

BOQ for Design, Manufacturing, Supply & Installation, Testing & commissioning of Supervisory Control & Data Acquisition System for IMT Manesar industrial area at Sub-Station level associated with 220KV/66KV/11KV Substation Sector 1, 2, 3, 4, 8 & Old Manesar and distribution level on all 11KV General Industrial and Independent Industrial/NDS feeders under the jurisdiction of 'OP' Circle-I, DHBVN, Gurugram, (Haryana)

Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
A1 - Bill of Quantities & Cost Estimation : SCADA								
1	220/66/11kV substation at Sector -1, IMT Manesar - Main Control Center							
1.1	Auxiliary RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors , items & accessories as per the requirement shall be part of RTU including wiring as required.	1	Nos	524250.00	524250.00	49500.00	49500.00	573750.00
1.2	IEC- 61850 compliant Ethernet switch with industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	151450.00	302900.00	14300.00	28600.00	331500.00
1.3	Industrial grade with modular structure, rack mounted, IEC gateway complete as per specification with PC, software & liscence.	2	Nos	93200.00	186400.00	8800.00	17600.00	204000.00
1.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, CAT VI cable.	500	Mtr	31.46	15730.00	2.97	1485.00	17215.00
1.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	500	Mtr	40.78	20390.00	3.85	1925.00	22315.00
1.6	Broadband CO-axial cable suitable for digital data transmission (0-4KHZ) (GPS link).	300	Mtr	13.98	4194.00	1.32	396.00	4590.00
1.7	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	50	Nos	93.20	4660.00	8.80	440.00	5100.00
1.8	OF patch cord (multi mode).	80	Nos	177.08	14166.40	16.72	1337.60	15504.00
1.9	HMI with built in mass storage system complete with other associated/components as per tech specifications complete with all required hardware & software /liscence							

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1.9.1	Workstation with dual TFT Monitors (OWS)	2	Nos	311482.56	622965.11	16042.02	32084.04	655049.15
1.9.2	Developmental console with one TFT (EWS)	2	Nos	263030.21	526060.41	13546.62	27093.24	553153.65
1.9.3	80-inch industrial grade full HD monitor	1	No	110749.56	110749.56	5703.84	5703.84	116453.40
1.10	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	400	Mtr	56.02	22408.00	5.29	2116.00	24524.00
	Hardware and Software							
1.11	Redundant SCADA / FEP Server complete with racks , all required hardware , accessories and licence	2	Nos	519139.15	1038278.29	26736.78	53473.56	1091751.85
1.12	ISR Server complete with racks , all required hardware , accessories & liscence	2	Nos	297640.03	595280.05	15329.10	30658.20	625938.25
1.13	NMS / management system / adminstration system complete with development server , all required hardware & software / licence.	2	Nos	166124.34	332248.68	8555.76	17111.52	349360.20
	Storage & Backup Devices							
1.14	External RAID Mass storage device (for 12 months online backup) with 20Nos 1TB HDD with network security with external DAT drive.	1	No	166124.34	166124.34	8555.76	8555.76	174680.10
	Switches							
1.15	Layer II switch (SCADA/ Dual LAN) (with adequate number of ports)	2	Nos	263030.21	526060.41	13546.62	27093.24	553153.65
1.16	Layer II switch (Development system)	3	No	144680.19	434040.56	7451.34	22354.02	456394.58
	Routers & Firewall , SCADA Security System							
1.17	Routers for interfacing SCADA with DMZ	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55

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1.18	Web server with Load Balancing	2	Nos	173046.77	346093.54	8912.28	17824.56	363918.10
1.19	Firewall for interface system.	2	Nos	221499.12	442998.24	11407.68	22815.36	465813.60
	Other Active Devices							
1.20	GPS Time synchronization system (with Time, Day & Date Digital Display)	2	Set	207655.43	415310.85	10694.70	21389.40	436700.25
	Printers							
1.21	A4 Size Color inkjet printer	1	Set	9500.00	9500.00	1650.00	1650.00	11150.00
1.22	A3 Size Network B/W Laser printer	1	Set	48750.00	48750.00	5500.00	5500.00	54250.00
1.23	A4 size All in one Color Laser printer	1	Set	104850.00	104850.00	13200.00	13200.00	118050.00
	Cabling System							
1.24	Cable, Jacks, 24 Port Jack Panel, Patch Chords, 42U Rack & KVM Switch, etc.	2	LS	221499.12	442998.24	11407.68	22815.36	465813.60
1.25	20 KVA, UPS in parallel redundant mode, with individual vattery set with 1 hour backup duration.	1	No	692184.75	692184.75	35649.00	35649.00	727833.75
	Test Equipments for RTU							
1.26	RTU Database Configuration & maintenance tool & RTU Simulator & Protocol analyzer tool including PC along with interface hardware.	1	Nos	207655.43	207655.43	10694.70	10694.70	218350.13
Total -1					8813652.13		517871.68	9331523.81
2	66/11kV substation -Sector -1							
2.1	IEC- 61850 compliant Ethernet switch wth industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
2.2	Interface unit / transducers as per technical specification.	2	Nos	81550.00	163100.00	7700.00	15400.00	178500.00

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2.3	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	340	Mtr	31.46	10696.40	2.97	1009.80	11706.20
2.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	340	Mtr	40.78	13865.20	3.85	1309.00	15174.20
2.5	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	50	Nos	93.20	4660.00	8.80	440.00	5100.00
2.6	OF patch cord (multi mode).	30	Nos	177.08	5312.40	16.72	501.60	5814.00
2.7	LDMS complete with PC and all accessories, hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software and	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
2.8	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55
2.9	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
2.1	Relay Required - 66KV as per technical specification.	1	Nos	233000.00	233000.00	22000.00	22000.00	255000.00
2.11	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	100	Mtr	56.02	5602.00	5.29	529.00	6131.00
2,12	Relay Required - 11 KV as per technical specification.	1	Nos	128150.00	128150.00	12100.00	12100.00	140250.00
2.13	Breaker Latching relays	1	Nos	24918.19	24918.19	13200.00	13200.00	38118.19
2.14	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00

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2.15	3 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	1	Nos	104850.00	104850.00	9900.00	9900.00	114750.00
Total -2					1774111.52		147789.52	1921901.04
3	66/11kV substation -Sector -2							
3.1	RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors , items & accessories as per the requirement shall be part of RTU including wiring.	1	Nos	1398000.00	1398000.00	132000.00	132000.00	1530000.00
3.2	IEC- 61850 compliant Ethernet switch with industrial networking capability as per IEEE 802.1 for ethernet redundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
3.3	Interface unit / transducers as per technical specification.	2	Nos	81550.00	163100.00	7700.00	15400.00	178500.00
3.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	720	Mtr	31.46	22651.20	2.97	2138.40	24789.60
3.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	720	Mtr	40.78	29361.60	3.85	2772.00	32133.60
3.6	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	100	Nos	93.20	9320.00	8.80	880.00	10200.00
3.7	OF patch cord (multi mode).	30	Nos	177.08	5312.40	16.72	501.60	5814.00
3.8	LDMS complete with PC and all accessories and hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software & liscence	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
3.9	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55

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3.10	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
3.11	Relay Required -66 KV as per technical specification.	1	Nos	233000.00	233000.00	22000.00	22000.00	255000.00
3.12	Breaker Latching relays	1	Nos	24918.19	24918.19	1283.34	1283.34	26201.53
3.13	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	250	Mtr	56.02	14005.00	5.29	1322.50	15327.50
3.14	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00
3.15	2 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	2	Nos	75725.00	151450.00	7150.00	14300.00	165750.00
Total -3					3131075.72		263997.96	3395073.68
4	66/11kV substation -Sector -3							
4.1	RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors , items & accessories as per the requirement shall be part of RTU including wiring.	1	Nos	1398000.00	1398000.00	132000.00	132000.00	1530000.00
4.2	IEC- 61850 compliant Ethernet switch with industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
4.3	Interface unit / transducers as per technical specification.	2	Nos	81550.00	163100.00	7700.00	15400.00	178500.00
4.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	700	Mtr	31.46	22022.00	2.97	2079.00	24101.00
4.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	700	Mtr	40.78	28546.00	3.85	2695.00	31241.00

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4.6	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	100	Nos	93.20	9320.00	8.80	880.00	10200.00
4.7	OF patch cord (multi mode).	30	Nos	177.08	5312.40	16.72	501.60	5814.00
4.8	LDMS complete with PC and all accessories and hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software & liscence	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
4.9	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55
4.10	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
4.11	Relay Required - 11 KV as per technical specification.	8	Nos	128150.00	1025200.00	12100.00	96800.00	1122000.00
4.12	Relay required -66KV as per technical	4	Nos	233000.00	932000.00	22000.00	88000.00	1020000.00
4.13	Breaker Latching relays	4	Nos	24918.19	99672.74	1283.34	5133.36	104806.10
4.14	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	250	Mtr	56.02	14005.00	5.29	1322.50	15327.50
4.15	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00
4.16	2 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	1	Nos	75725.00	75725.00	7150.00	7150.00	82875.00
Total -4					4852860.47		423361.58	5276222.05
5	66/11kV substation -Sector -4							

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5.1	Auxiliary RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors , items & accessories as per the requirement shall be part of RTU including wiring.	1	Nos	524250.00	524250.00	49500.00	49500.00	573750.00
5.2	IEC- 61850 compliant Ethernet switch wth industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
5.3	Interface unit / transducers as per technical specification.	2	Nos	81550.00	163100.00	7700.00	15400.00	178500.00
5.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	780	Mtr	31.46	24538.80	2.97	2316.60	26855.40
5.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	780	Mtr	40.78	31808.40	3.85	3003.00	34811.40
5.6	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	120	Nos	93.20	11184.00	8.80	1056.00	12240.00
5.7	OF patch cord (multi mode)	30	Nos	177.08	5312.40	16.72	501.60	5814.00
5.8	LDMS complete with PC and all accessories and hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software & liscence	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
5.9	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55
5.10	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
5.11	Relay Required - 11 KV as per technical specification.	3	Nos	128150.00	384450.00	12100.00	36300.00	420750.00

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5.12	Relay required -66KV as per technical specification.	1	Nos	233000.00	233000.00	22000.00	22000.00	255000.00
5.13	Breaker Latching relays	2	Nos	24918.19	49836.37	1283.34	2566.68	52403.05
5.14	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	250	Mtr	56.02	14005.00	5.29	1322.50	15327.50
5.15	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00
5.16	2 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	1	Nos	75725.00	75725.00	7150.00	7150.00	82875.00
Total -5					2597167.30		212516.50	2809683.80
6	66/11kV substation -Sector -8							
6.1	RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors , items & accessories as per the requirement shall be part of RTU including wiring.	1	Nos	1398000.00	1398000.00	132000.00	132000.00	1530000.00
6.2	IEC- 61850 compliant Ethernet switch wth industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
6.3	Interface unit / transducers as per technical specification.	2	Nos	81550.00	163100.00	7700.00	15400.00	178500.00

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6.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	760	Mtr	31.46	23909.60	2.97	2257.20	26166.80
6.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	760	Mtr	40.78	30992.80	3.85	2926.00	33918.80
6.6	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	120	Nos	93.20	11184.00	8.80	1056.00	12240.00
6.7	OF patch cord (multi mode)	30	Nos	177.08	5312.40	16.72	501.60	5814.00
6.8	LDMS complete with PC and all accessories and hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software & liscence	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
6.9	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55
6.10	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
6.11	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	250	Mtr	56.02	14005.00	5.29	1322.50	15327.50
6.12	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00
6.13	2 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	1	Nos	75725.00	75725.00	7150.00	7150.00	82875.00
Total -6					2802186.13		234013.42	3036199.55
7	66/11kV substation -Sector -Old Manesar							

BOQ for Design, Manufacturing, Supply & Installation, Testing & commissioning of Supervisory Control & Data Acquisition System for IMT Manesar industrial area at Sub-Station level associated with 220KV/66KV/11KV Substation Sector 1, 2, 3, 4, 8 & Old Manesar and distribution level on all 11KV General Industrial and Independent Industrial/NDS feeders under the jurisdiction of 'OP' Circle-I, DHBVN, Gurugram, (Haryana)

Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
7.1	RTU as per technical specification, complete with racks, sub-racks, power supply unit, CPU, interfacing equipment. All required convertors, items & accessories as per the requirement shall be part of RTU including wiring.	1	Nos	1398000.00	1398000.00	132000.00	132000.00	1530000.00
7.2	IEC- 61850 compliant Ethernet switch wth industrial networking capability as per IEEE 802.1 for ethernet redeundancy .	2	Nos	87375.00	174750.00	8250.00	16500.00	191250.00
7.3	Interface unit / transducers as per technical specification.	4	Nos	81550.00	326200.00	7700.00	30800.00	357000.00
7.4	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking,CAT VI cable.	760	Mtr	31.46	23909.60	2.97	2257.20	26166.80

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Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
7.5	Copper twisted , pair cables for data transmissions as per IEC 60603-7-4 for local area networking, STP Cables.	760	Mtr	40.78	30992.80	3.85	2926.00	33918.80
7.6	CAT-VI patch cord -2 Mtr (Same as CAT-VI cable).	120	Nos	93.20	11184.00	8.80	1056.00	12240.00
7.7	OF patch cord (multi mode).	30	Nos	177.08	5312.40	16.72	501.60	5814.00
7.8	LDMS complete with PC and all accessories and hardware with single 25 inch digital monitor with built in mass storage system complete with other associated components as per specifications including required software & liscence	1	Nos	170164.56	170164.56	8763.84	8763.84	178928.40
7.9	Router	2	Nos	269952.64	539905.27	13903.14	27806.28	567711.55
7.10	A-4 Size ,Printer- Laserjet Printer as per specifications.	1	Nos	11067.50	11067.50	950.00	950.00	12017.50
7.11	Relay Required - 11 KV as per technical specification.	13	Nos	128150.00	1665950.00	12100.00	157300.00	1823250.00
7.12	Relay required -66KV as per technical specification.	4	Nos	233000.00	932000.00	22000.00	88000.00	1020000.00
7.13	Breaker Latching relays	4	Nos	24918.19	99672.74	1283.34	5133.36	104806.10
7.14	24F/48F Armoured Optical Fiber Cable described in specification No. CSC-130/R-1/DH/UH/P&D/2016-17.	250	Mtr	56.02	14005.00	5.29	1322.50	15327.50
7.15	48V DCPS (DC Power Supply system) for RTU & SCADA system with VRLA Battery Bank complete Charger & DCDB with 10 hr backup.	1	Nos	184070.00	184070.00	17380.00	17380.00	201450.00
7.16	2 KVA UPS as per technical specification with 2 hr backup to work as DC backup.	1	Nos	75725.00	75725.00	7150.00	7150.00	82875.00
Total -7					5662908.87		499846.78	6162755.65

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A2 - Bill of Quantities & Cost Estimates : RMU's & Interconnecting Cables

1	3C, 11KV Al. Conductor , Armored ,XLPE cable of size 400 mm2	6500.00	Mtrs	1,972.30	12,819,950.00	-	-	12,819,950.00
2	Straight Jointing kit for 3/C 400 mm2 11 kV XLPE cable	7.00	No.	15,329.57	107,306.99	715.00	5,005.00	112,311.99
3	OD Termination kit for 11KV 3/C 400mm2 XLPE Cable	601.00	No.	4,773.72	2,869,005.72	715.00	429,715.00	3,298,720.72
4	HT cable protection cover RCC slabs	10855.00	nos.	238.83	2,592,499.65	-	-	2,592,499.65
5	HT RCC Route Marker and Straight Joint maker	65.00	nos.	873.75	56,793.75	-	-	56,793.75
6	HDPE pipe 160 mm dia for Trenchless boring & for cable raising and lowering on H Pole	1820.00	Mtr	251.64	457,984.80	-	-	457,984.80
7	CI pipe 250mm dia, 14mm thick for road crossing	500.00	Mtr	1,563.43	781,715.00	-	-	781,715.00
8	Un- Armoured Optical Fiber (48 Fibers) along with the all accessories connectors, switches and mainholl etc. to complete the job as per Nigam Specification	250.00	Mtr.	56.02	14,005.00	-	-	14,005.00
9	PLB-HDPE (Permanently Lubricated High Density Poly Ethylene) pipe 40 mm. dia pipe for laying optical Fiber Cable.	250.00	Mtr.	71.07	17,767.50	-	-	17,767.50
10	Outdoor type 11 KV SF6 type extensible and motorized 3 way smart Ring Main Unit (RMU) complete with one VCB and two LBS with FRTU and FPI with the provision of self powered supply through 1 kVA auxilliary power transformer 11/0.230 KV as per Nigam Specs	65.00	Nos.	751,302.68	48,834,674.20	14,187.69	922,199.85	49,756,874.05

BOQ for Design, Manufacturing, Supply & Installation, Testing & commissioning of Supervisory Control & Data Acquisition System for IMT Manesar industrial area at Sub-Station level associated with 220KV/66KV/11KV Substation Sector 1, 2, 3, 4, 8 & Old Manesar and distribution level on all 11KV General Industrial and Independent Industrial/NDS feeders under the jurisdiction of 'OP' Circle-I, DHBVN, Gurugram, (Haryana)

Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
11	Outdoor type 11 KV SF6 type extensible and motorized 3 way smart Ring Main Unit (RMU) complete with all three LBS and with FRTU and FPI with the provision of self powered supply through 1 kVA auxilliary power transformer 11/0.230 KV as per Nigam Specs	166.00	Nos.	653,045.41	108,405,538.06	12,332.19	2,047,143.54	110,452,681.60
12	Outdoor type 11 KV SF6 type extensible and motorized one way smart Ring Main Unit (RMU) complete with LB as per IS	13.00	Nos.	180,473.65	2,346,157.45	3,408.09	44,305.17	2,390,462.62
13	Outdoor type 11 KV SF6 type extensible and motorized one way smart Ring Main Unit (RMU) complete with VCB as per IS	4.00	Nos.	257,341.51	1,029,366.04	4,859.67	19,438.68	1,048,804.72
14	Earthing with G.I. Strip 25x6 mm 9 mtr. as per Drawing for line (one Nos. of each RMUs)	231.00	Mtrs	779.39	180,039.09	73.70	17,024.70	197,063.79
15	Supply of Earthing material like 40mm,dia 6 Mtr long G.I pipe for Earthing Set -B Class (one Nos. of each RMUs)	231.00	No.	1,794.10	414,437.10	169.40	39,131.40	453,568.50
16	Maintanance free (Chemical) Earthing with all the allied Materialas per Nigam Specifiaction (one Nos. of each RMUs)	231.00	Nos.	4,986.20	1,151,812.20	902.00	208,362.00	1,360,174.20
17	Foundation for RMU units	231.00	No.	-	-	19,800.00	4,573,800.00	4,573,800.00
18	Trenchless laying of HDPE and PLB-HDPE pipe by using HDD method	1820.00	Mtr.	-	-	715.00	1,301,300.00	1,301,300.00

BOQ for Design, Manufacturing, Supply & Installation, Testing & commissioning of Supervisory Control & Data Acquisition System for IMT Manesar industrial area at Sub-Station level associated with 220KV/66KV/11KV Substation Sector 1, 2, 3, 4, 8 & Old Manesar and distribution level on all 11KV General Industrial and Independent Industrial/NDS feeders under the jurisdiction of 'OP' Circle-I, DHBVN, Gurugram, (Haryana)

Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
19	Excavation for trenches upto 2m depth for size 1000mmX1200mmX400mm with supplying & laying 100mm jamuna sand for 1 nos. cables i/c refilling the excavated earth, watering, rolling compaction etc. complete in all respects alongwith laying of cables and all necessary installation of material including HDPE pipes for road/rail crossing and for bridge crossings or as per site requirement , cable protection cover RCC slabs, Bricks,Yamuna Sand, end termination, supporting structure for crossing small bridges, culverts etc, cast riser for cable joint marker, route markers, earthing material and earthing cable etc, including testing and commissioning for Laying and restoration of excavated portion to original look as far as practical possible of HT/ LT (3-core, 1 core) of various sizes & Optical fibre with PLB-HDPE pipe below the ground complete as per Drg./TS.	2730.00	Mtr.	-	-	107.42	293,256.60	293,256.60
20	Cutting/repair/finishing of interlocking paver block road including labour & material etc.for resurfacing the road/path as per original	81.90	Sq.Mtr.	-	-	748.00	61,261.20	61,261.20
21	Cutting/repair/finishing of cemented concrete road including labour,material & sufficient curingetc.for resurfacing the road/path as per original	191.10	Sq.Mtr.	-	-	1,205.60	230,390.16	230,390.16
22	Cutting/repair/finishing of metallic(Bituminous) road including labour,material & sufficient curing etc.for resurfacing the road/path as per original	191.10	Sq.Mtr.	-	-	344.30	65,795.73	65,795.73

BOQ for Design, Manufacturing, Supply & Installation, Testing & commissioning of Supervisory Control & Data Acquisition System for IMT Manesar industrial area at Sub-Station level associated with 220KV/66KV/11KV Substation Sector 1, 2, 3, 4, 8 & Old Manesar and distribution level on all 11KV General Industrial and Independent Industrial/NDS feeders under the jurisdiction of 'OP' Circle-I, DHBVN, Gurugram, (Haryana)

Sr. No.	Discipation	Qty	Unit	unit Supply cost after loading 16.5% Overhead charges on unit supply cost (in Rs)	Total Supply Cost (in Rs)	unit Erection cost after loading 10% extra charges on unit erection cost (in Rs)	Total Erection Cost (in Rs)	Total Amount (Supply + Erection) (in Rs)
23	Cutting/repair/finishing of brick on edge road including labour & material etc.for resurfacing the road/path as per original	81.90	Sq.Mtr.	-	-	657.80	53,873.82	53,873.82
A2- Total Cost - (Item 1-23 Nos.)					182,079,052.55		10,312,002.85	192,391,055.40
A3 - Training, Supervision, Operation & maintenance cost for three year (@ 2 Lacs per month)								7,200,000.00
A4- Cost towards annual maintance for 4th & 5th Year								
A5- Cost towards annual maintance for 6th, 7th & 8th Year								
Grand Total - (A1 +A2 + A3 +A4 +A5)								254,039,719.98