

Clause
No.

SCHEDULE OF REQUIREMENT
(REVISED)

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1.00

SCHEDULE OF REQUIREMENT:

- 1.01 Broad schedule of requirements is furnished herewith for price schedule as mentioned in Volume-2. The schedule of requirements is indicative of requirements of major equipment and essential services. The scope of supplies and services shall be as per various clauses stipulated in the different volumes under package- and the tenderer shall be responsible to ensure completeness of supplies and services even if these are not fully covered in this volume. In case any ancillary item is found to be appeared in different section of this specification, tenderer is to consider the same for the section which appears sequentially first and referred accordingly in the other section.
- 1.02 Any item of supply not explicitly listed but otherwise either evident by the contents of the specifications or essential for smooth operation of the equipment shall be construed as forming part of the supply and no additional charges shall be payable for the same.
- 1.03 If any particular items which were not explicitly listed are found to be essential, the Bidder / Contractor shall affirm the inclusion of the same in the scope of supply without any extra charge on the contrary if any items reflected in this Schedule of Requirement are not required; the Bidder shall exclude such items. However, such inclusion / exclusion shall be brought out in the Schedule of Deviation with justification for consideration of the Purchaser.
- 1.04 Bidder shall have to quote as per list of items / equipments detailed in this section as well as taking General Technical Specification (Vol-2, Part-I), Particular Technical Specification (Vol. 2, Part-II) & drawings (Vol.-4) into consideration.
- 1.04 The schedule of requirement given below may under-go change during detail engineering. Therefore, the quantity of equipments / works shall be considered at actuals and unit rates for which provision has been made elsewhere shall be considered for payment purposes. However, the spare quantities as indicated in the schedule of requirement shall be supplied as per the quantities mentioned
- 1.05 Bidders shall have to furnish unpriced schedule of equipment being offered by them, along with Technical & Commercial bid.
- 1.06 Bidders shall have to quote for each individual mandatory spares. Erection, Testing and Commissioning of items to be supplied by the Purchaser as specified in relevant section of the specification shall be in the scope of the Bidders.

2.00

SCHEDULE OF REQUIREMENTS: - SUPPLY

The schedule of requirement is tentative and shall be considered for bid evaluation only. Any items which are not individually stated or enumerated below but are necessary for the system shall have to be supplied, erected by the contractor without any extra cost to NEEPCO. Bidder is also to quote the unit rate of the following items.

2.01 5MW SPV Plant Plot/Array Yard, Power Conditioning Unit (Inverter) and Electrical System (Vol-2, part-II, section-II)

Sl. No.	Description	Quantity in nos.
1.	Solar PV system of minimum capacity 5MWp as per Particular Technical Specification comprising of but not limited to the following.	1Set
	a) Solar PV arrays with modules. b) String Monitoring unit c) Inverter / Power conditioning unit. d) Mounting structure e) Cable and Hardwares f) LT Panel with air circuit breakers (if required) g) Plant Monitoring desk h) Module cleaning system i) Lightning arrestor for arrays j) PVC pipes and accessories	As per requirement
TOTAL		

2.02 Power Transformer (Vol-2, part-II, section-III)

Sl. No.	Description	Quantity in nos.
1.	Bidirectional Transformer, 1500 KVA, 3 phase, 3 winding, */33kV (* is inverter output voltage), 50 HZ including all accessories as per Particular Technical Specification.	4 nos. (min)
2.	Station Auxiliary Transformer 250 KVA, 33/0.433kV, 3 phase, 2 winding, 50 Hz including all accessories as per Particular Technical Specification	1

2.03. 33 KV Indoor Switchgear (Vol-2, part-II, section-IV) (Revised)

Sl. No.	Description	Quantity in nos.
1.	33 KV indoor switchgear with Control, Protection and metering panel complete as per Particular Technical Specification. The 33 KV system shall include following a) Incomer bay from */33kV transformer: 4 Nos. (min) b) Outgoing line feeder bay: 2 Nos. c) Station Auxiliary Transformer bay : 1 No d) Spare bay : 1 No e) Bus PT : 1 set	1Set

2.04 33 KV Outdoor Switchyard is deleted (Vol-2, part-II, section-V)

Not required.

2.05 Power and Control Cables (Vol-2, part-II, section-VI) (Revised)

Sl. No.	Description	Quantity in nos.
1.	Power cable required for 33kV system complete with cable laying and termination, termination kit, cable joining kit, cable lug, cable gland and other accessories complete as per particular technical specification and for following. a) Interconnection between transformer and 33kV indoor switchgear. b) Interconnection between 33kV indoor switchgear and 33kV transmission line pole adjacent to the 33kV indoor switchgear control room.	Lot
2.	LT power cable required for the entire solar plant with cable lug, gland etc. complete as per Particular Technical Specification.	Lot
3.	Control and instrumentation Cable required for the entire solar plant with cable lug, gland etc. complete as per Particular Technical Specification	Lot
4.	Cable tray, support, conduit pipe, etc required for laying cables.	Lot

2.06 Control and Relay Panel for Switchyard (Vol-2, part-II, section-VII)

Separate C&R panel not required, however, same shall be included under the head Sl. No. 2.03 (33kV indoor switchgear)

2.07 Earthing and Lightning protection for array yard and control room (Vol-2, part-II, section-VIII)

Sl. No.	Description	Quantity in nos.
1.	Earthing complete in all respect as specified in the tender specification for the following a) Earthing of LT system with earth pit for arrays structure, flats, pipes etc., as required and as mentioned in the Particular Technical Specification b) Earthing of 33kV switchgear panel and transformer as required and as mentioned in the Particular Technical Specification c) Ground mat for control room and transformer yard with MS flat, MS rod, CI pipe etc as mentioned in the tender specification.	Lot
2.	Lightning protection for array yard and control room a) Lightning Arrester, flats, Earth pits, Cast iron cover plate etc. as per specification	Lot

2.08 Control and Monitoring (Vol-2, part-II, section-IX)

Sl. No.	Description	Quantity in nos.
1.	SCADA system including software, database with suitable memory, computer/server of latest version, Laser jet colour printer-A3 size, LAN, UPS	1Set
2.	Station control Board	1 set

2.09 Battery and battery charger (Vol-2, part-II, section-X)

Sl. No.	Description	Quantity in nos.
1.	DC battery banks 48 V, (2x100%) with one main , one standby along with suitable battery chargers	2Set
2.	DC Distribution Boards	As required

2.10 Illumination system and Air conditioning system (Vol-2, part-II, section-XI)

Sl. No.	Description	Quantity in nos.
1.	Illumination system which includes solar yard, control room, transformer yard. Sodium vapour lamp on pole shall be provided alongwith periphery. All required material, fitting, fixture, lighting distribution board, cable etc as required for the complete illumination system shall include in the scope.	Lot
2.	Air conditioning system-2 Ton capacity	As required

2.11 Fire fighting (Vol-2, part-II, section-XII)

Sl. No.	Description	Quantity in nos.
1.	Co2 cylinder 22.5Kg	As required
2.	Sand buckets	As required
3.	Foam type fire extinguishers	As required
4.	Dry chemical powder type extinguishers	As required
5.	Smoke sensors	(for control rooms) as required
6.	Danger boards, display boards etc	As required

2.12 33kV Line from the adjacent pole of 33kV indoor Switchgear control room to the existing 33kV pole System (approx length of 33kV line is 1 km)

Sl. No.	Description	Quantity in nos.
1.	<p>33kV single circuit overhead line to be constructed on steel tubular pole (Designation 540-SP-57 as per IS: 2713) of 11 meter height and ACSR 'DOG' conductor. All required material viz cross arm, disc and pin insulator, insulator hardware, string hardwares, clamp, connector, earth wire, stay & stay wire with accessories complete as required for completeness of the line shall be within the scope.</p> <p>GOAB switch and Lightning Arrestor at the interconnection point between 33kV cable and overhead line at the pole nearest to the 33kV control room shall be provided within the scope of contract.</p>	Lot

2.13 Auxiliary Distribution system

Sl. No.	Description	Quantity in nos.
1.	<p>Main LTAC panel with sub ACDB panel, as required for unit auxiliary power supply to all control room and power supply required for illumination system inclusive of all required power cables and accessories complete for distribution network.</p> <p>One feeder shall be kept for interfacing with existing power plant in the main LTAC panel as per revised SLD.</p>	Lot

2.14 Spares

The necessary items shall be indicated by the bidder.

3.00 SCHEDULE OF REQUIREMENTS: FOR ERECTION, TESTING AND COMMISSIONING

The schedule of requirement is tentative and shall be considered for bid evaluation only. Any items which are not individually stated or enumerated below but are necessary for the system shall have to be supplied, erected by the contractor without any extra cost to NEEPCO. Bidder is also to quote the unit rate of the following items.

3.01 5MW SPV Plant Plot/Array Yard, Power Conditioning Unit (Inverter) and Electrical System (Vol-2, part-II, section-II)

Sl. No.	Description	Quantity in nos.
1.	Solar PV system of minimum capacity 5MWp as per Particular Technical Specification comprising of but not limited to the following.	1Set
	a) Solar PV arrays with modules. b) Starting Monitoring unit c) Inverter / Power conditioning unit. d) Mounting structure e) Cable and Hardwares f) LT Panel with air circuit breakers (if required) g) Plant Monitoring desk h) Module cleaning system i) Lightning arrestor for arrays j) PVC pipes and accessories	As per requirement

3.02 Power Transformer (Vol-2, part-II, section-III)

Sl. No.	Description	Quantity in nos.
1.	Bidirectional Transformer, 1500 KVA, 3 phase, 3 winding, */33kV (* is inverter output voltage), 50 HZ including all accessories as per Particular Technical Specification.	4 nos. (min)
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3.04 33 KV Outdoor Switchyard is deleted (Vol-2, part-II, section-V)

Not required.

3.05 Power and Control Cables (Vol-2, part-II, section-VI) (Revised)

Sl. No.	Description	Quantity in nos.
1.	Laying and termination of Power cable required for 33kV system complete with cable termination kit, cable joining kit, cable lug, cable gland and other accessories complete as per particular technical specification and for following. a) Interconnection between transformer and 33kV indoor switchgear. b) Interconnection between 33kV indoor switchgear and 33kV transmission line pole adjacent to the 3kV indoor switchgear control room.	Lot
2.	Laying and termination of LT power cable required for the entire solar plant complete as per Particular Technical Specification.	Lot
3.	Laying and termination of Control and instrumentation Cable required for the entire solar plant complete as per Particular Technical Specification	Lot

3.06 Control and Relay Panel for Switchyard (Vol-2, part-II, section-VII)

Included with 33kV indoor switchgear.

3.07 Earthing and Lightning protection for array yard and control room (Vol-2, part-II, section-VIII)

Sl. No.	Description	Quantity in nos.
1.	Earthing complete in all respect as specified in the tender specification for the following a) Earthing of LT system with earth pit for arrays structure, flats, pipes etc., as required and as mentioned in the Particular Technical Specification b) Earthing of 33kV switchyard and transformer as required and as mentioned in the Particular Technical Specification c) Ground mat for control room and transformer yard with MS flat, MS rod, CI pipe etc as mentioned in the tender specification.	Lot
2.	Lightning protection for array yard and control room b) Lightning Arrester, flats, Earth pits, Cast iron cover plate etc. as per specification	Lot

3.08 Control and Monitoring (Vol-2, part-II, section-IX)

Sl. No.	Description	Quantity in nos.
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Sl. No.	Description	Quantity in nos.
1.	DC battery banks 48 V, (2x100%) with one main , one standby along with suitable battery chargers	2Set
2.	DC Distribution Boards	As required

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3.11 Fire fighting (Vol-2, part-II, section-XII)

Sl. No.	Description	Quantity in nos.
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2.	Sand buckets	As required
3.	Foam type fire extinguishers	As required
4.	Dry chemical powder type extinguishers	As required
5.	Smoke sensors	(for control rooms) as required
6.	Danger boards, display boards etc	As required

3.12 33kV Line from the adjacent pole of 33kV indoor Switchgear control room to the existing 33kV pole System (approx length of 33kV line is 1 km)

Sl. No.	Description	Quantity in nos.
1.	Construction and stringing of 33kV single circuit overhead line on steel tubular pole (Designation 540-SP-57 as per IS: 2713) of 11 meter height and ACSR 'DOG' conductor. All required material viz cross arm, disc and pin insulator, insulator hardware, string hardwares, clamp, connector, earth wire, stay & stay wire with accessories complete as required for completeness of the line shall be within the scope. GOAB switch and Lightning Arrestor at the interconnection point between 33kV cable and overhead line at the pole nearest to the 33kV control room shall be provided within the scope of contract.	Lot

3.13 Auxiliary Distribution system

Sl. No.	Description	Quantity in nos.
1.	Main LTAC panel with sub ACDB panel, as required for unit auxiliary power supply to all control room and power supply required for illumination system inclusive of all required power cables and accessories complete for distribution network. One feeder shall be kept for interfacing with existing power plant in the main LTAC panel as per revised SLD.	Lot

3.14 Spares

The necessary items shall be indicated by the bidder.

4.00 OPERATION AND MAINTENANCE

The bidder shall submit necessary details for Operation and Maintenance as per Particular Technical Specification.

5.00 CDM BENEFIT

The bidder shall submit necessary details regarding Assessment of CDM eligibility and obtaining necessary benefit.

6.00 CIVIL WORKS

Sl. No.	Description	Quantity
1.	<p>Civil works in conformity with approved Mechanical / Electrical layout / scheme comprising but not limited to the following</p> <ul style="list-style-type: none">a) Topological surveyb) Geo- Technical investigationc) Area Grading, levelingd) Module structure foundation including associated excavation, refilling, grounding etc.e) Control roomf) Civil works for 33kV line (1 Km approx.)g) Transformer foundationh) Approach road, Pathways, Pavingi) Fencing, Gate, Cross Drainage works etc.j) Cable Trenchk) Water Borehole and water and water supply systeml) Sewage and drainage systemm) Civil works associated with earthing systemn) Landscaping	Lot