

Amendments (SECI/ SD/ 1/ NIT/ 2015/ PPT10/ Amendment - 01)

NIT: SECI/ SD/ 1/ NIT/ 2015/ PPT10: 10MW Solar PV Power Plant (Pre - bid date: 15.12.2015)

S. No.	Section	Page No.	Clause	Tender Spec	Amended Clause
1	IFB	3 of 7	2.3.3	Construction of perimeter fencing for the complete land area provided for Solar PV(SPV) Project with security gate (s)	Construction of boundary wall for the complete land area provided for Solar PV(SPV) Project with security gate (s)
2	IFB	3 of 7	2.5	Supply of mandatory spares.	Supply of mandatory spares as per Annexure 3 attached.
3	ITB	18 of 24	3.9.8	NPV of annual O&M Price exclusive of taxes quoted for 10 (ten) years as given in Appendix 3: Bid Evaluation criteria.	NPV of annual O&M Price inclusive of taxes quoted for 10 (ten) years as given in Appendix 3: Bid Evaluation criteria
4	GCC	13 of 48	6.2.4.1	The Employer and the Contractor shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within twenty-eight (28) days after the latter of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for arbitrator designated in the SCC. 6.2.4.2 If one party fails to appoint its arbitrator within forty-two (42) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.	Existing arbitration clause is replaced with the following: Paradip Port Trust and the Contractor shall make every effort to resolve amicably, by direct informal negotiations, any disagreement or dispute arising between them in connection with the contract. In case of failure of negotiation between the executing Department and the Contractor, the parties shall refer their present and future disputes relating to the contract itself or arising out of or concerning or in connection with or in consequence of the contract to the Chairman, PPT whose decision shall be final and binding on both parties. The contract shall be governed by The Indian Contract Act, 1872. All disputes are subject to exclusive jurisdiction of courts at Kujang, Dist.- Jagatsinghpur, Odisha only.
5	SCC	4 of 15	8	The time lines for execution of the contract is 180 days from the date of award of LOI / NTP and as per the indicative milestones mentioned below.	The time lines for execution of the contract is 240 days from the date of award of LOI.
6	TS	10 of 86	3.2.22	One Solar Observatory including testing facilities. The Solar Observatory with associated systems shall include but not be limited to the following: <input type="checkbox"/> Pyranometers – for horizontal and tilted plane <input type="checkbox"/> Ultrasonic Anemometer (wind speed and direction) <input type="checkbox"/> Temperature Sensor – Ambient and module surface <input type="checkbox"/> Power source to the all sensors <input type="checkbox"/> Data Logger <input type="checkbox"/> Desktop and Printer	Solar observatory is replaced with the following: Weather monitoring station with associated systems shall include but not be limited to the following: <input type="checkbox"/> Pyranometers –one for horizontal and one for tilted plane <input type="checkbox"/> Ultrasonic Anemometer (wind speed and direction) <input type="checkbox"/> Temperature Sensor – Ambient and module surface <input type="checkbox"/> Power source to the all sensors <input type="checkbox"/> Data Logger <input type="checkbox"/> Desktop and Printer
7	TS	11 of 86	3.2.23	Construction of suitable infrastructures for power evacuation at 33kV from take-off point till the receipt of lines at Paradip Port 33kV Substation.	Supply, Erection & Commissioning of two numbers of outgoing feeder each of 10MW capacity along with switchgear and necessary protection, infrastructure for power evacuation at 33kV from take off point till the receipt of lines at Paradip Port 33kV indoor substation.

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8	TS	12 of 86	3.7.2	Earthwork for site grading, cutting, filling, levelling & compaction of land It is necessary to do the reclamation of the site for around 1.5 m as per the requirements of Paradip Port Trust., which may cost between 7-10 lakhs/acre. The bidders shall judiciously decide on making the price-bid accordingly.	Identifying borrow areas in consultation with PPT/SECI authorities, Providing and filling with Sand the low lying areas within the project site as per directions of Engineer-In-Charge(EIC) upto Finished Grade Level of the plant (average 200mm below the existing edge of Concrete Road passing through the plant area), including transportation, handling, loading, unloading, stacking at site, transporting to work site,placing in layers not more than 200mm in compacted thickness,compacting up to 75 % of relative density, etc complete.(Approximate quantity of compacted fill volume - 3,83,715.11 Cum). Suitable allowance for borrowed quantity shall be considered by the bidder to ensure the required fill volume) [NOTE: The estimated quantity may vary within +/- 10 % and the bid price shall be inclusive of this variation. Nothing extra shall be paid on this account.]
9	TS	20 of 86	5.9	Modules should have rugged design to withstand tough environmental conditions and high wind speeds (minimum up to 250 km/h).	All modules shall be certified with IEC 61215 2nd Edition for test load of 2400 Pa in the first two cycles and 5400 Pa in third cycle.
10	TS	21 of 86	5.10	Modules shall perform satisfactorily in relative humidity up to 95% and temperature between -10oC and 85oC (module temperature).	All modules shall be certified.Tested as per IEC 61215 for temperature and relative humidity conditions.
11	TS	22 of 86	6.1.4	The support structure design & foundation shall be designed with reference to the existing soil conditions in order to withstand wind speed applicable for the zone (Site Location) or 250kmph, whichever is higher, using relevant Indian wind load codes. The structures and foundations shall also conform to the seismic conditions pertaining to the zone using relevant Standards and codes	Base Wind speed shall be 250 kmph (69.5 m/s). For estimation of Design wind speed risk factors k1, k2,k3 shall each be taken as minimum 1.0.

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12	TS	22 of 86	6.1.7	The array structure shall be made of mild steel members of suitable sizes with weather protection coating. The coating shall be as per ASTM A792/ A792M-10 standard Al – Zn alloy with hot dip process and thickness of 150GSM on both sides. It is to ensure that before application of this coating, the steel surface shall be thoroughly cleaned of any paint, grease, rust, scale, acid or alkali or such foreign material as are likely to interfere with the coating process. The bidder should ensure that inner side should also be coated.	The array structure shall be made of mild steel members of suitable sizes with weather protection coating. The coating shall be hot dip galvanized with minimum thickness of 80 microns on each surface. It is to ensure that before application of this coating, the steel surface shall be thoroughly cleaned of any paint, grease, rust, scale, acid or alkali or such foreign material as are likely to interfere with the coating process. The bidder should ensure that inner surface if any should also be coated. The galvanization shall be done after fabrication of members to ensure <u>galvanization of all cut surfaces.</u>
13	TS	23 of 86	6.1.14	The Bidder should design the structure height considering highest flood level at the site. The minimum clearance between the lower edge of the module and the ground shall be the higher of (i) accessed highest flood level at the site and (ii) 500 mm.	The level of ground after land development shall be 200 mm below the existing concrete road edge. Accordingly the minimum clearance between the lower edge of the module and the ground shall be the higher of (i) accessed highest flood level at the site and (ii) 500 mm.
14	TS	25 of 86	6.2.8	Adequate capacity solar DC fuses & isolating miniature circuit breakers should be provided in recommendation with the inverter manufacturer. The fuses should be so designed that it should protect the modules from the reverse current overload.	DC fuses shall be provided for each string/input and DC disconnectors of suitable size should be used.
15	TS	46 of 86	6.22.3	33 kV isolator Impulse withstand voltage with 1.2/50 micro sec. wave : 325kVp to earth 195kVp across isolating distance One minute power frequency withstand Voltage : 140 kV (rms) to earth & 150 kV (rms) across isolating distance	33 kV isolator Impulse withstand voltage with 1.2/50 micro sec. wave : 170kVp to earth. One minute power frequency withstand Voltage : 70 kV (rms) to earth
16	TS	48 of 86	6.25.1	The Solar PV system and the associated power evacuation system interconnections should be protected as per IEC 61727 Ed.2, norms. Over current relays, reverse power relays, differential protection relays and earth fault relays have to be essentially provided. All relay should be numerical type & should be remote operating and controlling facility from the control room.	The Solar PV system and the associated power evacuation system interconnections should be protected as per IEC 61727 Ed.2, norms. Over current relays, reverse surge relays, differential protection relays and earth fault relays have to be essentially provided. All relay should be numerical type & should be remote operating and controlling facility from the control room.
17	TS	54 of 86	6.36.3	Minimum 10% spare feeders of each rating shall be provided in the switchgear.	Minimum 10% spare feeder subject to minimum one number of feeder of each rating/type.
18	TS	57 of 86	6.38.3	Separate metering system has to be provided for L.T. (incoming) and H.T. (outgoing) supply.	ABT meter is to be provided at the PPT substation as per SERC regulation to measure import and export of energy.

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19	TS	62 of 86	6.42.1	The power from the plant must be evacuated to nearby connecting substation through multicore co – axial cable of appropriate size as per prevailing conditions at site. The power evacuation system must be reliable, redundant and have low maintenance.	6 nos. of single core wire of appropriate size to be provided in two numbers of tri foil formation. Both ends will be equipped with suitable switch gear and protection system.
20	TS	80 of 86	12.3	The mechanical structures, electrical works and overall workmanship of the grid connected solar power plant must be warranted for a minimum of 5 years.	The mechanical structures, electrical works and overall workmanship of the grid connected solar power plant must be warranted for a minimum of 10 years.
21	TS	7 of 86	2.1.1	Technology: Solar PV Mono/ multi-crystalline modules (>16 Multi, >18% mono) of high efficiency and the cells/ modules.	Technology: Solar PV Mono/ multi-crystalline modules (>15 % Multi-crystalline, >17% mono) of high efficiency and the cells and modules should be manufactured in India.
22	TS	7 of 86	5.1	The solar photovoltaic modules with efficiency more than 16% for multi-crystalline, 18% for mono-crystalline silicon based modules with positive tolerance only.	The solar photovoltaic modules with efficiency more than 15% for multi-crystalline, 17% for mono-crystalline silicon based modules with positive tolerance only. The cells and modules should be manufactured in India
23	TS	10 of 86	3.2.18	Spares & consumables, as required or recommended, for 10 years O&M period.	Mandatory spares, spares, other spares & consumables, as required or recommended, for 10 years O&M period.
24	TS	12 of 86	3.7.6	Construction of internal roads 3.5m wide with 0.5m wide well compacted shoulders on each side with WBM base to carry safe and easy transportation of equipment and material at the project site during and after construction. Construction of Main Gate to Control room road of 3.5m wide with 0.5m wide well compacted shoulders on each side with bitumen base for easy approach to control room.	Construction of all roads including approach road for the solar project.
25	TS	76 of 86	8.10.2	Roads are to be constructed with sufficient width (minimum 3.5m) followed by 0.5m well compacted shoulders on each side. The road must be well compacted as per the relevant IS standards and MORTH updated till date.	All roads within the solar plant are to be constructed with sufficient width (minimum 3.5m) followed by 0.5m well compacted shoulders on each side. The road must be well compacted as per the relevant IS standards and MORTH updated till date.
26	TS	76 of 86	8.10.3	All peripheral roads and pathways from central road to Inverter room road shall be WBM road. Also, all cable crossings and other crossings shall be provided with GI/ Hume pipes.	All roads within the solar plant shall be WBM road except Main Gate to Control room road with bitumen road. Also, all cable crossings and other crossings shall be provided with GI/ Hume pipes.

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27	TS	76 of 86	8.11.1	The objective to provide a peripheral wall/ fencing is to demarcate the boundary and to keep away the unauthorized access to plant. The contractor shall provide GI chain link/ RCC pre cast/ RR masonry wall all around the periphery of the plant. The wall height must be minimum of 2 meter from the FGL. The boundary wall must be provided with a rugged main entry gate (s). The construction of peripheral wall and the main entry gate must conform to the relevant IS standards and practice.	Bboundary wall (of 2.5m high with concentrina coil on the top) to be provided. The contractor shall provide RCC pre cast/ RR masonry wall around the periphery of both the land parcels. The wall height must be minimum of 2.5 meter from the FGL. The boundary wall must be provided with a rugged main entry gate (s) on both the land parcels. The construction of peripheral wall and the main entry gate must conform to the relevant IS standards and practice.
28	TS	76 of 86	8.12.2	Bidder is to provide RCC Hume pipe of appropriate size at the crossing of road and drains and at required locations. The peripheral drain may be of brick pitching which is backed up by cement mortar bed and all joints are filled up with cement mortar in C.M. 1:4, no pointing and plastering is required. Alternate suitable drain can also be explored. Drains are required to provide weep holes with PVC pipes at an interval of 2m. Bidder shall submit the drain plan and drain section details for the complete plot as required for the effective water evacuation to nearest outfall point for suggestion/ approval.	Bidder is to provide RCC Hume pipe of appropriate size at the crossing of road and drains and at required locations wherever cross drainage is required. The peripheral drain may be of brick pitching which is backed up by cement mortar bed and all joints are filled up with cement mortar in C.M. 1:4, no pointing and plastering is required. Alternate suitable drain can also be explored. Drains are required to provide weep holes with PVC pipes at an interval of 2m. Bidder shall submit the drain plan and drain section details for the complete plot as required for the effective water evacuation to nearest outfall point for suggestion/ approval.
29	Forms and Format	11 of 57	Table 5A	TABLE 5A: Total EPC Contract Price	Refer Annexure 4 of Amendments
30	IFB	5 of 7	4.2.1	The bidder should have designed, supplied, erected/ supervised erection and commissioned/ supervised commissioning of Solar Photo Voltaic (SPV) based grid connected power plant(s) of cumulative installed capacity of 20MWp or above, out of which at least one plant should have been of 5 MWp capacity or above. The reference plant of 5 MWp or above capacity must have been in successful operation for at least One (1) year prior to the date of techno-commercial bid opening as per appendix 16.	The bidder should have designed, supplied, erected/ supervised erection and commissioned/ supervised commissioning of Solar Photo Voltaic (SPV) based grid connected power plant(s) of cumulative installed capacity of 10MWp or above, out of which at least one plant should have been of 5 MWp capacity or above. The cumulative capacity mentioned above including 5 MWp reference plant must have been in successful operation for at least Six (6) months prior to the date of techno-commercial bid opening as per appendix 16.

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31	TS	30 of 86	6.7.9	The wiring for modules interconnection could be in the weather resistant pipe of repute make. All the buried cables can be run through HD pipe/ DWC conduit. However, for crossing with road, drain and trenches etc., the cable must pass through GI pipe of appropriate size.	HT cables passing over marshy / water logged stretches of land shall be laid with special precaution to enable safe access and working environment for the cable in times of any emergency or repair. A raised trench of not less than 750 mm width, to accommodate cables above the submerged ground level to be constructed with brick walls (in cement mortar 1:4) on both sides of the trench (with a PCC bed of 1:3:6) strong enough to retain against the flowing water pressure. Trench to be filled with earth / sand , cables laid at-least 300 mm above maximum witnessed water level in the area. Further, the trench should be provided with suitable number and diameter NP class RCC Hume pipes to allow free drainage of water across the trench. HT cables crossing under or by side of RCC bridge over Railway line should be supported and carried over suitable structural members / brackets. The scheme and drawings for such crossing shall require approval of PPT before commencement.