

5MW Grid Interactive Solar PV Power Project, Monarchak

Pre Bid Queries of prospective bidder and Clarifications/ replies of NEEPCO

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| 1 | Volume 2- Part I General Technical specification | 2 | 2.0(C) | Please clarify the Terminal Point of the Scope of Bidder. Does the scope of Bidder include the 33 KV transmission line. If it's in bidder scope kindly clarify land clearance and transmission type (single or double circuit) for extension of 33 kV line (pole mounted) from existing system to 33 kV switchyard gantry. We have considered The distance shall be approx 1 (one) km from the proposed 33 kV switchyard to the Existing system. | 33kV line of 1 km (Approx) is considered. |
| 2 | | 3 | 2.0(F) | <p>We have not included the following associated civil works in TL scope.</p> <ul style="list-style-type: none"> ➤ Cutting and clearing of trees, plants etc., in about 30 acres of land to ensure shadow free area. ➤ Topographical survey of the area at 2.0 m interval. ➤ Geotechnical investigation necessary for the job. ➤ Site grading, levelling and consolidation of the area pertaining to the installation of | As per Specification and minutes of Pre-Bid meeting dtd. 20-12-12. |

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| | | | | SPV modules of solar plant. | |
| 3 | | 4 | 6.0 | We have not considered essential spares for the SPV plant and the grid connecting bay required for trouble free operation for three years. However We will submit the essential spares list to meet out the plant critical requirement. | Shall be as per specification. |
| 4 | | 6 | 8.0 | Synchronization shall be done at inverter level (IGBT section). Hence LT side (415V) and HT side (11 KV) shall not possible. Kindly clarify. | Agreed |
| 5 | | 9 | 14.09 | Degradation of Solar PV module depends on module manufacturer. Degradation value may vary from 1st year to 25th years as per manufacturer standard, but peak wattage warranty will remain same as per tender. i.e Peak wattage of PV modules is 90% at the end of 10 years and 80% at the end of 25 years. Kindly give your acceptance. | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |
| 6 | | 15 | 5 | Rated Capacity of inverter 500 kW as per tender. Pls confirm that bidders are free to choose the rating of PCU which is >500KW | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |
| 7 | | 11 | 6.0 | Testing and Records: We are planning to source the components from globally. We will provide manufacturer type test and qualification test certificate issued by any authorized IEC test centre. Please confirm. | Agreed |
| 8 | | 16 | 5 | As per tender output of inverter Voltage was 320 V to 415 VAC. Inverter output voltage shall be as per the | Refer minutes of Pre-Bid meeting dtd. |

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| | | | | <p>vendor standard, which is different for different suppliers, like 275V, 280V, 300V. Kindly note that, the voltage rating of lower rating of invert likes 500kW or 630KW is less than 300Volt.</p> <p>Need M/s Neepco acceptance for the same.</p> | 20-12-12. |
| 9 | | | | | |
| 10 | Volume 2- Part I I Particular Technical specification | 2 | 4.00 | <p>SYSTEM FEATURES</p> <p>Pl confirm the following points</p> <p>1. We have considered the rating of inverter shall be greater than 500kW or 630kW. Any rating of inverter should be allowed to be considered.</p> <p>Negative grounding of the inverter should be done. 1000kW</p> <p>2. We have considered Oil cooled transformer, 2 winding and 3 winding transformer based on the design. Primary winding of transformer, shall be as per the inverter output, which is different for different suppliers, like 275V, 280V, 300V.</p> <p>3. The output of the secondary voltage of transformer shall be 33kV which will be connecting to the RMU (Ring Main System) concept. Further RMU shall be connected to the outdoor 33kV switch yard. Hence Power transformer (6.3MVA) , 11kV switchgear and</p> | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |

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| | | | | 415V LT switchgear are not applicable and same will be taken care in side of the inverter. However we will be provided separate LT isolation box near transformer. Kindly confirm. | |
| 11 | | 4 | 6.02.2 | The maximum thickness of galvanisation is 80 microns as per the standard. Request NEEPCO to accept the same. | As per specification. |
| 12 | | 11 | 11.11 | For DC cable shall be 4Sq.mm cable. However 6Sq.mm of DC cable will be considered once ohmic losses (I ² R) exceeded 1.1%. Kindly confirm. | As per specification. |
| 13 | | | | We have not found vendor list from enclosed tender documents. We will consider reputed experienced vendors for solar products and electrical equipments. Please confirm. | As per specification. |
| 14 | | | | Please furnish AutoCAD format with Grid marking Request customer to furnish the legible plot plan. | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |
| 15 | | 12 | 11.14 | HDPE conduits shall be considered wherever cable crossing the one array section to other array section. Kindly confirm. | As per specification. |
| 16 | 33kV switchyard | 2 | 1.0 | As per tender Measurement of earth resistance to less than 0.5 Ohms. However soil resistance shall be based the type of soil. Hence we request the same shall be allowed up to 1 ohm. | As per specification. |

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| 17 | Cables | 2 | 1.0 | HT cable, LT cable and control cable shall be XLPE insulation without FRLS type. Because. Maximum Cable shall be laid under the ground. Hence FRLS is not required. Kindly confirm. | As per specification. |
| 18 | Solar Meteorological data | 2 | Annexure 3.1 A, 3.1 B, 4.2 | Solar Meteorological data is given in terms of NASA and Meternorm data as well as climatological data from the site. Kindly confirm which data is to be considered for output estimation. | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |
| 19 | Solar modules | 16 | Vol 2 part 1 | <p>Kindly confirm maximum DC sizing of the power project. As per "Salient Features" the DC size of the power plant is 5 MW and with those module and inverter specifications it is not possible to get annual energy generation of 8322 MWh/year.</p> <p>TL I considering 5.5 MW DC sizing of power plant. Kindly confirm.</p> <p>Efficiency of the module should be above 15.5 %. 300 Wp is basically 15.6% efficiency with 72 cells, whereas std cells 60 cells 245-250 Wp module @ 15.4 % efficiency. Standard palletization is 24 modules. All 24 modules will be done in current binning and will reduce DC string miss match loss. Hence, request you to change our selection to 245/250/290 Wp modules and 24 modules in series.</p> <p>(With 60 cells combinations will 892 V As the Voc, also this goes with 24 Modules with 1 string, whereas 300Wp doesn't manage with standard pallets with module manufacturer provides. No actual installations</p> | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |

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| | | | | for 300 Wp module for 1yr experience.) | |
| 20 | Annual Energy Generation | 17 | Vol 2 part 1 | Annual Generation guarantee can't be absolute. PR has to be considered. Kindly confirm | Refer minutes of Pre-Bid meeting dtd. 20-12-12. |
| 21 | | | | What will be the impact if Anti-dumping duty is considered? Impact of the duty. Current pricing is considered on zero % import duty. | As per specification. |