

Clarifications / Reply to Queries received against the Tender No. 6000090051 for Turnkey Supply & Installation of 300 MWp SPV Module Manufacturing Line, Technical Supervision and Annual Maintenance at BHEL-EPD Bengaluru

S.N.	Tender Document	Clause No.	Page No.	Tender Description	Description of Deviation	Remarks
1	NIT	4	3	EMD given by unsuccessful bidder shall be refunded on acceptance of award/LOI/PO by the successful bidder. The EMD of successful bidder shall be refunded after submission of Contract Performance Bank Guarantee(CPBG)	Please specify how many days EMD refunded on acceptance of award/LOI/PO by the successful bidder or after submission of Contract Performance Bank Guarantee(CPBG)	As per NIT. Please refer revised SCC Rev 01, also.
2	NIT	7	4	All the above Tender documents shall automatically become a part of the Order/Contract after its finalisation	Please specify which and what documents will be included definitely	SCC, GCC & Purchase Specification including Annexures and the modifications agreed by BHEL to the same during the tendering process.
3	SCC	12	3	By Road/Sea. Note: It is Vendor's responsibility to ensure availability of Trucks/Ships schedule etc. well in advance for dispatch of material to meet contractual delivery requirement. It is also the vendor's responsibility to ensure material is dispatched through shortest possible route.	Vendor's responsibility just under CFR/CIF terms	As per NIT. Please refer revised SCC Rev 01, also.
4	SCC	13	3	All dispatches shall be on freight pre-paid basis.	Just under CFR/CIF terms	As per NIT. Please refer revised SCC Rev 01, also.
5	SCC	16	4	Installation/ Erection & Commissioning (E&C): Completion within 28 weeks from the date of LOI/Purchase Order.	Installation/ Erection & Commissioning (E&C): Completion within 28 weeks from the date of LOI/Purchase Order without any influence from the Purchaser side, like inner-transportation from seaport to factory, equipment move-in to the plant, the readiness of the plant in floor/ceiling/gas /electricity,...	Incase there is a delay in any activity in the scope of Purchaser beyond the agreed L2 schedule, the Seller/Contractor to inform the Purchaser immediately. LD will be levied for the delays attributable to the Seller/Contractor only.
6	SCC	17	4	9.1.1 (b) For Foreign Purchase – Imports i. Eighty percent (80%) of basic price of the material supplied along with 100% of freight shall be payable pro-rata, as per approved billing break-up, on CAD basis, within 70 days from the date of receipt of documents as specified in Clause No. 9.2.2 of GCC / PO at BHEL Bank.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
7	SCC	17	5	ii. Ten percent (10%) of basic price of the material supplied shall be payable, on CAD basis, within 45 days from the date of successful installation/erection & commissioning and receipt of its joint certification, by BHEL & Vendor, at BHEL Bank.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.

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8	SCC	17	5	iii. Balance Ten percent (10%) of basic price of the material supplied shall be payable, on CAD basis, within 45 days on successful completion of site acceptance test and receipt of its joint certification, by BHEL & Vendor, at BHEL Bank.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
9	SCC	17	5	9.1.2(b) For Foreign Purchase – Imports: Hundred percent (100%) of basic price of the material supplied along with 100% of freight shall be payable, pro-rata, on CAD basis, within 70 days from the date of receipt of documents as specified in Clause No. 9.2.2 of GCC / PO at BHEL Bank.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
10	SCC	17	6	9.1.3 (b) For Foreign vendors: Hundred percent (100%) of installation/erection and commissioning charges shall be payable, on CAD basis, within 45 days from the date of successful completion of the activity and receipt of invoice along with its certification by BHEL & Vendor at BHEL Bank.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
11	SCC	17	6	2. In case of foreign bidders opting for payment through irrevocable and unconfirmed letter of credit, the same shall be opened by BHEL within 07 days from the request to do so by the vendor along with required details. The usance period for LC will be 100 days from the date of Bill of Lading (B/L) for 9.1.2.1 and 75 days for 9.1.2.2, 9.1.2.3 & 9.1.3.2. LC opening/ negotiation/ confirmation charges will be to vendor's account.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.

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12	SCC	17	6	9.1.4 Technical Supervision & Maintenance (TS&M): Hundred percent (100%) of Technical Supervision & Maintenance (TS&M) charges shall be payable through NEFT, in equal monthly instalments, within 45 days from the date of submission of the invoice and certification of satisfactory completion of TS&M for the month by BHEL Engineer, subject to replenishment / supply of spares / wear parts / consumable utilised by the vendor to fulfil the guarantee obligation, free of cost, during the month at BHEL-EPD.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
13	SCC	17	6	9.1.5 For Annual Maintenance Contract (AMC): Hundred percent (100%) of Annual Maintenance Charges shall be payable through NEFT, in equal quarterly instalments, within 45 days from the date of submission of the invoice and certification of satisfactory completion of AMC for the quarter by BHEL Engineer, subject to replenishment / supply of spares / wear parts utilised by the vendor to fulfil the AMC obligation, free of cost, during the quarter at BHEL-EPD.	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
14	SCC	22	6	Applicable as per GCC Cl. No. 11.0 and shall be submitted as per the format attached with this SCC.	To be defined in the bid. Non-conformity	Bidders to quote as per NIT.
15	SCC	30	9	Incase required for the purpose of SAT, the vendor may submit the specification and details of suppliers for cells, EVA, back sheet, glass, soldering consumables and other inputs, for manufacturing SPV Module, within 8 weeks from the date of LOI/PO.	To be defined in the bid. Non-conformity	Bidders to quote as per NIT.
16	SCC	31	9	In case of non-deployment of trained / skilled technicians in any shift during technical supervision and maintenance period, a sum equivalent of 0.02% of the total TS&M charges per man shift shall be deducted from the payable as penalty. In case of non-deployment of trained supervisor / engineer during technical supervision and maintenance period, a sum equivalent of 0.03% of the total TS&M charges per man day shall be deducted from the payable as penalty.	To be defined in the bid. Non-conformity	Bidders to quote as per NIT.

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17	SCC	33	9	H = Overhead Factor to be taken as 5	The reason why to taken as 5	The factor is based on the cost of anticipated overheads of BHEL on account of Risk & Cost action.
18	PQR (FIN)		1	All foreign language documents shall be translated to English language either by a Certified Agency or translated verification by a valid Authorized Agency.	Is it a must or what certificate required	As per the NIT.
19	GCC (GTC)	11	13 of 28	Note: 2.b From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)	Vendor's bank to check the possibility and how to make BG realized through any of the Consortium Banks only	List of Consortium Banks is provided in GCC (Annexure-X).
20	Purchase Specification		2	The scope includes design, supply, installation, commissioning, technology, line integration, training, process optimization, warranty and Technical supervision & Maintenance contract and Annual maintenance contract post warranty period of turnkey line	Technical supervision & Maintenance contract and Annual maintenance contract post warranty period of turnkey line required to be in details	Refer point 18 & 19 technical spec BHEL:EPD:SPV:PH2:001 where brief scope is mentioned.
21	Purchase Specification		2	the basic configuration of the PV Module manufacturing line shall consist of 2 manufacturing lines each of 75 modules per hour capacity for 72 cells module operating concurrently and together having 150 modules per hour capacity	24 seconds per module, if aggressive enough, just one line required	No 2 lines required for redundancy
22	Purchase Specification		2	the approximate plant foot print shall be designed to accommodate both the lines within the provided shop dimensions of 55 x 45 meter approx. with a clear height of 6 meters in an existing building	If possible, please share vendor with plant footprint in CAD file	Refer point 2 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
23	Purchase Specification		2	the off-line equipment provided separately shall be positioned at the nearest possible distance for ensuring minimal physical movement.	If any detail requirement, please make vendor informed	Bidder will be informed during layout finalization.
24	Purchase Specification		3	the solar PV module manufacturing line shall also have data acquisition and monitoring at all critical stages from raw material input to finished module output. Vital process parameters thus acquired shall be stored for analysis and product traceability	Is it MES requirement	Yes. MES required for total integration of data acquisition & processing for Men, material and machinery aspects
25	Purchase Specification		3	ii. with relevant business presence in india and having a reference of at least one(1) Turnkey solar pv module manufacturing line installation in india working satisfactorily.	Adani 1.2GW solar module lines, all automation lines from SC SOLAR; Turnkey solution in South Africa, in Turkey, in Japan, in Brazil, in Mainland China,...	Refer point 4 of technical spec BHEL:EPD:SPV:PH2:001

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26	Purchase Specification		6	2b Module line capacity Assumptions: plant uptime: $\geq 95\%$ plant yield: $\geq 99\%$ line throughput: Minimum 150 spv modules per hour for 72 cell module	The real working hours per year and the rated power of 72 cells module for calculation	Refer point 7 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
27	Purchase Specification		6	automatic tabber & stringer 02 per line at 2100 cells per hour	Stringers under 100% uptime and yield , 18.82 hours per day in uninterrupted 365 days and the rated power of 72 cells module at 374.4watts, then 300MW can be reached. 2100 cells per hour stringer cannot be reached in Mainland China Just TT available at Stringer under 2100 cells per hour	Refer point 1 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
28	Purchase Specification		8	online flipping station for visual inspection automated 180 degree flipping station for visual inspection	normally automated 90 degree flipping statio used for visual inspection	Refer point 14 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
29	Purchase Specification		9	junction box assembly station automatic measured sealant dispensing, auto/manual fitment and soldering/insertion of busbars	Which is preferred by ? auto ? manual ?	Dispensing and potting in auto mode, fitment and soldering will be manual process.
30	Purchase Specification		9	online flipping station for cleaning with scrubbing system automated 180 degree flipping station with provision for cleaning	Normally automated 90 degree flipping statio used or just the normal one with turnover conveyors	Refer point 15 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
31	Purchase Specification		10	automatic sorting and packing station auto sorting, pick, overturn, stack and pallet loading of the modules into carton box. lift and place for transport. it should be compatible for both conventional and glass to glass panel	Automatic sorting and automatic packing line, if automatic packing line, what is your packing process or automatic sorting compatible for sorting and packing	Refer point 41 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
32	Purchase Specification		11	controls & instrumentation system SCADA system with MES for the entire automated line with computer interfacing and SAP compatibility	What does SCADA stand for ? MES requirements ? BHEL SAP interfacing requirement	Supervisory Control Data Acquisition system. Yes. MES required for total integration of data acquisition & processing for Men, material and machinery aspects
33	Purchase Specification		12	Electrical power 1. BHEL will provide 3 phase, 4 wire, $415 \pm 10\%$ Vac, $50 \pm 5\%$ Hz, electrical supply to each of the equipment. The supplier shall provide the specification of the cable and termination type required.	3 phase, 5 wire, $415 \pm 10\%$ Vac, $50 \pm 5\%$ Hz, with transformer will much better.	Refer point 20 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019. And transformer will be provided.

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34	Purchase Specification		13	7. the equipment shall be aesthetically fabricated and all exposed parts shall be painted with corrosion-resistant paint or coating. the choice of equipment color shall be provided to BHEL	Equipment color vendor suggest to be with its standard ones, less lead time and much easier for quality control	BHEL will indicate the same after placement of PO on L1
35	Purchase Specification		14	Equipment details 5. overview(block) diagrams and schematic wiring diagrams where appropriate 8. dimensions and weight of the equipment	5. overview(block) diagrams and schematic wiring diagrams where appropriate; Offered after the project official and final layout permitted 8. dimensions and weight of the equipment;	Refer point 02 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
36	Purchase Specification		15	Automatic tabber stringer vi. the soldering quality shall match and exceed the minimum interconnect peel strength of 1 Nfor front tab and 2.5 N for back tab	peel strength not the same for different type of cells	Tender specification prevails
37	Purchase Specification		16	Automatic tabber stringer xx. preferred makes of critical brought out components	Vendor cant follow all the recommended brand; if it is a must, the stability and lead time will be influenced. all the brand used by Vendor will be shown in the bid	Tender specification prevails
38	Purchase Specification		17	Layup with transport system xvi.camera for string inspection system with following features. b. front and backlight imaging and analysis with software with failure diagnosis c. the system should be able to perform the identification of the broken cells, ribbon presence, ribbon misalignment, distance between cells and string dimensions.	Normally Camera just work and perform as assistance function	Tender specification prevails
39	Purchase Specification		18	Layup with transport system xix. preferred makes of critical brought out components	Vendor cant follow all the recommended brand; if it is a must, the stability and lead time will be influenced. all the brand used by Vendor will be shown in the bid	Tender specification prevails
40	Purchase Specification		18	Automatic bussing station iii.the auto bussing system should be compatible for bifacial, halfcut, perc solar cells and SWCT.	pre-lam module drawing required to share with vendor, especially drawing of SWCT	Details will be provided during the layout finalisation with successful bidder
41	Purchase Specification		19	Automatic bussing station x.the bussing station to have buffering facility for holding 30minutes in process	75 modules per hour, buffering facility for 30mins, does it mean 38pcs of module,is it too long for 30mins?	Refer point 24 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019.
42	Purchase Specification		19	Automatic bussing station xi. the bussing station to have rejected panel diversion for manual off-line repair	To be integrated into one equipment,not easier and influence the cycle time 1 conveyor with diversion function required	Tender specification prevails

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43	Purchase Specification		20	Electroluminescence tester ix.should be able to test single cells, strings along with the modules	If to test single cells and strings is a must, extra EL tester much better, for all the three inline EL Tester, mostly used for module matrix level.	Tender specification prevails
44	Purchase Specification		22	EVA/Back sheet automatic cutting machine Maximum cut measure 2000length x 1100 width mm	2000 length x 1100 width mm, is there something wrong ? module size just at 2000 x 1000 mm	Refer point 34 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019.
45	Purchase Specification		23	automatic edge trimming station an automatic 180 degree flipping station for online visual inspection before trimming	Normally automated 90 degree flipping statio used for visual inspection	Refer point 14 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
46	Purchase Specification		23	on line flipping station for cleaning an automatic 180 degree flipping station shall be provided in-line in the solar PV module manufacturing line for cleaning	Normally automated 90 degree flipping statio used or just the normal one with turnover conveyors	Refer point 15 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019. 180 degree flipping station required manual cleaning
47	Purchase Specification		23	sun simulator/ IV Tester	Item by item to be confirmed by the real supplier before submitting the bid; which preferable, top lightning, bottom lightning, or side lightning? mainland china brand or euro brand ?	Tender specification prevails
48	Purchase Specification		27	layout, Moving in and positioning supplier shall move in and position the equipment and integrate the module manufacturing line as per the layout	vendor integrate the module manufacturing line, but move in and position to be required help from purchaser , not only tools but also personnel.	MHE will be provided by BHEL but personnel, tools, instruments and any other thing not mentioned but required for installation will be under scope of bidder
49	Purchase Specification		28	installation and commissioning any special tools, tackles, instruments, commissioning spares and other materials required for installation and commissioning are under the scope of vendors	Materials in module BOM list or the related assistant material under the scope of purchaser	MHE will be provided by BHEL but personnel, tools, instruments and any other thing not mentioned but required for installation will be under scope of bidder
50	Purchase Specification		30	technical supervision & maintenance contract the TS & M value will be considered for arriving at the lowest bidder	The lowest bidder, the same successful bidder ? ?	Tender specification prevails
51	GCC (ITB)	3.0	7 of 15	3.0 In case of TURNKEY PACKAGES total erection & commissioning charges including service tax should be minimum 15% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.	Why total erection & commissioning charges including service tax should be minimum 15% of the total quoted package price	Bidder shall quote as per NIT.
52	GCC (ITB)	4.0 Note (b)	8 of 15	b) Bids of foreign suppliers shall preferably be in currency of the country of origin and on CPT/ CFR basis. In case of supplies from Indian origin, it shall be in INR on F.O.R BHEL EPD BANGALORE - 12.	Why in currency of the country of origin ? can the purchaser remit CNY out to suppliers from China	Bidder shall quote only in single currency, which is freely convertible.

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53	GCC (ITB)	7.0	9 of 15	7.0 VALIDITY OF OFFER Vendors offers shall be submitted with the following validity periods: i) Original offer shall be valid for 90 days from Part-I opening.	i) Original offer shall be valid for 90 days from Part-I opening if Ex rates fluctuate with 1 percent	Validity shall be as per NIT. Exchange rate variation, if any, to BHEL's account.
54	GCC (ITB)	11.0	11 of 15	11.2.2 Commitment by Bidder/ Supplier/ Contractor: (b) The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.	The reason and any special process to flow for Bidder/ Supplier/ Contractor and agents, brokers or any other intermediaries	Required as per NIT.
55	GCC (GTC)	9.0	7 of 28	9.0 terms of payment	To be defined in the bid. Non-conformity	As per NIT. Please refer revised SCC Rev 01, also.
56	GCC (GTC)	12.0	14 of 28	12.0 Guarantee for plant/equipment/stores 12.5 Decision of purchaser with regard to seller/contractor's liability and the amount involved, if any, payable by seller/contractor under the guarantee shall be final, conclusive and binding. However, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight.	Vendor's maximum liability will be limited to 5% of the total contract value including taxes, duties and freight. or to be negotiated in future	Bidders shall quote as per NIT.
57	GCC (GTC)	14.0	16 of 28	14.3 in case of foreign vendors the cost of third party inspection, where called for shall be deemed to be included in the quoted price	Please define how to run the inspection via third party	As per NIT.
58	GCC (GTC)	31	26 of 28	31.0 settlement of disputes: 31.1 Except as otherwise specifically provided in the order/contract, all disputes concerning questions of the facts arising under the order/contract, shall be decided by purchaser, subject to written appeal by the seller/contractor to the purchaser, whose decision shall be final	Why shall be decided by Purchaser	As per NIT.
59	GCC (GTC)	32	26 of 28	32.0 Arbitration & conciliation 32.1 to the sole arbitration of an arbitrator appointed by the head of the BHEL Unit/ Region/Division issuing the contract	Why to be sole arbitration of an arbitrator and appointed by the head of the BHEL Unit/ Region/Division issuing the contract	As per NIT.
60	GCC (GTC)	Annexure-VI		Request for Issue of Form - C	What purpose and which year preferred	Not applicable for this tender.

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61	Purchase Specification	5.0	13 of 31	Consumables/Spares		During AMC, spares will be in the scope of Vendor and Wear Parts & Consumables will be in the scope of BHEL.

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1	Purchase Specification			Capacity 300 MW/Annum	Number of days and number of working hours per day to achieve the target of 300MW.	Number of days =300 days, Number of working hours = 20 hrs
2	Purchase Specification			Capacity 300 MW/Annum	Power of module to be considered for calculation	Wattage per module = 350W and throughput of 150 modules/hr
3	Purchase Specification		2	Capacity 300 MW/Annum	Please clarify if it is section 9 or section 7	Refer point 12 & 14 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
4	Purchase Specification	3	8 of 31	Major Equipment Summary	Sl. no. 6: Kindly clarify if you need separate machine for Auto EVA, Auto Backsheet and second glass loading for glass to glass module	Refer point 11 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
5	Purchase Specification	3	8 of 31	Major Equipment Summary	Sl. no. 9: Please clarify if the visual inspection needs 180 deg or 90 deg	Refer point 14 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
6	Purchase Specification	3	9 of 31	Major Equipment Summary	Sl. no. 15: Please clarify if the cleaning with scrubbing agent would be solvent based or water based	Refer point 15 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
7	Purchase Specification	7.2	15 of 31	Layup with Transport System	Sl. no.xi: Glass placement accuracy will depend on the glass tolerance. Kindly specify the glass tolerance	Glass tolerance is not required to be considered. The glass string positioning accuracy shall be with reference to the leading edge of the glass on the conveyor at layup station and the stopper accuracy to position the glass. Tolerance indicated is for above.
8	Purchase Specification	7.14	23 of 31	Sun Simulator / IV Tester	Kindly re-verify the spectral range of the sun simulator (i.e. 200nm-1400nm)	Refer point 38 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019

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1	Purchase Specification		Page 2 of 31		55 *45 metre In the defined area, With lots of pillars, its difficult to have an efficient layout with this kind of automation & 2 lines. Please explore the possibilities of increasing the area. Also, Please help with the CAD layout with exact position of access doors.	Refer point 02 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
2	Purchase Specification		Page 3 of 31		VI & EL before and after Lami DO VI+EL required at both locations? Do we need auto detection without operator? Full auto detection EL and VI can be a challenge. Do we arelly require EL at 3 different positions?	Refer point 8,9 &10 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
3	Purchase Specification		Page 3 of 31		JB Assembly Sealant on the JB can be automatic but other steps can be manual. It will also give more flexibility keeping in mind the different technologies e.g. single JB, 3 JB, different designs.	Dispensing and potting in auto mode, fittment and soldering will be manual process.
4	Purchase Specification		Page 4 of 31		Pre Qualification Criteria Please include Auto bussing in the CE list as it is critical equipment. Also, It should be proven equipment with 10 Installations during 1.12.2012 to 30.11.2018, 5 Out of Country of Origin, 2 of the same model offered	Refer point 04 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
5	Purchase Specification		Page 6 of 31		Plant Uptime $\geq$ 95% Only stringer has standard uptime of 95%, Line uptime of 95% is not practically possible. Please mention Plant Uptime as minimum of 7260 Hrs per annum	Refer point 07 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
6	Purchase Specification		Page 8 of 31		Major Equipment summary Auto BS/EVA Cutter and Curing Line , One should be sufficient for 150 modules per hour. In case of any equipment which is offered 2 , Single equipment capacity shall be 75 modules per hour	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001 and each equipment throughput should be 138 modules/hr
7	Purchase Specification		Page 8 of 31 & Page 21 of 31		Major Equipment summary Multi Stack Laminator- 75 modules/hr in place of 85 modules per hour. Heating rate less than 30 min shall be increased to 60 mins Heating methodology will be through Thermic Fluid can be changed as Thermic Fluid/ Electrical Heating	Refer point 27-32 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
8	Purchase Specification		Page 9 of 31		Major Equipment summary Manual cleaning in place of scrubbing system & in place of auto spray of cleaning agents	Refer point 15 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019

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9	Purchase Specification		Page 10 of 31		Major Equipment summary Auto Sorting & Packing- 300 modules or 150 modules? Also, There is not enough space for Auto Sorting & packing as for Sorting & packing G&G modules, lot more space is required than conventional modules.	Refer point 40 & 41 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
10	Purchase Specification		Page 16 of 31		Layup with Transport System Doing a good string inspection will increase the enormously the cycle time of stringer plus layup. Also, we are using EL inspection before Laminator , hence it is not required at layup stage.	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001
11	Purchase Specification		Page 17 of 31		Layup with Transport System The line and equipments shall be able to process/transfer big sizes glass. Small glass sizes 800 * 500 mm are not required on the machines	Refer point 23 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
12	Purchase Specification		Page 23 of 31		31 Sun Simulator Change from 200 nm-1400 nm to 300nm -1200 nm, which covers all the technologies	Refer point 38 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019
13	Purchase Specification		Page 24 of 31		Sun Simulator What is the Insolation value?	Flux intensity of light
14	Purchase Specification		Page 30 of 31		AMC In AMC, Spares and Wear parts are also added, Please make it AMC only with Labour, No parts included	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001
15	SCC	15	Page 3 & 4	Delivery Schedule	Delivery Schedule 20 weeks is very less time considering the equipments and different technologies. Please change it to 28 weeks from the date of receipt of advance payment and Date of B/L to be considered as delivery date	As per NIT.
16	SCC	17	4,5 & 6	Payment Terms	Payment 20% Advance payment shall be included. Same amount ABG can be provided for the same. Irrevocable LC of remaining 80% with 75 days usance period. Milestones can be 60% against shipping documents, 10% after I&C and 10% after FAT. LC Opening charges in India in BHEL's scope and Outside India in Seller's scope.	As per NIT. Please refer revised SCC Rev 01, also.
17	GCC (GTC)	16	Page 17 of 28	Delivery Failure and Termination / Liquidated Damages	Delayed Delivery or other penalties Max 5 % in place of 10%. And Cumulative of all cannot exceed 5% of total order value	As per NIT.

Clarifications / Reply to Queries received against the Tender No. 6000090051 for Turnkey Supply & Installation of 300 MWp SPV Module Manufacturing Line, Technical Supervision and Annual Maintenance at BHEL-EPD Bengaluru

S.N.	Tender Document	Clause No.	Page No.	Tender Description	Queries	Remarks
1	Purchase Specification			Line throughput	There are two parameters used in the Specification one MW and other is no. of modules. If need to achieve 300 MW, then One (1) line shall be sufficient for 300 MW with the line cycle time of 28s and with Mono PERC cells of 21.8% efficiency.	Refer point 01 of amended technical spec BHEL:EPD:SPV:PH2:001 dtd 03-07-2019. No 2 lines are required for redundancy
2	Purchase Specification			Stringer throughput and numbers	Now , Almost all the stringers are above 3000 cells per hour. Shall this higher throughput can be considered?	The througput of the line should be 150 modules/hr . The vendor may offer higher capacity stringer and the figure shown is indicative and kept on the minimum side.
3	Purchase Specification			Layup	Currently more than 80% Layup are with Gantry type around the world, Still need to consider the robot? For the high end line, One Gantry Layup is sufficient for Two high speed stingers with better placing accuracy of 0.5 mm against robotic layup of 0.8 mm.	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001
4	Purchase Specification			Laminator	Can we use of two level and two stack laminator? It is a kind of laminator one another above. One laminator can handle capacity of 165 MW (20 panels in one run).	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001
5	Purchase Specification			Auto Framing	Now, there is no corner crimping with keys. Now the frame suppliers are supplying with the pre-crimped frames with the keys inserted.This will help to reduce cycle time and also increased up time against heavy hydraulic cylinders. (need more maintenance) Can it be used ?	Bidder to comply as per the BHEL tech Spec: BHEL:EPD:SPV:PH2:001
6	SCC	17	4,5 & 6	Payment Terms	How about financial payment, it is can be negotiated or the one proposed is final?	As per NIT. Please refer revised SCC Rev 01, also.