



Bharat Heavy Electricals Limited

(A Government of India Undertaking)

Electric & Photo Voltaic Division

Prof. CNR Rao Circle, Indian Institute of Science Post, Malleshwaram
BANGALORE – 560 012, Karnataka, INDIA

☎ Phone No.080-22182269, 📠 Fax No.080-23345604

SPV Process & Product Engineering

REF No. SPVE0019/Z/IEC-NIT/001 dt. 07.05.2020

17. Reverse Auction shall be conducted as per term & condition mentioned in GCC.
18. Conciliation Clause will be applicable as per Annexure-A.
19. All correspondence thereof, shall be addressed to the undersigned by name & designation and sent at the following address:

Technical & commercial

R K Pradhan / Sr Engineer, Raghavendra Babu.G.V / Mgr, Shivananda Kumar.G / SDGM
BHEL-EPD, Prof CNR Rao Circle, IISC post,
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Estimate Sheet for Type Test			Annexure-1		Dt. 03.02.2020	
Sl. No.	IEC Std. no.	IEC Test Description	Qty.	Unit Cost (Rs.)	Total Cost (Rs.)	Remark
1	IEC 61215-1, 61215-1-1, 61215-2 : 2016 & IEC 61730 part 1 & 2 : 2016. (Test report for IS 14286 : 2010, IS/IEC 61730-1 & 2 : 2004 & Fire test shall also be provided along with IEC test reports for all the 12 Sets.), CB Certificate shall also be provided	Terrestrial photovoltaic (PV) modules – Design qualification and type approval & Photovoltaic (PV) module safety qualification along with Fire test	*	-	-	* Qunatity is provided in Annexure-2, , Unit test charge shall be total of 12 Setss, as per annexure-2.
2	IS 14286 : 2010, IS/IEC 61730-1 & 2 : 2004	Terrestrial photovoltaic (PV) modules – Design qualification and type approval & Photovoltaic (PV) module safety qualification along with Fire test	**	-	-	** Qunatity is provided in Annexure-2, Unit test charge shall be same as "Sec. Sets (Sets-1)", as per annexure-2
3	IEC 62804-1 of latest version	Potential induced degradation – Part 1: Crystalline silicon (PID) - Test for (288 Hr) as per MNRE	5	-	-	Unit test charges shall be of average of 5 Sets, as per annexure-2.
4	IEC 61701 of latest version	Salt mist corrosion testing of photovoltaic (PV) modules - Severity level-1	5	-	-	Unit test charge shall be of average of 5 Sets, as per annexure-2.
5	IEC 61853-1 & PAN File of latest version	Irradiance and temperature performance measurements and power rating (PAN file to be provided)	5	-	-	Unit test charge shall be of average of 5 Sets for SL no. 5) & average of 4 Sets for SI No. 6) and to be added together, as per annexure-2.
6	PAN File	PAN file for alternative Wattage of SPV module	6	-	-	
7	IEC 62716 of latest version	Ammonia Corrosion (NH3)	4	-	-	Unit test charge shall be of average of 4 Sets
8	IEC 60068-2-68 of latest version	Dust test & Sand Abrasion	1	-	-	
9	IEC 62759-1 of latest version	Transportation testing	1	-	-	
Total						- Exclusive of GST
Remarks :						
1. Vendor to provide testing charges for all the above tests and Sets in Annexure-2, accordingly corresponding testing charges will update in this sheet (Annexure-1).						
2. All the testing charges shall be exclusive of GST.						


Annexure-2																Dt. 03.02.2020	
Sl. No.	IEC Std. no.	IEC Test Description	Unit Cost (Rs.)													Sub Total	Remark
			Sec. BOM (Set-1)	Sec. BOM (Set-2)	Sec. BOM (Set-3)	Sec. BOM (Set-4)	Sec. BOM (Set-5)	Sec. BOM (Set-6)	Sec. BOM (Set-7)	Sec. BOM (Set-8)	Sec. BOM (Set-9)	Sec. BOM (Set-10)	Sec. BOM (Set-11)	Sec. BOM (Set-12)	Sec. BOM (Set-13)		
1	IEC 61215-1, 61215-1-1, 61215-2 : 2016 & IEC 61730 part 1 & 2 : 2016. (Test report for IS 14286 : 2010, IS/IEC 61730-1 & 2 : 2004 & Fire test shall also be provided along with IEC test reports for all the 12 Sets.), CB Certificate shall also be provided	Terrestrial photovoltaic (PV) modules – Design qualification and type approval & Photovoltaic (PV) module safety qualification along with Fire test	Not required														- For 12 Set
2	IS 14286 : 2010, IS/IEC 61730-1 & 2 : 2004	Terrestrial photovoltaic (PV) modules – Design qualification and type approval & Photovoltaic (PV) module safety qualification along with Fire test		Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	Not required	- For 1 Set
3	IEC 62804-1 of latest version	Potential induced degradation – Part 1: Crystalline silicon (PID) - Test for (288 Hr) as per MNRE	Not required	Not required	Not required	Not required	Not required	Not required		Not required				Not required		- For 5 Set	
4	IEC 61701 of latest version	Salt mist corrosion testing of photovoltaic (PV) modules - Severity level-1	Not required	Not required	Not required	Not required	Not required	Not required		Not required				Not required		- For 5 Set	
5	IEC 61853-1 & PAN File of latest version	Irradiance and temperature performance measurements and power rating (PAN file to be provided)	Not required	Not required	Not required	Not required	Not required	Not required		Not required				Not required		- For 5 Set	
6	PAN File	PAN file for alternative Wattage of SPV module	Not required	Not required	Not required	Not required	Not required	Not required		Not required		Not required		Not required		- For 4 Set	
7	IEC 62716 of latest version	Ammonia Corrosion (NH3)	Not required	Not required	Not required	Not required	Not required	Not required		Not required		Not required		Not required		- For 4 Set	
8	IEC 60068-2-68 of latest version	Dust test & Sand Abrasion	Not required	Not required	Not required	Not required	Not required	Not required		Not required	Not required	Not required	Not required	Not required	Not required	- For 1 Set	
9	IEC 62759-1 of latest version	Transportation testing	Not required	Not required	Not required	Not required	Not required	Not required		Not required	Not required	Not required	Not required	Not required	Not required	- For 1 Set	

Remarks :
1. Vendor to provide testing charges for all the above tests and Sets except the place where "not required" mentioned.
2. BOM details are proved in annexure-3.
3. All the testing charges shall be exclusive of GST.

BOM details

Annexure-3

SL No.	BOM	Cell	Cell Interconnects	Bus bars	Junction Box	EVA	Back sheet	Aluminum Frame	Glass	Adhesive	Potting material for JB	Remark
	Tested BOM-1	Make-1 Multi	Make-1	Make-1	Make-1	Make-1	Make-1	Make-1	Make-1	Make-1	Make-1	CB & IEC certification for 2016 version & IS 14286, IS/IEC 61730-1& 2, with 1000V system, CB & IEC's report will be provided by BHEL at later stage, This test & BOM is not part of this tender.
1	Secondary BOM (Set-1)	Make-1 Multi	Make-2	Make-2	Make-2	Make-2	Make-2	Make-2	Make-2	Make-1	Make-1	Change in Cell Interconnects, Bus bars, Junction Box, EVA, Backsheet, AL. Frame & Glass compared to Tested BOM-1
	Tested BOM-2	Make-1 Multi	Make-2	Make-2	Make-2	Make-2	Make-3	Make-3	Make-2	Make-1	Make-1	CB & IEC certification for 2016 version & IS 14286, IS/IEC 61730-1& 2, with 1000V system, CB & IEC's report will be provided by BHEL at later stage, This test & BOM is not part of this tender.
2	Secondary BOM (Set-2)	Make-1 Multi	Make-3	Make-3	Make-3	Make-2	Make-2	Make-4	Make-2	Make-1	Make-1	Change in Cell Interconnects, Bus bars, Junction Box & AL. Frame compared to Set-1
3	Secondary BOM (Set-3)	Make-2 Multi	Make-4	Make-4	Make-3	Make-2	Make-2/3	Make-5	Make-2	Make-1	Make-1	Change in Cell, Cell Interconnects, Bus bars, Backsheet, JB & AL. Frame compared to Set-1
4	Secondary BOM (Set-4)	Make-3 Multi	Make-5	Make-5	Make-2	Make-3	Make-4	Make-6	Make-2	Make-1	Make-1	Change in Cell, Cell Interconnects, Bus bars, EVA, Backsheet & AL. Frame compared to Set-1
					Make-3							Change in Cell, Cell Interconnects, Bus bars, EVA, Backsheet & AL. Frame compared to Set-2
5	Secondary BOM (Set-5)	Make-2 Multi	Make-4	Make-4	Make-4	Make-4	Make-5	Make-5	Make-3	Make-2	Make-2	Change in JB, EVA, Backsheet & Glass, Adhesive & Potting material for JB compared to Set-3
System voltage to be change from 1000V to 1500V system level, 1500V system level shall be followed for all the below BOM's.												
6	Secondary BOM (Set-6)	Make-1 Multi	Make-3	Make-3	Make-5	Make-2	Make-6	Make-3	Make-2	Make-1	Make-1	Change in Cell Interconnects, Bus bars, JB & Backsheet compared to Tested BOM-2.
7	Secondary BOM (Set-7)	Make-2 Multi	Make-6	Make-6	Make-5	Make-2	Make-7	Make-7	Make-2	Make-1	Make-1	Change in Cell, Cell Interconnects, Bus bars, Backsheet, AL. Frame compared to Set-6
8	Secondary BOM (Set-8)	Make-2 Multi	Make-6	Make-6	Make-6	Make-5	Make-7	Make-7	Make-2	Make-1	Make-1	Change in JB & EVA compared to Set-7
9	Secondary BOM (Set-9)	Make-3 Multi	Make-7	Make-7	Make-7	Make-6	Make-8	Make-8	Make-4	Make-3	Make-3	Change in Cell, Cell Interconnects, Bus bars, JB, EVA, Backsheet, AL. Frame, Glass, Adhesive & Potting material for JB compared to Set-6
10	Secondary BOM (Set-10)	Make-4 MONO	Make-3	Make-3	Make-5	Make-2	Make-6	Make-3	Make-2	Make-1	Make-1	Change in Cell compared to Tested BOM-6
11	Secondary BOM (Set-11)	Make-5 MONO	Make-8	Make-8	Make-5	Make-2	Make-8	Make-9	Make-2	Make-1	Make-1	Change in Cell, Cell Interconnects, Bus bars, Backsheet & AL. Frame compared to Set-10
12	Secondary BOM (Set-12)	Make-5 MONO	Make-8	Make-8	Make-8	Make-7	Make-8	Make-9	Make-2	Make-1	Make-1	Change in JB & EVA compared to Set-11
13	Secondary BOM (Set-13)	Make-6 MONO	Make-9	Make-9	Make-9	Make-8	Make-9	Make-10	Make-5	Make-5	Make-4	Change in Cell, Cell Interconnects, Bus bars, JB, EVA, Backsheet, AL. Frame, Glass, Adhesive & Potting material for JB compared to Set-10

	<p align="center">ELECTRO- PORCELAINS DIVISION</p>	<p align="center">GENERAL CONDITIONS OF CONTRACT (GCC)</p> <p align="center">Revision No. R0 (For supply & services)</p>	<p align="center">INSTRUCTIONS TO BIDDERS</p> <p align="center">Issued on 01.04.2017</p>
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12.0 INTEGRITY PACT

Vendors shall have to enter into Integrity Pact with BHEL if specified in NIT/ RFQ, failing which vendor's offer will be rejected (Refer Annexure-IX).

13.0 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid (priced format submitted along with the offer in case of e-procurement), submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Nonsubmission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid (priced format submitted along with the offer in case of e-procurement) already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid (priced format submitted along with the offer in case of e-procurement) for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com)."

**ANNEXURE TO MODEL CONCILIATION CLAUSE FOR CONDUCT OF
CONCILIATION UNDER THE BHEL CONCILIATION SCHEME, 2018**

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings. If BHEL is to initiate Conciliation, then, the invitation to Conciliate shall be extended to the concerned Stakeholder in **Format 7** hereto. Where the stakeholder is to initiate the Conciliation, the notice for initiation of Conciliation shall be sent in **Format-8** hereto.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL. The appointment of Conciliator(s) shall be completed and communicated by the concerned Department/Group of BHEL Unit/Division/Region/Business Group to the other party and the Conciliator(s) within 30 days from the date of acceptance of the invitation to conciliate by the concerned party in the **Format-9**. The details of the Claim, and counter-claim, if any, shall be intimated to the Conciliator(s) simultaneously in **Format-5**.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the

proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.

7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.
8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.

14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.

21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.
22. The proceedings of Conciliation under this Scheme may be terminated as follows:
- a. On the date of signing of the Settlement agreement by the Parties; or,
 - b. By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
 - c. By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - d. By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - e. On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.
23. The Conciliator(s) shall be entitled to following fees and facilities:

Sl No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5 crores. Rs 50,000/- (Sole Conciliator) In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores.