Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)
RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

S. No.	Section	Clause No.	Page No.	Original Criteria	Read as/Amendment
1.	I	1.2.2	3	Uploaded documents of valid successful bidders will be verified with the original before signing the agreement. The valid successful bidder has to provide the originals to the concerned authority.	Uploaded documents of valid successful bidders will be verified with the original before signing the agreement. The shortlisted bidder has to **produce the original documents to the concerned authority (JREDA)** for verification.
2.	I	1.2.2	3	Bids will be opened online as per time schedule mentioned in clause 2.3	Bids will be opened online as per time schedule mentioned in **clause 2.2**
3.	I	2.3.1	4	A **Bid Security of 2% (rounded up to nearest lakh Rs.) of the project estimated cost** in the form as stipulated in the Bidding Documents to be drawn in favor of "Director JREDA", Ranchi. Nil for MSME of Jharkhand	An **EMD of 2% of the project estimated cost of the specific or total number of packages applied for**, in the form as stipulated in the Bidding Documents to be drawn in favor of "Director JREDA", Ranchi. Nil for MSME of Jharkhand The applicable EMD, MAAT and Net Worth applicable for individual package is provided in this Corrigendum
4.	I	3.1.B	4 & 5	i. Annexure-A: Proforma of Joint Undertaking by Manufacturer Along with the Bidder/Contractor ii. Annexure-B: Format for Evidence of Access to or Availability of Credit/ Facilities iii. Annexure-C: Form of Power of Attorney for Joint Venture iv. Annexure-D: Form of Joint Venture Agreement v. Annexure-I: Proforma of Bank Guarantee for Bid Guarantee vi. Annexure-IV: Proforma of Letter of Undertaking vii. Annexure-XI: Format of Power of Attorney for Signing Bid viii. Annexure-XII: Information about the Bidding Firm ix. Annexure-XIII: Declaration by the Bidder x. Annexure-XIV: Format for Financial Requirement – Annual Turnover	i. Annexure-A: Proforma of Joint Undertaking by Manufacturer Along with the Bidder/Contractor ii. Annexure-B: Format for Evidence of Access to or Availability of Credit/ Facilities iii. Annexure-C: Form of Power of Attorney for Joint Venture iv. Annexure-D: Form of Joint Venture Agreement v. Annexure-I: Proforma of Bank Guarantee for Bid Guarantee vi. Annexure-IV: Proforma of Letter of Undertaking vii. Annexure-XI: Format of Power of Attorney for Signing Bid viii. Annexure-XII: Information about the Bidding Firm ix. Annexure-XIII: Declaration by the Bidder x. Annexure-XIV: Format for Financial Requirement – Annual Turnover

S. No.	Section	Clause No.	Page No.	Original Criteria	Read as/Amendment
				xi. Annexure-XV: Format For Financial Requirement - Net Worth Certificate xii. Annexure-XVI: Format For Covering Letter xiii. Annexure-XVII: Format For Check List for Technical bid xiv. Schedule-3: Firm price declaration Schedule xv. Schedule-4: Commercial Deviations Schedule xvi. Schedule-5: Technical Deviation xvii. Schedule-6: Additional Information Included with this Proposal xviii. Schedule-7: Qualifying Requirement Data xix. Schedule-8: Guarantee Declaration xx. Schedule-9: Bought-out & Sub-Contracted Items xxi. Schedule-10: Work Completion Schedule xxii. Schedule-11: Checklist Schedule	xi. Annexure-XV: Format For Financial Requirement - Net Worth Certificate xii. Annexure-XVI: Format For Covering Letter xiii. Annexure-XVII: Format For Check List for Technical bid xiv. Schedule-3: Firm price declaration Schedule xv. Schedule-6: Additional Information Included with this Proposal xvi. Schedule-7: Qualifying Requirement Data xvii. Schedule-8: Guarantee Declaration xviii. Schedule-9: Bought-out & Sub-Contracted Items xix. Schedule-10: Work Completion Schedule
5.	I, II & V	3.3, 3.1, 38.1 & 10.2	6, 9, 24 & 82	The successful bidder shall also be required to furnish to JREDA a Project Operation Guarantee (POG) for twenty percent (20%) of the Capital Cost. The bid guarantee shall be kept valid by the successful for a period of sixty (60) months from schedule date of commissioning of the project.	The Contractor shall furnish within 30 days from the date of **"Final Acceptance of Successful Commissioning"** of Project, an unconditional and irrevocable bank guarantee from any bank specified in the "Schedule 1: List of Banks" in favour of "Director, JREDA" for due Performance as per Format attached as Project Operation Guarantee (POG), and which shall be for 20% of the total Contract Value (i.e., total sum of all the supply contract, erection contract and civil works contract) and valid for 60 months from the schedule date of commissioning **of all the villages of respective package**. POG has to be submitted in 5 equal parts valid for 5 years, i.e. 5 nos of POG of 4% of Contract Value valid for 5 years, and at the end of every one year of successful completion of CMC period from the date of final acceptance of successful commissioning one POG of 4% value shall be released.

6.	II	i of d of 2.1	8	For Manufacturer: The bidder should be (a) MNRE approved Channel Partner/ MNRE approved manufacturer/ MNRE approved PV System integrator or (b) A registered manufacturing company/Firm/Corporation in India (including MSME of Jharkhand).	I. Empanelled with MNRE under any category mentioned below: (i) MNRE approved Channel Partner (ii) MNRE approved manufacturer (iii) MNRE approved PV System integrator (iv) Empanelled with MNRE as Rural Energy Service Providers (RESP). or II. A registered manufacturing company/Firm/Corporation in India (including MSME of Jharkhand). or III. (i) For Manufacturer: The Manufacturer has adequate plant and manufacturing capacity available to perform the works properly and expeditiously within the time period specified……
7.	II	11, A, 2	13	**Pre-Qualification Details** Scanned Copy of Certificate for availability of Credit Facility for 10% of Tendered Amount from any Scheduled Commercial Bank.	**Pre-Qualification Details** Scanned Copy of Certificate for availability of Credit Facility for at least 10% of estimated project cost from any Scheduled Commercial Bank.
8.	II	13	15		The revised Clause is provided in this Corrigendum
9.	II	15	16		The Clause 15.2, 15.3, 15.4 and 15.6 has been deleted
10.	II	22.4	18		The Clause b of 22.4 has been deleted
11.	II	22.9	18	The bid guarantee shall be submitted along with the bid in separate sealed envelope in one original and two copies. Any bid not accompanied by the required bid security in accordance with provisions of this clause will be rejected and shall not be opened.	The **scan copy of EMD shall be uploaded along with technical bid** and **original copy of EMD should be submitted** as per mention address in the RfP document. Any bid not accompanied by the required EMD in accordance with provisions of this clause will be rejected and shall not be opened.
12.	II	24	20		The Clause 24 has been deleted
13.	II	25.1	20	Complete Bids (including Technical and Financial) must be received by the JREDA at the address specified in the Notice	Complete Bids (including Technical and Financial) must be uploaded on the web portal as specified in the Notice Inviting

				Inviting Bid not later than the date and time indicated in the Notice Inviting Bid.	Bid not later than the date and time indicated in the Notice Inviting Bid.
14.	II & V	32 & 6.5	23, 80	The added Clause 32.4 & 6.5 should be read as	For comparison purposes all the evaluated bid prices shall be in Indian Rupees as under:- W = M Where; W=Total Comparison Price M= Bid price in Indian Rupees (Ex-works value of equipment + Components of erection cost + mandatory spares and other components, if any + Cost of CMC for five years)
15.	III	1.17	27	'Date of Contract' shall mean the date on which Notice of Award of Contract/ Letter of Award has been issued.	'Date of Contract' shall mean the date on which **Contract Agreement has been signed with JREDA**.
16.	III	7.4	30	It is clearly understood that the total consideration for the Contract(s) has been broken up into various components only for the convenience of payment of advance under the Contract(s) and for the measurement of deviations or modifications under the Contract(s).	No provision of advance payment has been made under this RfP as the Clauses related to advance payment shall be considered deleted / altered as required.
17.	III	9.2.	30	The Agreement, unless otherwise agreed to, shall be signed within 30 days of the acceptance of the Letter of Award, at the office of the Employer on a date and time to be mutually agreed. The Contractor shall provide for signing of the Contract, Performance Guarantee six copies, appropriate power of attorney and other requisite materials. In case the Contract is to be signed beyond the stipulated time, the Bid Guarantee submitted with the Proposal will have to be extended accordingly.	The Agreement, unless otherwise agreed to, shall be signed within **15 days of the date of issuance of Letter of Award**, at the office of the Employer on a date and time to be mutually agreed. The Contractor shall provide for signing of the Contract, Performance Guarantee six copies, appropriate power of attorney and other requisite materials. In case the Contract is to be signed beyond the stipulated time, the Bid Guarantee submitted with the Proposal will have to be extended accordingly.
18.	III	13.1.	32	The Contract shall be considered as having come into force from the date of the notification of award unless otherwise provided in the notification of award.	The Contract shall be considered as having come into force from the date of **Signing of Contract or notification of award or unless otherwise provided in the notification of award**.
19.	III	33.3.	39		The Clause 33.3 has been deleted
20.	III	33.7.	40		The Clause 33.7.1 and 33.7.3 has been deleted

21.	III	38.2.	43		The Clause 38.2 has been deleted
22.	III	43.3.	44		The Clause 43.3 has been deleted
23.	III	47.3	46	The arbitration shall be conducted in accordance with the provisions of the Indian Arbitration Act, 1940 or any statutory modification thereof. The venue of arbitration shall be Ranchi.	The arbitration shall be conducted in accordance with the provisions of the **Indian Arbitration & Reconciliation Act, 1996** or any statutory modification thereof. The venue of arbitration shall be Ranchi.
24.	IV	15.4.	54	A new Clause shall be added as 15.4.3.	All necessary arrangement for wet cleaning of the solar panels shall be in the scope of the contractor and accordingly has to provide all the necessary equipment, accessories, tool & tackles, and piping arrangement pertaining to module cleaning system. Contractor regularly and shall include activities such as cleaning and checking the health of the Solar PV system, cleaning of module surface
25.	IV	31.24.	62		The Clause 31.24 has been deleted
26.	IV	34 & 35	64		The Clause 34 & 35 has been deleted
27.	V	2.1.1	75	List of Villages	The revised list of Packages with Village details is provided in this Corrigendum.
28.	V	4	79		The Clause 4.2, 4.3 and 4.5 has been deleted
29.	V	6.6	80	The Owner's evaluation of a bid, in addition to the total price as per Clause 6.5 above, will take into account the applicable taxes, duties and levies payable/ reimbursable by the Owner to the Contractor.	The Owner's evaluation of a bid, in addition to the total price as per Clause 6.5 above, will take into account the applicable taxes, duties by the Owner to the Contractor.
30.	V	7.1.3.	81	In case the Contract is awarded on a Joint Venture, the Advanced Bank Guarantees as well as Contract Performance Guarantees referred above, shall be in the name of the Joint Venture covering all the partners of the Joint Venture and not in the name of the Lead Partner or any Partners(s) of the Joint Venture alone.	In case the Contract is awarded on a Joint Venture, the Contract Performance Guarantees referred above, shall be in the name of the Joint Venture covering all the partners of the Joint Venture or in the name of the Lead Partner.
31.	V	12	82	A new Clause shall be added as 12.9	The Contractor shall Setup Village Energy Committee (VEC) that must comprise of President, Treasurer and Technician. The VEC should be fully trained and mobilized for timely payment

					collection, maintenance of books and system troubleshooting.
32.	V	18 & 19	83		The Clause 18.1, 18.2 and 19 has been deleted
33.	V	22.3	84	In case the bid is submitted by a joint venture, the Bid Guarantee shall be in the name of the Joint Venture covering all the partners of the Joint Venture and not in the name of the Lead Partner or any partner(s) of the Joint Venture alone.	In case the bid is submitted by a joint venture, the EMD shall be in the **name of the Joint Venture covering all the partners of the Joint Venture or in the name of the Lead Partner**.
34.	V	23.3.2.1	85	The bidder should have designed, supplied, erected and commissioned Solar Photo Voltaic (SPV) based off grid connected (distributed generation) / grid connected power plant(s) of cumulative installed capacity of 250kWp or above, out of which at least one plant should have been of 10 kWp capacity or above in last 7 years. The reference plant of 20 kWp or above capacity must have been in successful operation for at least One (1) year prior to the date of Technical bid opening.	The Clause shall be read as: The bidder should have designed, supplied, erected and commissioned Solar Photo Voltaic (SPV) based off grid connected (distributed generation) / grid connected power plant(s) of cumulative installed capacity of 250kWp or above, out of which at least one plant should have been of 10 kWp capacity or above in last 7 years. The reference plant of **10 kWp** or above capacity must have been in successful operation for at least One (1) year prior to the date of Technical bid opening.
35.	V	23.3.2.2	85	Bidder shall submit, in support to the above, the list of projects commissioned along with their work order/ LOI and the commissioning certificates along with the Certificate of Successful Operation/ satisfaction from the plant owner as per the format given under	Bidder shall submit, in support to the above, the list of projects commissioned along with their work order/ LOI and the commissioning certificates along with the Certificate of Successful Operation/ satisfaction from the plant owner.
36.	V	23.3.4.1	86	**Turnover Requirement** The Bidder should have the Minimum Average Annual Turnover (MAAT) of **25% of project estimated cost** derived from the last three financial years ending on 31.03.2015 on the basis of audited annual accounts for SPV Systems for minimum lot size quoted. The bidder submitting the bid for higher nos. of packages will require having average Annual Turnover in same higher proportion (25%).	**Turnover Requirement** The Bidder should have the Minimum Average Annual Turnover (MAAT) of **25% of project estimated cost** derived **from any three of last five financial years** ending on 31.03.2015 on the basis of audited annual accounts. The bidder applying for specific package should have MAAT of 25% of project estimated cost of that specific package. The bidder submitting the bid for higher nos. of packages will require to have MAAT in same higher proportion (25%). The certificate should be as per the Proforma attached as Annexure.

					The MAAT requirement for particular Package is provided table in this Corrigendum
37.	V	23.3.4.2	86	**Net worth Requirement** The Bidder should have Positive Net Worth (PNW) of minimum **10% of cost of minimum lot size** quoted and thereafter in same proportion for higher quantity as on 31.03.2015 on the basis of audited annual accounts.	**Net worth Requirement** The Bidder should have Positive Net Worth (PNW) of minimum **10% of the estimated project cost** of that specific package as on 31.03.2015 on the basis of audited annual accounts. The PNW requirement for particular Package is provided table in this Corrigendum
38.	VI	2.2	90	The materials/ equipment covered here under each package shall be supplied complete in all respects, including all components, fittings and accessories which are necessary or are usual for their efficient performance and satisfactory maintenance under the various operating and atmospheric conditions. Such parts shall be deemed to be within the scope of the Contract, whether specifically included or not in the Specification or in the Contract Schedules. The Contractor shall not be eligible for any extra charges for such fittings, etc. The details of the materials/ equipment required for the entire scope of works have been elaborated in the respective volumes of specification. The quantities of the same are mentioned in Bid Proposal Sheets (BPS).	The materials/ equipment covered here under each package shall be supplied complete in all respects, including all components, fittings and accessories which are necessary or are usual for their efficient performance and satisfactory maintenance under the various operating and atmospheric conditions. Such parts shall be deemed to be within the scope of the Contract, whether specifically included or not in the Specification or in the Contract Schedules. The Contractor shall not be eligible for any extra charges for such fittings, etc.
39.	Annexure D		102	Form of Joint Venture Agreement	Form of Joint Venture Agreement revised and provided in Annexure.
40.	Annexure V &VI		112 & 114	Proforma of Application for Payment Proforma of Bank Guarantee for Advance Payment	The Annexure V & VI has been deleted.
41.	Annexure-XIV		130	Format for Financial Requirement – Annual Turnover	The Annexure XIV has been modified and provided in Annexure.
42.	Section – VIII	Schedule 2	142 & 144	-	Revised Part A, D, E and F of Schedule 2 is provided in Annexure

43.	Section – VIII	Schedule-4, 5 & 11	146 & 156		The Schedule 4, 5 & 11 has been deleted.
44.	Section – VIII	Schedule-7	149	FORMAT – A	The Para "FORMAT A" of Schedule 7 has been deleted and accordingly revised schedule provided in Annexure.
45.	Section – IX	15 (d & e)	164	d) Supply, installation & grouting of MS Poles as per JREDA norms (or if the tenderer has better drawing he may attach the same with additional offer) for overhead/ underground distribution network of cables at village/ site. All the poles/ street lights should be numbered by oil paint in the specified format of JREDA. Two numbers of MS sign boards (each of 2' x 2.5' size) has to be supplied, painted (in the same manner as pole painting instructions) & clamped on the poles of the PDN as per JREDA's instructions. e) Supply, installation & commissioning of overhead cabling from pole to pole & pole to house. Cabling between pole to pole should be done as per standard norms of JREDA.	d) Supply, installation & grouting of **8 mtr height RCC Poles** as per JREDA norms (or if the tenderer has better drawing he may attach the same with additional offer) for overhead distribution network **of ACSR (squirrel) 20 Sq mm conductor cables** at village/ site. All the poles/ street lights should be numbered by oil paint in the specified format of JREDA. Two numbers of MS sign boards (each of 2' x 2.5' size) has to be supplied, painted (in the same manner as pole painting instructions) & clamped on the poles of the PDN as per JREDA's instructions. e) Supply, installation & commissioning of overhead **ACSR (squirrel) 20 Sq mm conductor cabling** from pole to pole and **Aluminum wire P.V.C. Insulated sheathed and single core cable from** pole to house. Cabling between pole to pole should be done as per standard norms of JREDA.
46.	Section – IX	15	164	The added Clause 15 (h) should be read as	The power generation should be of 440 V, 3 phase and the distribution network shall be of 3 phase 440 V.
47.	Section – IX	18	165	The added Clause 18 should be read as	Civil Works: Civil foundation design for Module Mounting Structures (MMS) as well as control room, equipment room and power equipment shall be made in accordance with the Indian Standard Codes and prevailing soil conditions. Pre-fabricated structures for control room with relevant IS 15916 (2011) standards are accepted.
48.	Section - IX		156	Technical specification (SPV Power Generation Plant)	Technical specification (SPV Power Generation Plant) revised.

Clause 13.2 of Section II of RfP at Page 15 shall be read as:

Separate numbers of Schedules shall be up-loaded for each of the following elements. The total amount for Schedule 2 shall be summarized in a grand summary of Price Proposal (Schedule -2) giving the total bid price(s) to be entered in the Bid – Form.

Schedule -2: A. Plant, Equipment and Civil material to be supplied shall include

i: Cost of Solar Power Plant including module, battery, PCU etc. (All plant equipment and auxiliary systems and accessories required for power plant operation)

ii: Cost of Power Distribution Network (PDN) with necessary control equipment including data logging facility between panel and batteries.

iii Cost of providing connection and fitting to Households & Street Lights

iv: Cost of Civil Work

Schedule -2: B. Installation, Construction & Erection, Testing and Commission shall include

i. Cost of Installation & Commissioning of Solar Power Plant including module, battery, PCU etc. (All plant equipment and auxiliary systems and accessories required for power plant operation)

ii. Cost of erection of PDN with necessary control equipment including data logging facility between panel and batteries.

iii Cost of providing connection and fitting to Households & Street Lights

iv Cost of Civil Work

Schedule-2: C. Cost of spare parts for 5 years after commissioning of the systems

Schedule-2: D. Cost of supplying power to villages for 5 years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. per day after taking into account the recovery from end users.

Schedule-2: E. Total Village Value

Schedule-2: F. Total Package Value

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Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)
RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

List of Packages with Applicable EMD, MAAT and Net Worth.

Packages	District	Block	No of Villages	Capacity kW	Length	Estimate Cost in Rs. Lakhs	Estimated Cost in Rs. Lakhs	EMD in Rs. Lakhs	Minimum Average Annual Turover in Rs. Lakhs	Positive Net Worth in Rs. Lakhs
Package 1	Pakur		18	129	20.9	361	2579	52	645	258
	Sahebanj		38	319	49.3	880				
	Simdea		5	83	13.6	213				
	West Singhbhum	Manjhari	1	20	3.4	51				
		Tonto	21	267	44.9	706				
		Kumardungi	1	59	10	142				
		Anandpur	1	30	5	75				
		Noamundi	1	7	1.1	20				
		Manoharpur	2	52	8.8	131				
Package 2	Garhwa		12	209	35.4	538	2838	57	710	284
	Palmaw		20	546	89.5	1329				
	Chatra	Pratappur	12	174	24.7	446				
	Chatra	Kunda	19	197	29.4	525				
Package 3	West Singhbhum	Goilkera	39	1114	187.2	2773	2773	55	693	277
Package 4	West Singhbhum	Bandhgaon	22	292	47.7	770	2788	56	697	279
	West Singhbhum	Chakradharpur	3	63	10.6	158				
	West Singhbhum	Sonua	35	734	124.1	1860				
Package 5	Latehar		23	576	93.7	1436	3125	63	781	313
	Gumla		24	501	81	1253				
	Chatra	Hunterganj	14	165	22.1	436				
Package 6	Chatra	Lawalaung	42	994	134	2455	2824	56	706	282
	Hazaribag		10	142	22.6	369				

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Details of Packages:

Package 1

S.No.	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
1	Pakur	Tetli	25	7	1.1
2	Pakur	Margo	16	4	0.7
3	Pakur	Tatbhitapahar	45	12	1.9
4	Pakur	Jani	65	17	2.8
5	Pakur	Tatbhita Santhali	55	14	2.4
6	Pakur	Bathukundi	50	13	2.2
7	Pakur	Barganwpahar	46	12	2.0
8	Pakur	Kasigora Santhal Tola	15	4	0.6
9	Pakur	Chhota Chetro	15	4	0.6
10	Pakur	Barajara	25	7	1.1
11	Pakur	Narchi	18	5	0.8
12	Pakur	Uparmargo	18	5	0.8
13	Pakur	Madui Chhoti Bandkoi	18	5	0.8
14	Pakur	Bara Bandhkai Sariam	45	12	1.9
15	Pakur	Tamki	15	4	0.6
16	Pakur	Porpara	15	4	0.6
17	Sahibganj	Chaperi	27	7	1.1
18	Sahibganj	Gorakepu	37	10	1.6
19	Sahibganj	Chhota Bhiranda	17	5	0.7
20	Sahibganj	Mir	17	5	0.7
21	Sahibganj	Amjani	15	4	0.5
22	Sahibganj	Garapani	25	7	0.9
23	Sahibganj	Badem	17	5	0.7
24	Sahibganj	Phulijhari	61	16	2.6
25	Sahibganj	Behra	35	9	1.5
26	Sahibganj	Chamdi Bedo	25	7	1.0
27	Sahibganj	Chamdi Mango	25	7	1.0
28	Sahibganj	Godwa	38	10	1.5
29	Sahibganj	Joya	25	7	1.0
30	Sahibganj	Tuti	45	12	1.9
31	Sahibganj	Darwase Bedo	45	12	1.7
32	Sahibganj	Goga	16	4	0.7
33	Sahibganj	Kochori Mago	65	17	2.7
34	Sahibganj	Kasari	17	5	0.7
35	Sahibganj	Muri (Bara)	25	7	1.0
36	Sahibganj	Goalapahar	38	10	1.5
37	Sahibganj	Banapara	38	10	1.6
38	Sahibganj	Chabitok	28	7	1.2
39	Sahibganj	Chengbita (Nagarbita)	50	13	2.1
40	Sahibganj	Dawana	45	12	1.9
41	Sahibganj	Ichapara (Ichanasi)	25	7	1.1
42	Sahibganj	Jirik (Kaji)	21	6	0.9
43	Sahibganj	Jokani Bedo	19	5	0.7
44	Sahibganj	Jokani Maqo	21	6	0.8

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S.No.	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
45	Sahibganj	Karkaram	50	13	2.1
46	Sahibganj	Ketekbera	27	7	1.1
47	Sahibganj	Malibita	22	6	0.9
48	Sahibganj	Mansbber a Bera Bans Pahar	17	5	0.7
49	Sahibganj	Manskepu	17	5	0.7
50	Sahibganj	Pakia Bedo	24	6	1.0
51	Sahibganj	Pirpam	24	6	1.0
52	Sahibganj	Rohra	25	7	1.0
53	Sahibganj	Salgachi (sarki)	80	20	3.4
54	Sahibganj	Talme (Panek)	45	12	1.9
55	Simdega	Boranda	60	15	2.4
56	Simdega	Barbera	60	15	2.5
57	Simdega	Semariya	60	15	2.3
58	Simdega	Hardibera	100	25	4.3
59	Simdega	Rengarpani	50	13	2.2
60	West Singhbhum	Manjhari	80	20	3.4
61	West Singhbhum	Gundi Pusi	50	13	2.2
62	West Singhbhum	Busing Hatu	70	18	3.0
63	West Singhbhum	Patatarob	100	25	4.3
64	West Singhbhum	Topabera	80	20	3.4
65	West Singhbhum	Banki	60	15	2.6
66	West Singhbhum	Bandu	70	18	3.0
67	West Singhbhum	Kadal Sakwa	60	15	2.6
68	West Singhbhum	Sarjom guru	40	10	1.7
69	West Singhbhum	Akahata	30	8	1.3
70	West Singhbhum	Pukri Kuru	60	15	2.6
71	West Singhbhum	Husia	55	14	2.4
72	West Singhbhum	Tembahaka	55	14	2.4
73	West Singhbhum	Tuebera	45	12	1.9
74	West Singhbhum	Rajabasa	18	5	0.8
75	West Singhbhum	Gaupur	20	5	0.9
76	West Singhbhum	Kuessuta	50	13	2.2
77	West Singhbhum	Masuriburu	55	14	2.4
78	West Singhbhum	Udalkam	35	9	1.5
79	West Singhbhum	Jhirjhanr	20	5	0.9
80	West Singhbhum	Rutagutu	25	7	1.1
81	West Singhbhum	Agoban	45	12	1.9
82	West Singhbhum	Samtha	170	43	7.3
83	West Singhbhum	Lowasokra	35	9	1.5
84	West Singhbhum	Haldi Pokhar	233	59	10.0
85	West Singhbhum	Karampada	81	30	5.0
86	West Singhbhum	Tarobera	117	7	1.1

Note: The cumulative capacity for remaining 2 villages at Pakur can be considered as 8 kW with districbution network of 3kms.

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Package 2

S.No.	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
1	Palamu	Kuku Khurd	31	8	1.3
2	Palamu	Raybar	45	12	1.9
3	Palamu	Shivpur	87	22	3.7
4	Palamu	Anata Khurd	192	48	8.2
5	Palamu	Jaspur	65	17	2.8
6	Palamu	Mahari	108	27	3.7
7	Palamu	Bagla	205	52	7.8
8	Palamu	Kosiyara	193	49	8.0
9	Palamu	Dundu	0	0	0.0
10	Palamu	Manjh Gaon	118	30	4.8
11	Palamu	Bharatpur	0	0	0.0
12	Palamu	Pasar	273	69	11.7
13	Palamu	Karma	0	0	0.0
14	Palamu	Sinjo	577	145	24.4
15	Palamu	Tal	0	0	0.0
16	Palamu	Jamuniyadih	0	0	0.0
17	Palamu	Jayadu	0	0	0.0
18	Palamu	Ulman	158	40	6.7
19	Palamu	Pahaldewa	50	13	2.2
20	Palamu	Supha	55	14	2.4
21	Garhwa	Bhajna	80	20	3.4
22	Garhwa	Hesatu	60	15	2.6
23	Garhwa	Khajira	85	22	3.7
24	Garhwa	Khura	90	23	3.9
25	Garhwa	Korwadih	25	7	1.1
26	Garhwa	Madgari	70	18	3.0
27	Garhwa	Saruwat	60	15	2.6
28	Garhwa	Totki	140	35	6.0
29	Garhwa	Tumera	40	10	1.7
30	Garhwa	Turer	100	25	4.3
31	Garhwa	Turer (Chapiya)	50	13	2.2
32	Garhwa	Polpol	23	6	0.9
33	Chatra	Dhardhari	31	8	1.1
34	Chatra	Hindia Kalan	44	11	1.7
35	Chatra	Hesatu	72	18	2.6
36	Chatra	Shikarpur	40	10	1.7
37	Chatra	Bami	60	15	2.6
38	Chatra	Barhe	38	10	1.5
39	Chatra	Bhugarh	15	4	0.6
40	Chatra	Lupugarah	22	6	0.9

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

S.No.	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
41	Chatra	Lotwa	75	19	2.9
42	Chatra	Soharlot	52	13	2.0
43	Chatra	Kujram	24	6	1.0
44	Chatra	Balhi	21	6	0.8
45	Chatra	Kamat	37	10	1.3
46	Chatra	Phuiwaria	35	9	1.4
47	Chatra	Khusihala	58	15	2.1
48	Chatra	Babudih	18	5	0.6
49	Chatra	Gendra	28	7	1.0
50	Chatra	Tithibhargaon	120	30	4.9
51	Chatra	Sinduri	63	16	2.3
52	Chatra	Korhans	20	5	0.7
53	Chatra	Ichak	27	7	1.0
54	Chatra	Pachamba	23	6	0.8
55	Chatra	Dokwa	19	5	0.7
56	Chatra	Belgara	75	19	3.1
57	Chatra	Chiloi	21	6	0.8
58	Chatra	Tatej	26	7	1.0
59	Chatra	Hindia Khurd	40	10	1.3
60	Chatra	Kuba	35	9	1.2
61	Chatra	Angarah	120	30	4.0
62	Chatra	Bhushar	135	34	4.5
63	Chatra	Kundi	60	15	2.0

Package 3

Name of the District	Block	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
West Singhbhum	Goilkera	Banjira	120	30	4.8
West Singhbhum	Goilkera	Buvgua	24	6	1.0
West Singhbhum	Goilkera	Bhaktauli	150	38	6.5
West Singhbhum	Goilkera	Chitir	94	24	4.0
West Singhbhum	Goilkera	Gamariya	167	42	6.9
West Singhbhum	Goilkera	Hindug	135	34	5.8
West Singhbhum	Goilkera	Kajuriya	120	30	5.2
West Singhbhum	Goilkera	Kamsai	112	28	4.7
West Singhbhum	Goilkera	Kara	120	30	5.2
West Singhbhum	Goilkera	Katinkel	134	34	5.2
West Singhbhum	Goilkera	Kumartondang	100	25	4.3
West Singhbhum	Goilkera	Popkera	35	9	1.5
West Singhbhum	Goilkera	Rela	105	27	4.5
West Singhbhum	Goilkera	Remar Kocha	47	12	1.9
West Singhbhum	Goilkera	Rerda	180	45	7.7
West Singhbhum	Goilkera	Saitba	150	38	6.5
West Singhbhum	Goilkera	Shawsol	70	18	3.0
West Singhbhum	Goilkera	Sarangda	200	50	8.1
West Singhbhum	Goilkera	Tomdel	106	27	4.5
West Singhbhum	Goilkera	Paral	65	17	2.8
West Singhbhum	Goilkera	Saruda	208	52	8.9
West Singhbhum	Goilkera	Joyoda	95	24	4.0
West Singhbhum	Goilkera	Jilingutu	122	31	5.2
West Singhbhum	Goilkera	Rayam	250	63	10.8
West Singhbhum	Goilkera	Tendana	36	9	1.5
West Singhbhum	Goilkera	Undada	80	20	3.4
West Singhbhum	Goilkera	Derba	222	56	9.4
West Singhbhum	Goilkera	Sarugara	257	65	11.0
West Singhbhum	Goilkera	Sauriuli	100	25	4.3
West Singhbhum	Goelkera	Rayrona	50	13	2.2
West Singhbhum	Goelkera	Kotargare	55	14	2.4
West Singhbhum	Goilkera	Balia	70	18	3.0
West Singhbhum	Goilkera	Sangajata	70	18	3.0
West Singhbhum	Goilkera	Borae (Borne)	170	43	7.3
West Singhbhum	Goilkera	Ambiya (Arabia)	50	13	2.2
West Singhbhum	Goilkera	Lomenta (Lobenta)	80	20	3.4
West Singhbhum	Goelkera	Bangurkia	60	15	2.6
West Singhbhum	Goilkera	Patunsha (Patung)	110	28	4.7
West Singhbhum	Goilkera	Sonva	90	23	3.9

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Package 4

S.No.	Name of the District	Block	Name of Village	No.of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
1	West Singhbhum	Bandhgaon	Erkora	26	7	1.1
2	West Singhbhum	Bandhgaon	Jerakel	66	17	2.8
3	West Singhbhum	Bandhgaon	Kukrubaru	49	13	2.1
4	West Singhbhum	Bandhgaon	Birda	17	5	0.7
5	West Singhbhum	Bandhgaon	Manmaru	25	7	1.0
6	West Singhbhum	Bandhgaon	Kurjulee	106	27	4.4
7	West Singhbhum	Bandhgaon	Chatma	23	6	1.0
8	West Singhbhum	Bandhgaon	Logora	99	25	4.3
9	West Singhbhum	Bandhgaon	Dudhkundi	94	24	4.0
10	West Singhbhum	Bandhgaon	Pingu	78	20	2.8
11	West Singhbhum	Bandhgaon	Lowahatu	44	11	1.9
12	West Singhbhum	Bandhgaon	Bobonga	42	11	1.8
13	West Singhbhum	Bandhgaon	Dumbari	36	9	1.5
14	West Singhbhum	Bandhgaon	Kopa	46	12	2.0
15	West Singhbhum	Bandhgaon	Bingburu	24	6	1.0
16	West Singhbhum	Bandhgaon	Jankopai	66	17	2.8
17	West Singhbhum	Bandhgaon	Kotagara	80	20	3.3
18	West Singhbhum	Bandhgaon	Shankra	30	8	1.3
19	West Singhbhum	Bandhgaon	Halmad	30	8	1.3
20	West Singhbhum	Bandhgaon	Rogto	25	7	1.1
21	West Singhbhum	Chakradharpur	Guibera	40	10	1.7
22	West Singhbhum	Chakradharpur	Ututua	150	38	6.5
23	West Singhbhum	Chakradharpur	Lanji	59	15	2.5
56	West Singhbhum	Sonua	Baskata	54	14	2.3
57	West Singhbhum	Sonua	Berakayam	70	18	3.0
58	West Singhbhum	Sonua	Bilaita Toli	90	23	3.9
59	West Singhbhum	Sonua	Burukayam	100	25	4.3
60	West Singhbhum	Sonua	Buruwalli	85	22	3.7
61	West Singhbhum	Sonua	Denai	60	15	2.6
62	West Singhbhum	Sonua	Dewan	80	20	3.4
63	West Singhbhum	Sonua	Dindapai	200	50	8.1
64	West Singhbhum	Sonua	Dura	84	21	3.6
65	West Singhbhum	Sonua	Giru	40	10	1.7
66	West Singhbhum	Sonua	Gudri	75	19	3.2
67	West Singhbhum	Sonua	Huilor	250	63	10.8
68	West Singhbhum	Sonua	Jamjui	150	38	6.5
69	West Singhbhum	Sonua	Jatey	80	20	3.4
70	West Singhbhum	Sonua	Joro	90	23	3.9
71	West Singhbhum	Sonua	Karmba	80	20	3.4
72	West Singhbhum	Sonua	Kukrubadi	80	20	3.4

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

S.No.	Name of the District	Block	Name of Village	No.of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
73	West Singhbhum	Sonua	Kundabera	150	38	6.5
74	West Singhbhum	Sonua	Kutipi	20	5	0.9
75	West Singhbhum	Sonua	Lamdar	80	20	3.4
76	West Singhbhum	Sonua	Mundari	68	17	2.9
77	West Singhbhum	Sonua	Nachalda	70	18	3.0
78	West Singhbhum	Sonua	Raigera	70	18	3.0
79	West Singhbhum	Sonua	Rowansali	60	15	2.6
80	West Singhbhum	Sonua	Saidba	60	15	2.6
81	West Singhbhum	Sonua	Sidma	75	19	3.2
82	West Singhbhum	Sonua	Talan Jira	30	8	1.3
83	West Singhbhum	Sonua	Sidma	60	15	2.6
84	West Singhbhum	Sonua	Bandu	70	18	3.0
85	West Singhbhum	Sonua	Virkal	30	8	1.3
86	West Singhbhum	Sonua	Buru Gulikera	60	15	2.6
87	West Singhbhum	Sonua	Berauruing	90	23	3.9
88	West Singhbhum	Sonua	Munjunia	85	22	3.7
89	West Singhbhum	Sonua	Udhalkam	70	18	3.0
129	West Singhbhum	Bandhgaon	Akir	24	6	1.0
130	West Singhbhum	Bandhgaon	Burunkel	26	26	4.4
133	West Singhbhum	Sonua	Srijang	102	21	3.4

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Package 5

S.No.	Name of the District	Name of Village	No. of House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
1	Gumla	Galu	45	12	5.85
2	Gumla	Birgaon	18	5	2.34
3	Gumla	Tebela	55	14	7.15
4	Gumla	Korle	18	5	2.34
5	Gumla	Hisir	40	10	5.2
6	Gumla	Hapad	55	14	7.15
7	Gumla	Akarakona	60	15	7.2
8	Gumla	Barkani	40	10	5.2
9	Gumla	Dumri	58	15	7.3
10	Gumla	Ghagra Pat	65	17	8.3
11	Gumla	Keragani	100	25	12.1
12	Gumla	Kewna	20	5	2.6
13	Gumla	Kochagani	47	12	6.05
14	Gumla	Kolda	53	14	6.89
15	Gumla	Kuiya	39	10	5.07
16	Gumla	Kukurunja	57	15	7.2
17	Gumla	Ladhudera	30	8	3.9
18	Gumla	Marwa	45	12	4.95
19	Gumla	Nichdumri	100	25	12.55
20	Gumla	Pakni	40	10	4.6
21	Gumla	Sanaidih	130	33	16
22	Gumla	Sokrahatu	93	24	11.7
23	Gumla	Sursang	460	115	56.8
24	Gumla	Uparkhatanga	301	76	36.13
25	Latehar	Barikheta	186	47	23.82
26	Latehar	Gua	105	27	13.65
27	Latehar	Hosir	139	35	17.86
28	Latehar	Haratu	275	69	32.15
29	Latehar	Opag	119	30	15.17
30	Latehar	Projected Forest (Bari Chattan)	82	21	10.66
31	Latehar	Tatha	96	24	12.39
32	Latehar	Tongari	174	44	22.47
33	Latehar	Gasigarah	21	6	2.73
34	Latehar	Makandpur	72	18	9
35	Latehar	Bandua	178	45	21.31
36	Latehar	Pailabathd	23	6	2.81
37	Latehar	Betala	72	18	9.09
38	Latehar	Adhe	61	16	7.54
39	Latehar	Belwar	85	22	10.72

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

S.No.	Name of the District	Name of Village	No. of House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
40	Latehar	Gasi Budani	147	37	18.75
41	Latehar	Kabrapath	24	6	2.88
42	Latehar	Korgi	27	7	3.42
43	Latehar	Kukud	101	26	11.99
44	Latehar	Madruwa	42	11	5.34
45	Latehar	Naina	26	7	3.17
46	Latehar	Gwal Khand	50	13	5.6
47	Latehar	Sarkai/ Surkaim	161	41	20.39
48	Chatra	Ghatdhari	28	7	3.01
49	Chatra	Kolhua	41	11	4.52
50	Chatra	Sajani	54	14	5.7
51	Chatra	Gorre	26	7	3.26
52	Chatra	Erabonga	36	9	3.9
53	Chatra	Salot	22	6	2.65
54	Chatra	Koluapahar	20	5	2.15
55	Chatra	Pandarkola	35	9	4.4
56	Chatra	Gue	40	10	4.9
57	Chatra	Karamo	25	7	3.25
58	Chatra	Kenrimoh	35	9	3.5
59	Chatra	Kurkheta	160	40	19
60	Chatra	Pahasbar	30	8	3.9
61	Chatra	Rajguru	90	23	11.1

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Package 6

S. No	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
1	Chatra	Serka	36	9	4.29
2	Chatra	Banwar	170	43	19.1
3	Chatra	Sildag	256	64	28.6
4	Chatra	Bhangia	30	8	3.45
5	Chatra	Nawadih	86	22	9.2
6	Chatra	Lorga	18	5	2.19
7	Chatra	Hardipur	36	9	4.29
8	Chatra	Naudiha	31	8	3.4
9	Chatra	Manatu Alias Tikulia	125	32	14.75
10	Chatra	Sulma	80	20	10.4
11	Chatra	Lowalang	175	44	22
12	Chatra	Bisrampur alias rampur	77	20	7.7
13	Chatra	Jhardag	50	13	5
14	Chatra	Kanti alias mandhania	266	67	26.6
15	Chatra	Matti majdiha alias	99	25	9.9
16	Chatra	Paramatu	136	34	13.6
17	Chatra	Sehada	41	11	4.1
18	Chatra	Kolkol Khurd	30	8	3
19	Chatra	Bishunpur	60	15	6
20	Chatra	Chano	25	7	2.5
21	Chatra	Kotari	55	14	5.5
22	Chatra	Limodih	35	9	3.5
23	Chatra	Marwa	110	28	11
24	Chatra	Narainpur	35	9	3.5
25	Chatra	Teona	50	13	5
26	Chatra	Barwadih	50	13	5
27	Chatra	Atra-atu	90	23	5
28	Chatra	Bandu	270	68	27
29	Chatra	Bulbul	35	9	3.5
30	Chatra	Chani	110	28	11
31	Chatra	Dunho	45	12	4.5
32	Chatra	Herum	415	104	41.5
33	Chatra	Hurdag	16	4	1.6
34	Chatra	Jobhi	55	14	5.5
35	Chatra	Jordag	20	5	2
36	Chatra	Kadhe	50	13	5
37	Chatra	Kalyanpur	130	33	13
38	Chatra	Lutu	50	13	5
39	Chatra	Madandih	150	38	15
40	Chatra	Pasagam	115	29	11.5

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

S. No	Name of the District	Name of Village	No. of Total House holds	DPR Capacity of the Project (kW)	Total Length for distribution network (kms)
41	Chatra	Sikni	145	37	14.5
42	Chatra	Sohawan	55	14	5.5
43	Hazaribag	Pathalgara	100	25	10
44	Hazaribag	Sikda	15	4	1.5
45	Hazaribag	Pathalgarwa	28	7	2.8
46	Hazaribag	Bukar	95	24	9.5
47	Hazaribag	Murina	60	15	6.0
48	Hazaribag	Duragara	52	13	5.2
49	Hazaribag	Dhoria	60	15	6.0
50	Hazaribag	Murainia	25	7	4.5
51	Hazaribag	Garmorwa	80	20	8.0
52	Hazaribag	Kaile	45	12	4.5

Annexure-D: Form of Joint Venture Agreement (Revised)

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE TO BE PURCHASED IN THE NAME OF

JOINT VENTURE)

PROFORMA OF JOINT VENTURE AGREEMENT

BETWEEN....., AND.....,..FOR BID SPECIFICATION

NO.....DATE ..... OF the JREDA.

THIS Joint Venture Agreement executed on this .....day of .... and between

M/s ..... a company incorporated under the laws of ..... and having its

Registered Office at ..... (hereinafter called the "Lead Partner" which expression shall include its

successors, executors and permitted assigns), M/s. .....a company incorporated under the laws

of ..... and having its Registered Office at..... (hereinafter called the "Partner" which

expression shall include its successors, executors and permitted assigns) and M/s..... a company

incorporated under the laws of..... and having its Registered Office at ..... .(hereinafter called the "Partner" which expression shall include its successors, executors and permitted assigns) for the purpose of

making a bid and entering into a contract (in case of award) against INV No. _____dated _____for the execution of Design, engineering, testing, supply, erection and commissioning of ------ kW Solar Photovoltaic based Decentralized Distributed Generation Systems under 6 different packages at **363** Nos. of Villages in 10 districts of Jharkhand being executed by the JREDA having its Registered Office at _____ (hereinafter called the ”Employer”).

WHEREAS the Employer invited bids as per the above mentioned Specification for the design, supply, installation,

commissioning and operation for 5 years for decentralized solar power generating plant for _____,

_____ and _____ of ___ District, Jharkhand on BOMT basis in the bidding documents under

subject Package for.....

Annexure -A (Qualification Requirement of the Bidder), Section-SCC, Vol.-IA, forming part of the bidding documents, stipulates that a Joint Venture of two or more qualified firms as partners, meeting the requirement of Annexure-A, Section SCC as applicable may bid, provided the Joint Venture fulfills all other requirements of Annexure-A, Section SCC and in such a case, the BID shall be signed by all the partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that the Joint Venture agreement shall be attached to the bid and the contract performance guarantee will be as per the format enclosed with the bidding document without any restriction or liability for either party.

AND WHEREAS the bid has been submitted to the Employer vide proposal No..... dated

..... against the Package No..... (Specification No.....) by Lead Partner based on the Joint Venture agreement between all the Partners under these presents and the bid in accordance with the requirements of Annexure- A (Qualification Requirements of the Bidders), Section - SCC has been signed by all the partners.

NOW THIS INDENTURE WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the Partners to this Joint Venture do hereby now agree as follows:

1. In consideration of the award of the Contract by the Employer to the Joint Venture partners, we, the Partners to the Joint Venture agreement do hereby agree that M/s _____shall act as Lead Partner and further declare and confirm that we shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, supply, and successful performance of the equipment in accordance with the Contract.

2. In case of any breach of the said Contract by the Lead Partner or other Partner(s) of the Joint Venture agreement, the Partner(s) do hereby agree to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performance guaranteed as per the specification in terms of the Contract, the Partner(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary.

   or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Partner(s).

4. The financial liability of the Partners of this Joint Venture agreement to the Employer, with respect to any of the claims arising out of the performance of non- performance of the obligations set forth in the said Joint Venture agreement, read in conjunction with the relevant conditions of the Contract shall, however, not be limited in any way so as to restrict or limit the liabilities of any of the Partners of the Joint Venture agreement.

5. It is expressly understood and agreed between the Partners to this Joint Venture agreement that the responsibilities and obligations of each of the Partners shall be as delineated in Appendix-I (*To be incorporated suitably by the Partners) to this agreement. It is further agreed by the Partners that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Partners under this Contract.

6. This Joint Venture agreement shall be construed and interpreted in accordance with the laws of India and the courts of Ranchi shall have the exclusive jurisdiction in all matters arising thereunder.

7. In case of an award of a Contract, We the Partners to the Joint Venture agreement do hereby agree that we shall be jointly and severally responsible for furnishing a contract performance security & Project Operation Guarantee from a bank in favour of the Employer in the forms acceptable to purchaser for value of 10% & 15% of the Contract Price in the currency/currencies of the Contract.

8. It is further agreed that the Joint Venture agreement shall be irrevocable and shall form an integral part of the Contract, and shall continue to be enforceable till the Employer discharges the same. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Partners to the Joint Venture agreement have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of For lead Partner

has been affixed in my/ our presence

pursuant to the Board of Director's (Signature of authorized

resolution dated ..... representative)

Name

Signature ..... Designation

Name ..... Common Seal of the company

Designation.....

- **Common Seal of For other Partners** has been affixed in my/our presence

pursuant to the Board of Director's (Signature of authorized
resolution dated representative)

Signature ..... Designation
Name ..... Common Seal of the company
Designation.....

WITNESSES:

1. …… 2. ……

(Signature) (Signature)

Name ..... Name .....

(Official address) (Official address)

Annexure-XIV: Format for Financial Requirement – Annual Turnover (Revised)

RfP No: ----------

[On the letterhead of Bidding Company]

To,

The Director,
Jharkhand Renewable Energy Development Agency
3rd Floor, S.L.D.C. Building,
Kusai Colony, Doranda,
Ranchi - 834002

Dear Sir,

Sub: Request for Proposal for site survey, planning, design, engineering, assembly, manufacturing, testing, supply, loading, transportation, unloading, insurance, delivery at site, handling, storage, installation, testing, commissioning of -------- kW of works for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

We certify that the Bidding Company had an average Annual Turnover of Rs. ----------

based on audited annual accounts of any three out of last five years ending 31.03.2015.

S. No.	Year	Turnover (Rs. Lakhs)
1	2010-11	
2	2011-12	
3	2012-13	
4	2013-14	
5	2014-15	

Authorised Signatory *Statutory Auditor*

(Power of Attorney holder) *(Stamp & Signature)*

Date:

Price Bid Proposal Schedules

(Conditions of Contract)

PROPOSAL

Bidders Name & Address:…….
Bid Proposal Reference: No ..... Dated .....
Person to be contacted:
Designation:
Contact No.:
Fax/ e-mail address:

To

The Director,
Jharkhand Renewable Energy Development Agency
3rd Floor, SLDC Building, Kusai, Doranda,
Ranchi-834002. Jharkhand INDIA

Sub.: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)
the RfP No……..dated……for Package No
.....(Specification No.....)

Dear Sir,

1.0 We, the undersigned Bidder, having read and examined in detail the specifications and documents for "site survey, planning, design, engineering, assembly, manufacturing, testing, supply, loading, transportation, unloading, insurance, delivery at site, handling, storage, installation, testing, commissioning of ------ kW Solar Photovoltaic based Decentralized Distributed Generation Systems and documentation of all items/material required to complete the Electrification works 10 (Ten) districts of Jharkhand which interlia include construction of LT Line & Operation & Maintenance of Plant for five years after commissioning" do hereby propose to execute the same under the Package No……..(Specification No…….) as detailed in specification and documents.

2.0 PRICES AND VALIDITY

2.1 All the prices stated in the bid are firm and no price adjustment is applicable in line with the bidding documents. All the prices and other terms and conditions of this proposal are valid for a **period of 6 (six) calendar months after the date of deadline of bid submission**. We further declare that prices stated in our Proposal are in accordance with your "Instruction to Bidders" included in Condition of Contracts, Volume – I of Bid documents.

2.2 We do hereby confirm that our bid prices as quoted in Schedule –1 includes all the import duties and levies including license fees lawfully payable by us on imported items and all taxes, duties

and levies applicable on bought-out components, materials, equipment and other items and confirm that any such taxes, duties and levies additionally payable shall be to our account. We further confirm that no tax & duties (except octori/ entry tax) in any form shall be payable by Owner for bought out items, which are dispatched by our sub-suppliers directly to the project site on sale-in-transit basis. Octroi/ entry tax as applicable for destination site/state on bought finished item, which shall be dispatched directly from our sub vendors works to your site (sale in transit) are not included in the bid price the same has been indicated separately in Schedule-1. We understand that applicable octori/ entry tax in respect of such items of supply would also be reimbursed to us by the employer subject to furnishing of documentary proof.

2.3 The Bid price, the price components of Bid price viz., Ex-works price, Inland Freight and Insurance charges, Erection price component, Other Spares Charges Schedule, etc. are quoted by us in Schedule 1 to 4 of this proposal.

3.0 We have studied clause 14.0 of Section INB, Volume – I relating to Tax and we hereby, declare that if any income-tax, surcharge on income-tax or any other corporate tax is attracted under the law, we agree to pay the same.

4.0 CONSTRUCTION OF THE CONTRACT

4.1 We declare that we are making the offer on the basis on one single contract containing the following parts:

a. Supply Part: For Ex-works supply of all equipment and materials including applicable taxes and duties.
b. Erection/ Service Part: For providing all other services like inland transportation, insurance for delivery at site, unloading, storage, handling at site, installation, testing and commissioning including performance testing in respect of all the equipment supplied under the "Contract" and any other services specified in the Bid Documents.
c. Both these parts will contain a cross fall breach clause specifying that breach of one will constitute breach of the other.
d. Notwithstanding anything contained otherwise, the segregation of the turnkey contract as "Supply" and "Erection/ Service" Parts is only for internal purposes. The Contract shall be single responsibility turnkey contract and taxes, levies, duties, etc. shall be made applicable accordingly.

5.0 BID GUARANTEE

We have enclosed a Bid Guarantee, in the form

of .....

(*Please fill in alternative chosen*)

for a sum of…….

(*Amount in Words & Figures*)

in original and two copies of the original, valid for a period of .....days beyond the bid validity date, in accordance with documents, for package as per the following details:

Package No & Specification No	Form of Bid Guarantee	Value of Bid Guarantee	Valid upto and including

We have also ensured that the above Bid guarantee furnished by us is in line with the Bid documents and complete in respect of following:

1. Value of non judicial stamp paper purchased in the name of executing bank is as per Stamp Act.
2. Power of Attorney no. and date as well as signature and full name & designation of executant along with Bank's stamp are there.
3. Signature, full name, designation and address of witness are there.
4. Complete mailing address of the Head Office of the Bank is indicated.

6.0 BID PRICE

We declare that our total price in Indian Rupees is given in para D of Schedule-1 for the entire scope of work as specified in your Bidding Documents.

7.0 DEVIATIONS

7.1 We confirm that specified stipulation of following Clauses are acceptable to us and no deviation/ exceptions are taken on any account, whatsoever in the following Clauses.

a)	Terms of Payment
b)	Bid Guarantee
c)	Contract Performance Guarantee & Project Operation Guarantee
d)	Liquidity Damages for Delay
e)	Price basis and Payment
f)	Guarantees

7.3 We have furnished herewith the Guarantee Declaration in Schedule- 8.

8.0 PERFORMANCE GUARANTEE

We declare that the ratings and performance figures of the equipment to be supplied and erected by us for this package are guaranteed.

9.0 BID PRICING

We further, declare that the prices stated in our Proposal are in accordance with your 'Instruction to Bidders' included in Conditions of Contract, Volume – I of Bid documents.

10.0 PRICE BASIS

We declare that our price components are on FIRM BASIS.

11.0 ADDITIONAL INFORMATION

11.1 In addition to the information called for in these Proposal sheets, we have included with this Proposal information as listed in Schedule – 6. We further confirm that such additional information does not imply any additional deviation beyond those covered in Schedule – 6 and in case of any contradiction between these additional information and other provisions of Bid, the latter will prevail.

12.0 QUALIFICATION DATA

We confirm having submitted the Qualification Data in three copies, as required by you in your 'Instruction to Bidders' and 'Special Conditions of Contract' included in Volume – I. Further we have filled in information for qualifying requirement data in Schedule –7. In case, you require any further information in this regard, we agree to furnish the same in time.

13.0 WORK SCHEDULE

If this proposal is accepted by you, we agree to submit engineering data, provide services and complete the entire work from time to time, in accordance with Schedules indicated in the Proposal. We fully understand that the Work Completion Schedule stipulated in this Proposal is the essence of the Contract, if awarded. The Completion Schedule of various major key phases of the Work is indicated in Schedule – 10.

14.0 CONTRACT PERFORMANCE GUARANTEE & PROJECT OPERATION GUARANTEE

We further agree that if our proposal is accepted, we shall provide an irrevocable

- Contract Performance Guarantee, of value equivalent to ten percent (**10%**) of the Contract Price valid upto 6 months beyond schedule commissioning of the project in the form of Bank Guarantee

- Project Operation Guarantee (POG) of value equivalent twenty **percent (20%)** of the Contract Price valid upto 60 months from schedule date of commissioning in the form of Bank Guarantee in your favour within thirty (30) days from the date of "Final Acceptance of Successful Commissioning" of Project, and shall enter into a formal agreement with you within thirty (30) days from the Letter of Award.

  POG shall be submitted in 5 equal parts valid for 5 years, i.e. 5 nos of POG of 4% of Contract Value valid for 5 years.

15.0 BOUGHT OUT AND SUB-CONTRACTED ITEMS

We are furnishing herewith in Schedule –9, the details of bought out items & sub-contracted items.

16.0 CHECK LIST

We have included a Check List duly filled in, as Schedule – 11.

17.0 We, hereby, declare that only the persons or firms interested in this Proposal as principals are named herein and that no other persons or firms other that those mentioned herein have any interest in this Proposal or in the Contract to be entered into, if we are awarded the Contract, and that this Proposal is made without any connection with any other persons, firm or party likewise submitting a Proposal and that this Proposal is in all respect for and in good faith, without collusion or fraud.

18.0 *** We, the Partners of the Joint Venture whose signatures are appended below, shall be liable jointly & severally for the execution of the Contract, in the event of award, in accordance with the terms of the Contract. The In charge for this bid is M/s……., who is submitting this Bid on behalf of the Joint Venture. The Power of Attorney in favour of M/s ……... is enclosed.

Dated this..... day of.....20 .....

Signature..... in the capacity of .....

..... duly authorised to sign for and on behalf of

(IN BLOCK CAPITALS)

Note: (i) *** Applicable to Joint Venture bids only.

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Revised Part A of Schedule 2

Part A: Plant, Equipment Civil material to be supplied shall include

Sl. No	Village Name	Particular of Items	Total Price	
1		Cost of SPVPP including module, battery, PCU etc. (All plant equipment and auxiliary systems and accessories required for the power plant operation)		
		Cost of PDN with necessary control equipment including data logging facility between panel and batteries.		
		Cost of providing connection and fitting to House- holds& Street lights		
		Cost of Civil work		Total A1
2		Cost of SPVPP including module, battery, PCU etc. (All plant equipment and auxiliary systems and accessories required for the power plant operation)		
		Cost of PDN with necessary control equipment including data logging facility between panel and batteries.		
		Cost of providing connection and fitting to House- holds& Street lights		
		Cost of Civil work		Total A2
3				
…				

Note: The Price shall be is inclusive of all costs as well as duties and taxes (the custom duty & levies, duties on taxes /VAT etc.) paid or payable and such taxes, duties, levies, additionally payable will be to the contractor's account.

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Revised Part D of Schedule 2

Part D: Cost of providing power in village for 5 years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. per day after taking into account the recovery from end users.

Sl. No	Name of Village	Scope of Work	Cost of providing Power (Rs.)	Fixed tariff collected from villagers @ Rs. 30 and Rs. 60 per household per month from BPL and APL. (Rs)	Effective Cost of providing power (Rs)	Other levies (Rs)	**Total Price (Rs)**
			I	II	III = I-II	IV	**V=III+IV**
1		Cost of providing power in village for five years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. Per day after taking into account the recovery from end users.					D1
2		Cost of providing power in village for five years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. Per day after taking into account the recovery from end users.					D2
3		Cost of providing power in village for five years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. Per day after taking into account the recovery from end users.					D3
4		Cost of providing power in village for five years including operation & maintenance of DDG power plant, power distribution network & providing power for 6-8 hrs. Per day after taking into account the recovery from end users.					

Note: The Price shall be is inclusive of all costs as well as duties and taxes (the custom duty & levies, duties on taxes /VAT etc.) paid or payable and such taxes, duties, levies, additionally payable will be to the contractor's account.

Corrigendum-III: Request for Proposal (RfP) for Rural Electrification Works of 363 Villages in districts of Chatra, Latehar, Garhwa, Palamu, West Singhbhum, Simdega, Sahibganj, Gumla, Hazaribagh & Pakur in Jharkhand through Solar Photovoltaic Power Plants (Mini/Micro grid) with distribution network & connection to households, along with 5 years CMC, under Decentralized Distributed Generation (DDG) Scheme of Deendayal Upadhyay Gram Jyoti Yojana (DDUGJY)

RfP No. 01/JREDA/SPV/DDG-363/2016-17, Dated 04/04/2016.

Revised Part F of Schedule 2

Part F. Total Package Value

Sl. No	Package No.	Total Number of	Total Package Price (in Rs.)
1			
2			
3			
4			
5			
6			
	Total		

Note: The Price shall be is inclusive of all costs as well as duties and taxes (the custom duty & levies, duties on taxes /VAT etc.) paid or payable and such taxes, duties, levies, additionally payable will be to the contractor's account.

Revised Part E of Schedule 2

Part E. Total Village Value

Sl. No	Package No.	Village Name	Total A (in Rs.)	Total B (in Rs.)	Total C (in Rs.)	Total D (in Rs.)	Total Village Price (A+B+C+D) (in Rs.)
1			A1	B1	C1	D1	
2			A2				
3			A3				
4							
5							
6							
7							

Note: The Price shall be is inclusive of all costs as well as duties and taxes (the custom duty & levies, duties on taxes /VAT etc.) paid or payable and such taxes, duties, levies, additionally payable will be to the contractor's account.

Schedule-7

JHARKHAND RENEWABLE ENERGY DEVELOPMENT AGENCY

IMPLEMENTATION OF RURAL ELECTRIFICATION PROJECT FOR DECENTRALIZED DISTRIBUTED GENERATION UNDER DDUGJY SCHEME OF _____ DISTRICT

(Qualifying Requirement Data)

Bidder's Name & Address:

To

The Director,

Jharkhand Renewable Energy Development Agency

3rd Floor, SLDC Building, Kusai, Doranda,

Ranchi-834002. Jharkhand INDIA

Dear Sir,

In support of our meeting the Qualifying Requirements for bidders stipulated in Annexure – A of Special conditions of Contract (SCC) of Bidding documents (Bid Ref……), we furnish herewith the details/ documents/ confirmations etc. as follows.

1.0 (Reference: Clause Error! Reference source not found. **of SCC)**

1.1 We meet the Stipulated QR as mentioned at Clause **Error! Reference source not found.** of SCC

FORMAT – A:

The following is the list of orders executed by us for design, supply, installation &Commissioning and maintenance of solar power plant:

The details of which are furnished hereunder in support of Qualifying Requirements:

Sl. No	**Customers / Client**	**Order ref. & Date**	**Name of location**	**Capacity of solar power plant (kVP**	**Order value (Rs. in lakhs)**	**Date of commissioning**	**Period of satisfactory operation**	****Role of contractor**	**User's certificate enclosed (YES/NO)**
	Bidder / JV 's partners name:								
1									

2									
3									

Note: 1. ****** Indicate as a sole Contractor/Partner in a joint venture

2. Customer's Certificate to be enclosed by the bidder for the satisfactory operation of equipment

3. Continuation sheets, of like size and format, may be used as per bidder's requirements and shall be annexed to this schedule

2.0 (Reference: Clause Error! Reference source not found. **of SCC)**

2.1 We have submitted our bid as a single firm who meets all the qualification requirement set

forth in Clause **Error! Reference source not found.** of SCC OR as a Joint Venture/ Consortium of two or more number of firms as partners wherein all partners meet individually the requirement of Clause **Error! Reference source not found.**.

The following documents are enclosed with our bid as (Annexure/Attachment no. to be indicated) as per/in support of above

We have enclosed the following documents for joint venture/consortium.

i. Joint venture agreement

ii. Power of attorney of the joint venture

3.0 (Reference: Clause Error! Reference source not found. **of SCC)**

3.1 The details / documents , required in regard to average annual turn-over of Bidder or Joint venture Partners or Consortium as per above are included/ furnished in our bid as indicated below

(i) Average annual turnover of the company (Bidder or Lead Partner).....for the three best financial years out of last five financial years as annualized is .....

(ii) Average annual turnover of the company (other than lead partner) .....for the three best financial years out of last five financial years as annualized is ..... (Delete or omit if not applicable)

(iii) Average annual turnover of the company (other than lead partner) .....for the three best financial years out of last five financial years as annualized is ..... (Delete or omit if not applicable)

(iv) Average annual turnover of the company (other than lead partner) .....for the three best financial years out of last five financial years as annualized is ..... (Delete or omit if not applicable) (In case of more no. of partners, the above turnover data shall be indicated here for all the partners)

4.0 (Reference: Clause Error! Reference source not found. **of SCC)**

The details/ documents, required for qualification requirement are included/ furnished in our bid as indicated below

i. Annual Reports

ii. Profit & Loss statements.

iii. Balance Sheets for the last five years

(These documents must be submitted by the sole bidder or all partners of the joint venture/consortium.)

5.0 Annual Turnover Data for the last five years

i. By the sole bidder

Annual Turnover Data Rs

ii. Joint Venture Partners (in case of JV):

Annual Turnover Data (Indian Rupees)					
Partners Name	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Lead Partner*					
Partner*					
Partner*					
Partner*					
Partner*					

* Partner Name to be indicated

Date : (Signature) .....

Place : (Printed Name).....

(Designation) .....

(Common Seal)

SECTION – IX (Revised)

TECHNICAL SPECIFICATIONS (SPV POWER GENERATION PLANT)

1.0 General Description & Configuration:

The Solar Power Plant consisting of Crystalline solar module with seasonal tilt mounting systems with hybrid solar power conditioning unit with battery back-up and without battery back-up. The Hybrid PCU in addition to battery charging during sunny hours the loads are fed from SPV Power Plant. The Solar Photovoltaic Power Plant shall cater the electricity demand as per the proposed hours or duration per day. The system shall have the provision of charging battery bank through mains as well. It should be designed such that during sunny hours the loads are fed from SPV Power Plant in addition to battery charging. If the power produced from the Power Plant is not sufficient to feed the loads then the balanced power will be taken from the grid and battery simultaneously according to the available source. The Power Plant shall provide a reliable and independent power supply at a voltage and frequency levels to suit the grid voltage and frequency.

2.0 Major Components of the system

The following are the major components of the system:

- Solar PV Array
- Array Mounting Structure
- Junction Box
- Power Conditioning Unit
- Storage Battery
- Data Logger
- Cables
- Bi-Directional Meter

3.1 Solar PV Module / Array

i. Solar Photo Voltaic (SPV) modules/ array shall be of high efficiency made of crystalline silicon solar PV cells and shall also satisfy the **MINIMAL TECHNICAL REQUIREMENTS / STANDARDS FOR SPV SYSTEMS**
ii. The terminal box on the module should have a provision for opening for replacing the cable, if required.
iii. The rating of each individual module should not be less than 250Wp at Standard Test conditions (Higher ratings can be used) and shall meet following minimum requirement:
Efficiency of module ≥ 15%
Fill factor shall be greater than 70%.

General requirements for PV module:

a. Module shall be made up of mono or poly crystalline silicon cells.
b. The interconnected cells shall be laminated in vacuum to withstand adverse environmental conditions
c. The module frame is made of corrosion resistant materials, preferably having aluminium anodized finish
d. The minimum clearance between the lower edge of the modules and the developed ground level shall be 400 mm.
e. Surge arresting device to be provide at junction box and module shall be provided with bypass diode.
f. The SPV module must be IEC 61215 and IEC 61730 Part I and Part II certified from any of the accredited certifying agencies.
g. Each solar PV module shall be warranted by the manufacturer for at least 90% of its rated power after initial 10 years and 80% of its rated power after 25 years from the completion of the trial run.
h. Each PV module deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module. (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

- Name of the manufacturer of the PV module
- Month & year of the manufacture(separate for solar cells and modules)
- Country of origin (separately for solar cells and module)
- I-V curve for the module
- Wattage, Im, Vm and FF for the module
- Unique Serial No and Model No of the module
- Date and year of obtaining IEC PV module qualification certificate
- Name of the test lab issuing IEC certificate
- Other relevant information on traceability of solar cells and module as per ISO 9001.

3.2 Module Mounting Structure

i. The structure shall be provided on terrace of the building.
ii. The structure shall be designed in accordance with the latitude of the place of installation. The support structure should be designed so that the load on buildings does not cross the limit of 140 Kg / sq. m, for roof mounted type. The array mounting structure shall be designed to allow easy replacement of any module and shall be in line with site requirement. Structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly.
iii. The array structure shall have tilt arrangement to adjust the plane of the solar array for optimum tilt.
iv. The mounting structure shall be of anodised aluminium and shall be as per relevant standards and shall withstand wind speeds of 150 KM/hour. The support structure angle should be of dimension 50x50x5mm.The minimum thickness of galvanization shall be at least 80 microns. Fixing fasteners shall be of Stainless steel, all nuts & bolts stainless steel. Legs assembly shall be of MS Hot Dip galvanized pipes after fabrication/Anodised Aluminium. Mounting structure shall of anodized aluminium /MS hot dip galvanized GI.
v. The minimum clearance of the lowest part of the module / module structure and the terrace shall not be less than 400 mm.

3.3 Junction Boxes

The junction boxes shall be dust, vermin and waterproof and made of FRP/ABS Plastic with IP54 protection as per IEC 529. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable marking shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification.

- The junction boxes shall have suitable arrangement for the following:
- Combine groups of modules into independent charging sub-arrays that shall be wired to the controller.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation
- The rating of the junction boxes shall be suitable with adequate safety factor to inter connect the solar PV array.
- Metal oxide varistors shall be provided inside the Array Junction Boxes.

3.4 Power Conditioning Unit

Power Conditioning Unit (PCU) provides an un-interrupted AC power using battery bank. Array output will be fed to PCU which consists of MPPT based Charge Controller, Inverter, Voltage Stabilizer and distribution panel along with necessary Displays, Indicators and Alarms and major protections and should conforming to IEC 61683/ IS 61683 Standard for efficiency measurement should conform to IEC 60068-2(1, 2, 14, 30) or equivalent BIS standard for environmental testing. The power conditioning unit shall convert DC Power by SPV modules and store in battery bank and good quality AC Power output is delivered. Contractor should ensure that the PCU supplied conform the performance as per MNRE requirements/specifications.

The Hybrid PCU in addition to battery charging during sunny hours the loads are fed from SPV Power Plant. The Solar Photovoltaic Power Plant shall cater the electricity demand as per the proposed hours or duration per day. The system shall have the provision of charging battery bank through mains as well. It should be designed such that during sunny hours the loads are fed from SPV Power Plant in addition to battery charging. If the power produced from the Power Plant is not sufficient to feed the loads then the balance power shall be fed by Battery bank. In case Battery bank is not sufficiently charged, then the balance energy can be drawn from the Utility Grid. The Power Plant shall provide a reliable and independent power supply at a voltage and frequency levels to suit the grid voltage and frequency.

The power conditioning unit should be an integrated unit comprising MPPT solar charger and bidirectional inverter. The details of solar charge controller & bidirectional inverter should be as under:

A. SOLAR CHARGE CONTROLLER:

Solar Charge controller should be an MPPT based charge controller which tracks the maximum power point of PV panels all the time.

The MPPT based solar charge controller should guarantee below minimum features:

- 3 stage battery charging (float, boost & equalize stages) for long life of the battery
- Battery current limiting feature to avoid over charge into the batteries
- Battery & PV reverse polarity protection (no use of blocking diodes which reduces overall efficiency of the system)
- Rated MCCB/ MCB on all PV inputs & battery inputs.
- MOV type surge arrestors on all PV inputs for overvoltage protection against lightening induced surges
- Individual KWH meters showing PV Voltage, PV amps, Instantaneous PV Power, daily PV generated & cumulative PV generated.
- All the parameters from KWH meters of PV channels should be available through an industry standard protocol for remote access.

B. **BIDIRECTIONAL SINGLE/THREE PHASE INVERTER:**

It should be a bidirectional inverter unit such that the same circuit elements are used for performing inverting and battery charging (through mains) operation. It should be an IGBT based; microprocessor controlled inverter & should incorporate PWM technology and all the desired safety features for reliable running of PCU.

The below minimum features should be ensured in the inverter unit:

- Operation without any derating from 0 to 50 degrees of ambient temperature
- Overloads of 110% for 60 sec, 125% for 30 sec and 150% for 5 sec.
- Inverter should be able to sustain load imbalance between the phases.
- Automatic reset of all non critical faults such as overloads, AC over voltage/ under voltage etc. once the fault has been cleared
- Facility to export excess PV power to grid incase consumption of loads is less than the generation. This is a futuristic feature and provision should be there to enable & disable this export feature.

The same bidirectional inverter should act as a battery charger (using 3 phase grid supply) incase solar PV power is not available and battery is discharged below a predefined level. The mains based battery charger should incorporate below minimum features:

- Facility to bypass grid to loads and charge batteries at the same time
- Should be IGBT based for rugged operation.
- Should use AC supply of all the three phases and not single phase.
- Should have a peak efficiency of at least 85% for AC to DC conversion.
- 3 stage battery charging for long life of the battery.
- Facility to enable/ disable charging of battery through mains by controlling the import power from mains.

TECHNICAL SPECIFICATIONS

PARAMETERS	SPECIFICATIONS
Capacity	Should not be less than the project capacity.
Output Voltage	230Volts ± 1% single phase, 2 wire output /415Volts ± 1% three phase, 4 wire output. Nominal voltage could be adjusted ± 5% via system set points.
Output Frequency	50Hz ± 0.5% during stand alone inverter operation. Inverter to follow generator frequency up to ± 3 Hz of the nominal output frequency during synchronized operation
Continuous Rating	as per system rating
Surge Rating	Up to 150% of the continuous rating for a minimum of 30 seconds
Waveform	Sine wave output
THD	Less than 4%
Efficiency	At 25% load> 85% At 50% load> 90% At 75 % load and above> 92%
Regulation	≤ 2%
Phase Load imbalance	At least 30% between phases
Internal Protection System	• Inverter continuous overload • Short circuit protection • Over/under AC voltage protection • Over/under frequency protection • Over/under battery voltage protection
Display (Inverter/ MPPT Charger)	• Inverter O/P Voltage, Current, Frequency • Mains Voltage, Current, Frequency • Battery Voltage, Current • Mode of Operation, Active Faults • PV Voltage, Current, Instantaneous Power, Daily Generation, Total Generation(for each Solar Charger channel separately)
MCBs	• PV (each Channel) • Battery • Mains • Load
Environmental	
Operating Temperature Range	0-50 degrees ambient
Humidity	0-90% non condensing
Enclosure	IP-30

REMOTE MONITORING

All the relevant parameters of PCU should be available for remote monitoring over internet using GPRS based monitoring solution. PCU shall have GPRS inability based on SIM card which shall be provided by the bidder. The list of parameters should include:

Solar Charge Controller	PV Voltage, PV Current, PV power, Daily Generation, Total Generation. (all above parameters to be included for all MPPT channels individually)
Inverter/ Mains Charger	• Inverter Voltage, Current, Frequency • Mains Voltage, Current, Frequency • Battery Voltage, Current • Active Faults

3.5 Battery Bank

The batteries shall be for SPV application Lead Acid type AGM-VRLA or Tubular Gel, Battery Bank voltage will be 24V/48V/96V/120V/240V.

The batteries shall use 2V battery capacity to be designed for C10 rate. Charging instructions shall be provided along with the batteries. A suitable battery rack with interconnections & end connector shall be provided to suitably house the batteries in the bank. Battery shall conform as per IEC 61427and / relevant IS specifications as per MNRE requirements. Undertaking letter of the above specifications must be submitted along with the consignment. The Battery should be warranted for a period of 5 years.

Features:

- The batteries shall be for SPV application and shall be Lead Acid type AGM-VRLA or tubular Gel.
- The batteries shall use 2V battery capacity to be designed for C10 rate.
- Charging instructions shall be provided along with the batteries.
- A suitable battery rack with interconnections & end connector shall be provided to suitably house the batteries in the bank.
- The batteries shall be suitable for recharging by means of solar modules via incremental / open circuit regulators.
- Battery interconnecting links shall be provided for interconnecting the battery in series and in parallel as needed and shall be Lead coated heavy duty copper strips.
- Connectors for inter cell connection (series / parallel) shall be maintenance free screws. Front covers shall be provided for each battery bank.
- The operating range will be 0ºC to +55/60°C.
- AH Efficiency: >95% and WH Efficiency: >85%
- Recombination Efficiency shall be >98%
- Self Discharge of battery shall be <0.5% per week at 27ºC.
- The minimum warranty of the Battery should be 5 years.

1. TECHNICAL SPECIFICATION OF TUBULAR BATTERY –

The batteries must be conforming to the latest edition of any of the following IEC/ equivalent BIS Standards/ MNRE guidelines for design qualification and type approval:

IEC 61427/ IS 1651/ IS 133369.

i) The minimum rating of battery voltage (V) and Ah at C/10 rate of discharge of different villages should be as following:-

Sl. No.	Capacity of plant (kWp)	Battery bank voltage (V)	Battery capacity Ah @ 7.2 VAH/Wp
1	1	48	150

2	2	48	300
3	3	48	450
4	4	48	600
5	5	96	375
6	6	96	450
7	7	96	525
8	8	96	600
9	9	96	675
10	10	120	600
11	15	240	450
12	20	240	600
13	25	240	750
14	30	240	900
15	40	240	1200
16	50	240	1500
17	60	240	1800
18	70	240	2100
19	80	240	2400
20	90	240	2700
21	100	240	3000

The general specifications shall be as under:

(A) The battery bank shall consist of required number of deep-discharge electrochemical storage cells, suitably interconnected as required. Parallel connections of storage cells will be discouraged.

(B) The cells shall be capable of deep discharge and frequent cycling with long maintenance intervals and high columbic efficiency. Automotive or car batteries shall not be accepted.

(C) The nominal voltage and capacity of the storage bank shall be selected and specified by the supplier in the bid.

(D) The self-discharge rate of the battery bank or individual cell shall not exceed four (4) percent per month.

(E) The permitted maximum depth of discharge (DOD), shall be specified by the supplier in the bid. Supplier should also specify the expected life of the Battery bank.

(F) The cells shall include explosion proof safety vents.

(G) The cells shall include the required number or corrosion resistant inter-cell required chemicals electrolyte packed in separate containers. Full instructions and technical details shall be provided for electrolyte filling and battery recharging at site for the first time.

(H) The cells shall preferably be supplied in dry charged condition, complete with all required chemicals electrolyte packed in separate containers. Full instructions and technical details shall be provided for electrolyte filling and battery recharging at site for the first time.

(I) If the cells are supplied in uncharged conditions, then the supplier shall provide full instructions for first time charging including, but not limited to, the following:

- A checklist of all items required: Minimum specification with possible alternatives of the required battery charger for first time charging.
- Instruction of electrolyte filling, battery charging etc. and instructions on the transportation of charged batteries, if required.

(J) Suitable number of corrosion resistant and acid-proof storage racks shall be supplied to accommodate the cells tester and other accessories. The rack design shall be such that minimum space is required, without any way obstructing the maintenance requirements. For metallic racks, standards specified for control panel enclosures and other metallic shall govern.

(K) All the connectors should be insulated except for the end portions.

(L) All technical and other details pertaining to the storage cells shall be supplied including but not limited to the following: -

1. Rated voltage and ampere-hour capacity of each storage cell as the rated discharge rate.
2. Permitted maximum DOD.
3. Self discharge rate.
4. Cycle life of the storage cell and the anticipated life (in years) of the battery bank.
5. Total number of storage cells in use.
6. Details on cell interconnections, if any. All the connectors should be insulated except at both ends from where the connectors are connected to battery terminals. Every cell should have proper numbering marked clearly for its identification. Only pre-insulated connectors should be used.

2. Battery Rack:

Placement of battery should be such that maintenance of the battery could be carried out easily. The non-reactive acid proof material should be provided to cover the entire floor space covering the battery rack. Battery rack should compulsorily be placed on the appropriate rubbers pads to avoid the contact of wooden racks with the floor, to protect wooden rack particularly from termite.

3.6 DC Distribution Board (DCDB)

DCDB shall consist of MCBs of suitable specifications which can withstand respective flow of current, with the purpose of providing the option for isolating the battery bank & SPV arrays. Best quality Ah meter has to be installed to measure the cumulative charging & discharging status of battery bank. If charge & discharge AH meter is available in PCU then no need of AH meter separately in DCDB.

3.7 AC Distribution Board (ACDB)

An ACDB shall be provided in between PCU and Loads. It shall have MCB of suitable rating for connection and disconnection of PCU from load. It shall have MCB's to supply power to control room loads such as fans, lighting loads and power plug sockets etc. It shall have energy meter to record energy supplied to loads.

3.8 Earthing and lightning protection

The SPV Power Plant should be provided with lightening and over voltage protection. The principal aim in this protection is to reduce the over voltage to a tolerable value before it reaches the PV or other subsystems components. The source of over voltage can be lightening or any other atmospheric disturbance. The Lighting Arrestor (LA) is to be made of $1^{1}/_{4}$" diameter (minimum) and 12 feet long GI spike on the basis of the necessary meteorological data of the location of the projects. Necessary foundation for holding the LA is to be arranged keeping in view the wind speed of the site and flexibility in maintenance in future. Each LA shall have to be earthed through suitable size earth bus with earth pits. The earthing pit shall have to be made as per IS 3043. LA should be installed to protect the array field, all machines and control panels installed in the control rooms. Number of LA shall

vary with the capacity of SPV Power Plant & location. The LA installations should be got approved from APDC prior to installation.

PV Array structure should be grounded properly. In addition the lightening arrestor/ masts should also be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/ shielding of the plant should be thoroughly grounded in accordance with Indian Electricity Act/ IE rules as amended up to date. After earthing each resistance should be tested in presence of the representative of JREDA by calibrated earth tester. The Participant shall make all testing arrangements. The earthing pit shall have to be made as per IS: 3043. All the array structures, equipments & control systems should be compulsorily connected to the earth. Number of earthing shall vary with the capacity of SPV Power Plant & location. The earthing installations should be approved from JREDA prior to installation.

3.9 Bidirectional Meter/ Net Metering

Net metering is the concept which records net energy between export of generated energy and import of Discom energy for a billing month. Alternatively, the meter, having the feature of recording both the import and export values, besides other parameters notified by CEA metering regulations and Discom procedures in vogue, shall also be allowed for arriving net energy for the billing period. Bi- Directional Meter can record the Import and Export Energy.

Based on available roof area solar PV panels will be installed on the roof of the building. The output of the panels (DC electricity) connects to the power conditioning unit / inverter which converts DC to AC. The inverter output will be connected to the control panel or distribution board of the building to utilize the power. The inverter synchronizes with grid and also with any backup power source to produce smooth power to power the loads with preference of consuming solar power first. If the solar power is more than the load requirement, the excess power is automatically fed to the grid. For larger capacity systems connection through step up transformer and switch yard may be required to feed the power to grid. In case of grid failure, there should provision of protection for isolating the SPV plant from the grid.

4. Battery room and control room

The control room & the battery room shall be provided by the end users.

5. Quality and adaptability of the equipment

Interested Companies must verify the grid behavior, solar insolation levels and general site conditions on their own before bidding. The bidder shall accordingly ensure that the equipment and the design submitted shall be able to perform as per guaranteed performance levels in the available site conditions. The design of the plant and the equipment offered shall be evaluated for its quality and adaptability to the site conditions.

6. DANGER BOARDS:

Danger boards should be provided as and where necessary as per IE Act/ IE Rules as amended up to date, as per the instructions of JREDA & affixed at various appropriate locations.

7. CABLES/WIRE:

All connections should be properly made through suitable lug/ terminal crimped with use of suitable proper cable glands. The size of cables/ wires should be designed considering the line loses, maximum load on line, keeping voltage drop within permissible limit and other related factors. For normal configuration the minimum suggested sizes of cables are:

Module to module/ AJBs	- minimum 4 sq mm (single core)
AJBs to MJBs	- minimum 10/16 sq mm (two core), with respect to current ratings of designing
MJBs to DCDB	- minimum 25 sq mm (single core) or as per design & rating

DCDB to PCU	- minimum 25 sq mm (single core) or as per design & rating
Battery to BPP	- minimum 25 sq mm (single core) or as per design & rating
BPP to DCDB	- minimum 25 sq mm (single core) or as per design & rating
DCDB to PCU	- minimum 25 sq mm (single core) or as per design & rating
PCU to ACDB	- as per design & rating

The size & rating of the cables may vary depending on the design & capacity of SPV Power Plant. Participant should compulsorily get the design & rating of the cables approved from JREDA prior to the installation.

8. JUNCTION BOXES:

All the Junction Boxes/ Enclosures for Inverters/ Charge Controllers/ Luminaries should be IP 54(for outdoor)/ IP 21(for indoor) as per IEC 529 Junction Boxes for Cables from Solar Array: The junction boxes shall be made up of FRP/ PP/ ABS (with prior approval of) with dust, water and vermin proof. It should be provided with proper locking arrangements.

9. Power Distribution Network

Installation of Power Distribution Network:

To supply, install & commissioning of Power Distribution Network at the site which shall operate on the electrical power produced by the SPV Power plant installed at the concerned site in the following manner:

(a) Installation of minimum three domestic light points - using high power factor of 3 nos. LED lamp of 11 watt & one socket point (60W) & one socket point (100 W) thus a total of 193 W upto 200 W will be taken with proper switching arrangement, in every selected house hold of the village with complete fittings of wiring in proper manner within conduit installed on saddle/ casing capping with prior approval of JREDA. In house wiring should be done with Heavy duty wire/ cable. P.V.C. Insulated twisted bright annealed Copper wire of 1.5 Sq. mm (3core) or 2.5 Sq. mm (2core) size. Make: Finolex or Havells or equivalent make. Every light point & socket point should be provided with individual switch of suitable current rating.

(b) Installation of domestic connection to every household through service pipe as per the standard electrical fittings. Shall use cable of Aluminum wire P.V.C. Insulated sheathed and single core cable, IS694/1990 of 6Sq.mm.

(c) Installation of appropriate load limiting switch/ fuse for controlling domestic/ street lighting connections, as per requirement of the site.

(d) Supply, installation & grouting of MS Poles as per JREDA norms (or if the tenderer has better drawing he may attach the same with additional offer) for overhead/ underground distribution network of cables at village/ site. All the poles/ street lights should be numbered by oil paint in the specified format of JREDA. Two numbers of MS sign boards (each of 2‵ x 2.5‵ size) has to be supplied, painted (in the same manner as pole painting instructions) & clamped on the poles of the PDN as per JREDA's instructions.

(e) Supply, installation & commissioning of overhead cabling from pole to pole & pole to house. Cabling between pole to pole should be done as per standard norms of JREDA.

(f) Supply, installation & commissioning of cabling from pole to pole & pole to house. Cabling between pole to pole/ pole to house can also be done as per bidders design with prior approval of JREDA.

(g) Supply, installation & commissioning of required numbers of poles with 30 W LED Street light luminary.

(h) Supply & installation of earthing kits, stay wire sets with complete set for poles etc. as per norms where ever required.

Note:

i) All cables should be of copper tested for General Test and Measuring Method PVC insulated cables as per IEC 60227/ IS 694 and IEC 60502/ IS 1554.

ii) All the materials to be consumed in the power distribution network should be of best Quality confirming to specification & should be with prior approval of JREDA.

iii)

10. Operation & Maintenance:

Operation & maintenance of SPV Power Plant along with the Power Distribution Network system installed at site has to be done. Tenderer shall be responsible for supplying required quantum of power for 6-8 hours per day at the identified timing, at least for 25 days in a month for a period of five years. Tenderer shall also be responsible for providing training/ capacity building to villagers/ users for safe usage of power & running of power plant. Tenderer shall also be responsible for collection of tariff from the end users, as per the norms of JREDA/ MoP, GOI. Reporting of the progress of the project has to be submitted in the prescribed format to JREDA every month during the BOMT period.

11. Manpower Training

The supplier/contractor shall train the users for the operation & maintenance of the plant.

Sd/-

Director,
JREDA, Ranchi