

MOU BETWEEN
DPT. OF RURAL DEVELOPMENT & PANCHAYAT RAJ
GOVT OF RAJASTHAN
&
RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED
FOR SUPPLY OF SOLAR PV SYSTEMS



AT BHARAT NIRMAN RAJIV GANDHI SEVA KENDRA



राजस्थान सरकार
ग्रामीण विकास एवं पंचायती राज विभाग
(अनुभाग-3)



क्रमांक-एफ 27(46) ग्रावि/नरेगा/रा.ग्रा.से.के./रील/2010 जयपुर, दिनांक : 3.8.2010
जिला कलेक्टर एवं जिला कार्यक्रम समन्वयक,
समस्त (राजस्थान)

विषय : भारत निर्माण राजीव गांधी सेवा केन्द्रों पर सोलर फोटो वॉल्टिक
सिस्टम लगाने बाबत ।

महोदय,

उपरोक्त विषयान्तर्गत निर्देशानुसार लेख है कि राज्य की प्रत्येक पंचायत समिति एवं ग्राम पंचायत स्तरीय भारत निर्माण राजीव गांधी सेवा केन्द्रों पर राजस्थान इलेक्ट्रोनिक्स एण्ड इन्स्ट्रूमेंट लिमिटेड, 2, कनकपुरा, औद्योगिक क्षेत्र, सिरसी रोड़, जयपुर द्वारा क्रमशः 2.2 किलोवाट एवं 1.1 किलोवाट फोटो वॉल्टिक सिस्टम स्थापित किये जाने हेतु दिनांक 28.4.2010 एवं 30.7.2010 को समेकित रूप से 68 पृष्ठीय सहमति पत्र (एमओयू) हस्ताक्षरित किया गया है, जिसकी प्रति संलग्न हैं, सहमति पत्र की एक प्रति प्रत्येक ग्राम पंचायत को भी उपलब्ध करवाई जावे। इस हेतु ग्राम पंचायतों की संख्या अनुसार अनुबंध पत्र की अतिरिक्त प्रतियां रील द्वारा आपको इसी माह में उपलब्ध करवा दी जावेगी।

पंचायत समिति एवं ग्राम पंचायत स्तरीय निर्मित सेवा केन्द्रों पर इस सहमति पत्र अनुसार ही रील को कायदेशि संबंधी कार्यवाही की जावे। प्रत्येक जारी किये जाने वाले आदेश की एक प्रति इस कार्यालय को भी भिजवाई जावे।

भवदीय,

(रामनिवास मेहता)

परि.निदे. एवं पदेन उपसचिव, ईजीएस

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु:-

1. आयुक्त एवं शासन सचिव, पंचायती राज विभाग, जयपुर
2. मुख्य कार्यकारी अधिकारी एवं अति. जिला कार्यक्रम समन्वयक, समस्त (राजस्थान) ।
3. प्रबन्ध निदेशक, राजस्थान इलेक्ट्रोनिक्स एण्ड इन्स्ट्रूमेंट लिमिटेड, 2, कनकपुरा,
औद्योगिक प्रबन्ध निदेशक, क्षेत्र, सिरसी रोड़, जयपुर

परि. निदे. एवं पदेन उप सचिव, ईजीएस

MEMORANDUM OF UNDERSTANDING

BETWEEN

DEPARTMENT OF RURAL DEVELOPMENT

&

PANCHAYAT RAJ, GOVT. OF RAJASTHAN

AND

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED (REIL)

FOR SOLAR PV SYSTEMS AT

BHARAT NIRMAN RAJEEV GANDHI SEVA KENDRAS

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MEMORANDUM OF UNDERSTANDING

This tripartite memorandum of understanding made and executed at Jaipur on 28-4-2010 among Secretary, Rural Development under Rural Development & Panchayat Raj Department, Govt of Rajasthan having office at Secretariat, Jaipur (hereinafter referred to as first party (Purchaser) / Secretary, RD department which expression shall, unless it is repugnant to the subject or context thereof, include its successors, assignees and /or nominees)

And

Commissioner cum Secretary, Employment Guarantee Scheme, under Rural Development & Panchayat Raj Department, Govt of Rajasthan having office at Secretariat, Jaipur (hereinafter referred to as Second Party (Purchaser) / Comm. NREGS which expression shall, unless it is repugnant to the subject or context thereof, include its successors, assignees and /or nominees)

And

Rajasthan Electronics & Instruments Ltd., (**A Public Sector Enterprise with 51 % stake of Govt of India & 49 % stake of Govt of Rajasthan**) having its office at 2, Kanakpura Industrial Area , Sirsi Road, Jaipur (hereinafter refereed to as REIL (supplier) which expression shall, unless it is repugnant to the subject or context thereof, include its successors, assignees and /or nominees)

Whereas

Bharat Nirman Rajeev Gandhi Seva Kendra under Rural Development & Panchayat Raj Department, Govt of Rajasthan for 249 nos. of Panchayat Samities & 9168 nos. of Gram Panchayats are provided with computers to promote sustainable solutions for improving the quality of life in rural areas by providing digital connectivity for need based agriculture solutions, communication, healthcare, governance and other diverse services etc

In order to achieve these objectives the computers are to be provided with reliable energy backup of SPV Systems at all the Bharat Nirman Rajeev Gandhi Seva Kendras in Rajasthan.

And Whereas

REIL a Public Sector Company situated in Jaipur is a reputed name in the field of Photovoltaic & has vast experience in production of PV modules confirming to International standards, design of systems & execution of turn key projects for bridging energy gap in rural areas, designs, supplies, installation & commissioning of power packs for specific applications in rural areas .

The parties agree to following Scope of Work:

- 1) Secretary RD and Commissioner (NREGS) under Rural Development & Panchayat Raj Department, Govt of Rajasthan shall provide all requisite support for preparation of project report for Solar PV Systems under Bharat Nirman Rajeev Gandhi Seva Kendras, to REIL.
- 2) REIL shall prepare a project report for design, supply, installation, commissioning & 5 years warranty maintenance of Solar PV systems for powering the critical loads at Bharat Nirman Rajeev Gandhi Seva Kendras in consultation with Secretary RD and Commissioner (NREGS) under Rural Development & Panchayat Raj Department, Govt of Rajasthan
- 3) The project report shall cover cost implications for powering the critical loads.
- 4) Rural Development & Panchayat Raj Department, Govt of Rajasthan shall forward the project report prepared by REIL to Ministry of New and Renewable Energy, Govt. of India, New Delhi for consideration & approval of the project.
- 5) REIL will follow up with Ministry of New and Renewable Energy, Govt of India for sanction of the project.
- 6) Upon receipt of necessary approvals & sanction from Ministry of New and Renewable Energy, Govt of India, REIL will intimate same to Rural Development & Panchayat Raj Department, Govt of Rajasthan. Rural Development & Panchayat Raj Department, Govt of Rajasthan shall issue necessary guidelines to district collector (DPC) for execution of the project.

- 7) District Collectors (DPC) shall issue work instructions to REIL as per format enclosed at **Annexure 1A / Annexure 1B** along with mobilization funds.
- 8) REIL shall start activities for execution of the project & obtain information from district collectors (DPC) for progress on constructions of buildings.
- 9) District Collectors (DPC) would provide information to REIL regarding construction of buildings as per **Annexure 1C**
- 10) The Districts collector (DPC) /ADPC (NREGS) will be competent authority to act on behalf of first and second party (purchaser)
- 11) REIL shall supply Solar PV systems at Panchayat Samities & Gram Panchayats as per technical details enclosed at **Annexure 1D & Annexure 1E** respectively.
- 12) REIL shall deliver the Solar PV systems at sites .The material will be received by the Block Development Officer of the concerned Panchayat Samities / Gram Sevak or sarpanch of the concerned Gram Panchayat. Necessary certificate will be issued towards same as per format enclosed at **Annexure 2A & Annexure 2B respectively.**
- 13) REIL shall install & commission the Solar PV Systems at the Panchayat Samiti/ Gram Panchayat and shall collect the certificate dully attested by the concerned JEN/ AEN/XEN of the concerned Panchayat Samiti / Gram Panchayat as per format enclosed at **Annexure 3A Annexure 3B respectively.** Onward wiring from Solar PCU to the specified loads will be provided by the purchaser.
- 14) REIL shall carry out the maintenance for a period of five years from the date of installation & commissioning of the Solar PV systems provided the maintenance charges are released to REIL on yearly basis by respective DPC (NREGS). For this purpose REIL will establish a computerized (With Web enabled tools) call center at Jaipur for receiving complaint , complaint shall be forwarded to district level service centers. The REIL district level service centers shall contain necessary spares & manpower for maintenance. For this purpose Rural Development & Panchayat Raj Department, Govt of Rajasthan shall provide space at respective

panchayat samiti head quarter in each district. The details of maintenance services are mentioned below & in the maintenance manual enclosed as **Annexure 4A & 4B :**

A) ROUTINE & PREVENTIVE MAINTENANCE SERVICES

REIL will provide free maintenance services for a period of 5 years from the date of installation .Preventive maintenance of Solar PV Systems shall be carried out atleast once in 6 months or as for satisfactory running. It shall include such checks and maintenance activities atleast once in 6 months, which are required to be carried out on all the components of the Solar PV Power Packs to minimize the breakdown and to ensure smooth and trouble free running of the Solar PV Power Packs. REIL shall be responsible to carry out the routine & preventive maintenance services and shall provide all labour, material, consumables, for the same .

B) BREAKDOWN MAINTENANCE SERVICES

Breakdown maintenance services shall mean the maintenance activities including any component or equipment of the Solar PV Power Pack services which is not covered by routine & preventive maintenance and which is required to be carried out as a result of sudden failure of Solar PV Power Pack. REIL shall carry out the breakdown maintenance of the Solar PV Power Packs and shall provide the required manpower, materials, consumables, components or equipments for the breakdown maintenance

REIL shall provide on site maintenance services during the 5 years period. The complaint shall be generally attended within 2 days from the date of receipt of complaint (Maximum time may be 3 days). REIL will rectify the fault within 3 days failing which the, REIL shall arrange temporary replacements in next 4 working days .If it becomes necessary to be taken out the SPV System parts or equipments, REIL would provide similar item or as acceptable to the purchaser as stand by arrangement.

The breakdown maintenance will be conducted as per the procedure laid down in " redressal of complaint " as per clause No.14C wherein the complains would be booked at toll free computerized Call Center through Phone , email ,

SMS services , & web enabled tools. Complaint shall be forwarded to district level service center. The staff deployed for repair and maintenance of SPV system would be provided sufficient mobility support and mobile facility by REIL so that all complaints may be addressed in specified time. The REIL district level service centers shall contain necessary spares & manpower for maintenance. The field staff would attend the complain and submit the Service Job report at the call center for closing the complain. For this purpose REIL will deploy adequate manpower at the space provided in each Zila Parishad Office / Panchayat Samiti (minimum 2 persons in one district , average one person on 100 systems). The deputed persons shall also remain in contact with concern NAREGA officials. The reil would take regular progress from its Distt staff about smooth functioning of SPV systems.

C) PROCEDURE FOR REDRESSAL OF COMPLAINT

REIL shall establish network for promptly attending to customer's grievances in respect of breakdown maintenance. A unique Number will be provided to SPV systems installed at all Gram Panchayats/ Panchayat samities Under Bharat Nirman Rajiv Ghandi Seva Kendra. A set up of the procedure for Redressal of customer grievances is given under:

a) REIL shall establish a toll free (computerized with web enable tools) Call Center facility for effectively resolving the customer complaints. Complaints shall be registered through:

- 1) Phone:** A separate dedicated phone line will be provided to cater the customer complaints. The customer complaints would be registered in format as per **Annexure 5 enclosed** , and a complaint number will be provided for further reference.
- 2) Email:** Customer can email the complaint at the call center as per the format enclosed at **Annexure 5**. Confirmation would be send back by the call center along with a complaint number for the complaints received in the desired format.

3) SMS Services: SMS no. will be provided for registration of complaint. On receipt of SMS the required details will be taken telephonically as per **Annexure 5** . The customer complaints would be registered and a complaint number will be provided for further reference.

4) Web Enable Tools: A specific web page would be provided with a maintenance domain for the user for lodging online complaints.

- b) REIL shall prepare a service job report (SJR) for the repairs carried out at Panchayat Samiti / Gram Panchayat as per **Annexure 6A & Annexure 6B respectively**).
- c) Copy of SJR shall be sent to call center for closing the complaint.
- d) Call Center will have the facility to excess the web page through web enabling tools.

D) WEB ENABLE TOOLS :

A Web page would be available on website for the user (GP/PS) to provide online information. The Web page would be accessed by the user (GP/PS) through a password protected user ID. The page would provide details of SPV project such as supply status, Installation & commissioning status, satisfactory working status, system photograph & contact details. Complaints regarding non operative SPV systems can directly be lodged by the user as per annexure 5

E) SYSTEM MONITORING

REIL shall incorporate necessary hard ware & soft ware in the systems to enable data acquisition in the computers available at BNRGSK. The data can also be monitored remotely if broadband facility is available.

F) Security & Insurance

REIL will arrange for necessary transit insurance upto supply & safe delivery of Solar PV systems to respective panchayat samiti/ gram panchayat. However, after installation, the security of the Solar PV Power Packs rest with the panchayat samiti/ gram panchayat. REIL shall not be held responsible for theft, breakage & misuse . The respective Panchayat Samiti/ Gram Panchayat may arrange necessary Insurance against theft & breakage & the same shall be renewed on yearly basis, if required. Insurance premium shall be paid by respective Panchayat Samiti/ Gram Panchayat. In this context an agreement will be signed with the panchayat samites/ gram panchayats as per **Annexure 7**

15) CDM Benefits:

The project has been conceived considering CDM benefits. Rural Development & Panchayat Raj Department, Govt of Rajasthan shall be eligible for obtaining CDM benefits from this project. REIL shall take up this matter with Ministry of New & Renewable Energy Sources, Govt Of India for financial assistance towards hiring of consultants for claiming the CDM benefits. Application fee / other charges not payable by Ministry of New & Renewable Energy Sources Govt of India shall be paid by Rural Development & Panchayat Raj Department, Govt of Rajasthan . Rural Development & Panchayat Raj Department, Govt of Rajasthan shall also provide all necessary details & documents required by the consultants for submitting application and claiming CDM benefits. It may become difficult to ensure smooth functioning of systems without CDM Benefits.

16) PROJECT DURATION:

REIL shall complete the supply, installation & commissioning of the Solar PV Systems at Bharat Nirman Rajeev Gandhi Seva Kendras at Panchayat Samities / Gram Panchayats within 6 months of site handover / date of intimation of completion of site from the district administration.

17) PROJECT COST

DETAILS	2240 W SPV POWER PACK AT PANCHAYAT SAMITY (Rs.)	1120 W SPV POWER PACK AT GRAM PANCHAYAT (Rs.)
UNIT COST INCLUDING 5 YEARS MAINTENANCE	6,00,000/-	3,10,000/-
TAXES (VAT)	NIL	NIL
SERVICE TAX	6180/-	3,193/-
TOTAL COST	6,06,180/-	3,13,193/-
LESS CFA FROM MNRE (-)	2,80,000/-	1,12,000/-
BALANCE STATE GOVT. SHARE	3,26,180/-	2,01,193/-*
LESS COST TOWARDS 5 YEAR MAINTENANCE (A)	44,120/-	22,060/-*
BALANCE TOWARDS SUPPLY & INSTALLATION (B)	2,82,060/-	1,79,133/-*

*Above calculation is on the basis of MNRE CFA of Rs. 1,12,000/- however, if this amount is changed the balance cost would change accordingly.

TAXES: Above costing is on the basis of present tax rate of VAT (NIL) & Service Tax (10.3 %) . However , in case of variation in taxes same shall be charged extra.

VALIDITY OF PRICES: The above prices are valid up to 31/3/2011. After this period, the prevailing prices of REIL would be applicable.

18) PAYMENT TERMS:

- a) 40 % of cost (at 17 (B)) be released along with work instructions (Annexure 1A/ 1B) by District collector (DPC).
- b) Balance 60 % payment of cost (at 17(B)) shall be released by respective district collector (DPC) after supply , installation & commissioning of the Solar PV systems at site and submission of documents as per details mentioned at **Annexure 8**. Deficiency if any be communicated in writing immediately otherwise the payment will be released within 2 weeks of submission of documents
- c) REIL shall claim CFA from Ministry of New & Renewable Energy Sources , Govt of India (MNRE) as per the terms of sanction issued by MNRE for which district collector(DPC) shall issue necessary certificates as required by MNRE.
- d) 5 years Maintenance charges shall be paid on yearly basis at the end of year by respective district authority. Maintenance period shall commence from the date of final installation & commissioning of respective SPV system.
- e) If payments (towards supply, installation, commissioning & maintenance) are not released in time, REIL shall be absolved from its contractual obligation.

19) BILLING PROCEDURE

- a) REIL shall raise bills to respective DPC (District Collector) district authority for the supply & installation cost separately for the total cost (including CFA) mentioning amounts to be paid by respective organization.
- 20) REIL is determined to ensure availability of Solar Power to computers at all Bharat Nirman Rajeev Gandhi Seva Kendras for the specified committed hours. To ensure this motto, REIL will not left any stone **untorn** including any modifications required in implementation methodology, technology and practices, changes and the same will be carried out with mutual consent .

Definition

- 1.1 In this MOU / contract the following terms shall be interpreted as below:-
- a) The MOU/ Contract entered into between the purchaser and the supplier.
 - b) The contract price means the price payable to the supplier by the purchaser.
 - c) The goods mean the equipments and other materials, which the supplier is required to supply to the purchaser under the contract.
 - d) Service means services auxiliary to the supply of the goods, such as transport and transit insurance and any other incidental services such as installation, commissioning, and other obligations of the supplier covered under the contract.
 - e) The purchase means the organization purchasing the goods.
 - f) The supplier means the firm supplying the goods under this contract.
 - g) The site means the place where the Bharat Nirman Rajeev Gandhi Seva Kendra will be executed.
 - h) The government means the government of Rajasthan.
 - i) Rupees mean the Indian currency in Rupees.

2. Application

- 2.1 The **Annexure 1 to Annexure 8** comprising of technical details , system specifications , Maintenance manual etc. is a part of this contract.

3. Use of Contract Documents and information

- 3.1 The supplier shall not, without the purchaser's written consent/ decision the specification, plan, drawing, pattern sample or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may necessary for purposes of such performance.
- 3.2 The supplier shall not, without the Purchaser's prior written consent, make use of any document of information enumerated in para 4.1 expect for purposes of performing the contract.
- 3.3 Any document, other than the contract itself, enumerated in para 4.1 shall remain the property of the purchaser and shall be returned to the

Purchaser on completion of the Suppliers performance under the contract if so required by the Purchaser.

4. Patent Rights

- 4.1 The supplier shall indemnify the purchaser against all third party claims of infringement of patent, trademark or industrial design rights arising from use of the goods or any part thereof in India.

5. Inspection Tests

- 5.1 The Purchaser or its representative shall have the right to inspect and / or to test the solar modules to confirm their conformity to the contract. The purchaser shall notify the supplier in this regard before delivery of material at site.
- 5.2 The inspections and test may be conducted on the premises of the Supplier prior to delivery. When conducted on the premises of the supplier or its subcontractor (s), all reasonable facilities and assistance shall be furnished to the inspectors at no charge to the purchaser.
- 5.3 Should any inspected or tested Solar PV modules fail to conform to the specifications the purchaser may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet specification requirement free of cost to the Purchaser.
- 5.4 Nothing in Clause 5 shall in any way release the Supplier from any warranty or other obligations under this contract.

6. Packing

- 6.1 The supplier shall provide such packing of the Goods as required to prevent their damage or deterioration during transit to their final destination as indicated in contract. The packing shall be sufficient to withstand without limitation, rough handling during transit and exposures to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

7. Delivery and Documents

- 7.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the purchaser.
- 7.2 For Purpose of the Contract, "FOR", and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of the national for the Interpretation of the Trade terms.

8. Insurance

- 8.1 The Goods Supplied under the Contract shall be fully insured for transit insurance up to delivery of material at site.

9. Incidental Services

- 9.1 The supplier have to provide any or all of the following services:
- (a) Performance or supervision of the on-site assembly and / or start-up of the supplied Goods; and
 - (b) Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;
 - (c) Performance or supervision or maintenance and/ or repair of the supplied Goods, for a period of time agreed by the parties provided that this services shall not relieve the supplier of any warranty obligations under this contract; and
 - (d) Conduct of training of the Purchaser's Personnel, at the Suppliers plant and/ or on-site, in assembly, startup, operation, maintenance and /or repair of the supplied Goods.
 - (e) Computerized call center with web enables tools.
 - (f) The Supplier shall put one display board of size 2' X 1.5' at every site of SPV system installation as per annexure 9. depicting details of the system and operational guidance.

10. Termination by Default

- 10.1 The Purchaser may without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the contract in whole or part.
- (a) if the Supplier fails to delivery any or all of the Goods within the time period (s) specified in the contract, or any extension thereof granted by then the Purchaser then the Decision of Principal Secretary, Panchayat Raj & Rural Development will be final & binding on both the parties.

11. Force Measures

- 11.1 For Purposes of this Clause ,” Force Majeure” means an event beyond the control of the Supplier and not involving the supplier's fault or negligence and not foreseeable. Such events ,may include, but are not limited to, acts of the Purchaser, either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 11.2 If a Force Measures situation arises, the Supplier shall promptly notify/ the Purchaser in writing of such conditions and the cause thereof . Unless otherwise directed by the Purchase in writing, the Supplier shall continue to perform its obligations under the contract as far as is reasonably

practical, and shall seek all reasonable alternative means for performance not prevented by the force Measures event.

12. Applicable Law

12.1 The Contract shall be interpreted in accordance with the laws of the Union of India.

13. Notices

13.1 Any notices, given by one party to the other pursuant to the contract shall be sent in writing and conformed in writing to the address specified.

13.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

14. Penalty Clause:

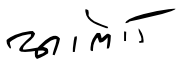
14.1. Delay in Execution (Supply, Installation & Commissioning): - Penalty @ 1% per month to maximum 5% will be imposed on REIL if there is delay in execution (Supply, Installation & Commissioning) of the SPV system (As per the clause 16 of scope of work).

14.2. Delay in Maintenance : - Penalty @ Rs.100 /- per week maximum Rs. 500/- will be deducted if REIL is enable to attend **complaint** with in the time duration (As per clause 14B of scope of work)

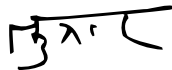
15. Arbitration:

In case of any difference arising at any time between the parties with regard to this MOU both parties will resolve to settle the issue through mutual negotiations without taking legal course. Decision of Principal Secretary, RD Department & Panchayat Raj shall be final & binding on both parties.

IN witness thereof the parties have set their hands and seal on the day 28 month April and year 2010 first written.



Secretary
RD, GOR



Commissioner
NREGS, GOR



Managing Director
REIL

Witness 1 Ram Niwas Mehta, PD Cum DS, EGS, RD & PRD,

Witness 2 Mukesh Mathur, A.G.M , REIL, Jaipur

In continuation to the MOU signed on dated 28/4/2010, The following points are further added with mutual consent of both the parties after point no. 21 of previously signed MOU.

22. DELIVERABLES OF BOTH PARTIES CLAUSE:

DELIVERABLES OF RD PR DEPARTMENT / PURCHASER

- 1) RD & PR department / purchaser will ensure release of payments to REIL as per the work instructions.
- 2) RD & PR department / purchaser would provide office space at RD PRD head quarter & Zila Parishad office to REIL.
- 3) RD & PR department / purchaser would provide all information's to REIL/ consultant for claiming the CDM Benefits & shall pay the required registration & validation fees.

DELIVERABLES OF REIL

- 4) REIL would install the Solar PV Systems with in a period of 6 months from work instructions as per Annexure 1 A / 1B & release of 40% payment and site completion information as per Annexure 1C
- 5) REIL would establish a call center for registration of complains.
- 6) REIL would hire a CDM consultant on behalf of the RD & PR department / purchaser.
- 7) REIL will depute one officer along with supporting infrastructure exclusively for day to day monitoring of SPV till REIL is associated with the Project. This officer would sit in RD & PR department.
- 8) REIL would undertake to not only maintain the Solar PV Systems but also do all that is necessary for effective & efficient working of Solar PV Systems

23. Exit Management Clause:

In addition to existing Clause No. 10 "Termination by Default" of "Other Terms & Conditions" of MOU , following conditions are hereby added :

Exit Management Schedule for Termination of MOU: This schedule sets out the provisions, which will apply on termination of the MOU.

1. The exit management period will be **90** days from the date of termination of MOU.
2. After receipt of notice, the SPV systems that may be finally commissioned by REIL within **90** days, shall be purchased by the purchaser.
3. RD & PR department shall get the payments released from the respective DPC for the Solar PV Systems supplied.
4. If payments are not released in time, termination clause shall not be applicable.

Exit Management Schedule after completion of maintenance period:

This schedule sets out the provisions, which will apply on completion of maintenance period (after five years).

1. REIL during the maintenance period would provide training to the users for proper maintenance of the Solar PV Power Plants.
2. REIL would provide maintenance manuals to the users during the maintenance period.
3. REIL would provide list of DO's & DON'TS.
4. REIL would provide all information's required for maintenance of the Solar PV Power Packs.
5. REIL would hand over all the SPV Systems in working conditions.

24. Delivery Schedule & Work in Progress Time:

On receipt of Work instructions as per Annexure 1 A / 1B with 40 % payments & site completion information as per Annexure 1C from the DPC/ District collectors, REIL shall complete the supply, installation & commissioning of the Solar PV Systems at Bharat Nirman Rajeev Gandhi Seva Kendras at Panchayat Samities / Gram Panchayats within **6** months.

25. Spare parts & yearly maintenance charges.

All spare parts would be supplied by REIL without any charge during the initially agreed 5 years maintenance tenure.

REIL would not be responsible for theft, breakage & misuse etc of SPV System. However if the Solar PV Systems comprising SPV Modules, Battery Bank, Power conditioning unit is non operative due to reasons as cited above , the cost incurred towards replacement of defective items would be charged as per the prevailing price list of REIL along with discounts ,if any. This cost of spare parts would be judged by a committee of following officers -

- 1) Financial advisor, RD
- 2) Project Director (EGS)
- 3) Chief Accounts Officer (EGS)
- 4) Executive Engineer (EGS)
- 5) Representative of MD , REIL

26 RENEWAL OF MAINTENANCE PERIOD

Initially REIL will maintain the Solar PV system for 5 years from the date of final installation & commissioning of SPV Systems. After expiry of this period, the maintenance tenure may be extended by mutual consent. The committee constituted as per point no. 25 of this MOU, would also propose

terms & conditions for the same. This exercise shall be commenced at the beginning of 5 year.

27. THIRD PARTY INSPECTION:

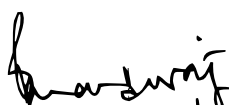
REIL shall get the Solar PV Systems inspected after installation & commissioning, by a third party as nominated by Ministry of New & Renewable Energy Sources, Govt. of India / RD &PR Department Govt. of Rajasthan. Any charges born by the third party would be paid by RD &PR Department, Govt of Rajasthan. The third party would conduct random inspection of Solar PV Systems at 2 nos. of Gram Panchayats in each Panchayat Samiti of each district & Solar PV Systems at 2 nos. of Panchayat Samities in each district & submit report to DPC as per Annexure 10 .

28. The following clauses as per details mentioned below have been amended in the tripartite memorandum of understanding made and executed at Jaipur on 28-4-2010 among Secretary, Rural Development as first party (Purchaser) And Commissioner cum Secretary, Employment Guarantee Scheme, as Second Party (Purchaser) and Rajasthan Electronics & Instruments Ltd.,

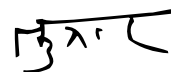
CL. NO	ORIGINAL DESCRIPTION			TO BE READ AS		
17	DETAILS	2240 W SPV POWER PACK AT PANCHAYAT SAMITY (Rs.)	1120 W SPV POWER PACK AT GRAM PANCHAYAT (Rs.)	DETAILS	2240 W SPV POWER PACK AT PANCHAYAT SAMITY (Rs.)	1120 W SPV POWER PACK AT GRAM PANCHAYAT (Rs.)
	UNIT COST INCLUDING 5 YEARS MAINTENANCE	6,00,000/-	3,10,000/-	UNIT COST INCLUDING 5 YEARS MAINTENANCE	6,00,000/-	3,10,000/-
	TAXES (VAT)	NIL	NIL	TAXES (VAT)	NIL	NIL

	SERVICE TAX 6180/- 3,193/-	SERVICE TAX 6180/- 3,193/-
	TOTAL COST 6,06,180/- 3,13,193/-	TOTAL COST 6,06,180/- 3,13,193/-
	LESS CFA FROM MNRE (-) 2,80,000/- 1,12,000/-*	LESS CFA FROM MNRE (-) 2,80,000/- 93,000/-*
	BALANCE STATE GOVT. SHARE 3,26,180/- 2,01,193/-*	BALANCE STATE GOVT. SHARE 3,26,180/- 2,20,193/-*
	LESS COST TOWARDS 5 YEAR MAINTENANCE (A) 44,120/- 22,060/-*	LESS COST TOWARDS 5 YEAR MAINTENANCE (A) 44,120/- 22,060/-*
	BALANCE TOWARDS SUPPLY & INSTALLATION (B) 2,82,060/- 1,79,133/-*	BALANCE TOWARDS SUPPLY & INSTALLATION (B) 2,82,060/- 1,98,133/-*
	*Above calculation is on the basis of MNRE CFA of Rs. 1,12,000/- however, if this amount is changed the balance cost would change accordingly.	*Above calculation is on the basis of MNRE CFA of Rs.93,000/- however, if this amount is changed the balance cost would change accordingly.
	TAXES: Above costing is on the basis of present tax rate of VAT (NIL) & Service Tax (10.3 %) . However , in case of variation in taxes same shall be charged extra.	TAXES: Above costing is on the basis of present tax rate of VAT (NIL) & Service Tax (10.3 %) . However , in case of variation in taxes same shall be charged extra.
	VALIDITY OF PRICES: The above prices are valid up to 31/3/2011. After this period, the prevailing prices of REIL would be applicable.	VALIDITY OF PRICES: The above prices are valid up to 31/3/2011. After this period, the prevailing prices of REIL would be applicable.
18	a) 40 % of cost (at 17 (B)) be released along with work instructions (Annexure 1A/ 1B) by District collector (DPC). b) 60 % payment of cost (at 17(B)) shall be released by respective district collector (DPC) after supply , installation & commissioning of the Solar PV systems at site and submission of documents as per details mentioned at Annexure-8. Deficiency if any be communicated in writing immediately otherwise the payment will be released within 2 weeks of submission of documents c) REIL shall claim CFA from Ministry	a) 40 % of cost (at 17 (B)) be released along with work instructions (Annexure 1A/ 1B) by District collector (DPC). b) 50 % payment of cost (at 17(B)) shall be released by respective district collector (DPC) after supply , installation & commissioning of the Solar PV systems at site and submission of documents as per details mentioned at Annexure-8. Deficiency if any be communicated in writing immediately otherwise the payment will be released within 2 weeks of submission of documents

of New & Renewable Energy Sources , Govt of India (MNRE) as per the terms of sanction issued by MNRE for which district collector(DPC) shall issue necessary certificates as required by MNRE. d) 5 years Maintenance charges shall be paid on yearly basis at the end of year by respective district authority. Maintenance period shall commence from the date of final installation & commissioning of respective SPV system. e) If payments (towards supply, installation, commissioning & maintenance are not released in time, REIL shall be absolved from its contractual obligation.	c) Balance 10 % payment of cost (at 17(B)) would be released after third party inspection and submission of document as per Annexure 10. d) REIL shall claim CFA from Ministry of New & Renewable Energy Sources , Govt of India (MNRE) as per the terms of sanction issued by MNRE for which district collector(DPC) shall issue necessary certificates as required by MNRE. e) 5 years Maintenance charges shall be paid on yearly basis at the end of year by respective district authority. Maintenance period shall commence from the date of final installation & commissioning of respective SPV system. f) If payments (towards supply, installation, commissioning & maintenance are not released in time, REIL shall be absolved from its contractual obligation.
--	--


 30/7/2010
 (P.M. Bharadwaj)

MD REIL,



Commissioner (EGS) & Secretary RD

THIRD PARTY INSPECTION REPORT.

District :

Details of Site Visited:

Sr.No	Name of Gram Panchayat	Name of Panchayat Samiti	Remarks
1.			
2.			
3.			
4.			

The above Solar PV Systems are installed, commissioned & working satisfactorily.

Signature of Authorized Signatory

(AS PER PARA 28 OF THE MOU)

ANNEXURE-1A

FORMAT FOR WORK INSTRUCTIONS TO BE ACCORDED TO REIL BY DISTRICT COLLECTOR (DPC) FOR SUPPLY OF SOLAR PV SYSTEMS AT GRAM PANCHAYATS.

No.

Dt.

To,
M/s Rajasthan Electronics & Instruments Limited, (REIL)
2, Kanakpura Industrial Area
Sirsi road
Jaipur

Sub : Work instruction for supply of Solar PV Systems at Gram Panchayats (as per list enclosed) in the district _____

Ref: Order No. _____ Dt. _____ from Rural Development & Panchayat Raj Department , Govt of Rajasthan

Sir,

With reference to above work instructions is issued for supply , installation , commissioning & 5 years warranty maintenance of Solar PV systems as detailed below:-

1.

S. No.	Description	Nos. of Solar PV System
1.	1120 Watt Solar PV System at Gram Panchayats	_____Nos. (List enclosed)

2. Project Cost :

DETAILS	1120 W SPV POWER PACK AT GRAM PANCHAYAT (Rs.)
UNIT COST INCLUDING 5 YEARS MAINTENANCE	3,10,000/-
TAXES (VAT)	NIL
SERVICE TAX	3,193/-
TOTAL COST	3,13,193/-
LESS CFA FROM MNRE (-)	93,000/-*
BALANCE STATE SHARE	2,20,193/-*

LESS COST TOWARDS 5 YEAR MAINTENANCE INCLUDING SERVICE TAX (A)	22,060/- (4412/- per year)
BALANCE TOWARDS SUPPLY & INSTALLATION (B)	1,98,133/-*

3. PAYMENT TERMS:*

- a) 40 % of cost (at 2(B)) be released along with work instructions (Annexure 1A/ 1B) by District collector (DPC).
- b) 50 % payment of cost (at 2(B)) shall be released by respective district collector (DPC) after supply , installation & commissioning of the Solar PV systems at site and submission of documents as per details mentioned at **Annexure-8**. Deficiency if any be communicated in writing immediately otherwise the payment will be released within 2 weeks of submission of documents
- c) Balance 10 % payment of cost (at 2(B)) would be released after third party inspection and submission of document as per Annexure 10 (As per para 27 of MOU).
- d) REIL shall claim CFA from Ministry of New & Renewable Energy Sources , Govt of India (MNRE) as per the terms of sanction issued by MNRE for which district collector(DPC) shall issue necessary certificates as required by MNRE.
- e) 5 years Maintenance charges shall be paid on yearly basis at the end of year by respective district authority. Maintenance period shall commence from the date of final installation & commissioning of respective SPV system.
- f) If payments (towards supply, installation, commissioning & maintenance are not released in time, REIL shall be absolved from its contractual obligation.

DISTRICT COLLECTOR (DPC)

Enclosed Annexures

COPY TO: All concerned

* as per Para 28 of the MOU

(AS PER PARA 28 OF THE MOU)

ANNEXURE-1B

FORMAT FOR WORK INSTRUCTIONS TO BE ACCORDED TO REIL BY DISTRICT COLLECTOR (DPC) FOR SUPPLY OF SOLAR PV SYSTEMS AT PANCHAYAT SAMITIES

No.

Dt.

To,

M/s Rajasthan Electronics & Instruments Limited , (REIL)

2, Kanakpura Industrial Area

Sirsi road

Jaipur

Sub : Work Instructions for supply of Solar PV Systems at Panchayat Samities (as per list enclosed) in the district _____

Ref: Order No. _____ Dt. _____ from Rural Development & Panchayat Raj Department , Govt of Rajasthan

Sir,

With reference to above work instructions is issued for supply , installation , commissioning & 5 years warranty maintenance of Solar PV systems as detailed below:-

1.

S. No.	Description	Nos. of Solar PV System
1.	2240 Watt Solar PV System at Panchayat Samities	_____Nos. (List enclosed)

2. Project Cost :

DETAILS	2240 W SPV POWER PACK AT PANCHAYAT SAMITI (Rs.)
UNIT COST INCLUDING 5 YEARS MAINTENANCE	6,00,000/-
TAXES (VAT)	NIL
SERVICE TAX	6180/-
TOTAL COST	6,06,180/-
LESS CFA FROM MNRE (-)	2,80,000/-

BALANCE STATE SHARE	3,26,180/-
LESS COST TOWARDS 5 YEAR MAINTENANCE INCLUDING SERVICE TAX (A)	44,120/ (8824/-per year)
BALANCE TOWARDS SUPPLY & INSTALLATION (B)	2,82,060/-

3 . PAYMENT TERMS: *

- a) 40 % of cost (at 2(B)) be released along with work instructions (Annexure 1A/ 1B) by District collector (DPC).
- b) 50 % payment of cost (at 2(B)) shall be released by respective district collector (DPC) after supply , installation & commissioning of the Solar PV systems at site and submission of documents as per details mentioned at **Annexure-8**. Deficiency if any be communicated in writing immediately otherwise the payment will be released within 2 weeks of submission of documents
- c) Balance 10 % payment of cost (at 2(B)) would be released after third party inspection and submission of document as per Annexure 10 (As per para 27 of MOU).
- d) REIL shall claim CFA from Ministry of New & Renewable Energy Sources , Govt of India (MNRE) as per the terms of sanction issued by MNRE for which district collector(DPC) shall issue necessary certificates as required by MNRE.
- e) 5 years Maintenance charges shall be paid on yearly basis at the end of year by respective district authority. Maintenance period shall commence from the date of final installation & commissioning of respective SPV system.
- f) If payments (towards supply, installation, commissioning & maintenance are not released in time, REIL shall be absolved from its contractual obligation.

DISTRICT COLLECTOR (DPC)

Enclosed Annexures

COPY TO: All concerned

* as per Page 28 of the MOU

No.

Date:

To,
M/s Rajasthan Electronics & Instruments Limited , (REIL)
2, Kanakpura Industrial Area
Sirsi road
Jaipur

Sub : Solar PV Systems at Panchayat Samities / Gram Panchayats
in the district _____

Ref: Order No. _____ Dt. _____ from Rural Development
& Panchayat Raj Department , Govt of Rajasthan

Dear Sir,

With reference to above kindly note that buildings of Bharat Nirman Rajeev Gandhi Seva Kendras at sites as per list enclosed are ready for installation & commissioning of Solar PV Systems .You are requested to kindly complete the work at locations as per list enclosed.

List enclosed as above.

District Collector (DPC)

Copy to all concern

**TECHNICAL SPECIFICATIONS OF SOLAR PV SYSTEMS
AT PANCHAYAT SAMITIES.**

REIL proposes 2240 Wp SPV Power Pack for running following loads for the duration shown against each equipment. The system is a Solar PV Hybrid systems having facility for charging through SPV & AC mains.

SR.NO	DESCRIPTION OF LOAD	QUANTITY (NOS.)	DURATION (HOURS)
1	Computer	10	6
2.	LAN	1	6
3.	Printer	1	1

Technical details:

SPV Modules	:	SPV Modules of total 2240 Wp capacity. The modules shall be Crystalline Silicon type fitted with bypass diodes.
Module mounting structure	:	1 set suitable to accommodate 2240 Wp SPV array. The structure shall be made duly galvanized to avoid corrosion with anti theft features.
Inverter Cum Charge Controller	:	The inverter shall be DSP Sine Wave Inverter (96V) input / 230V single phase output). The capacity of inverter shall be 4.0 K VA, suitable for charging through grid. A suitable 96 V DC input charge controller to charge the Battery from 2240 Wp PV Array. The Charge Controller shall be Solid State PWM charger. Protection against short circuit, Reverse current flow from battery and reverse polarity shall also be provided.
Battery Bank	:	The capacity of the battery Bank shall be 96 V 300 AH. The battery bank shall be of tubular Positive plate (suitable for solar applications) of Exide or equivalent make.
Junction Boxes	:	Dust and vermin proof to provide termination of cables along with tags.
Wires, cables & tags etc	:	Suitable length of cable shall be provided for interconnection of modules, inverter, charge controller, battery bank etc.

TECHNICAL SPECIFICATIONS OF SOLAR PV SYSTEMS
AT GRAM PANCHAYAT

REIL proposes 1120 Wp SPV Power Pack for running following loads for the duration shown against each equipment. The system is a Solar PV Hybrid systems having facility for charging through SPV & AC mains.

SR.NO	DESCRIPTION OF LOAD	QUANTITY (NOS.)	DURATION (HOURS)
1	Computer	5	6
2.	LAN	1	6
3.	Printer	1	1

Technical details:

SPV Modules	:	SPV Modules of total 1120 Wp capacity. The modules shall be Crystalline Silicon type fitted with bypass diodes
Module mounting structure	:	1 set suitable to accommodate 1120 Wp SPV array. The structure shall be made duly galvanized to avoid corrosion with anti theft features.
Inverter Cum Charge Controller	:	The inverter shall be DSP Sine Wave Inverter ((48 V) input / 230V single phase output). The capacity of inverter shall be 2.0 K VA, suitable for charging through grid. A suitable 48V DC input charge controller to charge the Battery from 1120 Wp PV Array. The Charge Controller shall be Solid State PWM charger. Protection against short circuit, Reverse current flow from battery and reverse polarity shall also be provided.
Battery Bank	:	The capacity of the battery Bank shall be 48V,300AH. The battery bank shall be of tubular Positive plate (suitable for solar applications) of Exide or equivalent make.
Junction Boxes	:	Dust and vermin proof to provide termination of cables along with tags.
Wires, cables & tags etc	:	Suitable length of cable shall be provided for interconnection of modules, inverter, charge controller, battery bank etc.

ANNEXURE-2A**DELIVERY CHALLAN FOR PANCHAYAT SAMITI**

This is to certify that Rajasthan Electronics & Instruments Limited has supplied Solar PV systems against order no. _____ dated _____ at Bharat Nirman Rajeev Gandhi Seva Kendra at Panchayat Samiti _____ district _____ on Date _____ as per details mentioned below:

SR.NO	DESCRIPTION	QUANTITY	Remarks
1	SOLAR PHOTOVOLTAIC MODULES 2240 WATT	1 SET.	Sr. No. Of Modules
2.	BATTERY BANK 96 V 300AH	1 SET.	Sr. No. Of battery
3.	INVERTER CUM CHARGE CONTROLLER	1 no.	
4.	SOLAR PHOTOVOLTAIC MODULE STRUCTURE	1 no.	
5.	JUNCTION BOX	1 set	
6.	CABLES	1 set	

The material has been received in good condition and entered in stock register at page No. _____

Signature
Block Development Officer
Panchayat Samiti
District

ANNEXURE-2B**DELIVERY CHALLAN FOR GRAM PANCHAYAT**

This is to certify that Rajasthan Electronics & Instruments Limited has supplied Solar PV systems against order no. _____ dated _____ at Bharat Nirman Rajeev Gandhi Seva Kendra at Gram Panchayat _____, Panchayat Samiti _____ district ----- on Date _____ as per details mentioned below:

SR.NO	DESCRIPTION	QUANTITY	Remarks
1	SOLAR PHOTOVOLTAIC MODULES 1120 WATT	1 SET.	Sr. No. of Modules
2.	BATTERY BANK 48 V 300 AH	1 SET	Sr. No. of battery
3.	INVERTER CUM CHARGE CONTROLLER	1 no.	
4.	SOLAR PHOTOVOLTAIC MODULE STRUCTURE	1 no.	
5	JUNCTION BOX	1 set	
6.	CABLES	1 set	

The material has been received in good condition and entered in stock register at page No. _____

Signature of Gram Sevak / Sarpanch

ANNEXURE-3 A**INSTALLATION & COMMISSIONING CERTIFICATE OF SOLAR PV SYSTEMS
FOR PANCHAYAT SAMITI**

This is to certify that Rajasthan Electronics & Instruments Limited has installed & commissioned Solar PV systems against order no. _____ dated _____ at Bharat Nirman Rajeev Gandhi Seva Kendra at Panchayat Samiti _____ district ----- on Date _____. The details are as mentioned below:

SR.NO	DESCRIPTION	QUANTITY	Remarks
1	SOLAR PHOTOVOLTAIC MODULES 2240 WATT	1 SET	Sr. No. Of Modules
2.	BATTERY BANK 96 V 300 AH	1 SET	Sr. No. Of battery
3.	INVERTER CUM CHARGE CONTROLLER	1 no.	
4.	SOLAR PHOTOVOLTAIC MODULE STRUCTURE	1 no.	
5	JUNCTION BOX	1 set	
6.	CABLES	1 set	

The Solar PV system has been installed & commissioned and working satisfactory.

Signature
JEN/ AEN / XEN
Panchayat Samiti
District

MAINTENANCE MANUAL

OF

SOLAR POWER PACKS

FOR

BHARAT NIRMAN RAJEEV GANDHI SEVA KENDRA
(GRAM PANCHAYAT LEVEL)

UNDER

**RURAL DEVELOPMENT & PANCHAYAT RAJ DEPARTMENT
GOVT OF RAJASTHAN**

SUBMITTED BY



RAJASTHAN ELECTRONICS & INSTRUMENTS LTD., JAIPUR



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- 5. TRAINING**



1. TECHNICAL SPECIFICATIONS OF SOLAR PV SYSTEMS AT GRAM PANCHAYAT

REIL proposes 1120 Wp SPV Power Pack for running following loads for the duration shown against each equipment. The system is a Solar PV Hybrid systems having facility for charging through SPV & AC mains.

SR.NO	DESCRIPTION OF LOAD	QUANTITY (NOS.)	DURATION (HOURS)
1	Computer	5	6
2.	LAN	1	6
3.	Printer	1	1

Technical details:

SPV Modules	:	SPV Modules of total 1120 Wp capacity. The modules shall be Crystalline Silicon type fitted with bypass diodes
Module mounting structure	:	1 set suitable to accommodate 1120 Wp SPV array. The structure shall be made duly galvanized to avoid corrosion with anti theft features.
Inverter Cum Charge Controller	:	The inverter shall be DSP Sine Wave Inverter ((48 V) input / 230V single phase output). The capacity of inverter shall be 2.0 K VA, suitable for charging through grid. A suitable 48V DC input charge controller to charge the Battery from 1120 Wp PV Array. The Charge Controller shall be Solid State PWM charger. Protection against short circuit, Reverse current flow from battery and reverse polarity shall also be provided.
Battery Bank	:	The capacity of the battery Bank shall be 48V, 300AH. The battery bank shall be of tubular Positive plate (suitable for solar applications) of Exide or equivalent make.
Junction Boxes	:	Dust and vermin proof to provide termination of cables along with tags.
Wires, cables & tags etc	:	Suitable length of cable shall be provided for interconnection of modules, inverter, charge controller, battery bank etc.



DRG. NO.

DS 2075		
LINEAR TOLERANCE		
FROM	TO	TOL
		6 $\pm$ 0.1
6		30 $\pm$ 0.2
30		120 $\pm$ 0.3
120		315 $\pm$ 0.5
315		1000 $\pm$ 0.8
1000		2000 $\pm$ 1.2
2000		4000 $\pm$ 2.0



3. **MAINTENANCE METHODOLOGY**

REIL is a Public Sector Enterprise committed to total Quality control and traceability from design to services. REIL has supplied & installed approx 150,000 nos. of Solar PV Systems in various villages in Rajasthan. REIL is maintaining these SPV systems that are installed at remote locations for trouble free operations. Salient features of REIL maintenance network are as follows:

I) **MAINTENANCE INFRASTRUCTURE:**

REIL has set up an elaborate maintenance / after sales network in all the districts of Rajasthan for carrying out effective maintenance of Solar PV systems and to provide trouble free services to the user. This maintenance system comprises of service centers, visits of technical personnel, facilities for repair in field / replacement of components.. REIL has deputed technicians/ engineers in the field at strategic locations so that maintenance related queries can be rectified well in time.

II) **SPARE PARTS**

REIL has created a infrastructure of service centers which are well stocked with spare components and repair tools.



III) SPECIAL ARRANGEMENT FOR TRIBAL REGIONS.

Geographical location of southern districts viz. Udaipur, Chittorgarh , Banswara, Dungarpur are entirely different from the rest of Rajasthan. The regions are mostly inhabited by tribals. To cater such a different area REIL has established service centers at centralized locations with sufficient inventory of spares.

IV) DESIGN IMPROVEMENT ON THE SYSTEMS:

In order to reduce the theft of Solar Modules, REIL has designed special hardware (nut/ bolt) which cannot be untied once tied & fixed. The SPV Structure is grouted with cement on the roof of the building to avoid theft cases. The SPV module has a specific serial number which can be traced.

V) SYSTEM MONITORING

REIL ensures preventive maintenance / breakdown maintenance through its visits of technicians. During there visits a representative of the user organization also remain present. The SPV system are checked and repaired and a service report is filled up dully authenticated by the concerned representative of the user organization. REIL has a dedicated toll free telephone number of call center where



complaint can be booked and enrolled. The complaints can also be booked through email. The complaints will be compiled & transferred to the respective field maintenance centers for further disposal.

VI) MAINTENANCE SERVICES

A) ROUTINE & PREVENTIVE MAINTENANCE SERVICES

REIL will provide free maintenance services for a period of 5 years (five) with preventive maintenance of Solar PV Systems once in 6 months for satisfactory running. It shall include such checks and maintenance activities once in 6 months, which are required to be carried out on all the components of the Solar PV Power Packs to minimize the breakdown and to ensure smooth and trouble free running of the Solar PV Power Packs. REIL shall be responsible to carry out the routine & preventive maintenance services and shall provide all labour , material , consumables etc., for the same .



B) BREAKDOWN MAINTENANCE SERVICES

Breakdown maintenance services shall mean the maintenance activities including any component or equipment of the Solar PV Power Pack services which is not covered by routine & preventive maintenance and which is required to be carried out as a result of sudden failure/ breakdown of Solar PV Power Pack . REIL shall carry out the breakdown maintenance of the Solar PV Power Packs and shall provide the required manpower, materials, consumables, components or equipments for the breakdown maintenance

REIL shall provide on site maintenance services during the 5 years period within 3 days from the date of receipt of complaint. The complaint shall be generally attended within 2 days from the date of receipt of complaint (Maximum time may be 3 days). REIL will rectify the fault within 3 days failing which the, REIL shall arrange temporary replacements in next 4 working days .If it becomes necessary to be taken out the SPV System parts or equipments, REIL would provide similar item or as acceptable to the purchaser as stand by arrangement.



SECURITY

The security against theft / breakage / misuse of the Solar PV Power Packs at the Bharat Nirman Rajeev Gandhi Seva Kendra rest with the user department.

VIII PROCEDURE FOR REDRESSAL OF COMPLAIN

REIL shall establish network for promptly attending to customer's grievances in respect of breakdown maintenance. A set up of the procedure for Redressal of customer grievances is given under:

REIL shall establish a Call Center facility for effectively resolving the customer complaints. Complaints shall be registered through:

- 1) Phone: A separate dedicated phone line will be provided to cater the customer complaints. The customer complaints would be registered and a complaint number will be provided for further reference. The complaint would be registered in format as per Annexure 5 enclosed.
- 2) Email: Customer can email the complaint at the call center as per the format enclosed at Annexure 5 enclosed. A email would be send back by the call center along with a complaint number for the complaints received in the desired format.
- 3) SMS Services : SMS no. will be provided for registration of complaint . On receipt of SMS the required details will be taken



telephonically as per Annexure 5 . The customer complaints would be registered and a complaint number will be provided for further reference.

a) REIL shall prepare a service job report (SJR) for the repairs carried out at Panchayat Samiti / Gram Panchayat as per Annexure 6A & Annexure 6B respectively). copy of SJR shall be send to call center for closing the complaint.

Complaints are categorized into 2 groups.

- 1) Technical Complaints regarding non operative Solar PV systems.
- 2) Complaints regarding non operation of computers.

PROCEDURE FOR ATTENDING COMPLAINTS

1.1 Technical

- a) Non operative Invertors
- b) Battery deep discharge
- c) Other complaints

On receipt of a complaint at the Call Centre for non-operative Solar PV systems at the Bharat Nirman Rajeev Gandhi Seva Kendra, the Call Centre registers the complaint and gives a complaint number. At the time of complaint receipt, the time and details of complaint, etc. is logged by the Call Centre Executive. The Call Centre, immediately thereafter,



contacts the concerned REIL's field maintenance in charge forwarding the complaint details.

a) Non operative / Faulty inverters are made operative at site / REIL works as per requirement. However if the inverters cannot be repaired at site the same are brought to works , standby inverters are provided at such sites for the meantime for smooth operations of the Solar PV systems.

b) Battery deep Discharge: If the battery are in deep discharge mode than the batteries are charged from near by charging stations. The load on the batteries are checked and if the load is more than the battery capacity load shedding is advised/ done.

c) Other complaints regarding blowing of fuse etc. is done at sites through the spares available with the concerned representative.

2) On receipt of a complaint of non operative computers necessary information is communicated to the customer.

Follows-up on the status of the resolution of any technical complaint is done from the call centers. Subsequently, the Call Centre checks with the customer on restoration of Solar power supply and close the complaint.



4 DO'S & DONT'S

DO'S

- 1) Solar PV Panel be cleaned with dry cloth regularly(every 3 days)
- 2) Batteries to be topped up with distilled water only.
- 3) Battery surface be kept dry.
- 4) Only specified load be connected on the Solar PV System.
- 5) System be used for 10 nos. computers for 6 hours every day in case of Panchayat Samiti.
- 6) System be used for 5 nos. computers for 6 hours every day in case of Gram Panchayat .
- 7) In case of problem information be given to REIL call center as per the format provided (Annexure 5)

DONT'S

- 8) Solar Panels should not be shaded with any object / tree etc
- 9) Wiring below solar panel should not be disturbed it may give DC shock
- 10) Do not bring any metal objects / hazardous objects near the batteries.
- 11) Inverter / Charge controller should not be covered.
- 12) Other electrical load (fans, lights etc) should not be connected to solar system



5. TRAINING

REIL shall provide training to Rural youths and user staff for operation & maintenance of Solar PV systems. Training to user staff shall be provided during installation & commissioning of Solar PV systems. During training they will be explained about solar PV system and procedure for using. They will also be explained the methodology for system monitoring and lodging complaints. Complete Maintenance manual shall be handed over to the user.

MAINTENANCE MANUAL

OF

SOLAR POWER PACKS

FOR

BHARAT NIRMAN RAJEEV GANDHI SEVA KENDRA
(PANCHAYAT **SAMITI**)

UNDER

**RURAL DEVELOPMENT & PANCHAYAT RAJ DEPARTMENT
GOVT OF RAJASTHAN**

SUBMITTED BY



RAJASTHAN ELECTRONICS & INSTRUMENTS LTD., JAIPUR



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- 4. DO'S & DON'T'S**
- 5. TRAINING**



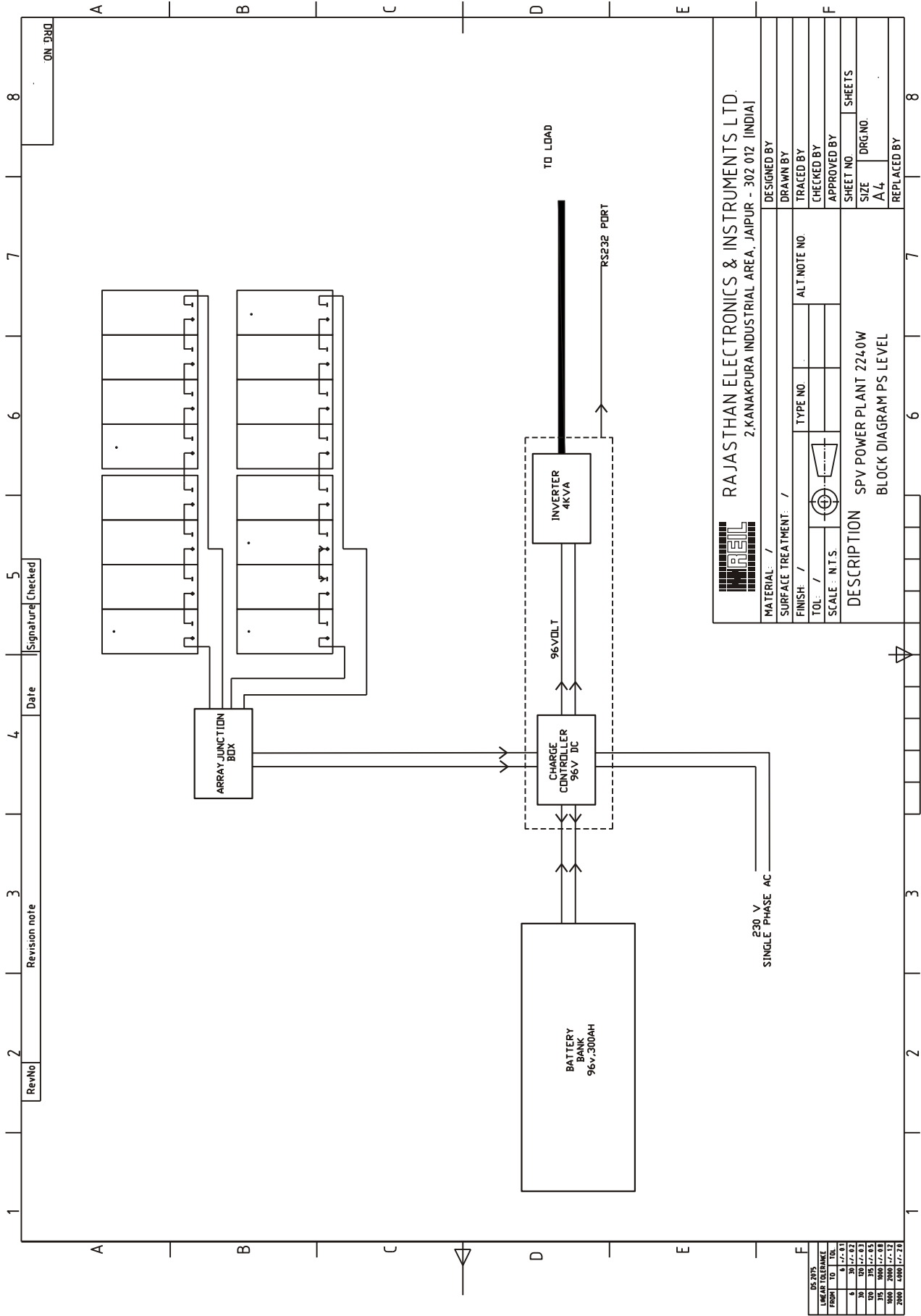
1. TECHNICAL SPECIFICATIONS OF SOLAR PV SYSTEMS AT PANCHAYAT SAMITIES.

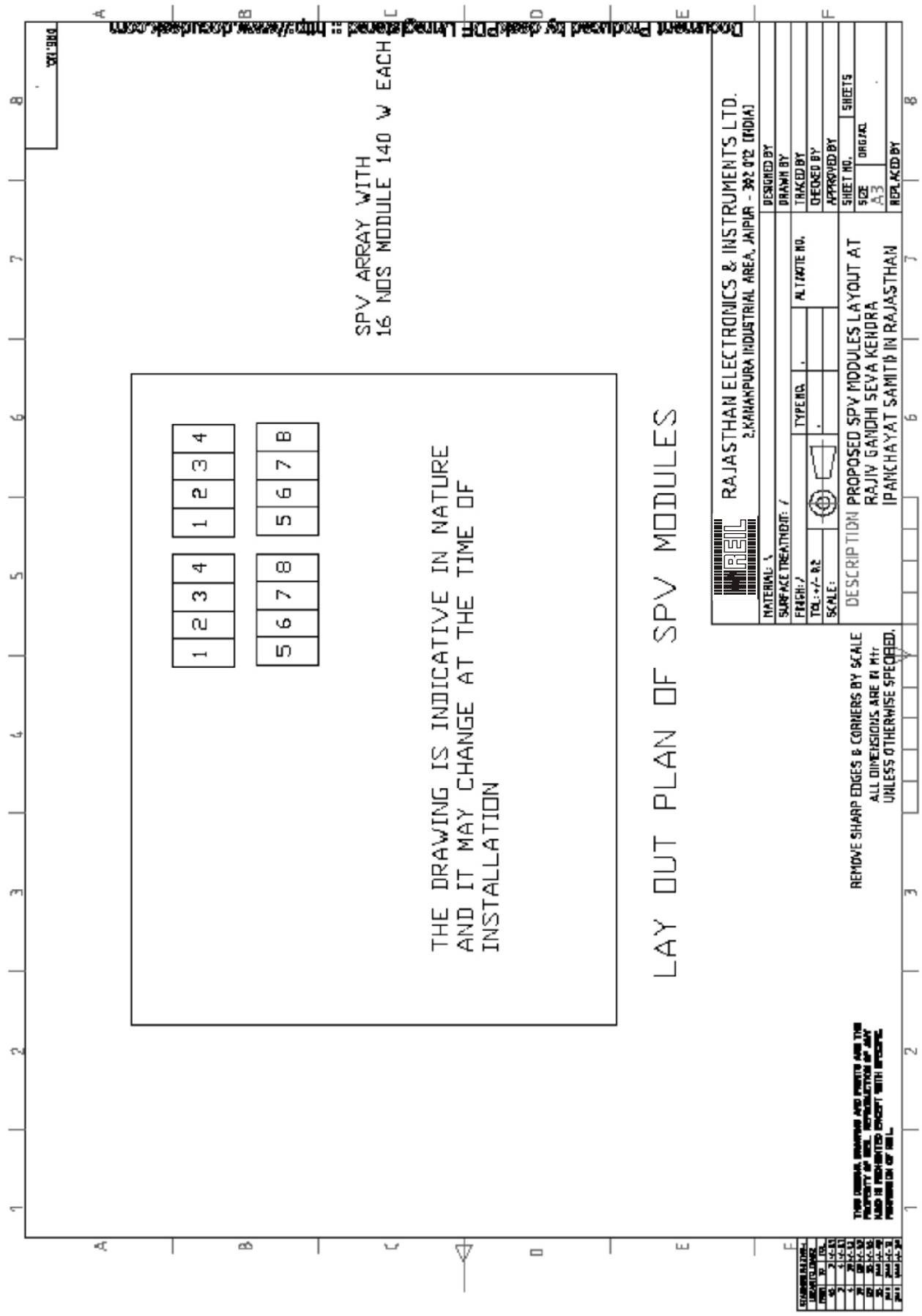
REIL proposes 2240 Wp SPV Power Pack for running following loads for the duration shown against each equipment. The system is a Solar PV Hybrid systems having facility for charging through SPV & AC mains.

SR.NO	DESCRIPTION OF LOAD	QUANTITY (NOS.)	DURATION (HOURS)
1	Computer	10	6
2.	LAN	1	6
3.	Printer	1	1

Technical details:

SPV Modules	:	SPV Modules of total 2240 Wp capacity. The modules shall be Crystalline Silicon type fitted with bypass diodes
Module mounting structure	:	1 set suitable to accommodate 2240 Wp SPV array. The structure shall be made duly galvanized to avoid corrosion with anti theft features.
Inverter cum Charge Controller	:	The inverter shall be DSP Sine Wave Inverter ((96V) input / 230V single phase output). The capacity of inverter shall be 4.0 K VA, suitable for charging through grid. A suitable 96 V DC input charge controller to charge the Battery from 2240 Wp PV Array. The Charge Controller shall be Solid State PWM charger. Protection against short circuit, Reverse current flow from battery and reverse polarity shall also be provided.
Battery Bank	:	The capacity of the battery Bank shall be 96 V 300 AH . The battery bank shall be of tubular Positive plate (suitable for solar applications) of Exide or equivalent make.
Junction Boxes	:	Dust and vermin proof to provide termination of cables along with tags.
Wires, cables & tags etc	:	Suitable length of cable shall be provided for interconnection of modules, inverter, charge controller, battery bank etc.







3. MAINTENANCE METHODOLOGY

REIL is a Public Sector Enterprise committed to total Quality control and traceability from design to services. REIL has supplied & installed approx 150,000 nos. of Solar PV Systems in various villages in Rajasthan.. REIL is maintaining these SPV systems that are installed at remote locations for trouble free operations. Salient features of REIL maintenance network are as follows:

I) MAINTENANCE INFRASTRUCTURE:

REIL has set up an elaborate maintenance / after sales network in all the districts of Rajasthan for carrying out effective maintenance of Solar PV systems and to provide trouble free services to the user. This maintenance system comprises of service centers, visits of technical personnel, facilities for repair in field / replacement of components.. REIL has deputed technicians/ engineers in the field at strategic locations so that maintenance related queries can be rectified well in time.

II) SPARE PARTS

REIL has created a infrastructure of service centers which are well stocked with spare components and repair tools.



III) SPECIAL ARRANGEMENT FOR TRIBAL REGIONS.

Geographical location of southern districts viz. Udaipur, Chittorgarh , Banswara, Dungarpur are entirely different from the rest of Rajasthan. The regions are mostly inhabited by tribals. To cater such a different area REIL has established service centers at centralized locations with sufficient inventory of spares.

IV) DESIGN IMPROVEMENT ON THE SYSTEMS:

In order to reduce the theft of Solar Modules, REIL has designed special hardware (nut/ bot) which cannot be untied once tied & fixed. The SPV Structure is grouted with cement on the roof of the building to avoid theft cases. The SPV module has a specific serial number which can be traced.

V) SYSTEM MONITORING

REIL ensures preventive maintenance / breakdown maintenance through its visits of technicians. During there visits a representative of the user organization also remain present. The SPV system are checked and repaired and a service report is filled up dully authenticated by the concerned representative of the user organization. REIL has a dedicated telephone number of call center where complain



can be booked and enrolled. The complaints can also be booked through email. The complains will be compiled & transferred to the respective field maintenance centers for further disposal.

VI) MAINTENANCE SERVICES

A) ROUTINE & PREVENTIVE MAINTENANCE SERVICES

REIL will provide free maintenance services for a period of 5 years (five) with preventive maintenance of Solar PV Systems once in 6 months for satisfactory running. It shall include such checks and maintenance activities once in 6 months, which are required to be carried out on all the components of the Solar PV Power Packs to minimize the breakdown and to ensure smooth and trouble free running of the Solar PV Power Packs. REIL shall be responsible to carry out the routine & preventive maintenance services and shall provide all labour , material , consumables etc., for the same .



B) BREAKDOWN MAINTENANCE SERVICES

Breakdown maintenance services shall mean the maintenance activities including any component or equipment of the Solar PV Power Pack services which is not covered by routine & preventive maintenance and which is required to be carried out as a result of sudden failure/ breakdown of Solar PV Power Pack. REIL shall carry out the breakdown maintenance of the Solar PV Power Packs and shall provide the required manpower, materials, consumables, components or equipments for the breakdown maintenance

The complaint shall be generally attended within 2 days from the date of receipt of complaint (Maximum time may be 3 days). REIL will rectify the fault within 3 days failing which the, REIL shall arrange temporary replacements in next 4 working days .If it becomes necessary to be taken out the SPV System parts or equipments, REIL would provide similar item or as acceptable to the purchaser as stand by arrangement.

VII) SECURITY

The security against theft / breakage / misuse of the Solar PV Power Packs at the Bharat Nirman Rajeev Gandhi Seva Kendra rest with the user department.



VIII) PROCEDURE FOR REDRESSAL OF COMPLAIN

REIL shall establish network for promptly attending to customer's grievances in respect of breakdown maintenance. A set up of the procedure for Redressal of customer grievances is given under:

REIL shall establish a Call Center facility for effectively resolving the customer complaints. Complaints shall be registered through:

- 1) Phone: A separate dedicated phone line will be provided to cater the customer complaints. The customer complaints would be registered and a complaint number will be provided for further reference. The complaint would be registered in format as per Annexure 5 enclosed.
- 2) Email: Customer can email the complaint at the call center as per the format enclosed at Annexure 5 enclosed. A email would be send back by the call center along with a complaint number for the complaints received in the desired format.
- 3) SMS Services : SMS no. will be provided for registration of complaint . On receipt of SMS the required details will be taken telephonically as per Annexure 5 . The customer complaints would be registered and a complaint number will be provided for further reference.



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**COMPLAINT FORMAT FOR SPV SYSTEM INSTALLED AT
PANCHAYAT SAMITI/ GRAM PANCHAYAT**

Dt.

ID Number: _____ :

Name of Panchayat Samiti: _____ **Dist.** : _____

Name of Contact Person :

Address :

Tele/ mobile No. :

Inverter Serial No. :

Battery No. :

Module No. :

Nature of Fault : Please tick status as shown on PCU :-

- | | | |
|--------------------------------------|---|---------|
| 1. Whether Battery Charging LED glow | - | Yes/ No |
| 2. Whether over load LED glow | - | Yes/ No |
| 3. Whether under voltage LED glow | - | Yes/ No |
| 4. Reverse Polarity LED glow | - | Yes/ No |
| 5. Charging mode LED glow | - | Yes/ No |
| 6. High Temperature LED glow | - | Yes/ No |
| 7. Power on CPU | - | Yes/ No |
| 8. Power on Monitor | - | Yes/ No |
| 9. Power on Output of PCU | - | Yes/ No |
| 10. Other if any | - | Yes/ No |

Please attend the complaint preferably on dt _____ times between _____

Authorized Signatory
With Mobile No.

SERVICE JOB REPORT OF SOLAR PV SYSTEMS
FOR PANCHAYAT SAMITI

SR NO: **DATE:**

ID No. OF SOLAR SYSTEM :
Complaint No :
Complaint Date :
Name of Panchayat Samiti :
District :
Details of Complaint :

Sr.No	Description of Complain	Tick	Remarks
1	Non Operative Inverters		
2.	Battery Deep Discharge		
3.	Others Complains (Fuse etc.)		
4.	Any other information		

DETAILS OF REPAIR :

SPARES USED :

FINAL STATUS OF SYSTEM :

SIGNATURE OF REIL REPRESENTATIVE

SYSTEM IS WORKING SATISFACTORILY

SIGNATURE OF USER STAFF

SERVICE JOB REPORT OF SOLAR PV SYSTEMS
FOR GRAM PANCHAYAT

SR NO: **DATE:**

ID No. OF SOLAR SYSTEM :

Complaint No :

Complaint Date :

Name of Gram Panchayat

Panchayat Samity :

District :

Details of Complaint :

Sr.No	Description of Complain	Tick	Remarks
1	Non Operative Inverters		
2.	Battery Deep Discharge		
3.	Others Complains (Fuse etc.)		
4.	Any other information		

DETAILS OF REPAIR :

SPARES USED :

FINAL STATUS OF SYSTEM :

SIGNATURE OF REIL REPRESENTATIVE

SYSTEM IS WORKING SATISFACTORILY

SIGNATURE OF USER STAFF

अनुबन्ध पत्र

भारत निर्माण राजीव गांधी सेवा केन्द्र के योजनान्तर्गत
(सौर फोटोवोल्टिक उपकरण सप्लायर व ग्रामपंचायत के मध्य स्थापना व
संधारण के लिए किये जाने वाले अनुबन्ध पत्र)

आज दिनांक को राजस्थान इलेक्ट्रॉनिक्स एण्ड इन्स्ट्रुमेंट्स लि. जयपुर
(सप्लायर) एवं संरपच ग्राम पंचायत
श्री / श्रीमति.....पुत्र / पत्नी श्री
पंचायत समितिजिला के मध्य
भारत निर्माण राजीव गांधी सेवा केन्द्र के अन्तर्गत कय किये जाने वाले सौर फोटोवोल्टिक उपकरण की
स्थापना के संबंध में यह अनुबन्ध निम्न शर्तों के साथ किया जा रहा है:-
यह उपकरण ग्रामीण विकास विभाग द्वारा भारत निर्माण राजीव गांधी सेवा केन्द्र के तहत लगाई जा रहें
है / लगाये गये है।

(1) सप्लायर के दायित्व :-

- (1) भवन निर्माण का कार्य पूर्ण होने की सूचना मिलने पर समस्त सामग्री पंचायत पर सप्लायर करेगा।
- (2) सप्लायर द्वारा कार्यादेश के संबंधित संलग्नक के अनुसार पूर्ण सिस्टम की स्थापना की जावेगी।
- (3) 1 ग्रामीण विकास विभाग की शर्तानुसार उपकरण स्थापना पश्चात लाभार्थी को संभालने (Handing Over) के दिन उपकरण पूर्णतया कार्यशील होगा व कोई हिस्सा टूटा – फूटा या बेकार नहीं होगा।
2 सप्लायर लाभार्थी को देव नागरी लिपि में सिस्टम की पूर्ण जानकारी एवं क्या करें, क्या ना करें तथा संचालन मेनुअन उपलब्ध करवाएंगे।
- (4) लगाने के पॉच वर्ष के भीतर ही उपकरण के खराब होने पर सप्लायर द्वारा नया उपकरण लगाना होगा।
- (5) सप्लायर के कर्मचारी बैटरी का जल नियमित रूप से जांचेंगे एवं लाभार्थी को बैटरी में डिस्टल वॉटर की मात्रा के सम्बन्ध में पूर्ण जानकारी एवं प्रशिक्षण देंगे।
- (6) सप्लायर अपने कर्मचारियों / एजेंट को इस कार्य के लिए जिला मुख्यालय पर नियुक्त रखेंगे जिससे ग्राम पंचायत इनसे सीधे सम्पर्क रख सकें।
- (7) सप्लायर एक टॉल फ्री नम्बर संयत्र स्थापना की दिनांक से ही उपलब्ध करवायेंगे तथा उस टॉल फ्री नम्बर पर प्रतिदिन प्रातः 9:30 बजे से सांय 6:00 बजे तक शिकायत दर्ज कर निरतारण की जानकारी दी जावेगी।

- (8) प्रत्येक ग्राम पंचायत एवं पंचायत समिति पर स्थापित संयंत्र के साथ ही Annexure-9 के अनुसार संयंत्र संबंधी समस्त सूचनाएं प्रदर्शित की जावेगी।
- (9) सप्लायर अपने कर्मचारीयों/एजेन्ट को पहचान पत्र देकर रखेंगे जो दिखाने पर ही उनको पंचायत भवन पर प्रवेश करने देगा।
- (10) सप्लायर उपकरण स्थापना के 5 वर्ष तक संयंत्र के रखरखाव एवं किसी उपकरण के खराब होने पर बिना किसी अतिरिक्त राशी के उसे ठीक/बदलेंगे।

2) ग्राम पंचायत के दायित्व :-

1. लगाये गये उपकरण की सुरक्षा का संपूर्ण दायित्व पंचायत का होगा।
2. उपकरण की स्थापना के बाद इसका बीमा पंचायत द्वारा करवाया जावेगा।
3. पंचायत द्वारा उनकी पंचायत पर लगे उपकरण का उपयोग कम्प्यूटर के अलावा अन्य किसी भी उपयोग जैसे लाईट, पंखा, बैटरी से टी. वी, टेप रिकार्डर, बल्ब लगाना/चलाना, दूसरी बैटरी चार्ज करना, बैटरी को दूसरे काम में लेना, एवं उपकरण स्थानान्तरण, आदि नहीं करेंगे। यदि ऐसा पाया गया तो वैधानिक कार्यवाही की जा सकती है। तथा उस स्थिति में सप्लायर द्वारा दी जाने वाली वारंटी नहीं दी जावेगी।
4. पंचायत उपकरण खराब होने पर रील के अधिकृत कर्मचारीयों/एजेन्ट को सूचित करेंगे न कि स्वयं उपकरण को ठीक करने का प्रयास करेंगे।
5. पंचायत सौर फोटोवोल्टिक उपकरण को छह घंटो से ज्यादा प्रयोग में नहीं लेंगे।
6. रील द्वारा रख-रखाव न करने पर ग्रामीण विकास विभाग को तत्काल सूचित करेंगे।
7. पंचायत लगाये गये उपकरण की सुरक्षा के लिए पूर्णतया जिम्मेदार होगा व चोरी होने पर पुलिस में तत्काल एफआईआर दर्ज करा के विभाग को सूचित करेगा।

रील के अधिकृत प्रतिनिधि

संरपच, ग्राम पंचायत

नाम

श्री

पद

ग्रा.प.

विभाग.....

पंचायत समिति.....

जिला

**CHECK LIST FOR THE DISTRICT COLLECTOR(DPC) FOR
RELEASE OF PAYMENTS**

**FOLLOWING DOCUMENTS ARE TO BE SUBMITTED FOR RELEASING
PAYMENTS TO REIL FOR SOLAR PV SYSTEMS AT BHARAT NIRMAN RAJEEV
GANDHI SEVA KENDRA AT PANCHAYAT SAMITI / GRAM PANCHAYAT**

1. REIL'S INVOICE SPECIFYING PAYMENTS TO BE RELEASED BY DISTRICT COLLECTOR(DPC).
2. COPY OF DELIVERY CHALLAN FOR PANCHAYAT SAMITI/ GRAM PANCHAYAT AS PER ANNEXURE 2A / 2B RESPECTIVELY
3. COPY OF INSTALLATION & COMMISSIOING CERTIFICATE OF SOLAR PV SYSTEMS FOR PANCHAYAT SAMITI/ GRAM PANCHAYAT AS PER ANNEXURE 3A/ 3B RESPECTIVELY.
4. COPY OF AGREEMENT SIGNED WITH RESPECTIVE PANCHAYAT SAMITI / GRAM PANCHAYAT AS PER ANNEXURE 7.
5. ONE PHOTOGRAPH OF THE SOLAR PV SYSTEM WITH THE USER.
6. COPY OF WORK INSTRUCTIONS (ANNEXURE-1A /1B).

भारत निर्माण राजीव गांधी सेवा केन्द्र के योजनान्तर्गत

सौर फोटोवोल्टिक उपकरण ग्रामपंचायत

स्थापना :

स्थापना की दिनांक :

संयंत्र की कुल लागत : (5 वर्ष की रखरखाव राशि सहित)

संयंत्र की क्षमता :

किसी भी प्रकार की सौर फोटोवोल्टिक उपकरण सम्बंधी समस्या हेतु राजस्थान इलेक्ट्रॉनिक्स एण्ड इन्स्ट्रुमेन्ट्स लि. जयपुर के टॉल फ्री नम्बर पर सूचना / शिकायत दें एवं अपना शिकायत नम्बर प्राप्त करें। प्राप्त शिकायत का निरतारण 3 दिवस में नहीं किये जाने पर कलक्टर के टॉल फ्री नम्बर 1077 पर सूचना दी जावे।

जिला कलक्टर एवं DPC

ANNEXURE-3 B**INSTALLATION & COMMISSIONING CERTIFICATE OF SOLAR PV SYSTEMS
FOR GRAM PANCHAYAT**

This is to certify that Rajasthan Electronics & Instruments Limited has installed & commissioned Solar PV systems against order no. _____ dated _____ at Bharat Nirman Rajeev Gandhi Seva Kendra at Gram Panchayat _____, Panchayat Samiti _____ district _____ on Date _____. The details are as mentioned below:

SR.NO	DESCRIPTION	QUANTITY	Remarks
1	SOLAR PHOTOVOLTAIC MODULES 140 WATT	8 Nos.	Sr. No. Of Modules
2.	BATTERY BANK 48V, 300AH	1 SET.	Sr. No. Of battery
3.	INVERTER CUM CHARGE CONTROLLER	1 no.	
4.	SOLAR PHOTOVOLTAIC MODULE STRUCTURE	1 no.	
5	JUNCTION BOX	1 set	
6.	CABLES	1 set	

The Solar PV system has been installed & commissioned and working satisfactory.

JEN/ AEN / XEN
Concerned Gram Panchayat
Panchayat Samiti
District



**Shaping Rural India Through Electronics, Energy, IT and
Communication**



FOR ENQUIRIES PLEASE CONTACT

E-mail : pr_callcenter@reil.co.in

OR

RE Division :

Rajasthan Electronics & Instruments Limited

2 , Kanakpura Industrial Area

Sirsi Road, Jaipur - 302012