Ministry of New and Renewable Energy

Jawaharlal Nehru National Solar Mission
(Off-grid and Decentralized Solar Applications)

Format for Submitting Project Proposals

Mini - Grid SPV Power Plants (Maximum SPV Capacity: 250 kWp each)

PART-A: General Details of the Project

1. Title of the Project

   Total kWp SPV Capacity

2. Name of the Project Proponent

   Name, Designation and Address of the Authorized Representative for correspondence with telephone No. Fax & Email (Web site, if any)

   Category of Project Proponent
   a) Renewable Energy Service Providing Company (RESCO)
   b) Financial Institutions (Banks, NBFCs, MFIs)
   c) Financial Integrator
   d) System Integrator
   e) Program Administrator
   In case of (e) above, Please indicate:
   Government Department, Autonomous Institution set up by Central/ State Government, State Renewable Energy Development Agency, Public Sector Undertaking

3. Executive Summary of the Proposal

4. Socio- Economic Justification of the Project

5. Benefits of the project (diesel savings/ others, if any)

PART-B: Details of the Project Proponent
i. In case of a),b),c) & d) the following Information to be provided:

   a. Whether commercial or non-commercial.
   b. Copy of Article of Association, Registration No. & Date; PAN/TAN No.
   c. Audited Balance Sheet for last three years.
   d. Annual Report of previous year.
   e. Whether MNRE has earlier sanctioned any SPV projects for implementation to the Project Proponent?
      if yes, please furnish information

b) Others

**PART-C: Details of the Project**

1. **Details of Project site:** (State, District/ City, Block, Panchayat, Village/ Hamlet and accessibility to site)
   i. Address of the proposed site
   ii. Name and census code of the village
   iii. How to approach the site (Access Details)
      a. By train …Nearest Railhead
      b. By Road… Nearest Town
   iv. Map of the site showing:
      - Approximate location of the proposed power plant, control room, Poles/ lampposts, extension lines, beneficiaries of electricity and estimated distances from the control room.
      - Existing Transmission Line (if it exists at site, provide details)
      - Proposed Transmission Line (over ground/ underground)

2. **Details of Project Beneficiaries**

3. **Details of Proposed Power Plant**

   a. **Location/ site details**
      i. Location of the proposed plant
      ii. Land Ownership
      iii. Solar radiation level
      iv. Longitude, latitude, average temperature, sunshine hours
a. (Please specify the source and nature of data if available)

v. Information about other meteorological parameters
vi. Height above sea level
vii. Population of the village(s) to be covered by the Solar PV Plant/ Mini Grid.
viii. No. of households to be covered

b. **Power Plant Details**
i. Proposed capacity of the SPV Power Plant
ii. Availability of shadow free south facing land area for the power plant
iii. Details of loads to be energized by Power Plant
iv. Storage battery capacity proposed
v. Inverter & Charge controller details (Please elaborate)
vi. Calculations and justification for the proposed capacity (Please elaborate)
vii. Expected annual energy generation
viii. Building for housing the battery bank and plant control systems
ix. Details of Distribution Network
x. LT/HT Transformer, if proposed

4. **Details of electrical load of the village**

i. Total Electrical load of the village (Please specify the source of data)

ii. Is it proposed to meet the entire village load

iii. Household loads to be serviced by the PV plant

iv. Street Lights load

v. Common loads of the village(s) (Please provide details of each Building/ institution like Panchayat Bhawan, School, PHC, Dak Ghar, CSC, etc)

vi. Drinking Water needs (No of wells/tube wells/ Pump-sets, estimated requirement of water, water table etc.)

vii. Commercial loads if any

viii. Irrigation pump sets/ RO plant load
     (Time duration for supply of power for each category of load and Load management details should be provided)

ix. Any other load

5. **Technology Description & System Design /Specification**

i. Line Diagram of the complete System with details of Mini Grid

ii. Total Capacity of the proposed Solar PV Power Plant (KWp)

iii. Power of each PV Module

iv. Number of modules and total array capacity
iv. Solar Cell technology & Module efficiency proposed to be used
v. Details of Tracking of PV Array (if proposed)
vi. Designed peak power of PV power plant/project
   (Please provide design details to justify the capacity of the plant to meet the proposed loads)
vii. Annual and monthly energy output (expected)
viii. Annual availability of solar radiation
ix. PCU/inverter capacity with detailed specifications
   (Details of quality of output power)
x. Number of PCU/inverters proposed to be used
xi. DC Bus voltage
xii. Capacity of battery bank (Current & Voltage)
ixiii. Type of battery proposed and estimated cycle life
xiv. Operational limits of the system
xv. Details of protections to be deployed on PV array and AC output side
xvi. Details of Metering, Indication, Data logging operation
xvii. Pre-paid meters to be used, if any.
xviii. Schematic diagram of the system including protecting interlocking devices, monitoring and data logging points to be provided.
xix. Details of training of manpower to be provided for successful operation of the plant.

6. Details of Proposed Mini-Grid
   i. Estimated total length of the distribution grid (length of each distribution line and no. of households proposed to be covered through that line)
   ii. Output Voltage at each distribution line
   iii. Connected load at each distribution line
   iv. Estimated losses in distribution lines

7. Existing Grid Details?
   i. Capacity of transformer available for evacuation of power.
   ii. Voltage at the bus bar
   iii. Load at the grid
   iv. Power factor at the bus bar
8. Details of System Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Make and Model</th>
<th>Capacity</th>
<th>Numbers</th>
<th>Indigenous/Imported</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV Module</td>
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<tr>
<td>Power Conditioning Unit</td>
<td></td>
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<tr>
<td>Charge Controller</td>
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<tr>
<td>Inverter</td>
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<tr>
<td>Storage Battery Bank</td>
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<tr>
<td>Data Acquisition System</td>
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<tr>
<td>Distribution Transformer/ Cables/ Poles etc.</td>
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</tbody>
</table>

9. Details of Building to Install the Battery Bank, Electronics and Control Panel

i. Whether any existing building is to be used, if so, details of ownership, area available, and layout plan etc. to be provided.

ii. If a new building is proposed, area, estimated cost and layout etc to be provided.

Notes:

- It is mandatory to provide technical performance specifications of each component of the power plant proposed to be installed under the project and for which the performance will be warranted.
- All technical parameters and warranty requirements must meet or exceed the requirements mentioned in the guidelines issued by the Ministry.

PART D: Operation and Maintenance Arrangements

- Details of Operation and Maintenance Arrangements.
- Arrangements for Generation Data Collection (applicable for SPV Power Plants / Mini Grids having more than 10 KWp capacity).
- Training of the O & M Personnel of the Beneficiary Organization

PART E: Project Duration and Implementation Schedule

- Completion schedule with milestones
PART F: Performance Monitoring Mechanism:

- Details of Data Monitoring on Daily, Monthly and Annual energy generation (Data logging and compilation and sharing with MNRE)

Please provide details in the following format

<table>
<thead>
<tr>
<th>Own Mechanism</th>
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<tbody>
<tr>
<td>Third Party</td>
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<tr>
<td>Remote Monitoring (for SPV power plants / mini grids having capacity above 10 kWp)</td>
<td></td>
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</table>

PART G: Project Cost and Financing Details.

Break up Project Hardware Cost:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>SPV Power Plant capacity (kWp)</th>
<th>Cost in Rupees</th>
<th>Module</th>
<th>Battery</th>
<th>Inverter</th>
<th>Structures</th>
<th>Balance of System</th>
<th>Total</th>
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Costing:

i. Cost of Systems Hardware | Rs.
ii. Cost of transportation and insurance | Rs.
iii. Cost of civil works and electrical works | Rs.
iv. Cost of distribution network | Rs.
v. Cost of installation and commissioning | Rs.
vi. Cost of Annual Maintenance for 5 years | Rs.
vii. Any other related costs | Rs.

Total Cost of Power Plant | Rs.
Means of Finance

<table>
<thead>
<tr>
<th>Means of Finance</th>
<th>Rs.</th>
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<tbody>
<tr>
<td>a) Envisaged CFA from MNRE</td>
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<tr>
<td>b) Contribution of Beneficiaries</td>
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<td>c) Contribution of Project Proponent</td>
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<td>d) Other Source(s) of Funding</td>
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<td>e) Envisaged Soft Loan assistance, if any</td>
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<tr>
<td>Details of Revenue to be collected with payback &amp; IRR</td>
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PART H: ANY OTHER INFORMATION

PART I: Declaration and Certificate (To be furnished by Implementing Agency)

1. It is certified that I/we have read the guidelines issued by the Ministry vide 5/23/2009/P&C dated 16th June, 2010 and the related provisions/terms and conditions for availing central financial assistance (CFA) from the Ministry of New and Renewable Energy and I agree to abide by these guidelines and related terms and conditions.
2. It is to confirm that the present proposal in full or part has not been submitted / has been submitted to any other agency for seeking support (In case proposal has been submitted to any other agency or under consideration all details and a copy of the proposal must be submitted along with the present proposal).
3. This is to certify that the various components of the SPV systems/ power pack/ plant/ pump will conform to the Relevant Standards, as mentioned in the Guidelines for Off-grid and Decentralized Solar Applications (Annexure-3) for SPV modules and components under JNNSM. Copies of the Relevant IEC/ BIS Certificates should be enclosed.
4. Failure to comply with these guidelines will result in denial of CFA by the Ministry.
5. I agree to put photograph of the system and beneficiary on my website for all systems above 1 kW.

It is to confirm that in case of any dispute, the decision of Secretary, Ministry of New and Renewable Energy, Government of India will be final and binding on all.

Signature ______________
Name & Designation of Authorized Signatory* of Implementing Agency

Place: 
Date: 

*Authorized signatory should be in the rank of General Manager of SNA/PSU or MD/CEO/Director in case of Channel Partner.
CERTIFICATE
(To be furnished by SNA/PSU/Channel Partner)
(Only for Solar Pump, Power Pack/ Power Plant)

This is to certify that Shri………………….. (name & designation) of………….. (organization) visited the proposed site on (date) … and found that there is ………..sqm. of south facing shadow free area is available at the site for installation of the solar pump/ power pack/ power plant. The latest Photograph of the front view of the proposed site with date is enclosed with the certificate. After installation photograph will be taken in same view and will be submitted with completion report.

Signature _____________
Name & Designation of Authorized Signatory*
of SNA/PSU/Channel Partner

Place:
Date:

* Authorized signatory should be in the rank of General Manager of SNA/PSU or MD/CEO/Director in case of Channel Partner.