**PROJECT DESIGN DOCUMENT FORM
FOR SMALL-SCALE CDM PROJECT ACTIVITIES (F-CDM-SSC-PDD)
Version 04.1**

PROJECT DESIGN DOCUMENT (PDD)

Title of the project activity	Grid connected solar photovoltaic power plant in Bikaner, Rajasthan, India
Version number of the PDD	Version 04
Completion date of the PDD	19/12/2012
Project participant(s)	Sai Maithili Power Company Private Limited
Host Party(ies)	India
Sectoral scope(s) and selected methodology(ies)	Sectoral Scope: 01 Energy industries (renewable - / non-renewable sources) Methodology: AMS.I.D. "Grid connected renewable electricity generation" Version 17, EB 61
Estimated amount of annual average GHG emission reductions	17,169 tCO_2e

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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Sai Maithili Power Company Private Limited (SMPCPL) is implementing a 10 MW solar photovoltaic technology based power project in Village-Gurha, Tehsil-Kolayat in Bikaner district of Rajasthan State in India entitled "Grid connected solar photovoltaic power plant in Bikaner, Rajasthan, India". The electricity generated from the project activity will be exported to the regional electricity grid and sold to NTPC Vidyut Vyapar Nigam Ltd. (NVVN) under a power purchase agreement. SMPCPL has decided to use thin film technology for its 10 MW project. The whole installation will have a minimum of design life of 25 years. The intimation for prior consideration of CDM for the project activity was submitted to UNFCCC and Host Party DNA with the project title "Grid connected solar photovaltaic power project in Bikaner, Rajasthan, India"

Since the proposed project activity is a Greenfield project, the approved small scale methodology AMS.I.D Version 17 already prescribes the baseline scenario as being "electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources". The electricity exported by the proposed project activity would displace an equivalent amount of electricity generated by the power plants already operational and proposed to be added in the North-East-West-North East (NEWNE) Grid which relies predominantly on fossil fuels. Thus, it contributes towards reduction in the demand-supply gap during periods of electricity shortage and increase in the share of renewable energy in the grid mix.

The estimation of GHG emission reductions by the project activity is limited to carbon dioxide (CO_2) only and its primary source is the fossil fuels consumed in the NEWNE grid. The expected annual average net electricity delivered to the grid by the proposed project activity is 18,019.7 MWh and the estimated annual average emission reductions are 17,169 tCO_2e over the chosen crediting period which is determined to be a fixed period of ten years. The total estimated emission reductions over the crediting period are 171,686 tCO_2e

View of the project participants on the contribution of the project activity to Sustainable Development:

Ministry of Environment and Forests (MoEF), Govt. of India has stipulated the following indicators for sustainable development in the interim approval guidelines for CDM projects[1]:

- **Social well being**
  - The project activity contributes towards generating employment opportunities for the local inhabitants during the installation and operation of the project activity.
  - The project will lead to improvement in the local infrastructure that would boost the development and social up-liftment of the region.
- **Economic well-being**
  - The project activity would improve the grid frequency and availability of electricity to the local consumers which would further provide opportunities for industries and economic activities to be setup in the area resulting in greater local employment and overall development of the region.
- **Environmental well being**
  - The project activity would reduce emission of CO_2 and other pollutants compared with fuel-fired power plant.
  - As solar PV power plants do not produce any end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power.
- **Technological well being**

[1] http://cdmindia.nic.in/host_approval_criteria.htm

- The project activity has high explicability potential and can therefore promote technological self reliance in India.
- The project activity would generate electricity through a technology that is environmentally safe and sound.

A.2. Location of project activity

A.2.1. Host Party(ies)

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India

A.2.2. Region/State/Province etc.

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Rajasthan

A.2.3. City/Town/Community etc.

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District: Bikaner
Tehsil: Kolayat
Village: Gurha

A.2.4. Physical/ Geographical location

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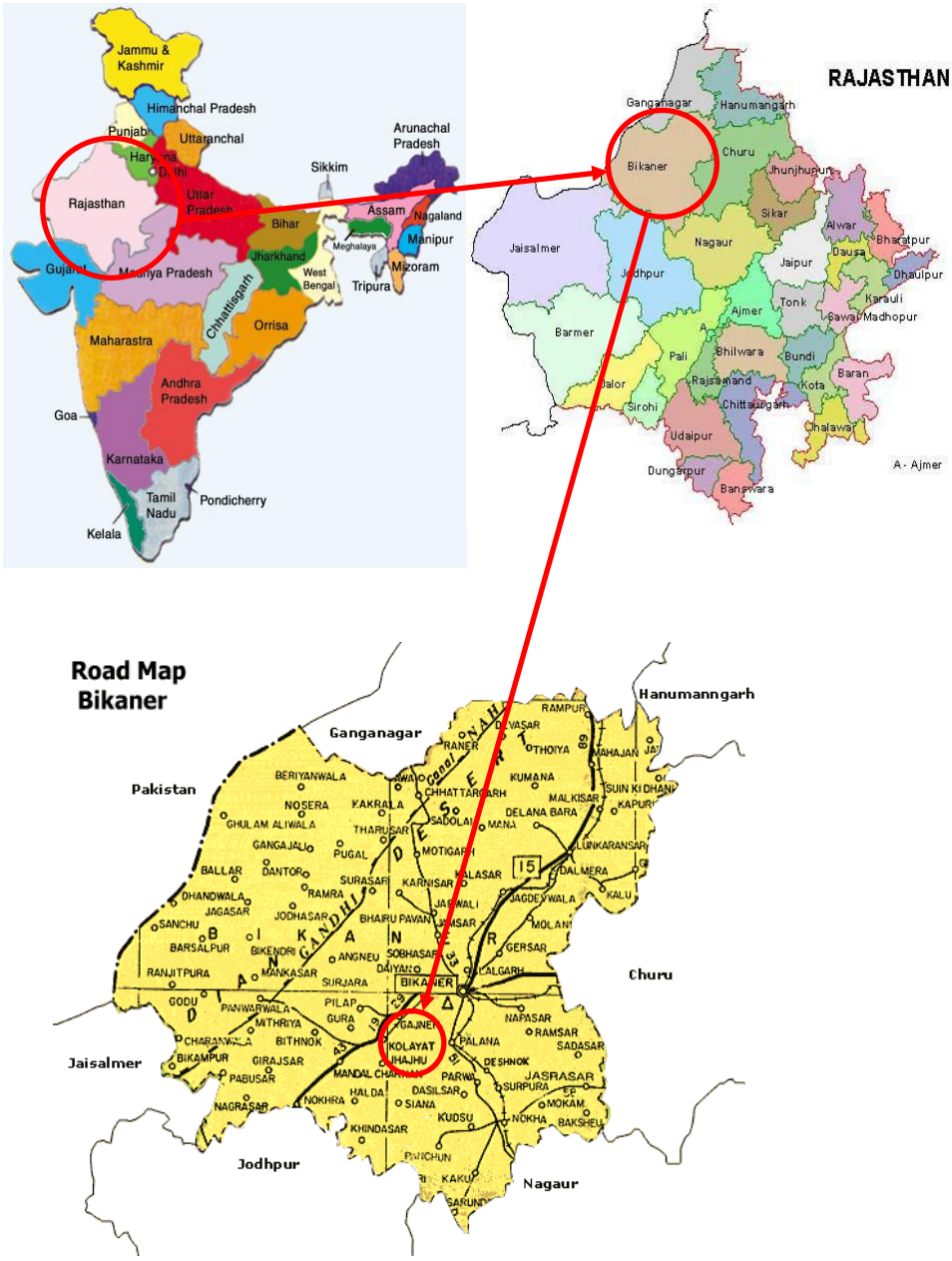
Latitude	:	27^0 51’ 50”	North
Longitude	:	72^0 50’ 20”	East

The nearest railway station is Kolayat at a distance of 15 Kms and Bikaner railway station is at a distance of 60 Kms from the project site. The nearest airport is Jaipur and the nearest highway is National Highway-15.



A.3. Technologies and/or measures

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As per the Appendix B of the simplified modalities and procedures for small scale CDM project activities, the small scale project activities fall under following type and category:

Type: (I) Renewable energy projects
Category: Electricity generation for a system
Methodology: AMS I.D Version 17, "Grid Connected renewable energy electricity generation"
Sectoral Scope: 01, Energy industries (renewable - / non-renewable sources)
The project activity is 10 MW capacity greenfield thin-film technology (CIGS) based solar photovoltaic power generation plant. Since the project activity is a green field installation there was no electricity

generation at the project site prior to its implementation. SMPCPL plans to use CIGS Solar PV modules for converting sunlight into electricity. Expected lifetime of the solar PV power plant is 25 years[2]. The rated capacity of power plant is 10 MW AC. The technical specifications of power plant are given below:

Parameters	Value
Manufacturer	Miasole
Model	MS140GG-02
Cell Type	Copper Indium Gallium Diselenide (CIGS)
Maximum Panel Voltage	29 Voc
Nominal Output	140Wp
Number of Cells	88 Cells
Voltage at maximum power point (Vm)	23 Vmpp
Current at maximum power point (Im)	6.09 Impp

Special grid interactive inverters will be installed along with interfacing, protection and control mechanism to operate in parallel with the grid. Each of the inverter is rated 680kva having 1000V nominal DC input and 380V, 50Hz AC Output. A dedicated 33 kV grid feeder line will be erected from the 10MW PV Power plant to the nearest electricity substation for feeding PV Generated Power into the grid. The interfacing of the 10MW PV system with the grid will be done through seven numbers of 1.5 MVA, 0.380 kV/33kV outdoor type step up Transformers. The data will be monitored including the electricity exported to the grid and electricity imported from the grid, which is measured by Main & Check meters installed at the substation. Metering arrangement is facilitated at 33 kV side. In accordance with para 3 (b) of the "Guidelines for the reporting and validation of plant load factors" (EB48 Annex 11), the plant load factor (PLF) was determined as 21.46% in a third party energy generation assessment study carried out by AIC Projects GmbH. However, the Power Purchase Agreement (PPA) signed for the project activity requires the grid utility to purchase only 18,396 MWh per annum. Hence, the PLF for the project activity has been conservatively considered as only 21% so as to comply with the limit defined in the PPA. Further, a deration of 0.5% per annum is considered after the second year in accordance with the Rajasthan Electricity Regulatory Commission Tariff Order for solar PV plants dated 30/05/2012[3].

The project activity will result in displacing the grid power, thus resulting in reduction of CO_2 emissions that would have occurred at fossil fuel fired power plants connected to the NEWNE grid in the baseline scenario. Solar energy is a pollution-free, infinitely sustainable form of energy. It does not produce greenhouse gases, and it does not produce toxic or radioactive waste. Therefore the technology for the project is environmentally safe and sound. Further, there is no technology transfer associated with the project activity.

A.4. Parties and project participants

Party involved (host) indicates a host Party	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (Host)	Sai Maithili Power Company Private Limited (Private entity)	No

A.5. Public funding of project activity

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[2] The operational lifetime of the project activity can be verified from the Mia Sole MS Series 02, CIGS module technical document

[3] http://www.rerc.rajasthan.gov.in/TariffOrders/Order127.pdf

No public funding is availed for the project activity from parties included in Annex I.

A.6. De-bundling for project activity

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As per the CDM Project Standard, Version 01.0 (EB 65, Annex 5) paragraph 88, project participants are required to follow the applicable provisions in the Guidelines on assessment of debundling for SSC project activities". According to these guidelines, a proposed small scale project activity is not a "de-bundled" component of large scale project activity if there is no registered small scale CDM project activity or a request for registration by another small-scale project activity:

- By the same project participants;
- In the same project category and technology/measure;
- Registered within the previous two years; and
- Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.

SMPCPL has no registered small scale CDM project activity and has not requested registration for any other small scale project activity in the same project category and technology within 1 km of the proposed small-scale project activity. Thus, the proposed 10 MW Solar PV Power plant by SMPCPL meets the above stated criteria. Hence, the project activity is not a de-bundled component of a larger activity and qualifies as a small scale project activity.

SECTION B. Application of selected approved baseline and monitoring methodology

B.1. Reference of methodology

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As per the Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories, Type I.D Version 17 has been used.

Title: "Grid connected renewable electricity generation".

Reference: AMS I D, Version 17, EB 61

It has been referred from the list of approved methodologies for CDM project activities in the UNFCCC/CDM (http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html) website.

The approved methodology uses the "Tool to calculate the emission factor for an electricity system" Version 02.2.1 for determination of the baseline scenario, "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" Version 02 for determining project emissions and also draws upon Appendix B of the simplified modalities and procedures for small-scale CDM project activities "Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories" for demonstration of additionality.

B.2. Project activity eligibility

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The methodology AMS.I.D Version 17 is being applied for the project activity. The reasons for the choice of project type and category for the project activity are as follows:

Criteria	Applicability to the project
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass a) supplying electricity to a national or a regional grid; or b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project is renewable energy generation through installation of photovoltaic modules. The project will supply electricity to the NEWNE grid. This can be verified from the Power Purchase Agreement (PPA) and Sales Agreement with MiaSole for supply of new Thin-Film Photovoltaic Modules signed for the project activity. **Thus, this criterion is applicable to the project activity and the project activity complies with this criterion.**.
2. Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies is included in Table 2.	As per Table 2 of the AMS.I.D Version 17 (also provided at Appendix-3 of the PDD), project activities that supply electricity to the national/regional grid are applicable under AMS.I.D Version 17. The proposed project activity under consideration will also supply electricity to the NEWNE regional grid which can be verified from the PPA. **Thus, this criterion is applicable to the project activity and the project activity complies with this criterion.**
3. This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The project activity is Greenfield installation of new power plant at a site where there was no renewable energy power plant operating prior to implementation of project. This can be verified from the PPA signed for the project activity and Sales Agreement with MiaSole for supply of new Thin-Film Photovoltaic Modules. **Thus, this criterion is applicable to the project activity and the project activity complies with this criterion.**
4. Hydro power plants with reservoirs that satisfy	The project activity is not a hydro power plant. This

at least one of the following conditions are eligible to apply this methodology: The project activity is implemented in an existing reservoir with no change in the volume of reservoir; The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m2; The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m2.	can be verified from the PPA signed for the project activity. **Thus, this criterion is not applicable to the project activity.**
5. If new unit has both renewable and non renewable components (e.g.. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	The project does not involve any use of fossil fuel. This can be verified from the PPA signed for the project activity. **Thus, this criterion is not applicable to the project activity.**
6. Combined heat and power (co-generation) systems are not eligible under this category.	The project activity generates only power and hence is not a cogeneration system. This can be verified from the PPA signed for the project activity. **Thus, this criterion is not applicable to the project activity.**
7. In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The project activity is Greenfield and there is no existing power generation facility at the site. This can be verified from the PPA signed for the project activity and Sales Agreement with MiaSole for supply of new Thin-Film Photovoltaic Modules. **Thus, this criterion is not applicable to the project activity.**
8. In the case of retrofit or replacement, to qualify as a small scale project, the total output of the modified or retrofitted or replacement unit shall not exceed the limit of 15 MW.	Project activity is neither retrofit nor modification of existing facility. This can be verified from the Sales Agreement with MiaSole for supply of new Thin-Film Photovoltaic Modules dated 29/06/2012. Further, as per the Power Purchase Agreement signed, the project capacity is 10 MW. Hence there will be no capacity addition in the future and the capacity of the plant will not exceed the small scale limit of 15 MW over the entire crediting period of the project activity. **Thus, this criterion is applicable to the project activity and the project activity complies with this criterion.**

As already been in the above table, as per the Power Purchase Agreement signed with NVVN, the project capacity is 10 MW. Hence there will be no capacity addition in the future and the capacity of the plant will not exceed the small scale limit of 15 MW over the entire crediting period of the project activity. From the above it is observed that, the project activity is applicable under AMS.I.D.

B.3. Project boundary

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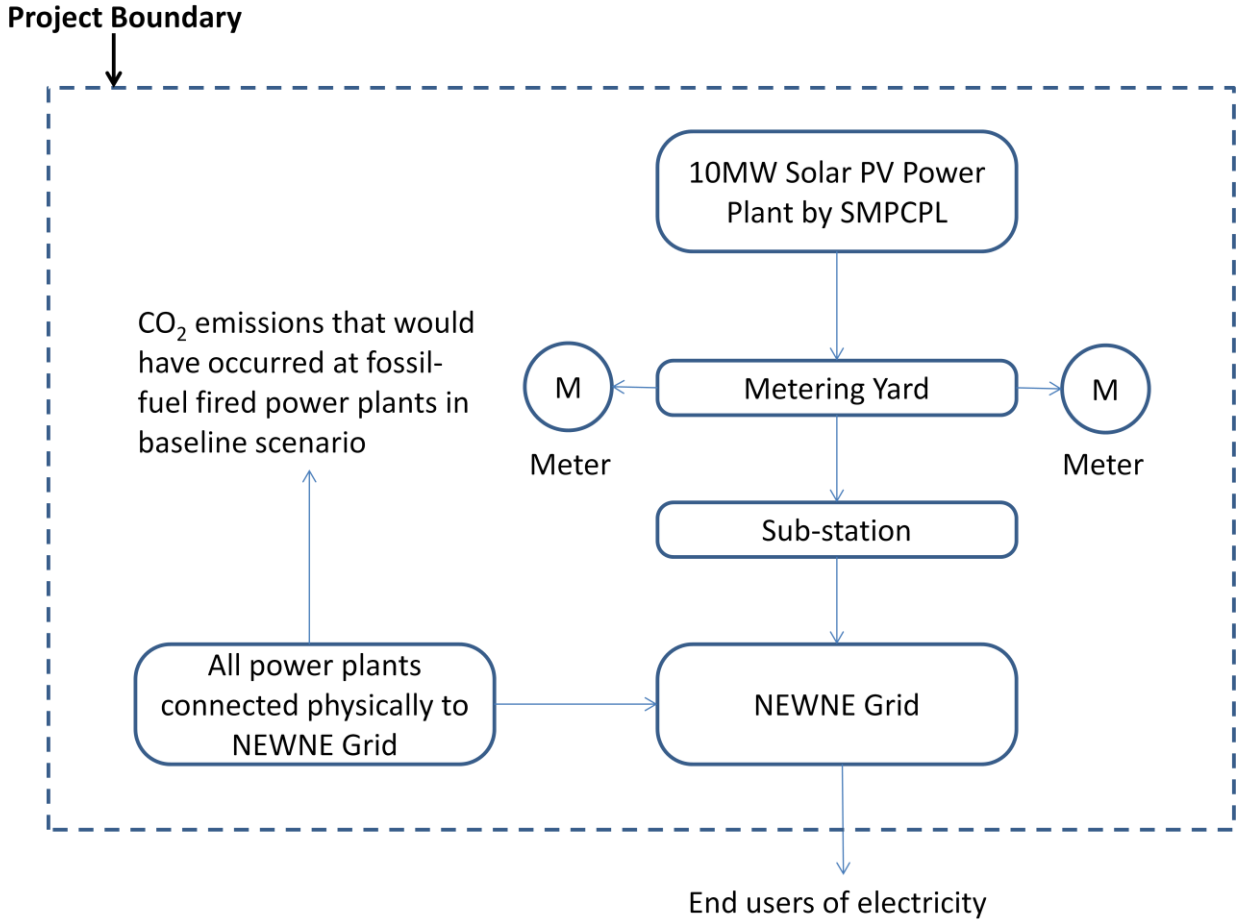
The project boundary as described in AMS.I.D Version 17 includes the project power plant and all power plants connected physically to the electricity system. Accordingly the project boundary includes solar PV power generation system and all power plants connected physically to the regional grid to which the renewable electricity is supplied to avoid GHG emissions. The proposed project is located in the state of Rajasthan and hence falls under the NEWNE grid (Integrated Northern, Eastern, Western and North Eastern Grid) of the Indian electricity system. The following diagram explains the project boundary for the proposed project activity.



B.4. Establishment and description of baseline scenario

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According to the guidelines of the applicable small scale methodology AMS.I.D (Version 17),

"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid."

The baseline scenario of the project is that electricity delivered to the regional grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources in the regional grid.

As per AMS.I.D (Version 17), *"the baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor."*

The emission factor is calculated as per the paragraph 12 (a) as a conservative estimate of a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according

to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system' Version 2.2.1 (EB 63).

Key data/ parameters used for baseline calculation:

S. No.	Data Variable	Data Unit	Description	Data Source
1.	$EG_{BL.y}$	MWh	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh).	Joint meter reading sheets
2.	$EF_{CO2,grid,y}$	tCO_2/MWh	CO_2 emission factor of the grid in year y.	CO_2 Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 7.0.

B.5. Demonstration of additionality

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Existing National and/or Sectoral Policies

Annexure 3 of the EB 22 states that national and/or sectoral policies and circumstances have to be accounted for when considering the baseline. Para 7(a) states that, only those national and/or sectoral policies or regulations under paragraph 6(a) i.e. type E+ policy that increase GHG emissions, that have been implemented before adoption of the Kyoto Protocol by the COP (decision 1/CP.3, 11 December 1997), shall be taken into account when developing a baseline scenario. The Electricity Act of 2003 promoted cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity (Refer Section 86(1) of Electricity Act 2003). Therefore, it could be seen that the provincial and sectoral policies are E- i.e., policies that decrease GHG emissions which is after November 2001.Hence the baseline scenario is the electricity generation by grid connected fossil fuel dominated power plants confirming to Annex 3 of EB 22.

Further, the baseline alternative mentioned above is in compliance with all the applicable regulatory policies and laws. Additionally, the project proponent is under no compulsion to opt for any particular technology or even a renewable mode of power generation. There is no governmental body or EB policy which requires a particular kind of fuel to be chosen and there is no legal requirement to which the above alternative does not conform.

Description on Prior CDM consideration

Paragraph 7 of the CDM Project Cycle Procedure Version 02.0 states that for project activities with a starting date on or after 02 August 2008, the project participant must inform a Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status within six months of the project activity start date.

In line with the above guidance, the project proponent intimated the UNFCCC and the National CDM Authority i.e. Host Party DNA of India of its intention to seek CDM for the proposed project activity through email communication[4] dated 16/04/2012, which is even before the start date of the project activity i.e. 29/06/2012 (as mentioned in section C1.1). Hence it can be clearly established that CDM was seriously considered in the decision to proceed with the proposed project activity.

Justification of Additionality:

[4] The intimation to UNFCCC and Host Party DNA was with the project title "Grid connected solar photovaltaic power project in Bikaner, Rajasthan, India"

The project activity meets the eligibility criteria to use simplified modalities and procedure for small-scale CDM project activities as set out in paragraph 6 (C) of decision 17/CP.7. As per the decision 17/CP.7 Para 43, a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity. Further as per the "Guidelines on the demonstration of additionality of small-scale project activities" Version 09, a proposed small scale CDM project activity will be considered as additional if the project activity would not have occurred any way due to at least one of following barriers[5]:

a) Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;
b) Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;
c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;
d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

It goes on to provide a positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds. The positive list comprises of the following grid-connected and off-grid renewable electricity generation technologies:

(i) Solar technologies (photovoltaic and solar thermal electricity generation);
(ii) Off-shore wind technologies;
(iii) Marine technologies (wave, tidal);
(iv) Building-integrated wind turbines or household rooftop wind turbines of a size up to 100 kW

Since the project activity is a grid connected solar photovoltaic technology based electricity generation project with an installed capacity of 10 MW, as per Para 2(a) (i) of EB 68, Annex 27, it is deemed to be **additional**.

B.6. Emission reductions
B.6.1. Explanation of methodological choices
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The AMS.I.D methodology is applied in the context of the project in the following steps:

- Calculate the baseline GHG emissions
- Calculate the project GHG emissions
- Calculate the leakage emissions
- Calculate the emission reductions

Baseline Emissions

As per para 11 and Equation No. 1 of the applicable small scale methodology (AMS.I.D, Version 17), the baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{BL,y} \times EF_{CO2,grid,y} \quad \textbf{(1)}$$

Where:

[5] https://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid05.pdf

BE_y = Baseline emissions in year *y* (tCO_2)

$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh)

$EG_{CO2,grid,y}$ = CO_2 emission factor of the grid in year y (t CO_2/MWh)

Calculation of $EF_{CO2,grid,y}$

In accordance with the "Tool to calculate the emission factor for an electricity system" Version 02.2.1, combined margin CO_2 emission factor for grid connected electricity generation is calculated stepwise as below:

Step 1: Identify the relevant electric power system

For the purpose of determining the electricity emission factors, a **project electricity system** and **connected electricity systems** are to be defined. The Indian power system is divided into two independent regional grids, namely NEWNE and Southern grid. Each grid covers several states. Power generation and supply within the regional grid is managed by Regional Load Dispatch Centre (RLDC). The Regional Power Committees (RPCs) provide a common platform for discussion and solution to the regional problems relating to the grid.

Each state in a regional grid meets their demand with their own generation facilities and also with allocation from power plants owned by the central sector such as NTPC and NHPC etc. Specific quotas are allocated to each state from the central sector power plants. Depending on the demand and generation, there are electricity exports and imports between states in the regional grid. There are also electricity transfers between regional grids, and small exchanges in the form of cross-border imports and exports (e.g. from Bhutan). Recently, the Indian regional grids have started to work in synchronous mode, i.e. at same frequency.

Table 1: States connected to different regional grids

Regional grid	**NEWNE Grid**				**Southern grid**
	Northern	**Eastern**	**Western**	**North Eastern**	**Southern**
States	Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand	Bihar, Orissa, West Bengal, Jharkhand and Sikkim	Gujarat, Madhya Pradesh, Maharashtra, Goa and Chattisgarh	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura	Andhra Pradesh, Karnataka, Kerala and Tamil Nadu
Union Territories	Delhi and Chandigarh	Andaman-Nicobar	Daman & Diu, Dadar & Nagar Haveli	-	Pondicherry, Lakshadweep

The NEWNE grid constitutes several states including Rajasthan. These states under the regional grid have their own power generating stations as well as centrally shared power-generating stations. While the power generated by own generating stations is fully owned and consumed through the respective state's grid systems, the power generated by central generating stations is shared by more than one state depending on their allocated share. Presently the share from central generating stations is a small portion of their own generation.

Since the CDM project would be supplying electricity to the NEWNE grid, it is preferable to take this grid as the project boundary rather than the state boundary. It also minimizes the effect of interstate power transactions, which are dynamic and vary widely. Considering free flow of electricity among the member

states and the union territory, the entire NEWNE grid is considered as a single entity for estimation of baseline.

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.
Option II: Both grid power plants and off-grid power plants are included in the calculation.

The project participants have chosen Option I for the calculation of the operating and build margin emission factor i.e. off-grid power plants are not being included in the calculation.

Step 3: Select an operating margin (OM) method

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

(a) Simple OM, or
(b) Simple adjusted OM, or
(c) Dispatch data analysis OM, or
(d) Average OM.

As per the tool, any of the four methods can be used. For the proposed project activity, simple OM method has been chosen to calculate the operating margin emission factor ($EF_{grid, OM, y}$). However, the simple OM method (option a) can only be used if low-cost/must-run resources constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. The low-cost/must-run resources are defined as power plants with low marginal generation costs or power plants that are dispatched independently of the daily or seasonal load of the grid. They typically include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation.

Table: Share of Low Cost / Must-Run (% of Net Generation)

	2006-07	**2007-08**	**2008-09**	**2009-10**	**2010-11**
NEWNE	18.5%	19.0%	17.4%	15.9%	17.6%
South	28.3%	27.1%	22.8%	20.6%	21.0%
India	20.9%	21.0%	18.7%	17.1%	18.4%

Ref: CO_2 Baseline Database for the Indian Power Sector – CEA, Version 07.[6]

Percentage of total grid generation by low cost/must run plants (on the basis of average of five most recent years) = 19.22 %

The calculation above shows that the generation from low-cost/must-run resources constitutes less than 50% of total grid generation, hence usage of the **Simple OM method** in the project case is justified.

The Simple OM emission factor can be calculated using either of the two following data vintages for years(s) *y*:

- Ex ante option: A 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period,

or

- Ex post option: The year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring. If the data required tocalculate the emission factor for year y is usually only available later than six months after the end of year y, alternatively the emission factor of the previous year (y-1) may be used. If the data is usually only available 18 months after the end of year y, the emission factor of the year proceeding the

[6] http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm

previous year (y-2) may be used. The same data vintage (y, y-1 or y-2) should be used throughout all crediting periods.

The project proponents choose the *Ex ante* option for estimating the simple OM emission factor wherein as described above a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period will be undertaken.

Step 4: Calculate the operating margin emission factor according to the selected method

The simple OM method has been selected as justified above. Further, as per the "Tool to calculate the emission factor for an electricity system" (Version 02.2.1; EB 63, annex 19), the simple OM may be calculated by one of the following two options:

Option A: Based on the net electricity generation and a CO_2 emission factor of each power unit; or

Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

In India, the Central Electricity Authority (CEA) has estimated the baseline emission factor for the power sector. This data has also been endorsed by the DNA and is the most authentic information available in the public domain. The details of same can be found on CEA website at http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm.

CEA has chosen Option A and has accordingly calculated the simple OM emission factor as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost / must-run power plants / units using the following formula:

$$EF_{grid,OM,simple,y} = \frac{\sum_{i,m} FC_{i,m,y} \cdot NCV_{i,y} \cdot EF_{CO2,i,y}}{\sum_{m} EG_{m,y}}$$

Where:

$EF_{grid,OMsimple,,y}$	=	Simple operating margin CO_2 emission factor of in year y (tCO_2/MWh)
$FC_{i,m,y}$	=	Amount of fossil fuel type i consumed by power unit m in year y (Mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (energy content) of fossil fuel type i in year y (GJ / mass or volume unit)
$EF_{CO2,i,y}$	=	CO_2 emission factor of fossil fuel type i in year y (tCO_2/GJ)
$EG_{m,y}$	=	Net electricity generated and delivered to the grid by power unit m in year y (MWh)
m	=	All power units serving the grid in year y except low-cost / must-run power units
I	=	All fossil fuel types combusted in power plant / unit m in year y
y	=	Either the three most recent years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option) or the applicable year during monitoring (ex post option), following the guidance on data vintage in step 2

Step 5: Calculate the build margin (BM) emission factor

In terms of vintage of data, project participants can choose between one of the following two options:

Option 1: For the first crediting period, calculate the build margin emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of

submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2: For the first crediting period, the build margin emission factor shall be updated annually, ex-post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex-ante, as described in option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

The project proponents wish to choose option 1.

Capacity additions from retrofits of power plants should not be included in the calculation of the build margin emission factor.

The sample group of power unit's *m* used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

(a) Identify the set of five power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently ($SET_{5\text{-units}}$) and determine their annual electricity generation ($AEG_{SET\text{-}5\text{-}units}$, in MWh);

(b) Determine the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total}, in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEG_{total} (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) ($SET_{\geq 20\%}$) and determine their annual electricity generation ($AEG_{SET\text{-}\geq 20\%}$, in MWh);

(c) From $SET_{5\text{-units}}$ and $SET_{\geq 20\%}$ select the set of power units that comprises the larger annual electricity generation (SET_{sample});

Identify the date when the power units in SET_{sample} started to supply electricity to the grid. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then use SET_{sample} to calculate the build margin.

In India, the installed capacity and corresponding annual generation from power plants is quite high. The Central Electricity Authority (CEA) has estimated the annual electricity generation from $SET_{\geq 20\%}$ to be larger than the generation from $SET_{5\text{-units}}$. The details of same can be found on CEA website at http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm. Further, none of the power units in $SET_{\geq 20\%}$ started to supply electricity to the grid more than 10 years ago.

Therefore, SET_{sample} is selected as $SET_{\geq 20\%}$ for the estimation of build margin.

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which power generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \cdot EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2 / MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit *m* in year y (MWh)
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit *m* in year y (tCO_2 / MWh)

M = Power units included in the build margin
Y = Most recent historical year for which electricity generation data is available

Calculations for the Build Margin emission factor $EF_{grid, BM, y}$ is based on the most recent information available on the plants already built for sample group *m* at the time of PDD submission. The sample group *m* consists of the power plant capacity additions in the electricity system that comprise 20 % of the system generation and that have been built most recently ($SET_{\geq 20\%}$).

Step 6. Calculate the combined margin emissions factor

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:

(a) Weighted average CM; or

(b) Simplified CM.

The weighted average CM method (option A) should be used as the preferred option.

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

Where:

$EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EF_{grid,OM,y}$ = Operating margin CO_2 emission factor in year y (tCO_2/MWh)
w_{OM} = Weighting of operating margin emissions factor (%)
w_{BM} = Weighting of build margin emissions factor (%)

The following default values should be used for w_{OM} and w_{BM}:

- Wind and solar power generation project activities: w_{OM} = 0.75 and w_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods.
- All other projects: w_{OM} = 0.5 and w_{BM} = 0.5 for the first crediting period, and w_{OM} = 0.25 and w_{BM} = 0.75 for the second and third crediting period, unless otherwise specified in the approved methodology which refers to this tool.

As mentioned before, the baseline emission factors have been calculated as per CEA sourced data for various regional grids in India according to the formulas specified above. As this is the most authentic information available in the public domain, the baseline emission factor used in the calculation of baseline emissions for the proposed project activity is being referred from the same for transparency and conservativeness[7].

Project Emissions

As per para 20 of AMS.I.D, Version 17, since the proposed project activity is electricity generation based on solar photovoltaic technology, there will be no fossil fuel combustion during the project activity and hence there will be no project emissions.
Therefore, the project emissions, $PE_y = 0$

Leakage

According to AMS.I.D Version 17, if the energy generating equipment is transferred from another activity, leakage is to be considered. Since this is not the case in the proposed project activity, no leakage emissions are to be considered.

[7] http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm

$LE_y = 0$

Emission Reductions

Emission reductions are calculated as follows (as per para 23 and Equation 10 of AMS.I.D Version 17):

$$ER_y = BE_y - PE_y - LE_y \quad \textbf{(10)}$$

Where:

ER_y = Emission reductions in year *y* (t CO_2/y)
BE_y = Baseline emissions in year *y* (t CO_2/y)
PE_y = Project emissions in year *y* (t CO_2/y)
LE_y = Leakage emissions in year y (t CO_2/y)

B.6.2. Data and parameters fixed ex ante

Data / Parameter	$EF_{grid,OM,y}$
Unit	tCO_2/MWh
Description	Operating Margin emission factor for NEWNE grid
Source of data	Referred from CO_2 Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 7.0. (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Value(s) applied	0.9842
Choice of data or Measurement methods and procedures	Calculated it as CEA sourced data 3 years' vintage data (2008-09, 2009-10 and 2010-11) and option of ex ante calculation based on Simple Operating Margin Method. Computed once during PDD finalization.
Purpose of data	Calculation of baseline emissions
Additional comment	This value is determined and fixed ex-ante.

Operating Margin Estimation for NEWNE Grid (tCO_2 / MWh)

Year	**Operating Margin (tCO_2e/MWh)**	**Net Generation (GWh)**
2008-09	1.0066	421,803
2009-10	0.9777	458,043
2010-11	0.9707	476,987
Generation Weighted Average OM	**0.9842 tCO_2e / MWh**	

Data / Parameter	$EF_{grid,BM,y}$
Unit	tCO_2/MWh
Description	Build Margin emission factor for NEWNE grid
Source of data	Referred from CO_2 Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 7.0. (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Value(s) applied	0.8588
Choice of data or Measurement methods and procedures	Calculated as per CEA sourced data for the year 2010-11. The build margin is calculated in this database as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation and option of ex ante calculation. Computed once during PDD finalization.
Purpose of data	Calculation of baseline emissions
Additional comment	This value is determined and fixed ex-ante.

Data / Parameter	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	Combined Margin CO_2 emission factor for NEWNE grid
Source of data	Estimated figure based on 75% of OM and 25% of BM values
Value(s) applied	0.9528
Choice of data or Measurement methods and procedures	Calculated as per CEA sourced data with 3 years vintage data and option of ex ante calculation based on 75% of OM and 25% of BM values approach. Computed once during PDD finalization.
Purpose of data	Calculation of baseline emissions
Additional comment	This value is determined and fixed ex-ante.

Combined Margin Estimation for NEWNE Grid (tCO_2e / MWh)	
Generation Weighted Average OM ($EF_{grid,OM,y}$)	**0.9842**
BM ($EF_{grid,BM,y}$)	**0.8588**
Combined Margin ($EF_{grid,CM,y}$)	**0.9528**

B.6.3. Ex-ante calculation of emission reductions

>>

Parameter	Value	Units	Source
Installed Capacity	10	MW	Power Purchase Agreement
Deration after second year	0.5	%	RERC Tariff Order for solar PV plants dated 30/05/2012 (http://www.rerc.rajasthan.gov.in/TariffOrders/Order127.pdf
Auxiliary consumption	0.25	%	
No. of Days of operation	365	Days	
No of Hours	24	Hours	
Plant Load Factor[8]	21.00	%	Conservatively considered

[8] In accordance with para 3 (b) of the "Guidelines for the reporting and validation of plant load factors" (EB48 Annex 11), the plant load factor (PLF) was determined as 21.46% in a third party energy generation assessment study carried out by AIC Projects GmbH. However, the Power Purchase Agreement (PPA) signed for the project activity requires the grid utility to purchase only 18,396 MWh per annum. Hence, the PLF for the project activity has been conservatively considered as only 21% so as to comply with the limit defined in the PPA.

			based on PPA
Gross generation (GWh)	18,396	MWh	Calculated
Auxiliary consumption (GWh)	46	MWh	Calculated
Net Generation (in 1st and 2nd year)	18,350	MWh	Calculated

Particulars	Unit	2008-09	2009-10	2010-11
Simple Operating Margin (incl. Imports)	tCO_2e/MWh	1.0066	0.9777	0.9707
Net Electricity Generation	GWh	4,21,803	4,58,043	4,76,987
Generation Weighted Average Operating Margin	tCO_2e/MWh	0.9842		

Particulars	Unit	Value	Weight
Generation Weighted Average Operating Margin	tCO_2e/MWh	0.9842	0.75
Build Margin (not adjusted for imports)	tCO_2e/MWh	0.8588	0.25
Combined Margin (incl. Imports)	tCO_2e/MWh	0.9528	

Baseline Emissions BE_y (As per Equation (1) of AMS.I.D, Version 17) for 1st and 2nd year of operation,

$$BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$$

Where,

$EG_{BL,y}$ = 18,350 MWh

$EF_{CO2,grid,y}$ = $EF_{grid,CM,y}$ = 0.9528 tCO_2e/MWh

Hence,

BE_y = 18,350 MWh * 0.9528 tCO_2e/MWh

= 17,483 tCO_2e

Project Emissions, PE_y = 0 (As explained in section B6.1)

Leakage Emissions, LE_y = 0 (As explained in section B6.1)

Therefore the emission reductions, ER_y (As per Equation (10) of AMS.I.D, Version 17)

For 1st and 2nd year of operation

$$ER_y = BE_y - PE_y - LE_y$$

= 17, 483 – 0 – 0

= 17,483 tCO_2e

The value will decrease by 0.5% per annum from third year onwards due to the deration factor.

B.6.4. Summary of ex-ante estimates of emission reductions

Year	Baseline emissions (tCO_2 e)	Project emissions (tCO_2 e)	Leakage (tCO_2 e)	Emission reductions (tCO_2 e)
2013-14	17,483	0	0	17,483
2014-15	17,483	0	0	17,483
2015-16	17,396	0	0	17,396
2016-17	17,309	0	0	17,309
2017-18	17,221	0	0	17,221
2018-19	17,134	0	0	17,134
2019-20	17,046	0	0	17,046
2020-21	16,959	0	0	16,959
2021-22	16,871	0	0	16,871
2022-23	16,784	0	0	16,784
Total	**171,686**	**0**	**0**	**171,686**
Total number of crediting years	**10**			
Annual average over the crediting period	**17,169**	**0**	**0**	**17,169**

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Data / Parameter	$EG_{BL,y}$
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y*
Source of data	Joint Meter Reading Sheets
Value(s) applied	18,350 MWh (for 1st and 2nd year)
Measurement methods and procedures	Main meter and Backup ABT (Availability Based Tariff) meters will be installed to continuously measure the electricity exported to and imported from the grid separately. The difference of the electricity exported to and imported from the grid would be calculated by the Grid Utility and SMPCPL to arrive at the net electricity supplied to the grid. Interface meters will conform to the Central Electricity Authority (Installation & Operation Meters) Regulation, 2006. Meter reading will be taken jointly by Grid Utility and SMPCPL on monthly basis on the first day of every month.
Monitoring frequency	Monitored continuously and recorded on a monthly basis
QA/QC procedures	Calibration of all the meters shall be done once in a period of three years in accordance with the guidelines mentioned in the Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories Version 12[9]. The meters will be bi-directional with accuracy of 0.2 s. The main meter reading will be cross checked with records for sold electricity (invoices).
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later

B.7.2. Sampling plan

>>

No sampling approach has been used

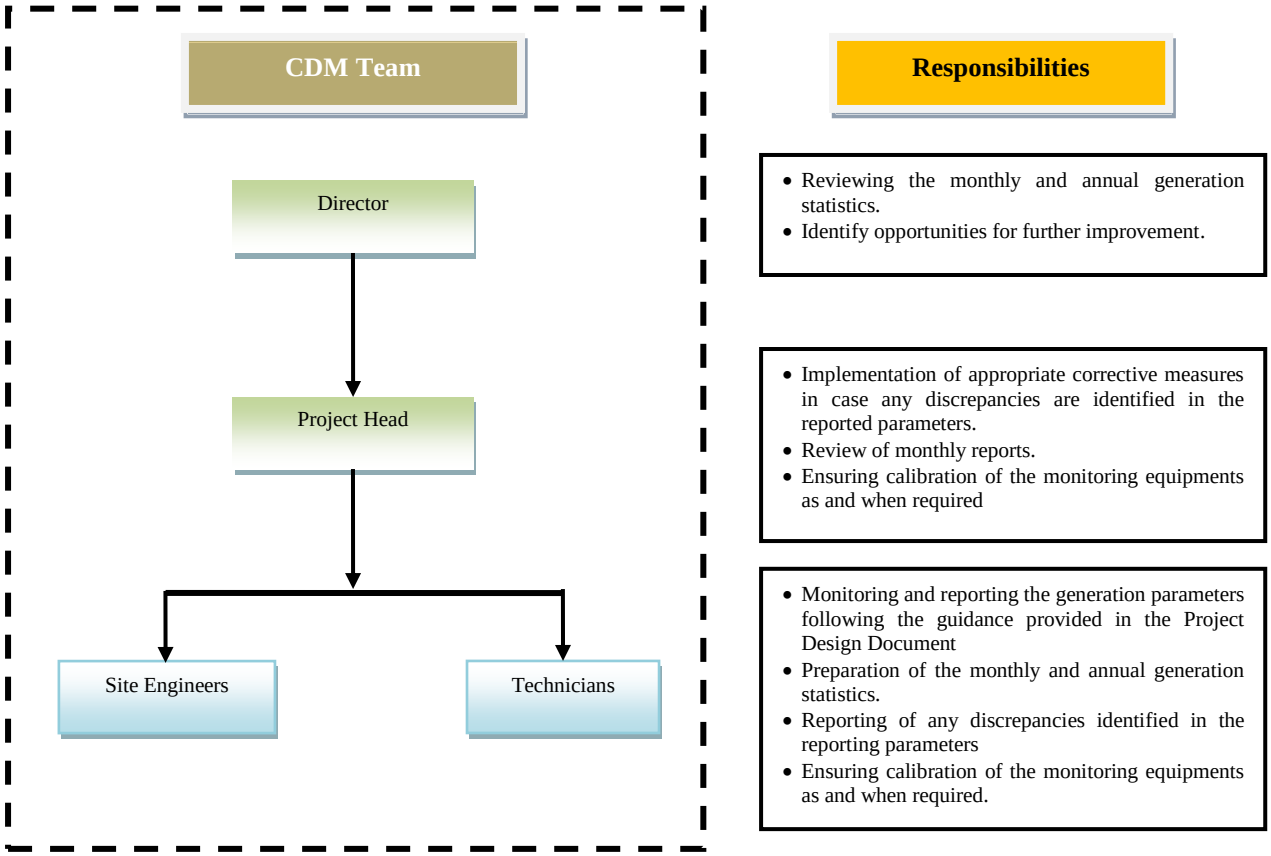
B.7.3. Other elements of monitoring plan

>>

The organizational structure for the proposed power plant envisages the Director as the in-charge for the entire power plant operations and maintenance. He will be assisted by the Project head who will further be assisted by Site Engineers and technicians..

The day-to-day operation like planning the routine maintenance, safety and environmental control will be placed under the care of the shift in charges. All administrative functions like personnel, industrial relations, labour welfare and financial functions will be looked after by Sai Maithili Power Company Private Limited. The organizational structure and responsibilities on project operation, monitoring and data recording has been mentioned below:

[9] This is conservative as compared to the PPA requirement for all meters to be calibrated in accordance with the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 (http://www.cea.nic.in/reports/regulation/meter_reg.pdf) which states in para 18 (1) (b) that all meters are to be tested once in five years.



Operation & Management Structure

Reading and Correction of Meters:

SMPCPL will provide Availability Based Tariff (ABT) compliant meters at the interface points. Interface metering will confirm to the Central Electricity Authority (Installation and Operation Meters) Regulation, 2006. In the event that the Main Metering System is not in service as a result of maintenance, repairs or testing, the check meters will be used.

Calibration of Meters:

The main and check meters will be calibrated at regular intervals[10] as per the industry standard and applicable local regulations.

Emergency Preparedness and Uncertainty Procedure:

In case Main meter or check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the check meter will be used for readings.

Recording:

SMPCPL will keep complete and accurate records of operating log at the Power Plant. The energy generation data would be available for a period of 2 years beyond the crediting period date.

Apportioning of electricity:

[10] At least once in three years as per the "Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories" Version 12

In case dates of monitoring period do not match with the dates of Joint Meter Readings the following apportioning formula would be used to estimate the electricity generation for calculating emission reductions:

X = Electricity generation recorded at the plant in the Daily Generation Reports (DGRs) between start/end date of monitoring period and date of billing cycle (MWh)

Y = Electricity generation recorded at the plant in the Daily Generation Reports (DGRs) for the particular month for which Joint Meter Reading has been taken (MWh)

Z = Net electricity exported by project activity to the grid in the particular billing cycle as recorded in the Joint Meter Reading sheet (MWh)

Electricity Generation = (X/Y) * Z MWh

Training:

Operating and maintaining a solar PV power plant requires certain degree of skills and exposure. In order to maintain a close knit operation and safe maintenance, sufficient training will be imparted to the O&M team before the implementation of the project.

SECTION C. Duration and crediting period

C.1. Duration of project activity

C.1.1. Start date of project activity

>>

29/06/2012

According to the Glossary of CDM Terms Version 06.0, the start date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a CDM project activity begins. In line with the above guideline, the date of signing of the Module Supply Agreement for procurement of Solar PV Modules was considered as the project start date. This agreement represents the earliest date when SMPCPL committed to expenditures related to the implementation of the project activity. There were no contracts / agreements / orders signed before this date that could be considered as a firm commitment from SMPCPL towards implementation / construction of the project activity.

C.1.2. Expected operational lifetime of project activity

>>

25 years and 0 months

C.2. Crediting period of project activity

C.2.1. Type of crediting period

>>

Fixed crediting period has been used.

C.2.2. Start date of crediting period

>>

26/02/2013

C.2.3. Length of crediting period

>>

10 years and 0 months

SECTION D. Environmental impacts

D.1. Analysis of environmental impacts

>>

The Ministry of Environment and Forests (MoEF), Government of India notification[11] S.O. 1533 (E) dated September 14, 2006 and its amendment notification S.O.-3067(E) dated 1/12/2009[12], regarding the requirement of Environment Impact Assessment (EIA) studies as per the Environment Protection Rule, 1986 (Published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) MINISTRY OF ENVIRONMENT AND FORESTS) states that any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a predefined list. Solar PV power projects are not included in this list and thus an EIA is not required. Ministry of Environment & forests vide their OM J-11013/41/2006 –IA II(I) dated 13th May 2011 has reaffirmed this and exempted the Solar PV power plants from EIA and EC requirement.

[11] http://envfor.nic.in/legis/eia/so1533.pdf

[12] http://moef.nic.in/downloads/rules-and-regulations/3067.pdf

SECTION E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

>>

SMPCPL has identified local communities, state government and governmental agencies, employees, contractors and consultants/ advisors as the most important stakeholders that would be affected by the project activity. Accordingly, SMPCPL conducted a stakeholder meeting at 11:00 AM on 08/08/2012 at the proposed project site in Village Gurha in Bikaner District of Rajasthan. An advertisement was placed in the regional language in Rajasthan Patrika newspaper on 01/08/2012 inviting them for the above mentioned stakeholder meeting one week in advance.

There were many participants representing various groups of the local communities, employees, villagers from the vicinity. All of them have shown interest in the project and related social & environmental development activities. The main issues raised during the stakeholder consultation meeting at the project site were about the benefits to the local people due to the establishment of the project activity and the project's contribution towards green house gas abatement.

E.2. Summary of comments received

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Mr. Acharya, the Site Incharge, started the meeting with a brief introduction and welcomed all the stakeholders. He highlighted the details of the programme to the villagers and encouraged the stakeholders to participate in the discussion and provide their comments or ask their questions related to the project activity.

This was followed by an address from Dr. B. Jagannatha Rao, Senior General Manager. Dr. Rao briefed the audience about the company and the implementation plan for the proposed project activity. He explained how solar energy projects generate electricity without any pollution and contribute towards reducing the demand-supply gap of electricity in the country.

This was followed by a presentation from Mr. Srinath Komarina, CDM consultant. He spoke about global warming and climate change and how it is affecting our community. He explained how carbon-dioxide level in the atmosphere is increasing and the various non-polluting initiatives that have been taken up or are being pursued to reduce the greenhouse gas emissions. He also explained how the project activity contributes towards this cause and as a result is being taken up under the Clean Development Mechanism.

After this the meeting was opened for discussion and the audience was invited to put up their queries and / or comments. A summary of the same are provided below:

S.No	Issue Raised	Response by the Project Proponent
1.	Mr. Ram Dayal: Will the project provide any employment opportunities to the local community?	As a result of the project activity, the local population would be given preference wherever the opportunity arises for employment as that would be mutually beneficial for both the company and the local villagers.
2.	Mr. Bhutada: What benefits would accrue to the local village as a result of this project?	As a result of the project activity the local village would benefit in terms of increased economic activity during the construction phase and also during the operation of the plant because of the additional employment opportunities generated. The power generated would be supplied to the local Kolayat Sub-Station.

In the end, Mr. Rathore, thanked all the stakeholders for their time and the effort taken to come to the venue of the meeting, and also for sharing their frank opinion. The villagers were happy on this environmental initiative taken by the company and did not have any adverse comments.

E.3. Report on consideration of comments received

>>

Representative of SMPCPL has explained that as a result of the project activity, the local population would be given preference wherever the opportunity arises for employment as that would be mutually beneficial for both the company and the local villagers.

He also explained that, as a result of the project activity the local village would benefit in terms of increased economic activity during the construction phase and also during the operation of the plant because of the additional employment opportunities generated. He also explained about the technical details, feasibility of the project activity and its impacts on environment. The stakeholders appreciated the project promoter for the environmental friendly measures. Considering the comments made by the stakeholders, no significant negative impacts due to the project activity had been identified .

SECTION F. Approval and authorization

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The National CDM Authority i.e. the Designated National Authority of India has provided its approval to the project activity vide letter Ref. No. 4/16/2012-CCC dated 06/11/2012.

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Appendix 1: Contact information of project participants

Organization	**Sai Maithili Power Company Private Limited**
Street/P.O. Box	Road No: 22, Jubilee Hills
Building	431/A
City	Hyderabad
State/Region	Andhra Pradesh
Postcode	500033
Country	India
Telephone	+91 40 2355 9922/23/24/25
Fax	+91 40 2355 9930
E-mail	jagannatharao.b@ksk.co.in
Website	-
Contact person	B. Jagannatha Rao
Title	Senior General Manager
Salutation	Dr.
Last name	Rao
Middle name	-
First name	Jagannatha
Department	-
Mobile	+91 9177535556
Direct fax	
Direct tel.	
Personal e-mail	jagannatharao.b@ksk.co.in

Appendix 2: Affirmation regarding public funding

Not applicable as no public funding has been availed for the project activity from parties included in Annex I.

Appendix 3: Applicability of selected methodology

Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies (as per Table-2 of AMS-I.D Version 17):

Table-2: Applicability of AMS-I.D, AMS-I.F and AMS-I.A based on project types

	Project type	AMS-I.A	AMS-I.D	AMS-I.F
1	Project supplies electricity to a national/regional grid		✓	
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			✘
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)		✘	
4	Project supplies electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			✘
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas	✘		

Since the project activity supplies electricity to the NEWNE grid that is a regional grid, the methodology AMS-I.D is applicable as per the above table.

The documents used as basis for justification of compliance with the applicability criteria of the methodology are as follows:

- Power Purchase Agreement with NTPC Vidyut Vyapar Nigam Limited (NVVN) dated 27/01/2012
- Sales Agreement for Thin-Film Photovoltaic Modules dated 29/06/2012

Appendix 4: Further background information on ex ante calculation of emission reductions

Information already provided in section B.6 of the PDD.

Appendix 5: Further background information on monitoring plan

Information already provided in section B.7 of the PDD.

Appendix 6: Summary of post registration changes

Not applicable at this stage.

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