VALIDATION REPORT

Green Infra Solar Energy Limited

10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India)

SGS Climate Change Programme
SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

Date of Issue:	**Project Number:**
13/12/2012	CDM.VAL3592
Project Title:	
10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India)	
Organisation:	**Client:**
SGS United Kingdom Limited	Green Infra Solar Energy Limited
Publication of PDD for Stakeholders Consultation	
Commenting Period:	10/07/2012 – 08/08/2012
First PDD Version and Date:	Version 01, Date- 03/07/2012
Final PDD Version and Date:	Version 05, 13/12/2012

Summary:

Green Infra Solar Energy Limited has commissioned SGS to perform the validation of the project: 10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India).

Methodology Used: AMS ID

Version and Date: Version 17, date 17/07/2011

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Standard (Version 02.0), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.

The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.

The report and the annexed validation describes a total of 06 findings which include:

- 07 Corrective Action Requests (CARs);
- 00 Clarification Requests (CLs);
- 00 Forward Action Requests (FARs);

All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration.

Subject:			**Document Distribution**
CDM Validation			
Validation Team:			
Nayan Jyoti Deka – Lead Assessor & Local Assessor Rekibuddin Ahmed – Assessor Sushil Buchade– Sectoal Expert TA1.2			☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:			
Date: 13/12/2012 Name: Ravi Kant Soni			☐ Limited Distribution
Authorised Signatory:			
Name: Siddharth Yadav Date: 19/12/2012			☐ Unrestricted Distribution
Revision Number:	**Date:**	**Number of Pages:**	
0	15/11/2012	72	
1	29/11/2012	73	
2	13/12/2012	73	

Abbreviations

BM	Build Margin
CAR	Corrective action request
CDM	Clean development mechanism
CDM EB	CDM Executive Board
CER	Certified emission reduction
CL	Clarification request
DOE	Designated operational entity
DNA	Designated national authority
FAR	Forward action request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
CDM EB	CDM Executive Board
CEA	Central Electricity Authority
CER	Certified emission reduction
CERC	Central Electricity Regulatory Commission
CL	Clarification request
CDM	Clean development mechanism
COP/MOP	Conference of Parties serving as the Meetings of Parties
DNA	Designated national authority
DOE	Designated operational entity
DPR	Detailed Project Report
EIA	Environmental Impact Assessment
EB	Executive Board
FAR	Forward action request
GHG	Greenhouse Gas(es)
GUVNL	Gujarat Urja Vikash Nigam Limited
IPCC	Intergovernmental Panel on Climate Change
ISHC	International Stake Holder Consultation
KWh	Kilo Watt hour
LA	Lead Assessor
LoA	Letter of approval
LSC	Local Stakeholder Consultation
MW	Mega Watt
MWh	Mega Watt hour
MoEF	The Ministry of Environment and Forest
MOM	Minutes Of Meeting
MOC	Modalities Of Communication
MP	Monitoring Plan
NRSE	New & Renewable Sources of Energy
NEWNE	North , East, West & North-East
ODA	Official Development Assistance
OM	Operating Margin
O & M	Operation and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PDD	Project Design Document
PP	Project Participant
PO	Purchase order
QA/QC	Quality Assurance & Quality Control

SSC	Small Scale
TPH	Ton Per Hour
UNFCCC	United Nations Framework Convention on Climate Change

Table of Content

Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Green Infra Solar Energy Limited to perform a validation of the project: 10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India) in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Standard (Version 2.0) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

By installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS ID version 17. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 164,976 t of CO2e over a 10 year crediting period, averaging 16,497 t of CO2e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature: 

Name: Siddharth Yadav

Date: 19/12/2012

2. Introduction

2.1 Objective

Green Infra Solar Energy Limited has commissioned SGS to perform the validation of the project: 10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India) with regards to the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2.3 GHG Project Description

The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The project activity has been implemented by Green Infra Solar Energy Limited (GISEL). The purpose of the project activity is to generation clean power utilising solar energy and to sell it to Gujarat Urja Vikas Nigam Limited (GUVNL) through a long term Power Purchase Agreement (PPA).

A solar photovoltaic (SPV) system converts solar irradiation in to DC (direct current) electricity and then inverts in to AC (alternating current) power. It is then connected to the grid via a step up transformer. The plant has been divided into 8 modular plots, with each plot comprising of 1.25 MWp of solar PV and two 630 kW inverters. The inverters convert the DC electrical output from the PV modules into AC. The PV modules face southwards and are titled at an angle of 15^{o} from the ground to maximise solar irradiation on the panels.

The project activity is a Greenfield project. There was no activity at the site prior to the implementation of this project activity. The estimated emission reductions for the first year are 16,994 tCO_{2e}. The total GHG emission reductions for the chosen crediting period are 164,976 $tCO_{2e.}$

2.4 The Names and Roles of the Validation Team Members

Assessment Team	Role
Nayan Jyoti Deka	Lead Assessor & Local Assessor
Rekibuddin Ahmed	Assessor
Sushil Buchade	Sectoral Expert TA 1.2 (Solar)

Technical Review	Role
Ravikant Soni	Technical Reviewer
Saurabh Chaudhari	Sectoral Expert, TA1.2

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project design document version 01 dated 03/07/2012 and the subsequent versions 05 dated 13/12/2012, (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 22/08/2012. The site visit results are summarized as a separate checklist as Annex 1 in this report.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Standard; Version 2 dated 25 November 2011. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation (reporting).

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Conclusion/ CARs/CLs
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

The completed validation protocol for this project is attached as Annex 2 to this report

3.3 Findings

As an outcome of the validation process, the team can raise different types of findings

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR

is issued, where:

I. The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
II. The CDM requirements have not been met;
III. There is a risk that emission reductions cannot be monitored or calculated.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of an CL may also lead to a CAR.

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

Corrective Action Requests and Clarification Requests are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. Findings can be raised at this stage and client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. This was checked from the UNFCCC website http://maindb.unfccc.int/public/country.pl?country=IN. The PP has submitted, to the DOE, the letter of approval issued by the Indian DNA, 'The Ministry of Environment & Forests' bearing No. 4 /13/2012-CCC dated 11/10/2012[/2/] which has been checked with original during the meeting between the PP and DOE at the PP's office by the Lead Assessor.

The authenticity of LoA[/2/] was further cross checked from the Indian DNA website[/36/] (http://www.cdmindia.gov.in/Approved_proj_reports_list_details.php?id=1&reporttype=1&page=10).

It was found that the LoA[/2/] is authentic and meets the requirements of Para 39 of VVS version 02.0.The assessment team has confirmed that the letter of approval has been issued by the Indian DNA and is valid for the proposed CDM project activity. The LoA[/2/] clearly confirms that the Government of India has ratified the Kyoto Protocol in 26th August 2002; participation is voluntarily for the project activity and clearly mentioned that the project activity contributes to the sustainable development of India. It has been also confirmed that the LoA[/2/] is unconditional with respect to the party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and the title of the project activity. The name indicated in the Letter of approval and in section A.1 and section A.3 of the PDD was found to be consistent. This was found to be in accordance with para 37 of the CDM modalities and procedures. This was also found to be as per VVS version 02.0 paragraphs 39 to 43.

Discussion of CAR/CLs

A Letter of Approval from the Indian DNA was not submitted by the Project Participant during the desk review of the PDD before the site visit. Thus, **CAR# 01** was raised asking the PP to submit the Letter of approval from the Indian DNA. The letter of Approval[/2/] issued by the Indian DNA "The Ministry of Environment and Forest (MoEF), dated – 11th October 2012 was later provided by the PP. The assessment team has confirmed that the letter of approval has been issued by the Indian DNA and is valid for the proposed CDM project activity. The LoA[/2/] clearly confirms that the Government of India has ratified the Kyoto Protocol in 26th August 2002; participation is voluntarily for the project activity and clearly mentioned that project activity contributes to sustainable development of India. It has been confirmed that the LoA[/2/] is unconditional with respect to the party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and the title of the project activity. Thus, this was accepted and hence, **CAR #01** was closed out.

Opinion

The validation team confirms that the LoA[/2/] submitted by the PP is in compliance with the requirements of paragraphs 39-43 of the VVS version 02.0 (EB 65 Annex 4).

4.2 Authorisation

The host Party for this project is India. India has ratified the Kyoto protocol on 26th August 2002. This was checked from the UNFCCC website http://maindb.unfccc.int/public/country.pl?country=IN .
The Project Participant has provided the Host country DNA approval letter as mentioned above in section 4.1. No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted.
The name of the Project Participant is "Green Infra Solar Energy Limited", who is a private entity and also the project developer and same information has been listed in tabular form in section A.3., of the PDD and also, this information was found to be consistent with the contact details provided in Annex 1 of PDD. Thus the

project activity meets the requirement as set out in the VVS version 02.0, (EB 65, Annex 4), paragraph 45-48/.
The proposed CDM project has been web hosted in the UNFCCC website (http://cdm.unfccc.int/Projects/Validation/DB/G6J0MWB6ICZ1F99DUEDOZF1D965A2C/view.html) for global stakeholders' process to invite comment as per the CDM requirements. As per the CDM EB guidelines (Paragraph 93 of EB25) the proposed CDM project has been web hosted from 10/07/2012 to 08/08/2012.
The project has been webhosted for a period of 30 days on the UNFCCC web site for International stakeholder's comments. This discussion signifies that the proposed CDM project activity fulfils the relevant CDM requirement. All the comments received have been taken into consideration during the validation of the project activity and has been addressed by the PP. The comments have been discussed in section 5 of this report. This ensures the satisfaction of VVS version 02.0, (EB 65, Annex 4), paragraph 34-37.

Validation Opinion:

The assessment team has confirmed that the project participant for the proposed project activity has been authorized by Indian DNA in a letter of approval/2/. The project participant is listed in tabular form in section A.4 of the PDD and this information is consistent with the information provided in the Appendix 1 of the PDD. No entities other than those authorized as project participants are included in these sections of the PDD. The assessment team further confirms that the approval of participation has been issued from the relevant DNA and it was verified with the DNA via email communication dated 12/11/2012 that the approval of participation is valid for the proposed CDM project participants. This is in line with the requirement of paragraph 45-48 of VVS version 02.

4.3 Modalities of Communication and MoC Statement

The corporate identity of the Project Participants and focal points has been included in the MOC/3/ statement provided by the PP. The assessment team confirms that MoC statement signed by the PP, dated 11/09/2012 has been correctly completed and organised. The assessment team also confirms that-

a) The latest version of the form "Modalities of Communication Statement" (F-CDM-MOC) has been used.
b) The information required as per the F-CDM-MOC, including its annex 1 is correctly completed.
c) The Project Participants authorized signatories signing the F-CDM-MOC correspond to the project participants authorised signatures included in F-CDM-MOC, annex 1.

Discussion of CARs/CLs:

CAR #02 requested the PP to provide the MOC form for the project activity, dully filled up and signed by the authorized signatory in the latest template as available on the UNFCCC website. The PP submitted the MoC and which was checked by the assessment team and was found to be correct. Thus CAR #02 was closed.

4.4 Project Design Document including Project Description

The PDD mentions the unique name of the project activity, "10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India)". The name of Project activity was also checked from the UNFCCC website http://cdm.unfccc.int/Projects/Validation/DB/G6J0MWB6ICZ1F99DUEDOZF1D965A2C/view.html and was found to be matching and hence accepted by the assessment team. It is confirmed that the PDD was prepared in accordance with the 'Guidelines for completing the simplified project design document (CDM-SSC-PDD)' version 01.0 (as per EB66, Annex 9) and CDM –SSC-PDD template version 04.1 as available on website: http://cdm.unfccc.int/Reference/PDDs_Forms/index.html. The table for mentioning the Project Participants has been correctly mentioned in the PDD/1/ version 1, in section A.4., which is as per VVS/5/, version 02.0, Para 51, (EB65, Annex 4). The proposed CDM project activity is located in Rajkot District of Gujarat, India. The location of the project activity is 21°44.186' N latitude and 70°7.199' E longitude which has been checked from the website (*http://www.gorissen.info/Pierre/maps/googleMapLocation.php?lat=21.736433&lon=70.119775&setLatLon=Set*) and found to be correct. Hence this was concluded that the project meets the relevant CDM requirements and PDD/1/ was checked against the forms and guidance mentioned on UNFCCC website.

Assessment on project description:

The description of the proposed CDM project activity as contained in section A.1 of the PDD/1/ version 01, as well as the subsequent version (in particular final version, 02 dated 12/09/2012) sufficiently covers all relevant elements accurately and it is consistent with details provided in further chapters of the PDDs.

The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The project activity has been implemented by Green Infra Solar Energy Limited (GISEL). The purpose of the project activity is to generation clean power utilising solar energy and to sell it to Gujarat Urja Vikas Nigam Limited (GUVNL) through a long term Power Purchase Agreement (PPA)/19/. This was checked by the assessment team during the site visit. The DPR and PPA of the project activity were also checked and the project activity as described in the Section A.1 of the PDD was found to be correct.

A solar photovoltaic (SPV) system converts solar irradiation in to DC (direct current) electricity and then inverts in to AC (alternating current) power. It is then connected to the grid via a step up transformer. The plant has been divided into 8 modular plots, with each plot comprising of 1.25 MWp of solar PV and two 630 kW inverters. The inverters convert the DC electrical output from the PV modules into AC. The PV modules face southwards and are titled at an angle of 15^{o} from the ground to maximise solar irradiation on the panels. The details of the project specifications have been checked from the DPR of the project activity and were found to be correct.

The project activity is a Greenfield project. There was no activity at the site prior to the implementation of this project activity. This was checked by the assessment team during the site visit. The estimated emission reductions for the first year are 16,994 tCO_{2e}. The total GHG emission reductions for the chosen crediting period are 164,991 tCO_{2e}.

Discussion of CAR/CL:

CAR #03 was raised asking the PP to provide, declaration letter regarding ODA involved in the project activity, acknowledge received from the UNFCCC & DNA regarding the prior consideration intimation to DNA and UNFCCC, PO of the project activity, technical details of the inverters installed in the project activity and documentary evidence to justify PLF. Further the PP was also requested to justify why no degradation factor has been considered.

Responding to the CAR #03, the PP provided the ODA declaration stating that the project activity does not involve any Official Development Assistance. Emails of acknowledgments received from the UNFCCC and host DNA was provided for prior consideration intimation, this was checked by the assessment team and was found to be correct. Purchase order, dated 30th June 2011 placed to Juwi India Renewable Energies Pvt Ltd as submitted by the PP was checked by the assessment team. Detailed Project Report (DPR) has been referred for the technical details as mentioned in the PDD. This was checked by the assessment team and was found to be consistent with the PDD. PLF of the project activity has also been quoted from DPR. The DPR of the project activity has been prepared by Surr Energy India. As they are a third party consulting firm, the PLF provided by Surr Energy is in line with the requirement of EB 48, Annex 11 and was accepted by the assessment team. PP has also provided the revised CER calculation sheet considering a degradation factor of 0.7%. This was checked by the assessment team and was found to be correct. Thus the **CAR #03** was closed.

CAR #06 was raised asking the PP to provide a confirmation that there is no auxiliary power supply connection for operation of plant during night hours. The PP was also requested to provide the information from promoter/EPC on Recycling Agreement with First Solar (PV Module Supplier) and how do they manage it. the PDD does not mention anything about degradation; the PP is requested to mention the relevant information. Further it was observed by the assessment team that the estimated plant generation (PLF – 20.36%), is on a higher side, considering the radiation and technical designing. The PP was requested to justify the same. The PDD does not include technical specification of at least PV module and inverter. Furthermore, from the PDD & DPR it was observed the plant size is slightly higher than 10.00 MWp. As per

PDD it is higher than 2.00 kWp and as per DPR it is higher than 80.00 kWp. The PP was requested to justify the mismatch in information.

Addressing the CAR #06, the PP stated that the project will consume some power for auxiliary consumption. However, the same is accounted for while calculating the net export from the project activity. The PP also included the gross electricity generated and also import from the grid as a part of the monitoring plan under the section B.7.1 of the revised PDD, version 3, dated 12/10/2012. This was checked by the assessment team and was found to be correct.

Recycling is a part of the EPC contract with Juwi. The modules are covered under the "First Solar Recycling Program" (as per section 2.2 of the EPC contract) and the details have been provided in Annexure II of the EPC contract. The EPC contract as provided by the PP was checked by the assessment team and the response provided by the PP was found to be correct.

Information regarding degradation has been included in section B.6 of the revised PDD. As per section 10.3 of the DPR, 0.7% degradation has been considered. This was checked in the revised PDD, version 3, dated 12/10/2012 and was found to be correct and matching with the DPR of the project activity.

This is the gross PLF for the site excluding degradation. The PLF reduces on factoring in the auxiliary consumption, uncertainties and annual degradation. Also, this PLF value has been provided by the third party consultant while preparing the DPR. As this is in line the requirement of EB 48, Annex 11, this was accepted by the assessment team.

Technical specifications of the PV module and inverters have been included in Section A.1.4 of the revised PDD. The technical specifications were checked from the DPR of the project activity and was found to be consistent.

The total output capacity of the power plant is 10 MWp. While the aggregate peak capacity of the individual modules combined may be slightly different than 10 MWp, the system in total has been designed for 10 MWp. The response provide by th PP was found to be correct and was accepted by the assessment team. Thus the **CAR #06** was closed.

Opinion:

The PDD satisfies the requirements of paragraphs 62 & 64 of VVS version 02.0 (EB 65 Annex 4). The PDD used as a basis for validation has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website. The PDD contains a clear description of the project activity that provides a clear understanding of the precise nature of the project activity. This description was found to be accurate and complete. It is consistent and in compliance with the actual situation. All details have been consistently mentioned throughout the PDD.

4.5 Eligibility as a Small Scale Project

The project activity correctly fits in to the category of small scale project activities. The total installed capacity of the project activity is 10 MW, which complies with the threshold limit of small scale project activities as per 4/CMP.1, Annex II. The project is a grid connected renewable energy project and applies the methodology AMS ID, Version 17, which is correct for such type of project activities. It was checked from the DPR of the project activity and was also confirmed by the assessment team during the validation site visit. The information as provided in the PDD was found to be correct. Thus the project activity is a small scale project and the requirement as set out in VVS, version 02.0, (EB 65, Annex 4), paragraph 150-152 has been met.

The PDD mentions that the Project Participant does not have any other registered or applied for registration CDM project activity in the 1 km area from the present project activity by the same project participant within 2 years in same project category and technology. This was confirmed during the site visit and it was found that there is no other project activity by the same PP which has been under CDM process and hence the

proposed CDM project is not a de-bundled component of a large scale project as per EB 54, Annex 13. Thus the validation requirement as set in VVS, version 02.0, (EB 65, Annex 4), paragraph 154 has been met.

There is no public funding used in the project activity. A declaration letter for no ODA diversion has been provided by the PP. The declaration letter was checked by the assessment team and was found acceptable.

Opinion:

As per the requirements of paragraphs 150- 154 of VVS, version 02.0, (EB 65, Annex 4), the validation team is of the opinion that the proposed project activity is eligible as a small-scale CDM project activity.

4.6 Applicability of selected methodology to the project activity

The proposed project activity confirms to the requisite applicability criteria of AMS I.D., version 17, under sectoral scope -01 (Energy Industries renewable-. Non- renewable sources) and justification for the applicability criteria has been mentioned clearly in the PDD. The proposed CDM project involves generation of electricity from biomass resources and the net electricity generated will be exported to the NEWNE grid.

Applicability of AMS I.D, Version 17 is illustrated as below:

Applicability condition	Project activity	DOE Assessment
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:1 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 activity involves installation of solar photovoltaic power plant. The project activity supplies electricity to the state grid of Gujarat, which forms a part of the NEWNE regional grid.	The project activity involves renewable energy generation by installation of Solar PV panels and will supply the net electricity generated to the NEWNE grid. This was verified from the technical description mentioned in the DPR of the project activity, dated April 2011 prepared by SgurrEnergy India and also from the PPA, dated 06/12/2010 of the project activity. The information as mentioned in the PDD was found consistent. Thus it was concluded that this applicability criteria of the applied methodology is met.
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 the installation of a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity.	The proposed project activity is a Greenfield project, thereby fulfilling the given criterion (a). This was confirmed by the assessment team during the site visit and by document review- a) The allotment letter (dated 14/10/2010) from Energy & Petrochemicals Department, Government of Gujarat. b) Purchase Order for services for execution

[1] Refer to EB 23, annex 18 or the definition of renewable biomass.

		(dated 30/06/2011) to Juhi India Renewable Energies Pvt Ltd. Thus it was concluded that this applicability criteria of the applied methodology is met.
Hydro power plants with reservoirs that satisfy 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,2 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.	The project activity is power generation through solar PV modules. Hence, this condition is not applicable to the project activity	The project activity is a solar PV based power project. Thus, this condition is not applicable for the project activity. This was confirmed by the assessment team during the validation site visit.
If the unit added 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.	The project activity consists only of renewable components. The capacity of the project activity is 10 MW, which is below the eligibility limit for a small-scale CDM project activity.	The proposed CDM project activity is a Greenfield project activity which is evident from the Purchase Order for services for execution (dated 30/06/2011) to Juhi India Renewable Energies Pvt Ltd, this was also verified during the validation site visit. The capacity of the project activity is 10 MW and is within the eligibility limit of 15MW for a Type I small scale CDM project activity. Hence, this criterion is not applicable for the project activity.
Combined heat and power (co-generation) systems are not eligible under this category	The project activity is not a co-generation unit	The project activity is not a cogeneration system. This was verified from the DPR, dated April 2011 of the project activity and also during the site visit by the

[2] A reservoir is to be considered as an “existing reservoir” if it has been in operation for at least three years before the implementation of the project activity.

		assessment team. Hence, satisfying the given criteria of applied Methodology
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 the installation of new solar PV based power plant. Hence, this condition is not applicable.	The project is Greenfield project and does not involve any capacity expansion. This was confirmed during the validation site visit along with review of EPC Contract, dated 18/03/2011 of the project activity and was found to be satisfactory. Hence, this criterion is not applicable for the project activity.
In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	The project activity does not involve any retrofit or replacement.	The project activity is a Greenfield project and there is no retrofitting or replacement involved in this project activity. Hence, this criterion is not applicable for the project activity. This was confirmed by the assessment team during the validation site visit of the project activity.

Opinion

As per the requirements of paragraphs 70-76 of VVS version 02.0 (EB 65 Annex 4) and based on the above discussion, that validation team confirms that the proposed CDM project activity meets all the applicability conditions and all other stipulations of the selected methodology AMS I.D Version 17.

4.7 Project Boundary

As per the approved methodology AMS ID, version 17, valid from 17th June, 2011, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to. The boundary of the proposed project activity has been appropriately considered and the project boundary includes the project activity and the electricity grid. The grid includes all other power plants connected to it.

The spatial extent of the project boundary has been confirmed during the site visit and found to be satisfactory. Thus, this is to conclude that the PDD has correctly described the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating the project and baseline emissions for the proposed CDM project activity. Thus, it has been confirmed that the delineation in the PDDs of the project boundary is correct and meets the requirements of the applied methodology AMS ID, version 17. There is no other emission occurring due to the project activity which is not accounted for by the PP. This was checked and confirmed during the site visit by the assessment team.

Opinion:

The validation team is of the opinion that the project boundary has been correctly identified in the PDD and is in line with paragraph 82 of VVS version 02.0 (EB 65, Annex 4).

4.8 Baseline Selection

The baseline scenario for the project activity 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 activity is also in line with the paragraph 10 of the applied methodology AMS ID, version 17.

The project activity aims to sell the entire power generated to the state grid of Gujarat through a Power Purchase Agreement (PPA). It shall thus displace an equivalent amount of electricity which would have been generated through the power plants connected to the state grid of Gujarat, which are predominantly fossil fuel based.

The PPA of the project activity was checked by the assessment team and was found to be authentic; the grid connectivity of the project activity was also cross checked from the commissioning certificate/21/, dated 09/12/2011 of the project activity.

Opinion:

Hence, it has been concluded that the approved baseline methodology AMS I.D/6/, version 17 has been correctly applied to identify the most reasonable baseline scenario and reasonably represents what would occur in the absence of the proposed CDM project activity. The requirement of para 88 of VVS, version 2.0, EB 65, Annex 4 has been met.

4.8.1 Additionality of a project activity

The additionality of the project activity is based on "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES", Version 09, EB 68, Annex 27.

As per paragraph 2(a) i, of EB 68 Annex 27, the project activity qualifies under the positive list of grid-connected renewable electricity generation technology which is automatically defined as additional.

The total capacity of the project activity was checked from the DPR of the project activity and also during the site visit by the assessment team. The grid connectivity of the project activity was checked from the PPA of the project activity signed with GUVNL and dated 06/12/2010.

Thus it was confirmed by the assessment team that the project is a small scale grid connected solar photo voltaic technology and the project is auto additional, as per EB 68, Annex 27.

Opinion:

The above mentioned validation of the additionality of the project activity has been carried out as per the requirements of paragraphs 101, 102 and 103 of the VVS version 2.0 (EB 65 Annex 4). The validation team is of the opinion that the project satisfies all the relevant requirements of auto additionality as per "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES" version 9, EB 68, Annex 27.

4.8.2 Prior Consideration of the Clean Development Mechanism

The proposed CDM project activity is a new project because the start date of the project activity is 18/03/2011 i.e. after 2 August 2008 (as per EB49, Annex22). The start date of the project activity is 18/03/2011 which is the EPC contract date for the implementation of the project activity and it is validated as the earliest date at which real action of project activity begins as per EB41, para 67 and the project start date definition as per Glossary of CDM terms (version 06.0).

The prior CDM consideration related notifications were sent on 04/03/2011 which is before the project activity start date. This is as per the UNFCCC guidance available at that time, which is EB 49, Annex 22 (it is noteworthy, that the latest guidelines on the demonstration and assessment of prior CDM consideration, i.e. EB62, Annex 13 is not considered in the current context of the project activity, since this was not available to

the PP during the time of sending the intimation to the UNFCCC and DNA, however the project activity also meets the requirement of EB 62, Annex 13).

The intimation to the UNFCCC was sent on 04/03/2011, which is found traceable through entry at the UNFCCC website (http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html).

The PP has demonstrated the awareness of CDM prior to the project start date and seriousness which is found evident from the Board Meeting Resolution dated 15/10/2012 which clearly indicates that consideration of CDM revenue was instrumental in the decision to proceed with the set up of the solar PV power plant.

The chronology of events for CDM consideration for the project activity is as follows:

Stage of project implementation	Date	Validation Remarks
Power Purchase Agreement (PPA)	06/12/2010	PPA signed with GUVNL by the PP was checked.
CDM notification made to UNFCCC and Host Country DNA	04/03/2011	As per the requirement for the "New Project activities" category following the guidelines of "Guidelines for the demonstration and assessment of prior consideration of the CDM", the PP had sent intimation to both UNFCCC and MoEF intimating about its intention to apply for carbon credits for the project activity through email on 04/03/2011. The email correspondences made to the UNFCCC and the Host Country DNA/25/ have been checked through archived copy of the email communications made to UNFCCC and Indian DNA office on 04/03/2011 and found to be consistent and thus accepted. Furthermore, the entry on the Project Title, Entity Name & Date of the notification received at UNFCCC website on Prior Consideration of the CDM (http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html) was cross checked and were found to be traceable and consistent as per the requirement.
EPC contract for implementation of the project activity	18/03/2011	The PP entered into an EPC contract for the implementation of the project activity
Acknowledgements received from UNFCCC and host DNA	24/03/2011	In response to the email notification made by the PP to UNFCCC and Indian DNA office on 04/03/2011, email acknowledgements were received from UNFCCC and host DNA/26/. The email correspondences made to the UNFCCC and the Host Country DNA/26/ have been checked through archived copy of the email communications made to UNFCCC and Indian DNA office on 04/03/2011 and found to be consistent and thus accepted.
Commissioning of the project activity	11/11/2011	The project activity started commercial operations
Local stakeholder meeting	10/02/2012	Stakeholder meeting was held at the project site involving the local stakeholders
Contract with the DOE	27/06/2012	The PP signed validation contract with a DOE for carrying out validation of the project activity
CDM webhosting	10/07/2012 to	The period for which the project was webhosted on the UNFCCC website for global stakeholder consultation

	09/08/2012	

4.8.3 Identification of alternatives (if applicable)

As the project is small scale project and the additionality is based on "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES", Version 09, EB 68, Annex 27, hence identification of alternatives is not required as per this guideline, EB 68, Annex 27. For detailed description on additionality of the project please refer to section 4.8.1 above.

4.8.4 Investment analysis (if applicable)

The additionality of the project activity is based on "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES", Version 09, EB 68, Annex 27. The project being a small scale solar photo voltaic project, it is auto additional as per paragraph 2 (a) i of EB 68, Annex 27. Thus investment analysis is not required for demonstration of additionality. For detailed description on additionality of the project please refer to section 4.8.1 above.

4.8.5 Barrier analysis (if applicable)

The additionality of the project activity is based on "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES", Version 09, EB 68, Annex 27. The project being a small scale solar photo voltaic project, it is auto additional as per paragraph 2 (a) i of EB 68, Annex 27. Thus barrier analysis is not required for demonstration of additionality. For detailed description on additionality of the project please refer to section 4.8.1 above.

4.8.6 Common practice analysis

The additionality of the project activity is based on "GUIDELINES ON THE DEMONSTRATION OF ADDITIONALITY OF SMALL-SCALE PROJECT ACTIVITIES", Version 09, EB 68, Annex 27, thus separate step for Common practice analysis as per Additionality Tool is not applicable.

4.9 Application of Baseline Methodology and Calculation of Emission Factors

The proposed CDM project activity has appropriately adopted the methodology AMS I.D; version 17, as the project activity is a grid connected renewable power generation activity. The project activity supplies the net electricity generated to the NEWNE grid, thus the baseline scenario for the project activity is the electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

As per approved 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.

Also, the emission factor can be calculated in a transparent and conservative manner as follows:

(a) 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";

OR

(b) The weighted average emissions (in t CO_2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

The project participant has chosen option (a) to calculate the emission factor. The emissions factor shall be calculated using the "tool to calculate emission factor for an electricity system", version 2.2.1 while using data from the CEA (Central Electricity Authority) CO_2 baseline database version 7.

The emission factor has been calculated as follows as per the Tool to calculate the emission factor for an electricity system, version 2. 2. 1:

Step1. Identify the relevant electricity systems:

The CEA of the host country has published a delineation of the project electricity system and connected electricity systems. The project activity is situated in the state of Gujarat and is a part of the NEWNE grid of India and the same has been considered as the relevant project electricity system by the PP.

Step2. Choose whether to include off-grid power plants in the project electricity system (optional):

The PP has not opted for this step.

Step3. Select a method to determine the Operating Margin (OM):

This step involves the selection of an Operating Margin method in which a three year generation weighted average based on the most recent data would be calculated ex ante and would be fixed for the entire crediting period. For the purpose of Ex-ante estimation of CERs, the Emission factor of the NEWNE grid was applied. Since the power supplied by low cost must run power plants to the NEWNE grid during is clearly below 50%, the CEA has applied the Simple OM method. The data vintage option selected is the ex-ante approach, where a 3 year average OM is calculated. The most recent three year CEA data published on the emission factor of NEWNE grid is considered.

Step4. Calculate the operating margin emission factor according to the selected method

In this step the PP has done the Calculation of the OM according to the Simple OM method which is calculated 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. The data has been taken from CEA (Central Electricity Authority) CO_2 Baseline Database for the Indian Power Sector version 7.0 which is the latest available official data at the time of PDD submitted for validation. The Simple OM has been calculated using the formula as mentioned in the "Tool to calculate the emission factor for an electricity system", version 2.2.1, which has been verified from the tool and found to be inline.

For the project activity, the full generation-weighted average for the most recent 3 years for which data are available at the time of the PDD submission has been considered. The data is published annually by the Central Electricity Authority. Thus:

Simple OM	NEWNE Grid (tCO_2/MWh)	Generation (GWh)
2008-09	1.0066	421802.6329
2009-10	0.9777	458043.0846
2010-11	0.9707	476986.7213
Generation weighted OM (tCO_2/MWh)	0.9842	

STEP 5: Calculate the build margin emission factor ($EF_{grid, BM,y}$)

The value of the BM has been taken from the data published by the CEA, which is based on the procedures mentioned in the Tool to calculate emission factor for an electricity system, version 2.2.1.

Option 1 of the "Tool to calculate emission factor for an electricity system", version 2.2.1 has been chosen in the project activity for the calculation of the build margin emission factor. BM is calculated ex-ante based on the most recent information available at the time of submission of the PDD and is fixed for the entire crediting period. As per the CEA CO_2 Baseline Database, the BM for the 2010-11 is shown below-

BM	NEWNE Grid (tCO_2/ MWh)
2010-11	0.8588

STEP 6: Calculate the combined margin (CM) emission factor ($EF_{grid, CM, y}$)

The combined margin emission factor is calculated as follows as mentioned in the "Tool to calculate emission factor for an electricity system", version 2.2.1:

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

Where:

EFgrid, OM,y = Build Margin CO2 emission factor in the year *y* (tCO_2/GWh)
EFgrid, BM,y = Operating Margin CO_2 emission factor in the year *y* (tCO2/GWh)
W_{OM} = Weighting of operating margin emission factor (%)
W_{BM} = Weighting of build margin emission factor (%)

Owing to their intermittent and non-dispatchable nature, the default weights for wind and solar projects as per the "Tool to calculate emission factor for an electricity system", version 2.2.1 are as follows:

***W_{OM}* = 75% and *W_{BM}* = 25%**

In the project activity, **combined margin has been chosen as the baseline emission factor** for grid emission factor. The value chosen is taken from relevant official sources and is publicly available.

Parameter	NEWNE grid (tCO_2/MWh)
OM, Operating Margin – Generation weighted	0.9842
BM, Build Margin	0.8588
CM, Combined Margin (tCO_2/ MWh)	**0.9529**

The combined margin thus obtained shall be fixed ex-ante for the entire crediting period of the project activity. The OM and BM have been fixed *ex-ante* for the entire crediting period of the project activity..

Baseline emissions:

Total Capacity: 10 MW
Run hours = 24×365 = 8760 hrs
PLF = 20.36%

Hence, net power exported = 17835.36 MWh/ annum. Thus the Baseline emission factor = 0.9529 tCO_{2e}/MWh and this gives a Baseline emissions = 16,994 tCO_{2e}. The value presented here is for the first year. An annual degradation factor of 0.7% has been taken, as per the DPR of the project activity.

Emission reductions

Since, $ER_y = BE_y$ (Since PE_y and LE_y are zero)

Hence, average estimated emission reductions for the project activity (considering a degradation factor of 0.7%) is = 16,497 tCO2e per annum

Opinion:

Based on the above discussion and the requirements of paragraphs 96-100 of the VVS version 02.0 (EB 65 Annex 4), the validation team confirms that:

1. All assumptions and data used by the PP are listed in the PDD including their references and sources
2. All documentation used by the PP as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD
3. All values used in the PDD are reasonable in the context of the proposed CDM project activity
4. The baseline methodology AMS I.D Version 17 has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions.
5. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

4.10 Application of Monitoring Methodology and Monitoring Plan

The monitoring methodology of AMS I.D., version 17 was correctly followed in the PDD, and the required parameters of the monitoring plan are also inline to the applicable methodology. The monitoring methodology applies consistently the choice of the option selected for monitoring both of project and baseline emissions.

The monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period. The information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan. The Project Participant has mentioned the procedure for the monitoring of net electricity supplied to grid and included required parameters in monitoring section B.7.1 of the PDD. Hence, in line with this, the PP has defined the following parameters in section B.7.1 of the PDD.

$EG_{export,y}$: It refers to Power exported to the grid by the project activity. The parameter will be measured on continuous basis through energy meter and the data will be recorded on monthly basis, which fulfils the frequency mentioned in the applied methodology AMS-I.D version 17. For measuring the electricity exported by the project activity, the state electricity board has installed two sets of energy meters (main and check) at the substation of the project activity (one for each feeder). Monthly readings are taken jointly by the representative of Gujarat Energy Transmission Corporation (GETCO) and site in charge of Project Participant and a statement is prepared. The energy meters installed at the grid interconnection point shall be calibrated regularly in accordance with the procedures of GETCO. The values of electricity exported can be cross checked with the plant log books.

$EG_{import,y}$: It refers to Power imported from the grid. The parameter will be measured on continuous basis through energy meter and the data will be recorded on monthly basis, which fulfils the frequency mentioned in the applied methodology AMS-I.D ver 17. For measuring the electricity imported by the project activity, the state electricity board has installed two sets of energy meters (main and check) at the substation of the project activity (one for each feeder). Monthly readings are taken jointly by the representative of Gujarat Energy Transmission Corporation (GETCO) and site in charge of Project Participant and a statement is prepared. The energy meters installed at the grid interconnection point shall be calibrated regularly in accordance with the procedures of GETCO. The values of electricity exported can be cross checked with the plant log books.

$EG_{actual,y}$: It refers to the Net power exported to grid. The net electricity export to grid is the difference between the measured quantities of the grid electricity export and the import. The net export is calculated as the difference between energy exported to grid and energy imported by the project activity.

Monitoring of power generation at Inverter end:

Power generated by the project activity at the inverter end will be recorded hourly in the dedicated Monitoring Station situated at the project site. The project activity consists of a number of solar modules connected to a total of 16 inverters. The generation details of each inverter at any point of time is monitored both at the Data Display System integrated in the inverter panel and simultaneously at the CMS. Monthly data will be compiled and stored electronically.

Apportioning procedure to be followed by the PP in case of mismatches in monitoring period date and billing date:

Apportioning is required in cases where the date of monitoring period doesn't match with the date of Monthly statement showing the energy generated through the project activity.

In such a case, the power sent out through the inverters shall be used for the apportioning. The readings from the inverters will be only used to arrive at an apportioning ratio for the energy as indicated in the Monthly statement showing the energy generated through the project activity in cases of mismatch in the start date of crediting period and dates of monthly statement. The apportioning of net exported electricity from the project would be done by multiplying the net electricity exported, as mentioned in the monthly statement showing the energy generated, and the ratio of inverter readings of the intervening period and total period as shown in monthly statement showing the energy generated.

A – Inverter readings for the partial days' generation of the month for which CERs are being claimed

B - Inverter readings for the period corresponding to the dates mentioned in the monthly statement showing the energy generated

C - ratio of A and B; A/B

D = C x Energy as indicated in the monthly statement showing the energy generated

This method was checked and was found to be correct by the assessment team and was ccepted.

Handling data Uncertainty:

- Main meter is faulty- If the main meter is faulty, it will immediately be replaced by a new meter and meter reading from the replaced meter will be used thereafter. The generation during the intervening

period will be forfeited. This was found correct and also conservative by the assessment team and was accepted.

- Error is identified during annual meter testing- If during the annual tests, the meter is found to be beyond the permissible limits of error (0.2%), the meter shall be immediately calibrated and replaced, if necessary. The error that is identified in the calibration would be applied to entire range of data from the date of last calibration. Billing for the period thereafter till the next monthly reading shall be as per the calibrated meter. This was found satisfactory by the assessment team and was accepted.

Discussions of CARs/CLs:

CAR #05 was raised asking the PP to update the version number of all the relevant tools and guidelines as applicable in the PDD. The PP was also requested to provide the excel spreadsheet of the calculation of emission reduction needs to be provided by the Project Participant. The PP was further requested to provide more information under monitoring plan, under section B.7.1, since during the site visit it has been observed that there are two sets of meters (2nos of main meters and 2nos of check meters) are installed for net export of electricity to the grid by the project activity.

Responding to the CAR #05 the PP revised the PDD and updated the name and version of the tools and guidelines used. This was checked by the assessment team and was found to be correct. The PP also provided the emission reduction calculation sheet; this was checked by the assessment team and was found to be correct. The meter details are now included in the revised PDD, version 3, dated 12/10/2012, wWas checked by the assessment team and was found to be correct. Thus the **CAR 05** was closed.

CAR #07 was raised asking the PP to clarify how the source document (JMR) for parameters export, import could also be cross checking reference for same parameters, also if $EG_{actual,y}$ is calculated parameter (Export –import), then why the details of meters provided for this parameter was provided. Further, methodology AMS I.D version 17 recommends “Continuous monitoring, hourly Measurement and at least monthly” for $EG_{y.}$ The PP was requested how the monitoring described in the PDD is in line with the requirement of methodology; also it is not clear what interval for calibration is recommended by GETCO.

In addition to this, the PP was requested to mention appropriate start date of crediting period in the PDD. The PP was also requested to justify the PLF considered and why the installed capacity of modules, i.e., 10.02 MWp has not been considered for all the calculations.

Addressing the CAR #07, the PP corrected the source for cross checking and stated that the invoices raised by the PP to the state utility for payment purposes can be used as cross checking references. The same was also mentioned in the PDD.

The monitoring for $EG_{export,y}$ & $EG_{import,y}$ was made in line with the methodology. As per the PPA section 7.2, meters will be calibrated once every three years. The same was also mentioned in the PDD. The PP also revised the start date of the crediting period.

The PP stated that, the PLF is as per the independent third party report, which is in line with EB 48 Annex 11. The same was available at the time of decision making as well. The PLF has been derived by comparing the irradiation figures given by METEONORM, SWERA and NASA for the Meravadar site. Moreover, the decision making was based on this value. Hence, the same has been used.

The PP also added that the total installed capacity of the plant is 10 MW. Thus, the same has been considered for all calculations. All statutory documents and allotment letter also refer to the rated site capacity of 10 MW.

The PP was further requested to justify the mismatch of annual emission reduction and average annual reduction in section B.6.3, of the PDD. Also, in the ER calculation sheet, Tab CERs has a table (cell no- J6) stating the start date. The PP was requested to mention the correct terminology clearly. Further, in the ER calculation sheet, Tab CERs (Cell no-J7) states “last day of first year”. As 31st March is not the last day, the PP was requested to take a corrective action.

Responding to this the PP revised the PDD (version 05, dated 13/12/2012) and the ER calculation sheet. This was checked by the assessment team and was found to be consistent. Thus **CAR 07** was closed.

Opinion:

Based on the above discussion and the requirements of paragraphs 131-132 of the VVS version 02.0 (EB 65 Annex 4), the validation team confirms that:

- The monitoring plan included in the PDD is based on the approved methodology AMS I.D version 17 which has been applied to the proposed CDM project activity
- Confirm that the description of the monitoring plan contains all necessary parameters, that they are described and that the means of monitoring described in the plan complies with the requirements of the methodology including applicable tool(s)
- The monitoring arrangements described in the monitoring plan are feasible within the project design
- The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project activity can be reported ex post and verified.

4.11 Environmental Impacts

As per the EIA notification number S.O. 1533 (http://envfor.nic.in/legis/eia/so1533.pdf), the generation of electricity using solar energy does not require a prior EIA assessment and environmental clearances.

The PP have acquired all the necessary consents and approvals required for the installation and operation of the project activity. Also, from the LoA, it has been confirmed that the proposed CDM project activity contributes to the sustainable development in the host country. Also, there is no significant environmental impact due to the project activity which has been physically verified during the site visit. This was on the basis of interviews of the personal during site visit by Lead assessor.

Validation Opinion

The Validation team is of the opinion that the project complies with environmental regulations in India.

4.12 Local Stakeholder Comments

The local stakeholders were informed about the project activity through an advertisement in a regional newspaper "*Fulchhab*" dated 04/02/2012 in vernacular language. This was checked by the assessment team. Invitation letters were sent to the heads of the village governing council (panchayat). A public notice was also displayed in the office of village council, this was also checked by the assessment team.

A stakeholder consultation meeting was held at the project site on 10/02/2012, which was confirmed from the minutes of meeting submitted by the PP. In the meeting, the PP representatives explained the local stakeholders of the project activity and its benefits. The stakeholders were details about the benefits of producing clean energy as compared to producing energy from fossil fuel based power plants. This was followed by a discussion round where comments/views from local stakeholders were invited. The PP responded to the comments of the stakeholders. An attendance list of stakeholder's present in the meeting was also checked by the assessment team to confirm the presence of stakeholder's.

The stakeholders appreciated the efforts of the project participant to promote clean energy. The stakeholders expressed satisfaction on the project activity and were happy about the fact that local people were provided employment at the project site. No negative comments were received during the stakeholder consultation process.

Discussion of CARs/CLs:

CAR #04 was raised asking the PP to provide the details of Stake Holder's consultation meeting in particular the Summary of comments received and report on consideration of comments received.

Addressing the CAR #04 the PP included all the details of Stake holder's consultation meeting in the revised PDD version 3, dated 12/10/2012. This was checked by the assessment team and was found to be correct. Thus the **CAR 04** was closed.

Validation Opinion

According to the requirements of the paragraphs 138-140 of the VVS version 02.0 (EB 65, Annex 4), the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out.

5. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the Project Design Document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

5.1 Description of How and When the PDD was Made Publicly Available

The Project Design Document for this project was made available on http://cdm.unfccc.int/Projects/Validation/DB/G6J0MWB6ICZ1F99DUEDOZF1D965A2C/view.html and was open for comments from 10/07/2012 until 08/08/2012 . Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

Comment Number	Date Received	Submitter	Comment
1	26/07/2012	Mahesh Pandya	Why this location has been chosen for this project? 1. Will this project have impact on temperature in surrounding area? 2. What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case? 3. How many skilled/unskilled people from surrounding area will be employed at this project during commissioning and operation? 4. List of stakeholders and minutes of stakeholder meeting is not attached with PDD. 5. What is Complaint redress mechanism of a company, in case of villagers want to complain about solar panels?
2	08/08/2012	Falguni Joshi gujaratforumoncdm @gmail.com	1. Employment Opportunity - How many skilled/unskilled people from surrounding area will be employed at this project during commissioning and operation? 2. Impact on Environment - Will this project have impact on temperature in surrounding area? What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case? 3. Local stakeholder consultation - List of stakeholders and minutes of stakeholder meeting is not attached with PDD. 4. Compliant redress mechanism - What is Complaint redress mechanism of a

Comment Number	Date Received	Submitter	Comment
			company, in case of villagers want to complain about solar panels?

5.3 Explanation of How Comments Have Been Taken into Account

Date:	26/07/2012	Raised by:	Mahesh Pandya
No.:	01		
ISHC Comment		Date: 10/07/2012 – 08/08/2012	
1. Why this location has been chosen for this project? 2. Will this project have impact on temperature in surrounding area? 3. What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case? 4. How many skilled/unskilled people from surrounding area will be employed at this project during commissioning and operation? 5. List of stakeholders and minutes of stakeholder meeting is not attached with PDD. 6. What is Complaint redress mechanism of a company, in case of villagers want to complain about solar panels?			
Project Participant Response:		Date: 26/09/2012	
1. This location was chosen based on studies of solar irradiation. Also, the project was allotted under the Gujarat Solar policy and the region was designated by the government of Gujarat. The district Rajkot has many other solar projects as well. 2. This project will have no direct impact on the temperature in surrounding areas. 3. This project will not lead to any negative environmental condition. The project is a part of the recycling initiative of First Solar as well, in which all the replaced solar PV modules will be recycled as per best practices. 4. During construction and commissioning, many people from the surrounding villages were employed by the contractor. About 15-16 people were employed on a daily basis for a period of about 4 months. Currently, one skilled and one unskilled individual from the surrounding areas have been employed by the project on a permanent basis on the site. 5. The same have been included in the revised PDD. In case of any complaints, the villagers can approach the care taker appointed at the project site. The care taker also belongs to the nearby areas and this helps facilitate interactions with the locals. 6. In case of any complaints, the villagers can approach the care taker appointed at the project site. The care taker also belongs to the nearby areas and this helps facilitate interactions with the locals.			

DOE Comment:

1. This was checked by the assessment team from Allotment Letter, dated 14/10/2010 by Energy and Petro Chemicals Department, Government of Gujarat, to Green Infra Solar Energy Limited and it was found that the this location was allocated to the PP. Justification provided by PP was found to be correct and was accepted by the assessment team. ISHC closed.
2. This was checked by the assessment team from the DPR of the project activity prepared by SGURR Energy, dated 15/04/2011. No such effect was mentioned in the DPR. This was also confirmed from the Sectoral Expert that the project will have no effect on the surrounding area. ISHC closed.
3. This was checked by the assessment team and was found to be correct. ISHC closed.
4. This was checked by the assessment team during the validation site visit and was found to be correct. ISHC closed.
5. List of stakeholders and a brief description of minutes of stakeholder meeting have been included in the revised PDD. This was checked by the assessment team and was found to be correct. List of stakeholders and minutes of stakeholder meeting List of stakeholders and minutes of stakeholder meeting
6. This was checked and was confirmed by the assessment team during the validation visit. List of stakeholders and minutes of stakeholder meeting

Date:	08/08/2012	Raised by:	Falguni Joshi Email: gujaratforumoncdm@gmail.com
No.:	01		
ISHC Comment		Date: 10/07/2012 – 08/08/2012	

1. Employment Opportunity - How many skilled/unskilled people from surrounding area will be employed at this project during commissioning and operation?
2. Impact on Environment - Will this project have impact on temperature in surrounding area? What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case?
3. Local stakeholder consultation - List of stakeholders and minutes of stakeholder meeting is not attached with PDD.
4. Compliant redress mechanism - What is Complaint redress mechanism of a company, in case of villagers want to complain about solar panels?

Project Participant Response:	Date: 26/09/2012

1. During construction and commissioning, many people from the surrounding villages were employed by the contractor. About 15-16 people were employed on a daily basis for a period of about 4 months. Currently, one skilled and one unskilled individual from the surrounding areas have been employed by the project on a permanent basis on the site.
2. This project will have no direct impact on the temperature in surrounding areas. This project will not lead to any negative environmental condition. The project is a part of the recycling initiative of First Solar as well, in which all the replaced solar PV modules will be recycled as per best practices.
3. The same have been included in the revised PDD
4. In case of any complaints, the villagers can approach the care taker appointed at the project site. The care taker also belongs to the nearby areas and this helps facilitate interactions with the locals.

DOE Comment:

1. This was checked by the assessment team and was found to be correct. ISHC closed.
2. This was checked by the assessment team from the DPR of the project activity prepared by SGURR Energy, dated 15/04/2011. No such effect was mentioned in the DPR. This was also confirmed from the Sectoral Expert that the project will have no effect on the surrounding area. ISHC closed.
3. List of stakeholders and a brief description of minutes of stakeholder meeting have been included in the revised PDD. This was checked by the assessment team and was found to be correct. List of stakeholders and minutes of stakeholder meeting List of stakeholders and minutes of stakeholder meeting
4. This was checked and was confirmed by the assessment team during the validation visit. List of stakeholders and minutes of stakeholder meeting.

List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
22/08/2012	Nishidh Baagat	Manager Projects	O & M, monitoring procedures ,Technical description of project activity and baseline and data monitoring for project activity
22/08/2012	Hitesh Shial	O & M Manager	O & M, monitoring procedures ,Technical description of project activity and baseline and data monitoring for project activity
22/08/2012	Nilesh Kecha	O & M engineer	O & M, monitoring procedures ,Technical description of project activity and baseline and data monitoring for project activity
22/08/2012	Anjan Katna	Assistant Manager (PWc)	Baseline and Monitoring procedure. Addtionality

6. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

/1/	*(a) PDD, Version 01, dated- 03/07/2012* *(b) PDD, Version 02, dated- 12/09/2012* *(c) PDD, version 03, dated- 12/10/2012* *(d) PDD, Version 04, dated- 28/11/2012* *(e) PDD, Version 05, dated- 13/12/2012*
/2/	Host Country Approval Letter, dated 11/10/2012
/3/	Modalities of Communication (MOC), dated 11/09/2012
/4/	ER Calculation sheet

Discuss the key changes in the final PDD against the version published for the international stakeholder consultation

PDD Version	Date of Revision	Main changes reason for Revision
Version 05	13/12/2012	The PDD has been updated for, • Estimated amount of CERs have been included in A.1 of the PDD. • Technical specifications of solar PV modules have been included in Section A.3. of the PDD • Technical specifications of inverter have been included in Section A.3. of the PDD • Applicability criteria have been included in Section B.2 of the PDD. • Chronology of events under Section B.5 has been updated. • Ex-ante parameter under B.6.2 has been added • Parameter EG_{import} and EG_{Export} have been added under section B.7.1 of the PDD. • Estimated amount of annual average GHG emission reductions in page 1 of the PDD • Revision of monitoring frequency in section B.7.1 of the PDD. • Changes in start date of crediting period • Changes in number of emission reductions.

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

/5/	Clean Development Mechanism Validation and Verification Standard Version 02.0
/6/	Approved methodological standard version, AMS ID, Version 17.
/7/	Tool to calculate emission factor for an electricity system, version 2.2.1
/8/	EB 68, Annex 27
/9/	CDM Project Standard, Version 01.0
/10/	Baseline Carbon Dioxide Emission Database Version 7.0, Published by Central Electricity Authority (CEA)
/11/	Board Meeting Resolution, dated 15/10/2012
/1/2/	Allotment Letter from Energy and Petro Chemicals Department
/13/	Consent to establish from Pollution Control Board, Gujarat, 24/10/2011
/14/	EPC agreement, dated, 18/03/2011

/15/	Detailed Project Report, April 2011.
/16/	Loan Agreement Letter, dated 28 June, 2011.
/17/	Loan Sanction Letter, May 09, 2011
/18/	Purchase order for service, 30th June
/19/	Power Purchase Agreement, dated 06/12/2012
/20/	O&M Agreement, dated 04/04/2011
/21/	Commissioning Certificate, dated 09/12/2011
/22/	Attendance list of stakeholder's meeting
/23/	Minutes of meeting of stakeholder's
/24/	Public Notice for Stakeholder's meeting
/25/	Email communications on CDM consideration notification made to UNFCCC (cdmregistration@unfccc.int) and Indian DNA office (assistant.ncdma@nic.in) on 04/03/2011
/26/	Email acknowledgements received from UNFCCC (cdmregistration@unfccc.int) and Indian DNA office (assistant.ncdma@nic.in) with regard to notification on CDM consideration.

- o0o -

A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for 10 MW Solar Photovoltaic Power Plant in Rajkot, Gujarat (India)

It serves as a "**reality check**" on the project that is completed by a local assessor from SGS India

Issue	**Findings**	**Source/Means of Verification**	**Further Action / Clarification / Information Required?**
QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation & maintenance	PP mentioned that there will be procedures for project performance reviews before data is submitted for verification.	Interviewed	Appropriate and accepted
Does the project activity qualify as small scale project?	The project activity is found to be a small scale project activity as evident from name plate.	Site visit	Appropriate and accepted
Project boundary	The project boundary is found to be in accordance with the PDD.	Site visit	Appropriate and accepted
Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	PP has the ownership right for the project activity.	Interviewed and site visit	Appropriate and accepted
Technical specification	The technical specification has been checked from the purchase order as well physical verification of the plant and found to be satisfactory.	Site visit/ Purchase order	Appropriate and accepted
Environmental impact	During the site visit it has been found that there is no environment affect envisage due to the proposed project activity.	Interviewed.	Appropriate and accepted

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Debundling criteria	During the site visit it has found that the project is not a Debundle component of a large scale project	Site visit	Appropriate and accepted
Power Purchase Agreement	PP has provided the power purchase agreement document	Power purchase agreement	Appropriate and accepted

A.2 Annex 2: Validation Checklist

NOTE: Please read the reporting requirements as detailed in AR6 (e.g. on applicability, baseline assessment and additionality etc) while completing related sections in this protocol

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
1. All Parties involved have approved the project activity 1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms 1.1.1. The country is a Party to the Kyoto Protocol 1.1.2. Participation is Voluntary 1.1.3. The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval 1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration	Annex 4, Clean Development Mechanism, Validation and Verification Standard, Version 2.0 (from this point forwarded referenced as VVS) – 39 a-d-42 /51 Paragraph 37 CDM Modalities and procedures	The Host Country Approval (HCA) letter is yet to be submitted.CAR#01 raised. Closure of CAR#01	~~CAR#01~~ CAR#01 closed

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
1.2. If the project participant(s) listed in the PDD published at international stakeholder[3] consultation are not included in the PDD submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary withdrawal from the proposed project activity.	EB 30 Para. 41. EB50 Annex 48 para. 8	NA	*Y*
1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVS Para. 46-49	HCA to be submitted by PP. CAR#01 raised.	~~CAR#01~~ CAR#01 closed
2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVS Para. 34-37 Marrakech Accords, CDM Modalities, §40	website: http://cdm.unfccc.int/Projects/Validation/DB/G6J0MWB6ICZ1F99DUEDOZF1D965A2C/view.html Starting date and closing date: 10/07/2012 to 08/08/012 Number of comments received:2	*Y*
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVS Para. 62-63 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The project correctly applies the PDD template and the document has been completed without modifying/adding headings or logo, format or font. The PDD used as a basis for validation has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.	*Y*
4. The project participants shall submit a completed modalities of communication (MoC) Form	Para 53-58, VVS Ver 2.0 F_CDM_MOC form available on UNFCCC websitehttp://cdm.unfccc.int/Reference/PDDs_Forms/index.html#reg	PP to submit MOC. CAR#02 raised. Closure of CAR#02	~~CAR#02~~ CAR#02 closed

[3] Stakeholders mean the public, including individuals, groups or communities affected, or likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
5. Have the project participant been authorized by at least one Party involved in letter of approval	VVS para 45-49	HCA to be provided by PP. ~~CAR#01 raised.~~ Closure of CAR#01	~~CAR#01~~ CAR#01 closed
6. Has the DNA considered whether the proposed CDM project activity assists the host Party in achieving sustainable development	VVS para 50-52	Yes.	*Y*

Table 2PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	Guidelines for completing a CDM-PDD (PDD) section A.1	DR	Yes	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	PDD section A.1 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	Yes	Y
A.1.3. Does the PDD clearly indicate the project participant, host party, sectoral scope and selected methodologies correctly as per contract with SGS	PDD template version 4.1 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	Yes	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements	VVS Para.64 PDD section A.1 see also A.3, and B.2	DR	Information regarding description of the purpose of project activity, type of technology used and contribution of the project activity to sustainable development has been described. The proposed project activity entails installation of 10 MW solar PV systems for the electricity generation and generated electricity from the project activity will be supplied to NEWNE grid of India. CAR#03 raised. Closure of CAR#03	~~CAR#03~~ CAR#03 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
accurately?				
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVS Para.64-69 PDD section A.1see also A.3 B.2	DR	The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The project activity has been implemented by Green Infra Solar Energy Limited (GISEL). All the information provided in the PDD will be checked during site visit. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.2.3. Is all information provided consistent with details provided in further chapters of the PDD?	VVS Para.64-69 PDD section A.1	DR	The information regarding the purpose of the project activity, type of technology used and contribution of the project activity to sustainable development has been considered in section A.2 of the PDD. All the details were verified against those mentioned in further section of the PDD and found to be accurate and consistent. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.3. Location of Project Activity				
A.3.1. Is the Host Party clearly mentioned in the section A.2.	PDD section A.2	DR	Yes. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.3.2. Is Region/State/Province etc.in A.2.2. provided in consistency with details provided by further chapters of the PDD	PDD section A.2	DR, SV	Yes. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.3.3. Is City/Town/Community etc.clearly mentioned in section A.2.3.	PDD section A.2	DR, SV	Yes. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.3.4. Is Physical/ Geographical location	PDD section A.2	DR, SV	Yes. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
provided in A.2.4.				closed
A.4. Technologies and/or measures				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	V PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR	The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The exact location along with latitude and longitude is mentioned under section A.4 of the PDD. The location and geographical co-ordinates will be verify during site visit. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?	PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR	The proposed project activity is a Greenfield project activity and there is not any alteration involved of existing installation as mentioned in the PDD. However, PP is requested to provide the purchase order release to equipment supplier and technical specification to substantiate that The proposed project activity is Greenfield and there not any alteration involved in existing installation. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVS Para.64-69 PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR	Applicable ownership documents or licenses which allow the implementation of the project activity at the project site need to be submitted by Project Participant.	
A.4.4. Is the category (ies) of the project activity correctly identified?	VVS Para.64-69 PDD section A.3	DR	The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. Hence, The section A.4 correctly identifies sectoral scope 01 Energy Industries (renewable & non-renewable sources), Type-I as	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			the project activity renewable energy generation with less than 15 MW capacity and category D for grid connected renewable electricity.	
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVS Para.64-69 PDD section A.3 EB 52 Para. 13	DR, SV	The technical specifications and Purchase orders for the project activity need to be submitted by the project activity. To be checked during the site visit. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVS Para.64-69 PDD section A.3	DR	The table used for indication of projected emission reduction has been correctly applied in section A.4 of the PDD as per the guideline for completion of the SSC-CDM-PDD.	Y
A.5. Parties and Project participants				
A.5.1. Are the parties and project participants correctly mentioned in the A.4 of the PDD	VVS Para.64-69 PDD section A.4	DR	Yes.	Y
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.5		The PDD mentions that no ODA was used for the project activity. PP is requested to provide the undertaking from the PP that there is no public funding involved in project activity. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.6.2. Is all information provided consistent with details provided by further chapters of the	PDD section A.5	DR	Annex 2 of PDD says that no public funding has been used in the project activity. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
PDD (in particular annex 2)?				
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	PDD section A.5	DR	There is no public funding used in the project activity. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
A.7. **Debundling**				
A.7.1. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVS Para. 1154-156	DR	The project activity is not a de-bundled project activity as mentioned in the PDD. The same will be checked during site visit. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
B. Baseline and Monitoring Methodology				
B.1. Reference of methodology and Project activity eligibility				
B.1.1. Is the baseline and monitoring methodology a valid version approved by the CDM EB?	VVS Para.70 PDD section B.1	DR	The methodology AMS.ID Version 17 is applied in the project activity, which is an approved methodology and valid at the time of global stakeholders consultation.	Y
B.1.2. is there any specific guidance and or	VVS Para.71 PDD section B	DR	NA	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
clarification provided by the board on this methodlogy/tool? If yes, is this correctly applied	(B.2)			
B.1.3. Does the project activity qualify as small scale project?	VVS Para. 72	DR, SV	The project uses AMS.ID version 17, the total rated capacity of the project activity is 10 MW which is less than the specified limit of Type I project activity of 15 MW; the same will be checked during the site visit. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
B.1.4. Is the selected simplified methodology applicable to the project activity in the PDD?	VVS Para.76 PDD section B (B.2)	DR	The PDD section B.2 mentions that the applicability of the simplified methodology AMS.ID version 17. The proposed CDM project activity will supply electricity to the NEWNE grid of India from renewable source (Solar) and the capacity of the project activity is 10 MW. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed
B.1.5. Does the project activity conform to one of the approved small-scale categories?	VVS Para. 151 EB55 Annex 35	DR	The proposed project activity confirms to AMS.ID version 17 under sectoral scope 01 (Energy Industries renewable- non renewable sources) and justification for the applicability criteria has been mentioned in the PDD.	Y
B.1.6. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?	VVS para 65c	DR	The proposed project activity is not a bundle of several small scale project activities. It is clearly mentioned in the PDD and the same will be checked by the assessment team during the site visit.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.7. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR, SV	The proposed project activity is not a bundle of several small scale project activities. It is clearly mentioned in the PDD and the same will be checked by the assessment team during the site visit.	Y
B.1.8. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR, SV	The proposed project activity is not a bundle of several small scale project activities. It is clearly mentioned in the PDD and the same will be checked by the assessment team during the site visit.	Y
B.1.9. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVS Para.74-76,77 PDD section B (B.2)	DR	The PDD mentions the applicability of methodology AMS.I.D version 17 to the proposed CDM project activity.	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent	VVS Para.82 PDD section B.3	DR	All the emission sources and gases related to baseline scenario, project scenario and leakage clearly identified in the PDD. The project boundary consist Solar PV arrays, inverters, transformers metering substation and NEWNE grid of India. As the proposed project activity is renewable energy generation from Solar PV system, there is no project and leakage emission associated with project activity. Emission from the baseline would mainly from the CO2. Further, there is no GHG emission associated with the implementation of project activity which is expected to contribute more than 1% of the overall expected average annual emission reduction. The same has been	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.	VVS Para 86		checked by the assessment team and found in line with the methodology AMS.I.D Version 17.	
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVS Para.83-- 85 PDD section B.3	DR	The project activity involves the electricity generation from the solar PV system and the generated electricity will be supplied to NEWNE gird of India. The grid is identified as per the CEA database version 06 which provides reference of "Tool to calculate the emission factor from electricity system" version 02.2.1.	Y
B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVS Para.83-85 PDD section B.3 also see section A.1 and A.3	DR	The project boundary has been clearly described in section B.3 of the PDD. The delineation in the PDD of the project boundary is correct and meets the requirements of the approved methodology AMS.I.D version 17	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVS Para.83-85 PDD section B.3 also see section A.1 and A.3		The source and GHG required by the methodology AMS.I.D version 17 is clearly described under section B.3 of the PDD.	Y
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVS Para..88 PDD Section B.4	DR	The project activity is the installation of new grid- connected renewable energy plant/unit, the baseline scenario is the electricity delivered to the NEWNE grid of India would have been otherwise generated by the operation of grid connected power plants and by the addition of new generation sources. Same is checked by the assessment team and found in line with the AMS.I.D version 17.	Y
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes	VVS Para.89,90,91,92, 93 a,b PDD Section B.4	DR	The discussion and determination of the chosen baseline is transparent and supported by the available data which is the present NEWNE grid. The data are available from CO_2 Baseline Database for the Indian Power Sector, Version 06.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?				
B.3.3. Is the choice of the baseline compatible with the available data?	VVS Para.94, 95 PDD Section B.4	DR	The baseline has been identified for proposed project activity as per the methodology AMS I D version 17 and mentioned clearly in the PDD.	Y
B.4. Additionality				
B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?	VVS Para 158 EB 54 report, annex 15 EB 68 Annex 27 VVS Para.159, 160 PDD Section B.1/B.4/B.5	DR	The project activity uses the Attachment A to appendix B of simplified modalities and procedure for small scale CDM project activity version 08, EB 63 Annex 24. As the proposed project activity is renewable electricity generation by using photovoltaic technology and has installed capacity of 10 MW. Hence the project activity is automatically defined as additional without further elaboration of barriers.	Y
B.4.2. In case of using the additionality tool:	PDD Section B.1/B.4/B.5	DR	The project activity uses the Attachment A to appendix B of simplified modalities and procedure for small scale CDM project activity version 08 EB 63 Annex 24. Thsi is the	~~CAR#05~~ CAR#05

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?			latest version available on UNFCCC website. Same is checked by the assessment team and found crrect. ~~CAR#05 raised~~. Closure of CAR#05	closed.
B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVS Para.103 PDD Section B	DR	Not Applicable	Y
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project	VVS Para.105 PDD Section B.5	DR	The starting date of the project activity is 18/03/2011 considered as the date of EPC contract for implementation of the project activity. PP is requested to submit the PO for the project activity. As the start date of the project activity is after 2nd August 2008, it comes under the new project activity and the PP needs to intimate UNFCCC and DNA for intention to seek the CDM status and such notification must be made within six months of project activity start date. PP is requested to provide the evidence for intimation to UNFCCC, GoI and DNA for intension to seek CDM status. Also, the acknowledgment from the UNFCCC GoI and DNA as per the EB 62 Annex 13. ~~CAR#03 raised~~. Closure of CAR#03	~~CAR#03~~ CAR#03 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
activity				
B.4.5. If an investment analysis has been used, has it been demonstrated that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVS Para. 117, 118, 119 a,b,c, 120 a,b,c,d,e, 121 a,b,c, 122 a,b,c PDD Section B.5	DR	Not Applicable	Y
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).	VVS Para.121 PDD Section B.5	DR	Not Applicable	*Y*
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the	VVS Para. 124 125a-b/126 PDD Section B.5	DR	Not Applicable	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	EB50, Annex 13			
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVS Para. 113 PDD Section B.5		Not Applicable	*Y*
B.4.9. If a barrier analysis has been used have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?	VVS Para 124 EB 50 Annex 13	DR	Not Applicable	*Y*
B.4.10. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM	VVS Para. 113 PDD Section A.3/B.5	DR	Not Applicable	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
project activity. Do they also abide by the same applicable laws and legislations?				
B.4.11. Has it been shown that the project is not common practice?	VVS Para. 128 PDD Section B.5	DR	Not Applicable	Y
B.4.12. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVS Para. 129 a-c, 130 a-d PDD Section B.5	DR	Not Applicable	NA
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining **baseline emissions**?	VVS Para. 96 PDD Section B (B.6.1 -B.7.2)	DR	Simplified methodology to determine baseline emission reduction has been correctly applied in the project activity. Same has been checked by the assessment team and found in line with the AMS.ID version 17. Further, the excel spreadsheet of the calculation of emission reduction needs to be provided by the project participant. The source of each value used for calculation needs to be provided.	*Y*
B.5.2. Has the simplified methodology been applied correctly for	VVS Para. 95,96 PDD Section B	DR	The proposed project activity is renewable electricity generation by solar PV system and generated electricity would be supplied to NEWNE grid. Thus, there is no project emission associated with the project activity. It has been checked by the assessment team and found in line with the methodology.	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
determining **project emissions**?	(B.6.2-B.7.2)			
B.5.3. Has the simplified methodology been applied correctly for determining **leakage**?	VVS Para. 96 PDD Section B (B.6.2 -B.7.2)	DR	The proposed project activity is renewable electricity generation by solar PV system and generated electricity would be supplied to NEWNE grid. Thus, there is no leakage emission associated with the project activity. It has been checked by the assessment team and found in line with the methodology.	*Y*
B.5.4. Where applicable, has the simplified methodology been applied correctly for the **direct calculation of emission reductions?**	VVS Para 95, 96 PDD Section B (B.6.2 -B.7.2)	DR	The equation used in the project activity for direct calculation of emission reduction is applied correctly in the PDD. Same is checked by the assessment team and found in line with the AMS.ID version 17. However, Pending closure of CAR#8	*Y*
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVS Para.95,96 PDD Section B (B.6.2 -B.7.2)	DR	The methodological choice for different equations or parameters used is clearly addressed in the PDD same has been checked by the assessment team and found in line with the AMS.ID version 17 and tool to calculate the emission factor for electricity system version 02.2.1.	Y
B.5.6. Are uncertainties in the GHG emissions	PDD Sections B.5-C	DR	The project activity involves the installation of solar PV system for electricity generation. Thus, this is not applicable.	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
estimates properly addressed in the documentation?				
B.6. Algorithm and /or formulae used to determine emission reductions				
B.6.1. Are the data provided in compliance with the methodology?	VVS Para. 97,98,99a PDD Section B.6.3 B.6.4	DR	The baseline emission factor will be used ex-ante for whole crediting period. Project activity has considered CEA database version 06 to calculate the emission factor, which is the latest version available at the time of PDD webhosting. The values and calculation have been checked by the assessment team and fond in line with the requirement of AMS.I.D version 17 and tool to calculate the emission factor for electricity system 02.2.0.	*Y*
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVS Para. 97,99a,b PDD Section B.6.3/B.6.4	DR	Al the data used to calculate emission factor have been considered from official data sources or replicable records like the CEA database version 06 and correctly quoted	*Y*
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The vintage of the baseline data is correct as PP has used the latest version of CO_2 Baseline Database for the Indian Power Sector, Version 04 which was available at the time of PDD submission	*Y*
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVS Para. 99c PDD Section B.6.3/B.6.4	DR	All the data applied to calculate the base line emission are applied correctly same has been checked with the sources and data provided and found correct.	*Y*
B.6.5. If the project activity uses the PLF does it follow the guidance provided in EB48 annex 11?	EB48 Annex 11.	DR	The data from the CEA database version 6 - OM, BM and CO_2 emission factor which have been fixed by the PP are appropriate and will result in conservative estimates throughout the crediting period.	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for determining **emission reductions**?	VVS Para. 99d PDD Section A.4.3/B.6	DR	The calculation for emission reduction has been applied correctly as per the methodology AMS ID version 17. Same is checked by the assessment team and found correct.	*Y*
B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVS Para. 99e PDD Section B.6	DR	Every equation applied to calculate the emission reduction is clearly referenced and documented. Checked and found in line with the AMS.ID version 17.	*Y*
B.7.3. Is the calculation of the emission reduction correct?	VVS Para. 99e PDD Section B.6	DR	The application of formulae to calculate emission reductions were found acceptable and all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.	*Y*
B.8. Emission Reductions				
B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section / Section B.6.4	DR	The form/table for the projected emission reductions is correctly applied.	Y
B.9. Monitoring Methodology				
Are all parameters and data that are available at validation consistent with the simplified methodology. Has this	VVS Para. 72e PDD Section B.7 see also Annex 5	DR	The net electricity applied to the grid is the only parameter identified for the project activity. And the same is checked by the validation team with the methodology by the assessment team and fond correct. Further information would be verified during site visit.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
data been interpreted and applied correctly?				
B.9.1. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	PDD Sections B and C	DR	The monitoring plan has been applied correctly for monitoring of both project and baseline emission and the same needs to be checked during site visit.	*Y*
B.10. Data and Parameters Monitored				
B.10.1. Is the description of the monitoring plan included in the PDD based on approved monitoring methodology and the applicable tools	VVS Para. 132 (a) PDD Section B.7-B.7.2	DR	The monitoring frequency of the monitoring parameters is not in line with the methodology. ~~CAR 07 raised~~. CAR 07 closed.	~~CAR 07~~ CAR 07 closed.
B.10.2. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD Section B.6.2-B.7.2 EB 55, annex 35	DR	The information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan.	*Y*
B.10.3. Is the information given for each monitoring variable by the presented table	PDD Section B.6.2-B.7.2	DR	The information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan. However, Pending closure of CAR#10	*Y*

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?				
B.11.				
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7.3/Annex 5	DR	Management structure for the project activity has been described in the PDD. The same will be checked during the site visit.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.7.3/Annex 5	DR	The authority and responsibility for registration, monitoring, measurement and reporting clearly described under section B.7.2 of the PDD and the same will be checked during site visit.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.7.3/Annex 5	DR	The procedure for the staff training for monitoring has to be checked during site visit.	Y
B.13. Monitoring Plan (Annex 5)				
B.13.1. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required,	VVS Para. 132b EB55 Annex 35	DR	Section B.7.2 of the PDD describes the monitoring plan for the project activity and it is in line with the methodology AMS.I.D version 17. It will be further verified during the site visit.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
including measures to be implemented for ensuring data quality?				
B.13.2. Are procedures identified for calibration of monitoring equipment?	VVS Para. 133a-b EB55 Annex 35	DR	Section B.7.2 of the PDD describes all measures to be implemented for monitoring and ensuring the data quality of the parameters. It will be further verified during the site visit	Y
B.13.3. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVS Para. 133a-b EB55 Annex 35	DR	Section B.7.2 of the PDD mentions the procedures for recording & storing data. And the data will be archived for tow year after the end of crediting period or the last issuance of CERs for the project activity. This will be further verified during the site visit	Y
B.13.4. Is the monitoring plan in absolute compliance with the monitoring methodology?	VVS Para. 132a-c	DR	Yes	Y
B.14. Sampling				
B.14.1. Is there any indication of a Sampling?	PDD Section B.7.2/Annex 3	DR	*NA*	Y
B.14.2. Is the sampling consistent with the requirement of the methodology ?	Also see revision history of the PDD Standard for sampling and surveys for CDM project activities and programme of	DR	*NA*	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	activities			
B.14.3. Is all data required provided in a complete manner by annex 5 of the PDD?	PDD Annex 5	DR	*NA*	Y
C. **Duration of the Project / Crediting Period**				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVS Para. 105 PDD Section C.1.1/C.1.2	DR	The operation life time of the project activity is 25 year. Purchase order and technical specification need to be checked during site visit.	*Y*
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	VVS Para. 108a PDD Section C.2/C.2.1/C.2.2	DR	A fixed crediting period of 10 year is considered for the project activity.	*Y*
C.1.3. Does the project's operational lifetime exceed the crediting period	VVS Para. 108a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	No	*Y*
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project	VVS Para. 108a PDD Section	DR	The starting date of the project activity is 18/03/2011 which is after 2nd August 2008. Thus, it is a new project activity.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
activity?	C.1.1/C.2.1.1			
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host country?	VVS Para. 134,135 PDD section D	DR	As per the notification dated 14th September 2006 by Ministry of Environment and Forests (MoEF), Govt. of India, solar power projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study required to be conducted.	Y
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVS Para. 134 PDD section D	DR	As per the notification dated 14th September 2006 by Ministry of Environment and Forests (MoEF), Govt. of India, solar power projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study required to be conducted.	Y
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVS Para. 134 PDD section D	DR	As per the notification dated 14th September 2006 by Ministry of Environment and Forests (MoEF), Govt. of India, solar power projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study required to be conducted.	Y
D.1.4. Will the project create any adverse environmental effects?	VVS Para. 134 PDD section D	DR	The project activity involves the establishment of renewable Solar Power plant, thus no adverse impact associated with the project activity	Y
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVS Para. 134 PDD section D	DR	Not applicable since as EIA is not required for the project activity	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVS Para. 134 PDD section D	DR	Not applicable since as EIA is not required for the project activity	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVS Para. 138 PDD Section E.1	DR	The stakeholders meeting for the project activity conducted on 09/11/2011 and the relevant stakeholders have been consulted. Same is clearly mentioned in PDD. ~~CAR#04 raised~~. Closure of CAR#04	~~CAR#04~~ CAR#04 closed
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVS Para. 139a PDD Section E.1	DR	Project participant needs to mention mode of invitation used to invite the stakeholders for consultation in section E.1 of PDD Project participant needs to submit evidence for the date, media of invitation, MoM of stakeholders meeting for project activity. ~~CAR#04 raised~~. Closure of CAR#04	~~CAR#04~~ CAR#04 closed
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVS Para. 139b PDD Section E.1	DR	The stakeholder's process is described in a complete and transparent manner. ~~CAR#04 raised~~. Closure of CAR#04	~~CAR#04 raised~~. Closure of CAR#04
E.1.4. Is a summary of the stakeholder comments received provided?	VVS Para. 139b PDD Section E.2	DR	The summary of stakeholder comments received has been provided in the PDD and was further checked during the site visit. ~~CAR#04 raised~~. Closure of CAR#04	~~CAR#04 raised~~. Closure of CAR#04
E.1.5. Has due account been taken of any stakeholder comments received?	VVS Para. 139b PDD Section E.3	DR	The PDD mentions that the doubts raised by the stakeholders were addressed and a positive feedback was received from the stakeholders. This was further checked during the site visit. ~~CAR#04 raised~~. Closure of CAR#04	~~CAR#04 raised~~. Closure of CAR#04

A.3 Annex 3: Overview of Findings

Findings Overview

	CARs	CLs	FARs
Total Number raised	07	00	00

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka	
Type:	CAR	Number:	01	Reference:	PDD
Lead Assessor Comment:					
PP is requested to provide the Host Country Approval (HCA) for the project activity.					
Project Participant Response:			**Date:** 23/10/2012		
The HCA has been submitted to the DOE.					
Documentation Provided by Project Participant:					
Host Country Approval letter					
Information Verified by Lead Assessor:					
Host Country Approval letter, dated 11/10/2012					
Reasoning for not Acceptance or Acceptance and Close Out:			**Date:** 05/11/2012		
The HCA letter, dated 11/10/2012 was checked by the assessment team and was found to be authentic. CAR01 was closed.					
Acceptance and Close out by Lead Assessor:			**Date:** 05/11/2012		

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka	
Type:	CAR	Number:	02	Reference:	PDD
Lead Assessor Comment:					
PP is requested to provide the MOC form for the project activity, dully filled up and signed by authorized signatory in the latest template as available in the UNFCCC website.					
Project Participant Response:			**Date:** 11/09/2012		
The MOC form has been submitted to the DOE.					
Documentation Provided by Project Participant:					
MOC_GISEL					
Information Verified by Lead Assessor:					
MOC, dated 11/09/2012 has been checked for PP's contact information.					
Reasoning for not Acceptance or Acceptance and Close Out:			**Date:** 10/10/2012		
Information as provided in MOC (fax no) is found to be not matching with the information as provided in Annex 1 of PDD. PP to take corrective action. CAR 02 open.					
Project Participant Response:			**Date: 17/10/2012**		
The information in Annex1 of the PDD has been made in line with the MOC					
Documentation Provided by Project Participant:					
Revised PDD, version 03,dated 12/10/2012					
Information Verified by Lead Assessor:					
The Revised PDD, version 03,dated 12/10/2012 was checked.					
Reasoning for not Acceptance or Acceptance and Close Out:			**Date:** 05/11/2012		
The Revised PDD, version 03, dated 12/10/2012 was checked and it was found matching with the MOC of the project activity. CAR 01 closed.					
Acceptance and Close out by Lead Assessor:			**Date:** 05/11/2012		

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka	
Type:	CAR	Number:	03	Reference:	PDD

Lead Assessor Comment:	
PP is requested to provide the following documentary evidences- a) Declaration letter regarding ODA involved in the project activity. b) Acknowledge received from UNFCCC & DNA regarding the Prior consideration intimation to DNA and UNFCCC. c) PP is requested to kindly provide the PO of the project activity. d) PP is requested to provide the technical details of the inverts installed in the project activity. e) The PP has used the 20.36% PLF to calculate the electricity supplied in year y. However, PP has not been provided the evidence for the same as per the EB48 annex 11. Clarification is requested. f) The total energy generation as depicted in the PDD is kept same for each year. PP is requested to justify why no degradation factor has been considered.	
Project Participant Response:	**Date:** 11/09/2012
a) Declaration regarding ODA has been submitted b) Acknowledgment emails received from UNFCCC and DNA regarding prior consideration have been forwarded to the DOE. c) The purchase order has been submitted. d) Technical details of the inverters have been provided in Section 7.3 of the DPR e) The PLF values were provided by the third party, SGURR Energy, which also prepared the DPR of the project activity. This has been separately presented in Section 10 of the DPR. Hence, the same is in line with EB 48 Annex 11. f) A 1% degradation factor has been considered in the revised PDD.	
Documentation Provided by Project Participant:	
• ODA declaration • Emails of acknowledgments received from UNFCCC and host DNA • Purchase order placed to Juwi Renewables • Detailed Project Report (already submitted) • Revised CER calculation sheet	
Information Verified by Lead Assessor:	
a) ODA declaration has been checked for undertaking from PP for no involvement of ODA b) Emails of acknowledgments received from UNFCCC and host DNA has been checked for prior CDM consideration. c) Purchase order placed to Juwi Renewables was checked by the assessment team. d) The value of PLF was checked from DPR of the project activity, dated April, 2011. As the DPR is prepared by a third party contracted by the project participants and is in line with EB 48, Annex 11. This was found to be correct and was accepted by the assessment team. e) Revised CER calculation sheet has been checked for the ER calculations.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 10/10/2012
Information provided by PP was checked and was found to be ok. CAR closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 10/10/2012

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka		
Type:	CAR	Number:	04		Reference:	PDD
Lead Assessor Comment:						

PP is requested to provide the details of Stake Holder's consultation meeting in particular the Summary of comments received and report on consideration of comments received.	
Project Participant Response:	**Date:** 11/09/2012
Details of the stakeholder consultation meeting have been submitted to the DOE.	
Documentation Provided by Project Participant:	
• Newspaper advertisement • Copies of individual invitation letters to stakeholders • Copy of public notice • Attendance list of stakeholders present in the meeting • Minutes of Meeting in both Gujarati and English	
Information Verified by Lead Assessor:	
• Newspaper advertisement has been checked for media used to invite local satekholder's comments • Copies of individual invitation letters to stakeholders has been checked for media used to invite local satekholder's comments • Copy of public notice has been checked for media used to invite local satekholder's comments • Attendance list of stakeholders present in the meeting has been checked for local stakeholder's meeting • Minutes of Meeting in both Gujarati and English has been checked for local stakeholder's meeting process.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 10/10/2012
Information provided by PP was found to be correct and was accepted by the assessment team. CAR 04 closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 10/10/2012

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka	
Type:	CAR	Number:	05	Reference:	PDD
Lead Assessor Comment:					
a) PP is requested to update the version number of all the relevant tools and guidelines as applicable in the PDD. b) The excel spreadsheet of the calculation of emission reduction needs to be provided by the project participant. Also the sources of each value used for calculation need to be provided. c) PP is requested to provide more information under monitoring plan, under section B.7.1, since during the site visit it has been observed that there are two sets of meters (2nos of main meters and 2nos of check meters) are installed for net export of electricity to the grid by the project activity.					
Project Participant Response:			**Date:** 11/09/2012		
a) The revised PDD uses the latest versions of all applicable tools and guidelines. b) The excel spreadsheet of the emission reduction calculations have been submitted to the DOE. c) Section B.7.1 has been revised to include exact information of metering at the site.					
Documentation Provided by Project Participant:					
a) The revised PDD uses the latest versions of all applicable tools and guidelines. b) The excel spreadsheet of the emission reduction calculations have been submitted to the DOE. c) Section B.7.1 has been revised to include exact information of metering at the site.					
Information Verified by Lead Assessor:					

a) The revised PDD, Version 02, dated 12/09/2012 has been checked for the uses the latest versions of all applicable tools and guidelines. b) The excel spreadsheet of the emission reduction calculations have been checked for ER calculation. c) Section B.7.1 of PDD has been checked for revision to include exact information of metering at the site.
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 10/10/2012
a) PP is requested to update the title of EB 68, Annex 27. CAR 5(a) open. b) The emission reduction sheet was checked and was found to be correct. CAR 05 (b) closed. c) PP is requested to provide the details of the meters in the PDD. CAR 5(b) open. Thus, CAR#05 is open.
Project Participant Response: **Date: 17/10/2012**
a) The same has been updated in the revised PDD. c) Details of the meters have been included in Section B.7 of the revised PDD.
Documentation Provided by Project Participant:
Revised PDD, version 03, dated 12/10/2012
Information Verified by Lead Assessor:
Revised PDD, version 03, dated 12/10/2012 was checked.
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 05/11/2012
PP has updated the title of EB 68, Annex 27 and was found to be correct. CAR closed. The meter details have been provided in the PDD. CAR closed. Thus the CAR 05 was closed by the assessment team.
Acceptance and Close out by Lead Assessor: **Date:** 05/11/2012

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka		
Type:	CAR	Number:	06		Reference:	PDD
Lead Assessor Comment:						
1. PP is requested to provide a confirmation that there is no auxiliary power supply connection for operation of plant during night hours. 2. PP is requested to provide the information from promoter/EPC on Recycling Agreement with First Solar (PV Module Supplier) and how do they manage it. 3. PDD does not mention anything about degradation; PP is requested to mention the relevant information. 4. The estimated plant generation (PLF – 20.36%), seems to be slightly on a higher side, considering the radiation and technical designing. Please clarify. 5. PDD dose not include technical specification of at least PV module and inverter. Please clarify. 6. From the PDD & DPR it is observed the plant size is slightly higher than 10.00 MWp. As per PDD it is higher than 2.00 kWp and as per DPR it is higher than 80.00 kWp. (Needs exact plant size.). Please clarify.						
Project Participant Response: **Date:** 11/09/2012						

1. The PP will consume some power for auxiliary consumption. However, the same is accounted for while calculating the net export from the project activity.
2. Recycling is a part of the EPC contract with Juwi. The modules are covered under the "First Solar Recycling Program" (as per section 2.2 of the EPC contract) and the details have been provided in Annexure II of the EPC contract.
3. Information regarding degradation has been included in Section B.6 of the revised PDD. As per Section 10.3 of the DPR, 0.7% degradation has been considered.
4. This is the gross PLF for the site excluding degradation. The PLF reduces on factoring in the auxiliary consumption, uncertainties and annual degradation. Also, this P50 value has been provided by the third party consultant while preparing the DPR.
5. Technical specifications of the PV module and inverters have been included in Section A.1.4 of the revised PDD.
6. The total output capacity of the power plant is 10 MWp. While the aggregate peak capacity of the individual modules combined may be slightly different than 10 MWp, the system in total has been designed for 10 MWp.

Documentation Provided by Project Participant:

1. Annexure II of the EPC agreement

Information Verified by Lead Assessor:

1. The Information provide by PP is reviewed and found to be insufficient.
2. Recycling is a part of the EPC contract with Juwi. The modules are covered under the "First Solar Recycling Program" (as per section 2.2 of the EPC contract) and the details have been provided in Annexure II of the EPC contract. The annexure II of EPC contract has been checked.
3. Information regarding degradation has been included in Section B.6 of the revised PDD. As per Section 10.3 of the DPR, 0.7% degradation has been considered. Revised PDD & DPR has been checked.
4. This is the gross PLF for the site excluding degradation. The PLF reduces on factoring in the auxiliary consumption, uncertainties and annual degradation. Also, this PLF value has been provided by the third party consultant while preparing the DPR. The DPR has been checked.
5. Technical specifications of the PV module and inverters have been included in Section A.1.4 of the revised PDD. The revised PDD has been checked.
6. The justification provided by PP is satisfactory, however, this information is not reflecting in the revised PDD.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 10/10/2012

1. PP is requested to include the gross electricity generated and also import from the grid as a part of the monitoring plan. CAR 6(1) open
2. Response provided by PP was found to be satisfactory. Information was checked by the assessment team and was closed. CAR 6(2) closed.
3. PDD was checked, however the information as mentioned by PP could not be found. PP is requested to include the information regarding degradation in the PDD. CAR 6(3) open.
4. The response provided by PP was found to be correct and was accepted by the assessment team.
5. Section A.4.1 of the revised PDD, version 02 was checked and was found to be correct. The information provided was checked from the DPR of the project activity and was found to be consistent. CAR 6(5) closed.
6. PP is requested to include the information in the PDD also in section A.3 of the PDD. CAR 6(6) open

Thus, CAR#06 is open.

Project Participant Response:	**Date:** 17/10/2012
1. The same have now been included in the revised PDD. 3. The same has been included in Section B.6.3 of the revised PDD. 6. The information has been included in Section A.3 of the revised PDD.	
Documentation Provided by Project Participant:	
Revised PDD, version 3, dated 12/10/2012	
Information Verified by Lead Assessor:	
Revised PDD, version 3, dated 12/10/2012 was checked.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 05/11/2012
The information provided by PP was checked and was found to be correct. The revised PDD version 3, dated 12/10/2012 was also checked and was found to be consistent. Thus CAR 06 was closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 05/11/2012

Date:	31/08/2012		Raised by:	Nayan Jyoti Deka		
Type:	CAR	Number:	07		Reference:	PDD
Lead Assessor Comment:						
1. It is not clear how the source document (JMR) for parameters export, import could also be cross checking reference for same parameters. If $EG_{actual,y}$ is calculated parameter(Export –Import),then please clarify why the details of meter provided for this parameter. 2. Methodology AMS I.D version 17 recommends “Continuous monitoring, hourly Measurement and at least monthly” for $EG_{y.}$Please clarify how the monitoring described in PDD is in line with the requirement of methodology. Also it is not clear what interval for calibration is recommended by GETCO. 3. PP is requested to mention appropriate start date of crediting period in the PDD. 4. The PLF calculated is on a higher side, particularly for the project site mentioned. Please justify. 5. Why the installed capacity of modules, i.e., 10.02 MWp has not been considered for all the calculations. Please justify						
Project Participant Response:				**Date:** 28/11/2012		
1. The invoices raised by the PP to the state utility for payment purposes can be used as cross checking references. The same has now been mentioned in the PDD. The meter details of $EG_{actual,y}$ has been removed from the PDD. 2. The monitoring for EGexport,y & EGimport,y has been made in line with the methodology. As per the PPA section 7.2, meters will be calibrated once every three years. The same has now been mentioned in the PDD. 3. The start date of the crediting period has been revised. 4. The PLF is as per the independent third party report, which is in line with EB 48 Annex 11. The same was available at the time of decision making as well. The PLF has been derived by comparing the irradiation figures given by METEONORM, SWERA and NASA for the Meravadar site. Moreover, the decision making was based on this value. Hence, the same has been used. 5. The total installed at site capacity of the plant is 10 MW. Thus, the same has been considered for all calculations. All statutory documents and allotment letter also refer to the rated site capacity of 10 MW.						
Documentation Provided by Project Participant:						
Revised PDD						
Information Verified by Lead Assessor:						
Revised PDD, version 04, dated 28/11/2012						
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 29/11/2012		

1. PP has corrected the source for cross checking the information. The electricity exported and imported will be cross checked against the invoices raised by PP to the state utility. This was found to be acceptable by the assessment team and CAR was closed.
2. Calibration frequency of the meters was checked from the PPA, and it was found that the meters will be calibrated once in every three years by the state utility. As this is a local standard followed by the state utility for all other independent power producers, hence this was accepted by the assessment team and CAR was closed.
3. The start date of crediting period was checked by the assessment team and was found to be acceptable. Thus CAR was closed.
4. The justification provided for the PLF value was found to be acceptable by the assessment team. CAR closed.
5. The justification provided for the installed capacity was found to be acceptable. CAR was closed.
6. However, in section B.6.3, PP has stated the per annum emission reduction as 16,994 tCO2, where as the average emission reduction of the project activity is 16, 499 tCO2. PP is requested to justify the mismatch! CAR open
7. In the ER calculation sheet, Tab CERs has a table (cell no- J6) stating the start date, is this crediting period start date or the project activity start date. PP is requested to mention the correct terminology clearly! CAR open
8. In the ER calculation sheet, Tab CERs (Cell no-J7) states “last day of first year”. As 31st March is not the last day, PP is requested to take a corrective action! CAR open.

Project Participant Response:	**Date:** 13/12/2012

1. The values of emission reductions have been made consistent in the PDD. 16,994 is the first year value only. Thereafter, a degradation factor has been applied annually. Thus, the average annual emission reductions are calculated as 16,497 tCO2. The details have been provided in the revised PDD and the revised CER sheet.
2. The cell J6 refers to the crediting period start date. The sheet has been revised.
3. Cell J7 refers to the last day of the financial year. The CER sheet has been revised accordingly.

Documentation Provided by Project Participant:	
Revised PDD Revised CER sheet	
Information Verified by Lead Assessor:	
Revised PDD, version 05, dated 13/12/2012 was checked Revised CER sheet was checked	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 13/12/2012
PP has revised the PDD and ER calculation sheet. This was checked by the assessment team and was found to be consistent. Thus CAR 07 was closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 13/12/2012

A.4 Annex 4: Team Members Statements of Competency

Name: NAYAN JYOTI DEKA

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	x	-	Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) **x**

Technical Area(s*):*
TA 1.1 Thermal energy generation from fossil fuels and biomass
TA 1.2 Energy generation from renewable energy sources

2. Energy Distribution

Technical Area(s*):*

3. Energy Demand

Technical Area(s*):*

4. Manufacturing

Technical Area(s*):*

5. Chemical Industry

Technical Area(s*):*

6. Construction

Technical Area(s*):*

7. Transport

Technical Area(s*):*

8. Mining/Mineral Production

Technical Area(s*):*

9. Metal Production

Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s*):*

12. Solvent Use

Technical Area(s*):*

13. Waste Handling and Disposal

Technical Area(s*):*

14. Afforestation and Reforestation

Technical Area(s*):*

15. Agriculture

Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 20/07/2012

Statement of Competence

Name: Sushil Buchade

Status

-	Lead Assessor		-	Expert	x
-	Assessor		-	Financial Expert	
-	Local Assessor		-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s):] *Energy generation from renewable energy sources*	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 09/05/2012

Statement of Competence

Name: Ahmed Rekibuddin

Status

-	Lead Assessor		-	Expert	
-	Assessor	x	-	Financial Expert	
-	Local Assessor	India	-	Technical Reviewer	

Scopes of Expertise

1. **Energy Industries (renewable / non-renewable)**

Technical Area(s*):*

2. **Energy Distribution**

Technical Area(s*):*

3. **Energy Demand**

Technical Area(s*):*

4. **Manufacturing**

Technical Area(s*):*

5. **Chemical Industry**

Technical Area(s*):*

6. **Construction**

Technical Area(s*):*

7. **Transport**

Technical Area(s*):*

8. **Mining/Mineral Production**

Technical Area(s*):*

9. **Metal Production**

Technical Area(s*):*

10. **Fugitive Emissions from Fuels (solid, oil and gas)**

Technical Area(s*):*

11. **Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride**

Technical Area(s*):*

12. **Solvent Use**

Technical Area(s*):*

13. **Waste Handling and Disposal**

Technical Area(s*):*

14. **Afforestation and Reforestation**

Technical Area(s*):*

15. **Agriculture**

Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 02/11/2012

Statement of Competence

Name: Ravi Kant Soni

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	India	-	Technical Reviewer	x

Scopes of Expertise

1. **Energy Industries (renewable / non-renewable)** **x**

Technical Area(s*):* TA 1.2 Energy generation from renewable energy sources

2. **Energy Distribution**

Technical Area(s*):*

3. **Energy Demand**

Technical Area(s*):*

4. **Manufacturing**

Technical Area(s*):*

5. **Chemical Industry**

Technical Area(s*):*

6. **Construction**

Technical Area(s*):*

7. **Transport**

Technical Area(s*):*

8. **Mining/Mineral Production**

Technical Area(s*):*

9. **Metal Production**

Technical Area(s*):*

10. **Fugitive Emissions from Fuels (solid, oil and gas)**

Technical Area(s*):*

11. **Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride**

Technical Area(s*):*

12. **Solvent Use**

Technical Area(s*):*

13. **Waste Handling and Disposal**

Technical Area(s*):*

14. **Afforestation and Reforestation**

Technical Area(s*):*

15. **Agriculture**

Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 12/10/2012

Statement of Competence

Name: Saurabh Chaudhari

Status

-	Lead Assessor		-	Expert	x
-	Assessor		-	Financial Expert	
-	Local Assessor		-	Technical Reviewer	

Scopes of Expertise

1. **Energy Industries (renewable / non-renewable)** **x**

Technical Area(s*): TA 1.2 Energy generation from renewable energy sources*

2. **Energy Distribution**

Technical Area(s*):*

3. **Energy Demand**

Technical Area(s*):*

4. **Manufacturing**

Technical Area(s*):*

5. **Chemical Industry**

Technical Area(s*):*

6. **Construction**

Technical Area(s*):*

7. **Transport**

Technical Area(s*):*

8. **Mining/Mineral Production**

Technical Area(s*):*

9. **Metal Production**

Technical Area(s*):*

10. **Fugitive Emissions from Fuels (solid, oil and gas)**

Technical Area(s*):*

11. **Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride**

Technical Area(s*):*

12. **Solvent Use**

Technical Area(s*):*

13. **Waste Handling and Disposal**

Technical Area(s*):*

14. **Afforestation and Reforestation**

Technical Area(s*):*

15. **Agriculture**

Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 26/06/2012