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GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)
REPORT
-
DESIGN CERTIFICATION (RENEWAL)

Project Title:	30 MW Solar PV Project by Nirosha Solar Power Private Limited
GS project ID:	GS 5699
Internal ID:	8921
Customer:	Nirosha Solar Power Private Limited
Date:	14/09/2021
Revision:	01

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
A+SH_SYST_TQC_GS_VER_RCP_8921	14/09/2021	01	14/09/2021

Client	Nirosha Solar Power Private Limited
Project Title	30 MW Solar PV Project by Nirosha Solar Power Private Limited
Project Participants	Nirosha Solar Power Private Limited
Project Location	Village Bendo. Mahoba District, Uttar Pradesh State, India
Contact Person	Ms. Dhriti Pande

GS4GG Version: GS4GG GS4GG Activity Requirements: RE Activity Requirements, version 1.4 Applied Methodology Version: ACM0002, Version 20 The following tools and guidance's have been followed (References): • Methodological tool (EB 66, Annex 47) "Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period." (Version 03.0.1)[1]. • Tool to calculate the emission factor for an electricity system (Version 07.0)[2] • Tool for the demonstration and assessment of additionality (Version 07.0.0)[3] • Current Methodology Version: ACM0002, Version 20 • Applied Methodology Version for GS first Crediting period: ACM0002, Version 17	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2
GS4GG First PDD Version: 03 Date: 17/02/2018	GS4GG Final PDD Version: 04 Date: 14/09/2021

Estimated Annual SDG Impacts:

Sustainable Development Goals Targeted	**SDG Impact**	**Estimated Annual Average**
7 Affordable and Clean Energy	MWh of renewable energy generated	47,371 MWh/Year
8 Decent Work and Economic Growth	Trainings Employees	1 No./Annum 10 No.[4]
13 Climate Action	Emission Reduction	44,273 tCO_2/Annum

[1] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf
[2] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[3] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[4] Minimum 10 employments will be provided by the project activity and will be reviewed annually.

(mandatory)		

Selected Sustainable Development Goals (SDGs): 7; 8; 13

Design Certification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Nirosha Solar Power Private Limited to perform the GS VER validation (Renewal of GS Crediting Period) of "30 MW Solar PV Project by Nirosha Solar Power Private Limited" applying the methodology ACM0002, Version 20.

The management of Nirosha Solar Power Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review, remote audit document review has been conducted to verify the data submitted in the GS4GG PDD. Applus+ Certification confirms the following have been reviewed:

a. Registered PDD of first CP and the corresponding validation report;
b. The applied monitoring methodology;
c. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
d. The Gold Standard for Global Goals "Principles and Requirements" Version 1.2
e. All information and references relevant to the project activity's resulting in estimated emission reductions.

The scope of the RCP validation is defined as an independent and objective review of the project design document, against the Kyoto Protocol requirements, UNFCCC rules, applicable CDM requirements and requirement of Gold Standard. The validation report is finalized based on the assessment of the Gold Standard GS4GG PDD, and applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g., Remote audit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.

The report and the annexed validation checklist describe a total of 6 findings which include:

- 3 Corrective Action Requests (CARs);
- 0 Clarification Requests (CLs/CRs);
- 0 Forward Action Requests (FARs).

The PP has responded these findings by modifying the Gold Standard GS4GG PDD and providing adequate additional explanations and evidences. Applus+ Certification confirm that all the findings have been "closed out" before submitting the request for renewal to GS board (Renewal of Crediting period).

As a summary of the RCP validation, the review of the Gold Standard GS4GG PDD and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence for the determination of the project's fulfillment with all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and requirement of Gold Standard. Therefore, Applus+ Certification recommends the project for renewal of crediting period by the GS Registry as GS VER project.

ASSESSMENT TEAM		
Team Members	**Type of Resource**[5]	**Organization** *(for OEs)*
Lead Auditor: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Auditor: Mr. Jitendra Mohan Singh	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Expert: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Simon Shen	☐ IR ☒ EI ☐ OE	-

[5] IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

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ABBREVIATIONS	
AMS	Approved Methodology Small Scale
Applus+ LGAI / Applus+	LGAI Technological Center, S.A. (Applus+ Certification)
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL / CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non-Governmental Organization
RCP Validation	Validation for Renewal of Crediting Period
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PP	Project Participant
PS	Project Standard
PPA	Power Purchase agreement
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	CDM validation and verification standard for project activities, Version 02.0

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Appendix 1: Corrective Action Request / Clarification Request / Forward Action Request resolution table.

Appendix 2: Audit Team CVs.

1. INTRODUCTION

Nirosha Solar Power Private Limited has commissioned Applus+ Certification to perform a RCP validation of "30 MW Solar PV Project by Nirosha Solar Power Private Limited" (hereafter referred to as the project activity). This validation report summarizes the findings of the RCP validation of the project, performed on the basis of UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM/GS Executive Board as well as requirement of Gold Standard.

The project activity primarily aims at reducing Green House Gas (GHG) emissions through utilization of renewable energy technology for generation of electrical energy. The electricity generated from the project activity (approximately 47,371 MWh annually) will displace equivalent electricity generation in grid connected power plants. The project activity will reduce the anthropogenic GHG emissions (approximately 44,273 tCO_2 annually) associated with the equivalent amount of electricity generation from Indian grid connected power plants predominantly fossil fuel based.

The project activity involves installation of 30 MW (AC) solar power project at Village Bendo, District Mahoba, Uttar Pradesh, India. The project activity is in line with the sustainable development priority of the country. The electricity generated from the solar Power plant is sold to regional grid (Indian grid).

The start date of this second crediting period of the project is from 20/09/2021 to 19/09/2026.

Assessment team checked the technical parameters of the project equipment during remote audit and confirm that the details as mentioned in the GS PDD submitted for 2nd CP are correct.

Technology Transfer

No technology transfer from other countries is involved in the project.

The project activity is the installation of a new grid-connected renewable power plant/unit and this is not a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs.

The project activity is commissioned on 20/09/2016. Same is verified from the commissioning certificate issued by State government agency.

The details of geo-coordinates are cross-checked during remote audit on the basis of approved PDD and are 25.42 N 79.44 E.

1.1 Objective

The purpose of a RCP validation is to have an independent third party assessment of the GS4GG PDD for renewal of crediting period and compliance with the GS requirements as described in the Gold Standard documentation and supporting documents by the client. Validation is part of the GS VER project cycle and will finally result in a conclusion by Applus+ Certification whether a project activity is valid and should be submitted for registration/renewal of crediting period of a proposed project activity rests at the GS and the Parties involved.

1.2 Scope

The RCP validation scope is defined as an independent and objective review of the project PDD, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable GS requirements including the approved baseline and monitoring methodology ACM0002, Version 20. The validation was based on the requirements in the Gold Standard GS4GG requirement.

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

2. METHODOLOGY

The project assessment is based on the CDM validation and verification standard for project activities, Version 02.0, Gold Standard requirement for GS4GG and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the project activity are appointed. Once the project is made available for Applus+ Certification, the members of the assessment team carried out:

1. A desk review of the PDD;
2. Follow-up interviews with project stakeholders;
3. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The prepared validation report and other supporting documents then undergo an internal quality control before being submitted to the GS Registry.

The GS overview documents which is referred as DVR is as below

Validation Checklist Table 3: Resolution of Audit Findings			
Type:	☐ **CAR** ☐ **CL/CR** ☐ **FAR**	**Number:**	
Raised by:			
Description of the audit finding		**Date:**	
The description of the audit finding should be clearly included here.			
Project Participant's response		**Date:**	
The responses given by the project participants during the communications with the validation team should be included here.			

Documentation provided as evidence by Project Participant		
The evidences provided by the project participants should be included here.		
Auditor's assessment comment	**Date:**	
This section should include how the audit finding is assessed by the assessment team.		

The Complete List of CAR/CL/FAR is included as Appendix 1 of this report.

2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center, S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center, S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center, S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT)
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	**Role**	**SS Coverage**	**TA Coverage**	**Financial aspect**	**Host country experience**
Mr. Pankaj Kumar	LA/TE	YES	YES	YES	YES
Mr. Jitendra Mohan Singh	A/TE	YES	YES	YES	YES
Mr. Simon Shen	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 2 of this report.

2.2 Document review

The Gold Standard PDD submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and

information from other sources has been done. A complete list of all documents and evidence material reviewed is included in Section 4 of this report.

2.3 Follow up Interviews

Interviewed Personnel	Functions	Organization
Ms. Dhriti Pande	PP representative	PP
Mr. Kingshuk Das	Consultant	EKIESL
Mr. Mohit Kumar	Villager	Local stakeholder
Mr. Vijendra	Villager	Local stakeholder
Mr. Ashok	Villager	Local stakeholder

The details activity done during remote audit is as below:

Duration of Remote Audit: 13/09/2021				
No.	**Activity performed during remote audit**	**Site location**	**Date**	**Team member**
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. (Discussion with PP) Assessment team interviewed the local stakeholder and confirmed that there is no grievance resulted from the project activity in and out of the project location. The stakeholder confirmed that the project resulted in employment and improves lifestyles of the personal/families in the nearby villages. (Discussion with Stakeholder)	Village Bendo, Mahoba District, Uttar Pradesh, India (Remote audit through Skype)	13/09/2021	Mr. Pankaj Kumar Mr. Jitendra Mohan Singh

The stakeholder interaction during remote audit is described below:

Name of the stakeholder	Mr. Mohit
Occupation	Villager

DOE QUESTION: Did this Solar power plant cause any pollution? Answer: No, the plant does not cause any pollution. DOE QUESTION: Did local villagers getting benefitted due to project activity? Answer: Yes, peoples are getting benefitted through CSR activities. Company providing various trainings to youths and also helping local schools for buildings and study material etc. DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, employment is generated for local peoples. The Solar power plant have provided various direct and indirect employment opportunities to the locals. DOE also like to conclude that during the interviews with PP, that local people were employed for security and operation related work. DOE also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.

Name of the stakeholder	Mr. Vijendra
Occupation	Villager
DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants. DOE questions: What are other benefits from plant? Answer: Electricity availability increased, locals getting various jobs like technical & non-technical and CSR activities increased. DOE thus conclude that stakeholders are happy with the implementation of the project activity.	

2.4 Resolution of Clarification and Corrective Action requests

The objective of this phase of the RCP validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needs to be clarified for Applus+ Certification positive conclusion on the PDD. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the validation process, the concerns raised and responses given are summarized in Appendix 1 below.

The Gold Standard GS4GG PDD version 04 submitted on 14/09/2021 for renewal of crediting period serves as the basis for the final assessment presented. Additional changes to the GS4GG PDD during the RCP validation process are not considered to be significant with respect to the main CDM and Gold Standard objectives.

2.5 Internal Quality Control

As a final step for Validation of RCP assessment, the final documentation, including the Validation of RCP Report, has to undergo an internal quality control by the Technical Reviewer(s) to be approved.

Details of the Technical Reviewer(s) are provided within the Validation of RCP Report in Section 2.1. and Appendix 2 for further references of knowledge and capability to conduct the quality checking.

After the Technical Review process, the final documentation may undergo a final quality checking process called Administrative Review, done by the Applus+ Certification's Project Manager and/or Technical Support.

For final approval, the final set of documents are prepared by the VVB's Technical Manager or its deputy and signed by the authorized signatory of the VVB.

In case any of the persons performing this final internal quality control approval process has acted as a part of the Assessment Team or Technical Review team, the approval can only be given by VVB's authorized personnel who are not part of those teams.

If the final set of documents has been satisfactorily approved, a request of renewal of the Crediting Period (GS4GG Design Certification Renewal) is submitted to the GS Registry along with the relevant documents.

3. PROJECT DESIGN CERTIFICATION ASSESSMENT

3.1 Approval

The host country of the project activity is India which is validated from the registered PDD.

The host country is clearly identified in PDD. The GS4GG allows the states defined as 'Non-Annex 1 Parties to the Convention' on UNFCCC website as the host country for GS projects. India is a Non Annex1 Party and therefore eligible state for Gold Standard Projects.

3.2 Participation

Nirosha Solar Power Private Limited is the project proponent from the host party India. The host country involved is parties to the Kyoto Protocol and meet and requirements to participate in the Gold Standard.

3.3 Scale of the project

The project activity is identified as a Large-scale project in section A.4 of the GS4GG PDD applying a Large-scale methodology ACM0002, Version 20. The total capacity of the power project is 30 MW as validated from the registered PDD. Since the design capacity of the project activity is more than 15 MW, which is stipulated limit for large scale projects by GS/CDM, the project is correctly classified as large-scale project. Assessment team also checked the requirement of latest applicable methodology ACM0002, Version 20 and confirms that the project qualifies the requirement of the latest methodology also (i.e., scale, applicability, baseline, additionality and monitoring).

a) Type of project: The project activity involves electricity generation using solar power to reduce atmospheric CO_2 emission by replacing equivalent amount of electricity from the grid of India. The project type is identified as renewable energy project in section A.4 of the GS4GG PDD. The project activity complies with the requirement of 'the generation and delivery of energy services (e.g., electricity) from non-fossil and non-deployable energy sources as defined

in GS4GG. The project activity generates and supplies renewable electricity to the grid thereby displacing the electricity which would have generated in fossil fuel-based power plants connected to the grid.

General Eligibility Criteria under Renewable Energy Activity Requirements:

Assessment team reviewed the general eligibility criteria under Renewable Energy Activity Requirements, version 1.4 and found that criteria appropriately provided & justified in the Section A.1.1 of the GS PDD.

3.4 Greenhouse Gases

The project activity leads to displacement of electricity generation from fossil fuel-based power plants connected to the regional grid by renewable energy generated using solar power. The operation of the project activity will result in reduction of carbon-dioxide from the atmosphere due to displacement of electricity in grid by the renewable energy. Hence, the greenhouse gas identified in the PDD is carbon dioxide which is duly validated by the VVB.

The GHG emission sources considered for the project boundary and their explanations are as follows:

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Grid connected electricity generation.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project scenario	Greenfield solar Power Project Activity.	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O

3.5 Project timeframe

- ***Other certification scheme:*** The project activity has not applied, confirmed by project developer, for any other certification like Green or White certification. Therefore, the validation team concluded that the project activity meets the applicability criteria of Gold Standard. Assessment team checked the double counting clarification vide GS guideline on double counting in the context of Green Certificate Schemes, 22/01/2015. A declaration dated 10/09/2021 submitted by PP confirms that the project activity is not taking any REC Benefits under REC mechanism. The project is applied for GS VER retroactive validation. Assessment team also checked the REC web site (https://recregistryindia.nic.in/) and confirms that the project is not undertaking any REC benefits at present nor intended to take it in near future. Further, project activity is also not availing any International REC benefits.

3.6 Public announcement

Assessment team is in opinion, taking note of the validation report and PDD that the incentive from CDM was seriously considered in the decision to proceed with the project activity. The project is registered under GS mechanism[6].

3.7 Project Boundary

As per ACM0002, Version 20 (Latest methodology applied as available on CDM web site) - "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the GS project power plant is connected to".

The project boundary includes the Solar project, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the INDIAN grid. Therefore, the entire INDIAN grid and all connected power plants have been considered in the project boundary for the proposed CDM project activity. The same is checked by the assessment team during the validation remote audit & PPA review and found correct.

3.8 Baseline Identification

Being a grid connected Solar energy generation project, PP developed the project based on the Methodology ACM0002, Version 20. As per methodology, Version 20.0, Para 19:

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

The project activity involves setting up of solar power projects to harness the power of solar energy to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants. In the absence of the project activity, the equivalent amount of power would have been drawn from the Indian grid. Hence, the baseline for the project activity is the equivalent amount of power from the Indian grid. As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline and pre-project scenario is same.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official source (where available) and made publicly available. The CEA database version 16.0 was the latest available data at the time of PDD submission to DOE for validation, hence same is considered for emission factor calculations.

The combined margin of the Indian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source

[6] https://registry.goldstandard.org/projects/details/1375

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.9346 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Calculated[7] as the weighted average of the operating margin (0.25) & build margin (0.75) values, sourced from Baseline CO2 Emission Database, Version 16 published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,OM,y}$	0.9568 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3-year (2017-18 , 2018-19, 2019-20) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 16.0, published by Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8682 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 16.0 (2019-20) published by Central Electricity Authority (CEA), Government of India

3.9 Eligibility Principles Assessment

- **Principle 1. Contribution to Climate Security & Sustainable Development**

  The baseline scenario and the emission reduction calculations have been performed as per the requirement of the methodology. The emission factor of grid, in the GS4GG PDD, has been calculated in-line with the provisions of applied methodology ACM0002 Version 20.0. The latest applicable version of "Tool to calculate the emission factor for an electricity system" is version 07.0

  The applicability criteria are now detailed out in the report as below:

  Applicability 1: Assessment team checked that the project activity is installation of a new grid connected solar power plant/ unit at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant) and hence this criterion is applicable.

  Applicability 2: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and hence criteria under point (a) is met. The project does not involve any capacity additions, retrofits or replacements and therefore this criteria under point (b) is not applicable.

  Applicability 3: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and not Solar power plant, therefore this criteria is not applicable for this project activity.

  Applicability 4: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and not Solar power plant, therefore this criteria is not applicable for this project activity.

7 http://cea.nic.in/tpeandce.html

Applicability 5: Assessment team checked that the project activity is installation of a new grid connected solar power project/ unit and does not involve switching from fossil fuel to renewable energy, therefore criterion described in point (a) is not relevant to the project activity.

This is a solar power plant/ unit and not a biomass fired plant, therefore criterion described in point (b) is not applicable to the project activity

Applicability 6: Assessment team checked that the project activity is a new grid connected solar power plant/ unit and not a retrofits, replacement or capacity additions and therefore this criterion is not applicable to the project activity.

Applicability conditions of "Tool to calculate the emission factor for an electricity system"

- OM, BM and CM are estimated using the tool under section B.6.2 of the PDD for calculating baseline emissions.
- The project activity is grid connected and thus emission factor is calculated and thus OM, BM and CM are estimated using the tool under section B.6.2 of the PDD for calculating baseline emissions.
- The project activity is located in India, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.
- The project activity is a grid connected solar power project and not a Solar power plant. Therefore, this criterion is not applicable for the project activity.

Applus+ Certification confirms that the application of the baseline methodology is transparent and conservative and confirms that the chosen baseline and monitoring methodology i.e. ACM0002 Version 20.0 is applicable to the project activity.

DOE also confirms that the project activity complies with the requirement of baseline determination in ACM0002 Version 20.0, which is the latest applicable methodology available to the project participant. The project activity applies grid emission factor as per the latest available CEA database version 16.0 and the emission factor applied is 0.9346 tCO_2/MWh. This calculated emission factor is conservative as per tool.

Assessment team referred "Methodological tool (EB 66, Annex 47) "Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period." (Version 03.0.1)" and CDM validation and verification standard for project activities, version 02" to check the originality of the baseline. Following are the observation of the assessment team regarding selected baseline for the project activity in this present 2nd renewable crediting period:

Step 1.1 (EB 66, Annex 47): Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The baseline for the project activity is the electricity delivered to the grid by the project activity which 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 project activity is claiming the emission reductions from the net exported electricity to the grid only. In absence of project activity this quantity of electricity would have been generated from the electricity grid mix (mainly fossil fuel). The Government of India enacted the Electricity Act in the year 2003 to

harmonize and rationalize the provisions in the then existing laws. The Act consolidated the laws relating to generation, transmission, distribution, trading and use of electricity. With the Enactment of the act, the then existing laws viz, The Indian Electricity Act 1910, The Electricity Supply Act, 1948 and The Electricity Regulatory Commissions Act, 1998 were repealed. The Electricity Act 2003 was in force at the time of the completion of the baseline study during first crediting period.

The baseline remains unchanged for the present (2nd) crediting period since there is no policy been revised and/or is currently in force as well, therefore the baseline scenario is still in compliance with all the relevant mandatory national and/or sectoral policies.

Step 1.2 (EB 66, Annex 47) : Assess the impact of circumstances

There are no new circumstances that can impact the original baseline. The baseline emission factor value is however updated based on the current data available for the grid.

Step 1.3 (EB 66, Annex 47): Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

As per the "Tool to determine the remaining lifetime of equipment", the remaining lifetime of the equipment is the time for which the existing equipment can continue to operate before it has to be replaced/discarded. As per this Tool, Project participant can use one of the following options to determine the remaining lifetime of the equipment:

(a) Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;
(b) Obtain an expert evaluation;
(c) Use default value

The project activity started commercial operation on 30/09/2016 and since commissioning, the project activity is running satisfactorily. As per Manufacturer specification and Registered PDD, the technical lifetime of power plant is 30 years (As per 1st CP). Thus the remaining lifetime of equipment's exceeds the crediting period for which renewal is requested. Thus as per manufacturers information, the remaining lifetime of equipment is exceeds crediting period as per option 1 of Tool to determine the remaining lifetime of the Equipment.

The below conditions are fulfilled. (i)The equipment has been operated and maintained according to the recommendations of the equipment supplier; (ii) There are no periodic replacement schedules or scheduled replacement practices specific to the industrial facility, that require early replacement of equipment before the expiry of the technical lifetime; and (iii) The equipment has no design fault or defect and did not have any industrial accident due to which the equipment cannot operate at rated performance levels.

An per option (a), evaluating the remaining lifetime for the type of equipment has been approached and requested to determine the remaining lifetime of the equipment. The assessment of remaining life time of the equipment's had been done and confirmed that the remaining technical lifetime of the equipment of the project activity exceeds the crediting period for which renewal is requested. As the remaining technical lifetime of the equipment is not less than the end of the crediting period or which renewal is requested, the current baseline holds good for this crediting period too.

Step 1.4(EB 66, Annex 47): Assessment of the validity of the data and parameters

This step stipulates that "Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity."

The project chosen **ex-ante default value i.e. Emission Factor**. As per the Guidance given in Tool the emission factor is updated as follows:

1. The operating margin is calculated as per the latest version of CEA (Version 16.0) available to the project participant. The operating margin calculation is checked by the assessment team and found correct.

2. The build margin is considered from CEA database version 16.0 as per "Tool to calculate the emission factor for electricity system" version 07. The value considered is checked by the assessment team and found correct

3. The Combined margin calculation is carried out as per "Tool to calculate the emission factor for electricity system" version 07. The value considered is checked by the assessment team and found correct

The emission factor is fixed ex-ante and thus will be used for the complete 2nd renewable crediting period and for entire verification conducted under 2nd renewable crediting period.

Application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline is valid for the Second crediting period but data and parameters needs to be updated. Therefore, step 2 is used

Step 2.1: Update the current baseline
This step is applicable since the Steps 1.1, 1.2, 1.3 and/or 1.4 showed that the current baseline needs to be updated. As evident from the explanation provided above the baseline scenario remains unchanged.

Updated the baseline emissions based on the latest approved version of the methodology applicable to the project activity for the subsequent crediting period, without reassessing the baseline scenario.

Step 2.2: Update the data and parameters
The updated Data and/or parameter are followed for estimating the baseline emissions

Hence as per ACM0002, ver. 20.0 (latest Methodology), the baseline of the project is as follows:

Project activity is the installation of a Greenfield power plant, the baseline scenario is 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, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

The above selected baseline is correct and thus applicable to the project activity and in line with approved methodology for the applied renewable of crediting period.

The National CDM Authority (NCDMA), which is the Designated National Authority (DNA) for the Government of India (GOI) under the Ministry of Environment, Forests & Climate Change (MoEFCC), has mentioned four indicators for the sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India[8]. Thus the project's contribution towards sustainable development has been addressed based on the following sustainable development aspects:

I. Social well-being:

The project activity provided / provides job opportunity to local people during erection, commissioning and maintenance of the Solar power plant. Frequency of visiting villages and nearby areas by skilled, technical and industrialist increase due to installation /remote audit /operation and maintenance work related to Solar power plant. This directly and indirectly positively effects the economy of villages and nearby area.

II. Economic well-being:

The CDM project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and life style of the area.

III. Environmental well-being:

The Solar power is one of the cleanest renewable energy powers and does not involve any fossil fuel. There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.

IV. Technological well-being:

The project activity is step forward in harnessing the untapped Solar potential and further diffusion of the Solar technology in the region. The project activity leads to the promotion and demonstrates the success of Solar projects in the region which further motivate more investors to invest in Solar power projects. Hence, the project activity leads to technological well-being.

- **Principle 2: Safeguarding Principles**

  The Safeguarding principles assessment is as below:

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**

[8] http://ncdmaindia.gov.in/Contactus.aspx

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
3.0 SOCIAL & ECONOMIC SAFEGUARDING PRINCIPLES AND REQUIREMENTS 3.1 Principle 1 – Human Rights	1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. 2. The Project shall not discriminate with regards to participation and inclusion.	No	The Project is not in conflict with the economic livelihood of the local community. The Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. Further, the Project meets the local labour law requirements thus does not cause any human rights abuse. The India has ratified the United Nations Human Rights Rules and regulations. The India ratified the same as per web link[9] given below The project adheres to the host country's commitment to: Universal Declaration of Human Rights (UDHR) International Covenant on Economic, Social and Cultural Rights, India Accession 10/04/79[10] International Covenant on Civil and Political Rights India Accession 10.04.79[11]	Not applicable

9 http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

10 http://hrlibrary.umn.edu/research/ratification-india.html and http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
3.2 Gender Equality and Women's Rights	1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)	No	The Project promotes gender equality and the empowerment of women. The Project does not cause any discrimination against women. The project Proponent does not indulge in discrimination on basis of gender, race, religion, sexual orientation. The PP has a stipulated HR policy that takes into account participation by both men and women. Further, the CSR projects designed are implemented for equal participation of both men and women The project abide by the Factories Act that prohibits any form of discrimination and is in accordance with the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), India ratified it on 09/07/1993 with certain reservations[12] And International Convention on the Elimination of All Forms of Racial Discrimination; India ratified the convention on	Not applicable

11 http://hrlibrary.umn.edu/research/ratification-india.html and http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

[12] http://nhrc.nic.in/documents/india_ratification_status.pdf and http://www.un.org/womenwatch/daw/cedaw/

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
			03/12/1968 with certain reservation[13] The Stakeholder consultation attendance sheet, Minutes of meeting and photographs were checked and assessment team conclude that feedback were considered equally from both the genders and due consideration is provided to the comments. The stakeholder of both genders was invited with due process of public notice and personal invitations and the same is found correct.	
3.3 Principle 3 – Community Health, Safety and Working Conditions	1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.	No	The project is renewable energy technology (Solar Technology) and does not have exposure to increased health risks and shall not adversely affect the health of the workers and the community. Necessary health and safety measures are taken during construction and operation phase, relevant staff will be trained to be able to work with high voltages.	Not applicable
3.4 Principle 4 – Cultural Heritage, Indigenous Peoples,	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or	No	No cultural heritage is observed on the project site, thus no harm observed.	Not applicable

[13] http://nhrc.nic.in/documents/india_ratification_status.pdf and http://www.refworld.org/docid/3ae6b3940.html

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
Displacement and Resettlement 3.4.1 Sites of Cultural and Historical Heritage	religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)?		Compliance with India's commitment to International Covenant on Economic, Social and Cultural Rights 10.04.79 will ensure no damage to critical cultural heritage.	
3.4.2 Forced Eviction and Displacement	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project has received the necessary approvals from the local authorities and does not lead to any resettlement. India (the Ministry of Rural development have the "The National Rehabilitation and Resettlement Policy, 2007 http://www.dolr.nic.in/nrrp 2007.pdf The project activity does not have any major impact on land use patterns. In accordance with Article 1 of the International Covenant on economic, Social and Cultural Rights the program does not complicit in involuntary resettlement. No Expropriation has been conducted on any private land involved in project activity. Land has been purchased by PP directly from the owner of the land through direct negotiation of commercial terms. The land is acquired on mutual consent between land owner and PP, thus there are no any issues of dissatisfaction of private land owner.	Not applicable

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
3.4.3 Land Tenure and Other Rights	1. Does the Project require any change to land tenure arrangements and/or other rights? 2. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	No	The project has received the necessary approvals from the local authorities and does not lead to any resettlement. There are no any uncertainties with regards land tenure, access rights, usage rights or land ownership. Thus land tenure and other rights are with PP. PP have the rights to use land for the project activity and there is no any dissatisfaction for land usage for the project activity as the land has been completely procured by PP and the land title has been transferred in the name of PP. Also PP has obtained all necessary clearances from relevant government agencies for establishing the Solar power plant.	Not applicable
3.5 Principle 5 – Corruption	The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project is renewable energy technology (Solar Technology) and does not contribute to or reinforce corruption of any kind. Indulgence in corruption is an illegal activity in the host country and the local labour compliance takes into account of the same. The project abides by the United Nations Convention	Not applicable

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
			Against Corruption. India ratification 09.05.11[14]	
3.6 Principle 6 – Economic Impacts 3.6.1 Labour Rights	1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. 2. Workers shall be able to establish and join labour organisations. 3. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise: (a) Working hours (must not exceed 48 hours per week on a regular basis), AND	No	Forced labour is an illegal activity in the host country and the local labour compliance takes into account of the same. Further, India is a party to ILO and forced labour is illegal in India. The project does not employ any form of forced or compulsory labour. Employees can quit their services at any time. The project complies with the Factories Act in India that prohibits forced or compulsory labour [15] . The project activity does not involve any child labour. The project respects fundamental right of employee. There is law in India since 1926 by The Trade Unions Act, 1926 [16] which protects rights of industrial trade unions and their members. The agreements are in place for permanent employees The project prefers the	Not applicable

[14] http://www.unodc.org/unodc/en/treaties/CAC/signatories.html
[15] http://www.ilo.org/dyn/natlex/docs/WEBTEXT/32063/64873/E87IND01.htm
[16] http://ncwapps.nic.in/acts/TheTradeUnionsAct1926.pdf

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
	(b) Duties and tasks, AND (c) Remuneration (must include provision for payment of overtime), AND (d) Modalities on health insurance, AND (e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND (f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.		local employment and culture is maintained at project site. The country has strict prohibition for child labour[17]. Thus project does not involve child labour during construction and operation of project activity. The project follows the health, safety and environment guidelines at project site. The project ensures the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.	
3.6.2 Negative Economic	1. Does the project cause negative	No	The project does not involve any negative	Not

[17] http://www.indianchild.com/child_labour_law_in_india.htm

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
Consequences	economic consequences during and after project implementation?		impacts and no any potential risk to local economy. The project leads to economic development of the local area by means of generating employment opportunities for local people either directly or indirectly.	applicable
4.1.1 Emissions	Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project is renewable energy technology (Solar Technology) and does not lead any increase in greenhouse gas emissions over the Baseline Scenario.	Not applicable
4.1.2 Energy Supply	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The project activity supplies energy to national grid and project activity displaces equivalent quantity of electricity which would have been generated by fossil fuel dominated grid connected power plants. The clean energy supply to the grid increases and hence Locals can get benefit of having continuous excess to clean power.	Not applicable
4.2.1 Impact on natural water patterns and flow	Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	The project is renewable energy technology (Solar Technology) and does not affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s).	Not applicable

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
4.2.2 Erosion and/or water body stability	1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2. 2. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	No	The project is renewable energy technology (Solar Technology) and does not affect Erosion and/or water body stability.	Not applicable
4.3.1 Landscape modification and soil	Does the Project involve the use of land and soil for production of crops or other products?	No	The project proponent has implemented Environment Health Safety and Social guideline which takes into account the same. The project activity involves barren land and does not involve use of land and soil for production of crops or other products. The project does not involve any landscape modification or soil. Hence there is no any impact of this principle.	Not applicable
4.3.2 Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic	No	The project is renewable energy technology (Solar Technology). The Project will not be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding, drought or other	Not Applicable

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
	conditions?		extreme climatic conditions. Thus this section is Not Applicable.	
4.3.3 Genetic Resources	Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	The project is renewable energy technology (Solar Technology). The Project not be negatively impacted by the use of genetically modified organisms or GMOs. Thus this section is Not Applicable	Not Applicable
4.3.4 Release of pollutants	Could the Project potentially result in the release of pollutants to the environment?	No	The project has received environmental clearance from the State Pollution control Board. Further the EHSS guidelines take into account the same. The project does not lead to release of any hazardous substances that pose threat to the environment. Rather it aims at reducing the air pollution that is prevalent due to use of fossil fuel power plants. The project promotes environmental protection through the use of cleaner technology. The project abides by the stipulations of the Indian Environment Protection Act 1986[18] .	Not applicable
4.3.5 Hazardous	Will the Project involve	No	The project is renewable	Not

[18] http://envfor.nic.in/legis/env/env1.html

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
and Non-hazardous Waste	the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?		energy technology (Solar Technology). The project does not involve generation of Hazardous and Non-hazardous Waste. Standard procedure is followed at site during operation and maintenance. During operation and maintenance of the power plant, the waste generated is handled and disposed in an approved manner. Health, safety and Environment guidelines are followed at site. The Solar project activity site generates negligible quantity of waste oil/diesel and same is stored and given to vendor for further reuse/recycle or to dispose. Thus waste is generated are being disposed as per standard waste management principles being followed by PP.	Applicable
4.3.6 Pesticides and fertilizers	Will the Project involve the application of pesticides and/or fertilisers?	No	The project is renewable energy technology (Solar Technology) power generation. There is no any involvement of pesticides and/or fertilisers. Thus this principle is Not Applicable.	Not Applicable
4.3.7 Harvesting of forests	Will the Project involve the harvesting of forests?	No	The project is renewable energy technology (Solar Technology) power generation. The project activity does not involve any harvesting of forests.	Not Applicable

Safeguarding principles	**Assessment questions**	**Assessment of relevance to the project (Yes / potentially / no)**	**Justification of the Assessment team**	**Mitigation measure (if required)**
			Thus this principle is Not Applicable.	
4.3.8 Food	Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project is renewable energy technology (Solar Technology) power generation. The Project does not modify the quantity or nutritional quality of food available. Thus this principle is Not Applicable	Not Applicable
4.3.9 Animal Husbandry	Will the Project involve animal husbandry?	No	The project is renewable energy technology (Solar Technology) power generation. The Project does not involve animal husbandry. Thus Not Applicable	Not Applicable
4.3.10 High Conservation Value Areas and Critical Habitats	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	No cultural heritage is observed on the project site, thus no harm observed. Compliance with India's commitment to International Covenant on Economic, Social and Cultural Rights 10.04.79 will ensure no damage to critical cultural heritage. The project is not located in any HCV areas as per the list of approved HCV areas of India[19].	Not Applicable
4.3.11 Endangered Species	1. Are there any endangered species identified as potentially being present within the Project boundary	No	There are no any endangered species identified at project site and also no species have the route through area.	Not Applicable

[19] http://natureconservation.in/state-wise-list-of-conservation-reserves-of-india-updated/

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes / potentially / no)	Justification of the Assessment team	Mitigation measure (if required)
	(including those that may route through the area)? AND/OR 2. Does the Project potentially impact other areas where endangered species may be present through trans boundary affects?		The project activity does not impact other endangered species through trans boundary affects. The project site is not on the migration route of migratory birds also. The project site is located at Village Bendo, Mahoba District, Uttar Pradesh, India. It is to be noted that there is any migratory birds route over the project area.	

The safeguarding principles relevant to the project activity are justified by PP based on supporting web links, references wherever applicable.

Also the report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013 is submitted to DOE. This report clearly mentioned that Solar farms operations do not result in direct air pollution, noise pollution. Please refer below web link for the same.

http://mnre.gov.in/file-manager/UserFiles/report-on-developmental-impacts-of-RE.pdf

These safeguarding principles assessment is validated through references given by PP, MNRE report as mentioned above and interview during the remote audit.

The SDG goals are also described below:

SDG Indicator	Assessment of Methodological choices/approaches for estimating the SDG outcome
SDG 7 –Affordable and Clean Energy: Electricity produced and supplied to the grid.	**Measurement Method:** - Electricity produced and supplied to the grid is monitored through energy meter. Net electricity will be calculated by state electricity board and PP on monthly basis and provided in the monthly report or equivalent. The other parameters used for net electricity supplied to grid are mentioned in monitoring plan. **QA/QC Process:** This parameter is monitored monthly and value of parameter will be cross checked with invoices. The meters will be

SDG Indicator	Assessment of Methodological choices/approaches for estimating the SDG outcome
	calibrated on regular frequency. **Relevant SDG Target:** 7.2 -By 2030, increase substantially the share of renewable energy in the global energy mix. **Corresponding indicator:** Electricity produced and supplied to the grid. (7.2.1 Renewable energy share in the total final energy consumption)
SDG 8 – Decent Work and Economic Growth: 1. Quality of employment (No. of trainings provided to the employees). 2. Livelihood of Poor. 3. Employment generated due to project activity. 4. Technology transfer and technology self-reliance.	**Measurement Method:** - Together with the technology supplier, the Project proponent organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures. Number of employees and salary disbursed can be verified from employment records etc. **QA/QC Process:** The number of persons employed and salary disbursed would be mentioned in the plant register, which can be crossed checked with daily attendance register for number of peoples employed. Training records are maintained by PP for the various technical and soft skill trainings conducted at the plant. **Relevant SDG Target:** 8.5 - By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value **Corresponding indicator:** 1. 01 No. of trainings provided to the employees 2. Employment generated due to project activity (10 persons)
SDG 13 – Climate Action: Emission reductions in tCO_{2e} from the project activity.	**Measurement Method:** - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is ex-ante parameter and determined based on data obtained from "CO_2 Baseline Database for Indian Power Sector" version 16, published by the Central Electricity Authority, Ministry of Power, and Government of India. This is in line with "Tool to calculate the emission factor for an electricity system, version 7". The emission reductions are calculated as per registered PDD and as per methodology requirement. **QA/QC Process:** This parameter is calculated, and no any QA/QC procedure required.

SDG Indicator	Assessment of Methodological choices/approaches for estimating the SDG outcome
	Relevant SDG Target: 13.2: Integrate climate change measures into national policies, strategies and planning **Corresponding indicator:** Emission reductions in tCO_{2e} from the project activity.

- **Principle 3: Stakeholder Inclusivity**

The project is applying for the renewal of the crediting period i.e. Second crediting period from 20/09/2021 to 19/09/2026. Thus, reassessment of stakeholder's inclusivity not required.

- **Principle 4: Demonstration of real outcomes**

  The Sustainable monitoring plan is described below:

SDG Parameter/ Safeguarding principle	Indicator	Monitoring
SDG 7: Affordable and Clean Energy	Net Electricity Quantity to Indian grid delivered by the project (MWh)	The available parameter to Project owner is net electricity supplied to grid and same is mentioned as monitoring parameter. Monthly generation data is directly measured from the installed trivector main & check meter readings at project site and grid substation. These values would be the primary source to calculate Quantity of net electricity supplied by the project plant/unit to the grid. The calculation of net electricity generation is in the hand of state electricity board and PP has no role to play in the same. Statements issued by state board to the project proponent on electricity generation will report the net electricity export, $EG_{PJ,y} = EG_{facility,y}$. Energy meters of 0.2s accuracy class provided at delivery points continuously measure the export as well as the import from the turbine at the project site. The net electricity exported shall be

SDG Parameter/ Safeguarding principle	Indicator	Monitoring
		calculated by subtracting import from the export values. Meter readings will be taken monthly by the representative of the state board. The meters are monitored continuously & cumulative readings are taken at the end of the month by joint meter reading procedure. These are sealed by state board to avoid malfunctioning with meter readings. The officials frequently check the meters for tampering and malfunctioning with the meters. Meter is calibrated once in a five year by the State authority in the presence of PP and State Board officials to ensure the working of meter within permissible limits. This is inline with the CEA guidelines for calibration. The calculation of net electricity supplied to grid is under purview of state electricity board and Project owner do not have control on it. The onsite practice is thus acceptable to the assessment team as the same is as per the requirement of the approved methodology. The invoices are than raised on the basis of JMR and after cross verification the payment is issued by DISCOM to the respective PP. These values are used in ER calculation which can be cross verified from invoices.
SDG 8: Decent Work and Economic Growth	1. Quality of employment (No. of trainings provided to	Project participant have Documentation pertaining to employment, attendance register

SDG Parameter/ Safeguarding principle	Indicator	Monitoring
	the employees). 2. Employment generated due to project activity.	and documentary details of training/capacity building. Assessment team also checked the salary slips & O&M agreement/other outsourced activities and confirms that due to project activity peoples are getting more than minimum wages as a salary and this salary is better than local level salary. Based on the roles and responsibility of employee, the salary will be higher than the minimum salary of the region and hence the parameter monitoring is acceptable to the assessment team. The training records are maintained on regular basis with annual consolidation. Assessment team checked that at least more than 10 people are expected to be employed at site per year during remote audit & employment records. The employment opportunities generated are local or temporary or permanent as checked and confirmed by the assessment team. The training related to O&M, Safety, emergency procedure, fire safety etc. are provided to employees. Since local people are employed due to project activity, the training given to employees improves the quality of employment. Apart from these training to employees, the PP organizes few events which will be beneficial to society as a part corporate social responsibility (CSR) activities as per their policy. As the parameter is subjected to

SDG Parameter/ Safeguarding principle	Indicator	Monitoring
		monitoring the same will be checked during the verification of the project activity. It will be ensured that safe working condition and safety equipment's has been provided for all skilled and unskilled Labor. It will be checked during verification through remote audit observations and interview with people if noise level is maintained within permissible limit. Safety equipment to be provided to workers both skilled and unskilled will be checked during the verification of the project activity. Assessment team however checked the same is already provided to the workers as part of companies CSR (EHS) policy.
SDG 13: Climate Action	Emission Reductions	The emission reduction calculation will be done as per the formula mentioned in the PDD. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.

Transmission line effect: The project activity is exporting the generated electricity to grid. The EPC contractor and state electricity board is responsible for the construction of transmission line. They are following safety while construction of transmission lines. The project proponent does not have any role in the construction of transmission lines. The standard procedure is followed at site while commissioning the transmission lines.

Principle 5: Financial Additionality & Ongoing Financial Need

The additionality of the project activity has been demonstrated in-line with "Tool for the demonstration and assessment of additionality", Version 07.0. All steps of the additionality tool have been demonstrated in the CDM PDD and validation report.

The project activity is already registered with the GS and additionality of project already demonstrated in registered PDD (https://registry.goldstandard.org/projects/details/1375), found the same to be correct and appropriate.

3.10 Calculation algorithm and/or formula used to determine emission reductions

The CDM PDD of the project activity is checked by the assessment team and found that ACM0002, Version 20 is used at the time of CDM validation (2nd CP). However, the for Global Goals "Principles and Requirements" Version 1.2 recommends the application of the latest version of the applied methodology along with the conservative argument of the approach followed. The latest version is ACM0002, Version 20 and VVB confirm that the project activity is in line with the latest methodology as well.

The formula used in the CDM PDD was used for the calculation of emission reduction and same is found to be correct. Hence emission reduction calculation at this time of validation is conservative and appropriate.

Assessment team checked that Formula used to calculate the net emission reduction for the project activity is

$ER_Y = BE_Y – PE_Y - LEy$

Where,

ER_Y = Emission Reduction in tCO_2/year

BE_Y = Baseline emission in tCO_2/year

PE_Y = Project emissions in tCO_2/year

Ley = Leakage emissions in tCO_2/year

Baseline Emission (BE_Y)

The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$
Where,

BE_y	Baseline emissions in year y (t CO_2/yr)
$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

BE_y= 47,371 MWh x 0.9346 tCO_2/MWh = 44,273 tCO_2

Since $ER_y = BE_y$ (As PE_y=0 & LE_y=0)

Therefore, ER_y = 44,273 tCO_2/year

SDG 13 Climate Action

Parameter: GHG Emission Reduction

Year	Baseline estimate	Project estimate	Net benefit
Year 1	44,273	0	44,273
Year 2	44,273	0	44,273
Year 3	44,273	0	44,273
Year 4	44,273	0	44,273
Year 5	44,273	0	44,273
Total	221,365	0	221,365
Total number of crediting years	5		
Annual average over the crediting period	44,273	0	44,273

SDG 7: Affordable and Clean Energy

Parameter: Amount of Clean electricity supplied to grid (MWh)

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0	47,371	47,371
Year 2	0	47,371	47,371
Year 3	0	47,371	47,371
Year 4	0	47,371	47,371
Year 5	0	47,371	47,371
Total	0	236,855	236,855
Total number of crediting years	5		
Annual average over the crediting period	0	47,371	47,371

SDG 8: Decent Work and Economic Growth

Parameter: Number of Jobs created, Number of Training conducted & O&M cost spent

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1
Year 2	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1
Year 3	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1
Year 4	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1
Year 5	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1
Total	0	Jobs – 10 Training – 5	Jobs – 10 Training – 5
Total number of crediting years	5		
Annual average over the crediting period	0	Jobs – 10 Training – 1	Jobs – 10 Training – 1

4. REFERENCE

S. No.	Document/Evidence/Reference/Web blink, Version, Date
1.	Project Design Document (PDD) version 03 dated 17/02/2018
2.	Initial GS4GG PDD, version 03 dated 17/02/2018 Final GS4GG PDD, version 04 dated 14/09/2021 based on which final opinion was provided.
3.	Estimated Emission reduction sheet, version 04, dated 16/08/2021
4.	Methodology: ACM0002, Version 17 (As per registered CDM PDD of 1st CP and Version 20.0 during RCP validation of 2nd CP)
5.	Standard: CDM Project Standard for project activities, Version 02.0
6.	Standard: CDM validation and verification standard for project activities, Version 02.0
7.	Procedure: CDM Project Cycle Procedure for project activities, Version 02.0
8.	Tools: 1. Tool to calculate the emission factor for an electricity system, Version 7.0 2. Methodological tool (EB 66, Annex 47) "Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period." (Version 03.0.1)
10.	GS4GG guideline
12.	Training Records of project staff at site
13.	Declaration for non-receiving of ODA for project
14.	Universal declaration of Human Rights https://nhrc.nic.in/acts-&-rules/declarationcovenants-1
15.	Ministry of Labor https://labour.gov.in/lcandilasdivision/india-ilo
16	National Prevention of Corruption Act of Government of India http://legislative.gov.in/sites/default/files/A1988-49.pdf49.pdf
17	Ministry of Environment, Forest & Climate Change http://moef.gov.in/
21	UNFCCC Website for CDM mechanism–http://cdm.unfccc.int/

S. No.	Document/Evidence/Reference/Web blink, Version, Date
22	HR employment records/ Salary slip of the project staff on site
23	Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects Ministry of New and Renewable Energy (MNRE), September 2013
24	Declaration of not participating in REC mechanism

5. FINAL PROJECT DESIGN CERTIFICATION RENEWAL STATEMENT

Applus+ Certification have performed an RCP validation of the "30 MW Solar PV Project by Nirosha Solar Power Private Limited". The RCP validation was performed on the basis of UNFCCC criteria of CDM validation and verification standard for project activities, Version 02.0, Gold Standard GS4GG guideline and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the GS4GG PDD and the subsequent follow-up interviews has provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC and Gold Standard requirements for the Gold Standard and all relevant host country criteria. The project will hence be recommended by Applus+ Certification for renewal of crediting period with the Gold Standard Registry.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 44,273 tCO_2e per year.

The RCP validation has been performed following the requirements of the latest version of the CDM validation and verification standard for project activities, Version 02.0, Gold Standard GS4GG guideline and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

- The project does not result in negative social, environmental and/or economic impacts.
- The project contribution to Environment, Social Development and Economic and technological development
- The project additionality is sufficiently justified in the Gold Standard PDD
- The project does not result in diversion of ODA.
- Conservative assumptions were applied in the project description.
- The monitoring plan of SD parameters is transparent and adequate.
- The project meets the stakeholder consultation requirements.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the RCP validation.

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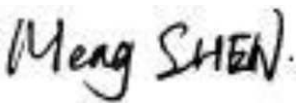
Date: 14/09/2021

Lead Auditor: Mr. Pankaj Kumar
Tech. Expert: Mr. Pankaj Kumar
Auditor Mr. Jitendra Mohan Singh
Tech. Reviewer: Mr. Simon Shen

Approver *(Applus+ Certification VVB Technical Manager)*
Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Pankaj Kumar	**Technical Reviewer:** Mr. Simon Shen
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

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Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Pankaj Kumar	Ref. to checklist in GS4GG PDD:	-
Description of the audit finding		Date:	13/09/2021

- PP requested to submit Design Review by GS for CP 1, GS Validation Report and latest performance review completed by GS.
- Updated Version of applied methodology is not consistent throughout the PDD. Hence corrective action sought for the same.
- Editorial mistakes are observed during the desk review of the PDD. Thus, corrective action sought.
- PP is requested to reframe the language of sections in PDD as the project activity is already implemented and contributing towards to emission reduction. Thus, corrective action sought.
- PP requested to submit commissioning certificates and PPA in support of legal ownership of the project activity.
- PP requested to submit Declaration confirming that there would not be double counting of credits for any particular monitoring period for both GS and CDM Scheme.

Project Participant's response	Date:	14/09/2021

1. The Design Review closure form by GS, GS Validation report are now submitted to the DOE assessment team. It is to be noted that, the Performance Review number 2 is currently ongoing and we have just received the GS feedback. The Performance Review number 1 closure form is provided instead.
2. The version of the applied methodology is now made consistent throughout the revised GS PDD.
3. Editorial mistakes are now corrected throughout the revised GS PDD.
4. The language used in the GS PDD is now reframed as the project activity has been implemented and commissioned.
5. The commissioning certificate and the PPA is now submitted to the DOE assessment team as a supporting to justify the legal ownership of the project activity.
6. The PP declaration confirming of no double counting is now submitted to the DOE assessment team.

Documentation provided as evidence by Project Participant

1. Design Review closure form by GS, GS Validation report, Performance Review number 1 closure form
2. Revised GS PDD
3. Commissioning Certificate and PPA
4. PP declaration confirming of no double counting

Auditor's assessment comment	Date:	14/09/2021

- GS Registration documents for the previous CP 1 of project activity is submitted to assessment team and found no FAR. Thus, accepted and CAR closed.
- PP has submitted revised PDD with updated version of ACM0002 Meth. Found accepted thus CAR closed
- Editorial mistake is rectified throughout the revised PDD. Thus, accepted and CAR closed.
- PP has reframed the language throughout the revised PDD, found acceptable thus CAR closed.
- PP submitted commissioning certificates and PPA in support of legal ownership of the project activity.

CAR closed. • PP submitted Declaration confirming that there would not be double counting of credits for any particular monitoring period for both GS and CDM Scheme. CAR closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Mr. Pankaj Kumar	Ref. to checklist in GS4GG PDD:	-
Description of the audit finding		Date:	13/09/2021
During Desk review, DOE team found that assessment of the validity of the original/current baseline and update of the baseline as per the applicable CDM tool 11, version 3.0.1, EB 66 annex 47 is missing in the PDD. Thus PP is requested to demonstrate the same in preferred section. Corrective action sought.			
Project Participant's response		Date:	14/09/2021
In section B.4 of the revised GS PDD, the baseline scenario of the project activity has now been updated as per the latest ACM 0002, version 20 of applied methodology.			
Documentation provided as evidence by Project Participant			
Revised PDD.			
Auditor's assessment comment		Date:	14/09/2021
PP have submitted revised GS PDD as per the updated tools and methodologies and found acceptable. CAR thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Pankaj Kumar	Ref. to checklist in GS4GG PDD:	-
Description of the audit finding		Date:	13/09/2021
The supporting documents related to Data and parameters to be monitored is not submitted to assessment team. For example Sample JMR& invoices, CSR records, trainings & workshops that are given to the respective O&M staffs. • Technical Trainings • Soft Skill Trainings Corrective action is sought for the same.			
Project Participant's response		Date:	14/09/2021
The following documents are now submitted to the DOE assessment team. 1. Sample JMR & Invoices 2. Training Records			
Documentation provided as evidence by Project Participant			
1. Sample JMR & Invoices 2. Training Records			
Auditor's assessment comment		Date:	14/09/2021
PP have submitted supporting documents related to Data and parameters to be monitored an dfound			

correct. CAR thus closed.

Appendix 2: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Pankaj Kumar	**Mr. Pankaj Kumar** worked as team leader – Bihar for South Asia Climate Proofing and Growth Development (CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-national level in India, Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO (Bihar Urban Infrastructure Development Corporation), Govt. Of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE), Johannesburg, RSA as Team Leader for validation, verification of around 100 GHG projects in Asia, Africa, USA, Asia Pacific & Americas. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. He is also member of task force on climate change & human health, Health Department, GoB and on roster of UNICEF's WASH experts. He is an experienced, qualified and result oriented Environment Professional having more than 14 yrs. Of relevant experience in Climate Change (Mitigation &Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing. Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India)
Mr Jitendra Mohan Singh	**Jitendra Mohan Singh**, has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than (18) years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked on contract basis (adhoc) as a RIT expert in UNFCCC from 2010 to 2013. Currently. he is empanelled with Applus+ Certification since 2020 and has been involved Verifications of PAs as Lead Auditor and Technical Expert for Renewable and non-Renewable as well as Energy Demand
Mr. Simon Shen	**Mr. Simon Shen** has a Bachelor's Degree on Thermal Energy Engineering and Master´s Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert

	and technical reviewer.