

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Report No.: A+SH_SYST_TQC_004616-GS

Client:

Janardan Wind Energy Pvt. Ltd. (JWEPL)

DATE: 28/02/2018

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A+SH_SYST_TQC_0046 16	07/11/2017	03.0	28/02/2018
Client	Janardan Wind Energy Pvt. Ltd. (JWEPL)		
Project Title	20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan		
Project Participants	Janardan Wind Energy Pvt. Ltd. (JWEPL)		
Project Location	The details location of the project is as below: Village: Sanwreej Teshil: Phalodi Disrtict: Jodhpur State: Rajasthan.		
Contact Person	Mr. Ashwini Kumar		
Applied Methodology/Version: ACM0002- Grid-connected electricity generation from renewable sources --- Version 17.0	Sectoral scope: 1 Technical area: 1.2		
First Passport Version: 01 Date of Issuance:28/11/2016	Final Passport Version: 03 Date of Issuance:28/02/2018		
Estimated Annual Emission Reduction:	34,882 tCO _{2e} /year		
<p>Summary:</p> <p>M/s Janardan Wind Energy Pvt. Ltd. has commissioned Applus+ LGAI to perform a validation of "20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan"</p> <p>The scope of the 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 Passport, and applying 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 approved methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation checklist describes a total of 7 findings which include:</p> <ul style="list-style-type: none"> • 7 Corrective Action Requests (CARs); • 0 Clarification Requests (CLs/CRs); • 0 Forward Action Requests (FARs). <p>The PP has responded these findings by modifying the Gold Standard Passport and providing adequate additional explanations and evidences. Applus+ LGAI confirms that all the findings have been "closed out" before submitting the request for registration to GS board.</p> <p>As a summary of the validation, the review of the Gold Standard Passport and the subsequent follow-up interviews have provided Applus+ LGAI 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+ LGAI recommends the project for registration by the GS Registry.</p>			

<p>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 with UNFCCC. http://cdm.unfccc.int/Projects/DB/Aplus1501572247.73/view</p>		
Assessment team	Roles	Organization
Mr. Sukanta Das	Team Leader/Lead Auditor	True Quality Certifications private Limited-Outsourced entity
Mr. Denny Xue	Technical Reviewer (I)	Applus+ LGAI

ABBREVIATIONS

ACM	Approved Methodology large scale(Consolidated)
Applus+ LGAI	LGAI Technological Center, S.A. (Applus)
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
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
GS	Gold Standard
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non-Governmental Organization
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PP	Project Participant
PS	Project Standard
UNFCCC	United Nations Framework Convention for Climate Change
VVS	Validation and Verification Standard

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1.- INTRODUCTION

M/s Janardan Wind Energy Pvt. Ltd has commissioned Applus+ LGAI to perform a validation of "20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan" (hereafter referred to as the project activity) in the state of Rajasthan in the republic of, India. This validation report summarizes the findings of the 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 Executive Board as well as requirement of Gold Standard.

The main purpose of this project activity is to generate clean form of electricity through renewable Solar PV energy source. Janardan Wind Energy Pvt. Ltd. (JWEPL) is the promoter of the proposed project activity. The project activity involves installation of 10 MWAC (Project-I) & 10 MWAC (Project-II), totaling to 20 MWAC (corresponding to 22.5 MWp) solar power project under Jawaharlal Nehru National Solar Mission (JNNSM) Phase-II, Batch-II (DCR Category). Both the projects are installed in the same project boundary at Village: Sanwreej, Teshil: Phalodi, District: Jodhpur, State: Rajasthan.

The electricity generated from project activity will be sold under the Power Purchase Agreement (PPA), signed with NTPC Vidyut Vyapar Nigam (NVVN) Ltd. The electricity generated from the project activity will be evacuated through 132 kV sub-station located at Sanwreej for consumption in the Indian Electricity Grid.

The generated power from this project activity will be supplied to the grid and purchased by NTPC Limited which falls in northern region of the country. The generation of power from Solar is a clean technology as there is no fossil fuel fired or no GHG gases are emitted during the process. Therefore, the project activity led to reduction in GHG emissions as it displaces power from fossil fuel based electricity generation in the regional grid. The annual average GHG emission reduction through this project activity is 34,882 tCO₂e. The project leads to reduction in GHGs and achieve sustainable development of the host country.

1.1.- Objective

The purpose of a validation is to have an independent third party assessment of the passport 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 CER project cycle and will finally result in a conclusion by Applus+ LGAI whether a project activity is valid and should be submitted for registration of a proposed project activity rests at the GS and the Parties involved.

1.2.- Scope

The validation scope is defined as an independent and objective review of the project passport, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable CDM and GS requirements including the approved baseline and monitoring methodology ACM0002 version 17.0. The validation was based on the requirements in the Validation and Verification Standard version 09.0 and Gold Standard 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 passport.

2.- METHODOLOGY

The project assessment is based on the Clean Development Mechanism Validation and Verification Standard version 09.0, Gold Standard requirement 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+ LGAI, the members of the assessment team carried out:

1. A desk review of the passport;
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:	<input type="checkbox"/> CAR	<input type="checkbox"/> CL/CR	<input type="checkbox"/> FAR	Number:	
Raised by:		Ref. to checklist in table 1&2:			
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.					
Conclusion by Lead Auditor			Date:		
The conclusion made by the Lead Auditor should be included here.					

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 scopes / technical area and experiences in the sectoral or national business environment, Applus+ LGAI has composed a project assessment team in accordance with the appointment rules in Applus+ LGAI. The composition of audit team has to be approved by the Applus+ LGAI ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules as below:

- Leader Auditor (LA)
- Auditor (A)
- Auditor Trainee (T)

- Technical Experts (E)

It is required that the sectoral scope / technical area linked to the methodology has to be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country experience
Sukanta Das	LA*/E	Y	Y	Y	Y
Denny Xue	TR	Y	Y	Y	N

*LA: Lead Auditor

TR: Technical Review

E: Technical Experts (E)

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

2.2.- Document review

The Gold Standard Passport 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 Appendix 3 to this report.

2.3.- Follow-up interviews

During the period of 02/02/2017 to 03/02/2017, Applus+ LGAI performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm selected information and to resolve issues identified in the document review. The main interviewed personnel are listed in following table.

Interviewed personnel	Function	Organization
Mr. Ashwini Kumar	Project Manager	PP representative
Punaram	Villager	NA
Om Prakash	Villager	NA

2.4.- Resolution of Clarification and Corrective Action Request

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

The Gold Standard Passport version 03 submitted on 28/02/2018 serves as the basis for the final assessment presented. Additional changes to the passport during the validation process are not considered to be significant with respect to the main CDM and Gold Standard objectives.

2.5.-Internal quality control

As final step of a validation the final documentation including the validation report and the protocol have to undergo an internal quality control by the technical review committee. Each report has to be finally approved either by the head of technical review committee or the deputy. In case one of these two persons is part of the audit team, approval can only be given by the other one.

After confirmation of the PP the validation opinion and relevant documents are submitted to the GS Registry.

3.- VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

- 1) The findings from the desk review of the original passport and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Appendix 1 of this report
- 2) Where Applus+ LGAI had identified issues that need clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Appendix 1 of this report.
- 3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and Applus+ LGAI to resolve these Clarification or Corrective Action Requests are summarized.
- 4) The conclusions for validation subject are presented.

3.1.- Approval

The host country of the project activity is India which is validated from the CDM- PDD Registered with UNFCCC.

The host country is clearly identified in section C.2 of the Passport. The Gold Standard Toolkit Version 2.2 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

The project participants are M/s Janardan Wind Energy Pvt. Ltd. as 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 C.1 of the passport applying a large scale methodology ACM0002 version 17.0. The total capacity of the power project is 20MW_{AC} as validated from the CDM PDD. Since the design capacity of the project activity is more than 15 MW, which is stipulated limit for small 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 17.0 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 CO₂ emission by replacing equivalent amount of electricity from the grid of India. The project type is identified as renewable energy project in section C.3 of the passport. 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 section 1.2.3 of GS toolkit. The project activity generates and supplies renewable electricity to the regional grid thereby displacing the electricity which would have generated in fossil fuel based power plants connected to the grid.

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 section C.4 of the passport is carbon dioxide which is duly validated by the DOE.

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 ₂ O	No	Minor emission source
Project scenario	Greenfield Solar PV 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 ₂ O	No	Project activity does not emit N ₂ O

3.5.-Official Development Assistant (ODA)

The project has not utilized any ODA and a declaration of non-use of ODA has been provided by the project participant. The declaration was made in the template (AnnexD) provided by the Gold Standard and validated for appropriateness by the DOE.

3.6.-Project timeframe

- **Previous Announcement check:** The project activity has considered the revenue of carbon while planning for the project activity. The information related to pre-announcement is provided in C.3 of the passport. The information was validated from the CDM-PDD and found to be consistent.
- **Retroactive crediting:** The project applies for Gold Standard CERs under retroactive project cycle and thus became eligible for receiving credits for realized emission reductions prior to the date of registration for two years period.
- **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 REC regulators web site and confirms that the project activity does not avail any RECs. The link for the same is as below:

https://www.recregistryindia.nic.in/index.php/general/publics/accrued_regens

The declaration regarding NO RECs benefit availed is checked and found correct by the DOE. Thus the project conform to the requirement of Revisions to GS rules on double counting in the context of Green Certificate Schemes, 22/01/2015.

3.7.-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 CDM UNFCCC mechanism.

3.8.-Project Boundary

As per ACM0002 version 17.0 - "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 site visit and found correct. DOE also confirms that the project activity complies with the requirement of project boundary in ACM0002 version 17.0, which is the latest applicable methodology available to the project participant.

3.9.-Conservative of the baseline and applicability of methodology

The baseline scenario and the emission reduction calculations have been performed as per the PDD. The emission factor of grid, in the CDM PDD, has been calculated in-line with the provisions of applied methodology ACM0002 version 17.0. The latest applicable version of "Tool to calculate the emission factor for an electricity system" is version 05.

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

The applied baseline methodology is justified as it has been demonstrated that the proposed project activity is:

Applicability 1: The project activity is installation of a new grid connected solar power plant 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: The proposed project activity is an installation of a new grid connected solar power plant 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: The proposed project activity is an installation of a new grid connected solar power plant and not Hydro power plant, therefore this criteria is not applicable for this project activity.

Applicability 4: The proposed project activity is an installation of a new grid connected solar power plant and not Hydro power plant, therefore this criteria is not applicable for this project activity.

Applicability 5: The project activity is installation of a new grid connected solar power project 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 and not a biomass fired plant, therefore criterion described in point (b) is not applicable to the project activity.

Applicability 6: The project activity is a new grid connected solar power plant 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.6.1 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.6.1 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 hydro power plant. Therefore, this criterion is not applicable for the project activity.

Applus+ LGAI confirms that the application of the baseline methodology is transparent and conservative, and confirms that the chosen baseline and monitoring methodology i.e. ACM 0002 version 17.0 is applicable to the project activity.

DOE also confirms that the project activity complies with the requirement of baseline determination in ACM0002 version 17.0, 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 11 and the emission factor applied is 0.9777tCO₂/MWh. This calculated emission factor is conservative as per tool. Thus the PP has applied the conservative value for emission factor in line with the registered CDM PDD.

3.10.- **Additionality screen according to the GS Criteria**

The additionality of the project activity has been demonstrated in-line with "Tool for the demonstration and assessment of additionality", Version 07.0.0. All steps of the additionality tool have been demonstrated in the CDM PDD and validation report.

DOE checked the additionality in CDM PDD and found the same to be correct and appropriate.

3.11.- Sustainability Assessment

Do no harm assessment

The project passport has taken into account all the safeguarding principles as mentioned in GS document Annex H. The project proponent has assessed all the risks and all the safeguarding principle is associated with low risk. None of the principles are associated with the medium/high risk of breaching the safeguarding principles.

Serial Number	Safeguarding principle	Level of risk	Assessment team's Opinion/justification for the mitigation measure
1	The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	LOW	India has signed the universal declaration of Human rights (UDHR) and the project follows the same. Assessment team checked ISO manual for IMS and QMS at corporate level. The policy respect internationally proclaimed human rights and hence, the low risk level was found applicable. Hence the safeguarding principle#1 is implemented properly
2	The project does not involve and is not complicit in involuntary resettlement.	LOW	Not relevant for project activity as no resettlement was required because the solar panels are installed in non-cultivated and non-habited land. The same is checked during the site visit. Hence, the low risk level was found applicable. The Land for the project is private land and the same has been purchased directly from the Land owners and thus there are no any conflict or resettlement process is involved. Assessment team discussed during the site visit with the stakeholders and conforms that PP has taken adequate measure during construction phase like internal roads like usage of using existing roads and lanes, reuse of water for sprinkling in upaved roads, reuse of soil for foundation, avoiding construction and maintenance during times when soil is drenched, installing an exclusion fencing to keep livestock away from construction activities.

			No Expropriation has been conducted on any private land involved in project activity. The DOE discussed the same during the validation site visit and found the result to be satisfactory. Hence the safeguarding principle#2 is implemented properly.
3	The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage	LOW	<p>The solar module is installed in the barren land and no cultural heritage has been hampered verified during the site visit. Hence, the low risk level was found applicable.</p> <p>During the validation site visit it was observed that as project was approachable by existing public road, no road construction was undertaken by the project except for internal plant road. Plant land was generally plain so no major excavation and filling work was required for making the land level save excavation for foundation of individual structure. As soil is/was alluvial, there was no need of blasting. Hence, the safeguarding principle#3 is implemented properly.</p>
4	The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restriction of these freedoms and rights.	LOW	The employees were interviewed during the site visit and no such restriction was imposed. Hence, the low risk level was found applicable.
5	The project does not involve and is not complicit in any form of forced or compulsory labor.	LOW	The labor rights are protected as per labor law in India. The right to unionize, bargain collectively are highly protected by this law. All the employees are involved in the project activity on voluntary basis and no child labor is involved. The project activity is not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Project activity, being as solar panels, does not expose the employees to any adverse environment. During the site visit the employees were also interviewed to cross-verify the information and no such restriction

			was imposed. Hence, the low risk level was found applicable.
6	The project does not employ and is not complicit in any form of child labor.	LOW	<p>The employees were interviewed during the site visit and the following feedback was received:</p> <ol style="list-style-type: none"> 1) The employer has a human resource policy which is communicated to every employee during induction/joining. The policy document is also accessible to all employees all time 2) There were no migrant workers as most of the workers are recruited locally 3) None of the employees is below 18 years. This was further cross-checked from the HR records of all employees 4) No employee works as a forced/bonded labor. <p>Hence, the low risk level was found applicable.</p>
7	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	LOW	<p>The HR data was checked and it was observed that the project doesn't involve any form of discrimination based on race, religion, sexual orientation or any other basis. The employees were interviewed and no such restriction was imposed. Hence, the low risk level was found applicable</p>
8	The project provides worker with a safe and healthy work environment and is not complicit in exposing worker to unsafe or unhealthy work environments.	LOW	<p>PP follows international standards for environment, health and safety, the project activity does not expose the workers to unsafe or unhealthy work environment.</p> <p>The HSE (Health and Safety Executive) states that best practice when installing solar panels requires trained, dedicated working at height maintenance teams to access risks and select appropriate equipment before any work is carried out.</p>
9	The project takes a precautionary approach in regards to environmental challenges and is not complicit in practices contrary to the precautionary principles.	LOW	<p>The environment is protected by environmental laws and regulations in India. The project has received all statutory clearances. Thus risk associated is low.</p>
10	The project does not involve or complicit in significant	LOW	<p>The project proponent has implemented Environment Health</p>

	conversion or degradation of critical natural habitats including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognized as protected by traditional local communities		Safety and Social guideline which takes into account the same. Thus risk associated is low.
11	The project does not involve and is not complicit in corruption.	LOW	India has ratified the UN Convention against corruption and also has its National Prevention of Corruption Act, 1988 and thus the project activity does not involve and will not be complicit in corruption. All the legal requirements were taken care regarding the project and were checked by the assessment team. It can be confirmed that all the operations are done as per the provisions. Hence, the low risk level was found applicable

In summary, assessment team is in opinion that there are no critical issue identified under "Do no harm" assessment and project found meeting the requirement.

Sustainability development matrix

The project participant has considered all the indicators mentioned in annex and all the suitable indicators required in case of project activity. There are few indicators that have been indicated as neutral score as the positive impact of these parameters cannot be monitored effectively. The project also does not have any negative score against any of the indicator/parameter selected.

S. No.	Indicator	Assessment and acceptance/non acceptance
1	Air quality	<p>The project generates clean energy which replaces the fossil fuel intensive electricity generation.</p> <p>Also report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013. This report clearly mentioned that Solar farms operations do not result in direct air pollution. Please refer page 28, table 3.4.3 of report</p>

		<p>Adequate measures were taken to mitigate the envisaged impacts like spraying water on the road side to reduce dust level, etc. This was confirmed by the local stakeholders during validation site visit. Therefore, it is validated that mitigation measures were robustly implemented on ground for air quality issues project will have a positive impact on air quality, however as a conservative estimate the impact in the SDM is considered as positive and the same will be checked during verification.</p>
2	Water quality and quantity	<p>The project has no effect on water quality and quantity because it neither generates any waste nor consumes any water. It was validated during on-site assessment that there was no requirement of water for operations of solar panels and the only usage of water was for drinking and sanitation purposes. The consumption of freshwater during construction was also pretty much limited as confirmed by the local stakeholders during SFR.</p> <p>Once the Solar farm is operational, water is only required for the domestic use of project staff at the site which will be around 0.5 KLD.</p> <p>Hence the parameter is indicated as neutral and the same is acceptable to the DOE</p> <p>Please refer page 28, table 3.4.3 of report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013 which mentioned that solar plant operations do not result in water pollution.</p>
3	Soil condition	<p>There are negligible impacts envisaged during operation of the project activity.</p>

		<p>For mitigating the impacts during construction, various mitigation measures were taken which is validated from the plant records of PP and the interview with local villagers.</p> <p>The top soil excavated during construction, was stockpiled and used for compaction. The roads were not paved and soling was done with excavated earth & rock material, so land disturbance could be minimized.</p> <p>It was also confirmed that, the vegetation done at site helps for soil erosion. The same is confirmed during the stakeholder meetings during onsite visit.</p> <p>Therefore, it can be concluded that the project has no effect on soil conditions during its operation because it has no waste coming out.</p> <p>Please refer page 25, table 11 of report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013.</p>
<p>4</p>	<p>Other pollutants - noise</p>	<p>During the operation of the Solar Panels there will be some noise due to electrical equipment’s like transformers etc. The maximum decibel level of sound due the project activity equipment’s is less than 60 dB which is within permissible limit. Also as distance increases, sound level will be less and less audible. Thus there will be no negative impact on the settlement areas in this project due to the distance.</p> <p>Also report on “Developmental Impacts and Sustainable Governance Aspects of</p>

		<p>Renewable Energy Projects” prepared by MNRE dated September 2013. This report does not mention any noise pollution from Solar Panels, thus there is no any impact of noise pollution due to project activity. This report clearly mentioned that solar farms operations do not result in any significant noise pollution.</p> <p>There are no other pollutants generated from the solar power project (renewable energy project).</p> <p>Also report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report does not mention any noise pollution from solar power plants, thus there is no any impact of noise pollution due to project activity. This report clearly mentioned that solar farms operations do not result in any noise pollution.</p>
<p>5</p>	<p>Other pollutants</p>	<p>Solid waste due to construction and daily activities of staff, during both construction and operation phases, will be handled and disposed of in an approved manner; therefore no soil contamination will result.</p> <p>Waste water holding tanks / septic tank will be located away from bore wells or any other underground water holding tanks. It was confirmed during on-site assessment that there was no spillage of lubricants or any other form of ground water contamination observed within the project premises. Therefore, the DOE concludes that there is negligible risk of improper management of waste or any</p>

		<p>adverse impact on environmental due to waste due to project operations. Therefore, the monitoring of waste management of the project activity is not required.</p> <p>Assessment team confirms that Access Road was available for transportation of equipment during construction.</p> <p>Vegetation and landscaping was done at site to give pleasant outlook at site. Since project site was barren land prior to implementation of project activity, there is no any impact of project activity on vegetation. In fact Vegetation has positive impact.</p>
<p>6</p>	<p>Biodiversity</p>	<p>During the validation site visit it was observed that the condition of ground vegetation will be gradually improved; No rare species has been found in the around area.</p> <p>The project site is not on the migration route of migratory bird. As Such solar panels do not have any obstruction in the path of migratory birds.</p> <p>With the implementation of Project, the greening water will be increased significantly; the biodiversity in the vicinity will be improved with the vegetation improvement.</p> <p>Therefore, the monitoring of this parameter of the project activity is not required.</p> <p>The project will not affect genetic diversity, alter or destruct natural habitat or deplete stocks of renewable resources. The proposed project does not involve forest land.</p>

		<p>Please refer page 29 and 30, table 3.4.1 of report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. Page 29 and 30 of this report mentioned that “As described, air, noise, water and biodiversity impacts of both wind and solar projects are either very low or negligible”.</p>
7	Quality of employment	<p>The project activity employed local population as skilled workers as well as security guards which were envisaged during the validation site visit. The personnel employed by the project activity are also provided trainings and exposed to various awareness programs therefore a positive indicator has been accepted.</p> <p>Please refer page 29, table 3.4.4 of report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013 which mentioned that solar farms create local employment.</p>
8	Livelihood of the poor	<p>The project is associated with infrastructure development like roads in the nearby areas and promoting economic activities like grants to local school and communities temples etc. Also, project employed local villagers as guards for the security of solar panels. However, the impact is not significant and direct.</p> <p>Please refer page 29, table 3.4.4 of report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013 which</p>

		mentioned that solar forms create local employment.
9	Access to affordable and clean energy services	<p>The project will help to reduce high share of imported fossil fuel dependency of India.</p> <p>In baseline, equivalent quantity of electricity would have been generated from fossil fuel dominated grid connected power plants. Thus project activity helps to increase renewable energy contribution for grid connected power plants. Since electricity export from project activity is supplied to grid, thus clean energy supplied by project does not have any direct impact in local areas or households. However, the parameter is considered as SDM and need to be checked during verification</p> <p>Monthly Generation Records were checked by the assessment team to confirm the same.</p>
10	Human and institutional capacity	<p>The project activity will have an overall positive contribution to the sustainable development of the region. However, it is difficult to measure the positive changes in the project scenario compared to the baseline specifically in terms of education & skills, gender equality and empowerment.</p> <p>In practice, only the employees working on the Project can be considered as the main beneficiaries.</p> <p>Thus, it is considered that the project activity does not have a significant impact on human and institutional capacity.</p> <p>There is no direct impact of the project activity on education & skills, gender equality and empowerment however with the implementation of the project activity local people in and out of the vicinity will get job opportunity during operation of the project activity. However the</p>

		parameters are considered positive and added as SD monitoring parameter.
11	Quantitative employment and income generation	<p>Project activity provides employment to local people and Local persons are employed as security guards, supervisors and even managers.</p> <p>The project activity expected to generate the employment for more than 10 to 30 people and they are getting more payment than local level. However as the parameter is subjected to monitoring the same will be checked during each verifications.</p> <p>Employment Records were checked by the assessment team to confirm the same.</p>
12	Access to investment	The project has no direct effect on this parameter
13	Technology transfer and technological self-reliance	<p>In the project activity, technology shall be sourced primarily from inside the country and introduced into the region. At the same time, the project activity shall build usable and sustainable know-how in the region for the technology, where know-how was previously lacking. Hence the project presents ample opportunities of replication in other areas. However, constant monitoring of this parameter involves complexities and hence this parameter is scored neutral as a conservative approach.</p>

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 do not have any role in the construction of transmission lines. The standard procedure are followed at site while commissioning the transmission lines.

Landscape and visual impact: Landscape and visual impact: Before construction of project activity, there was no such landscape available. Also land was barren land, thus there was nothing at site (no vegetation, no landscaping etc.). Thus there is no any impact on landscape and visual impact. Due to project activity implementation, the vegetation and landscaping is done

at project site. Thus project activity does not have any negative impact on landscape and visual impact.

3.12.- Sustainability Monitoring plan

The project developer has developed a credible and rational monitoring plan to assist the monitoring of the sustainability indicators. The parameters being monitored are as follows:

Parameter	Indicator	Monitoring
<p>Training records, categories of jobs created, working conditions of the project activity, occupation health management, and safeguard put in place and living standards of the plant staff.</p>	<p>Quality Of employment</p>	<p>The training records are maintained on regular basis with annual consolidation. Assessment team checked onsite that at least 10 people are expected to be employed at site during crediting period.</p> <p>Assessment team also noted that following training will be provided: The major thrust of trainings would be on the below core areas:</p> <ul style="list-style-type: none"> • Effective verbal & written communication • HSE training to all employees who are deployed at site <p>However, other trainings may be provided as well depending on the need of the project developer as well as that of the employees. The training records will be checked during the verification of the project activity.</p>
<p>Number of employment opportunities created</p>	<p>Quantitative Employment and income generation</p>	<p>Documentation pertaining to employment, attendance register and documentary details of training/capacity building. Assessment team also checked the salary slips and confirms that due to project activity peoples are getting minimum 350 INR per month as a salary and this salary is better than local level salary. Based on the roles and responsibility of employee, the</p>

<p>Indirect parameter of "Net clean and renewable electricity supplied by the Project" is measured in order to calculate the concentrations of CO₂, as multiplied by default national emission factor from the Indian grid.</p>	<p>Air Quality</p>	<p>The net electricity supplied by the Project will be continuously measured by electricity meters. The net electricity will be calculated from export and import values and the same will be checked from the JMR sheets and cross checked from the invoices. The procedure to calculate is as per the standard practice in India and thus acceptable to the assessment team.</p> <p>In order to reduce dust emissions during the construction phase, the following dust suppression measures were stipulated and implemented:</p> <ul style="list-style-type: none"> • Spraying water and covering material trucks' body to minimize dust; • Reuse of water for sprinkling of unpaved roads. • Imposition of speed controls for vehicles and unpaved site roads;
<p>Net clean and renewable electricity supplied by the Project</p>	<p>Access to affordable and clean energy services</p>	<p>The net electricity supplied by the Project will be continuously measured by electricity meters. The net electricity will be calculated from export and import values and the same will be checked from the JMR sheets and cross checked from the invoices. The procedure to calculate is as per the standard practice in India and thus acceptable to the assessment team.</p>
<p>Total number of beneficiaries of the initiatives undertaken by the Project Developer to enhance the human and institutional capacity of the local stakeholders.</p>	<p>Human and institutional capacity</p>	<p>The verification of the parameter will be done using Photographs, cheques, donation receipts, CSR reports and other supportive documentation on reporting as provided by the project participant. The same is acceptable to DOE.</p>

3.13.- Calculation algorithm and/or formula used to determine emission reduction

The CDM PDD of the project activity is checked by the assessment team and found that ACM0002 version 17.0 is used at the time of CDM validation. However, the GS tool kit 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 17.0 and DOE 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.

3.14.- Stakeholder consultation for Gold Standard

The project is submitted for request for CDM registration and therefore local stakeholder consultation at the start of the project activity was undertaken before the PDD was made available for global stakeholders' consultation. The local stakeholders were invited by the invitation published in local newspaper and the meeting was conducted. The details are given below:

All the stakeholders have been invited through public notice (dated 20/06/2016 which were displayed/ placed to the nearby areas. Further, stakeholders were invited individually to attend the stakeholders meeting. The meeting was held on 11/07/2016

The PDD was also made public for international stakeholders' consultation for 30 days on UNFCCC website. The local and international consultation process was validated during the CDM registration process. All the documents were also reviewed by the GS validation team and found them appropriate.

3.15.- Stakeholder Feedback Round

The project activity is a retroactive project and therefore PP was required to conduct a Stakeholder Feedback Round (SFR) covering the issues (if any) related to the project activity. An email was sent to all the stakeholder and comment are envisaged from 17/01/2017 for 2 month period. Public notices were also circulated onsite and in the village for the local stakeholders to inform about the project activity. Assessment team observed that the C and D category stakeholders are invited through online SFR. For category A and B – Local peoples, the public notice has been put at project site. Assessment team checked the public notices and found correct. The public notice mentioned about Grievance expressions, telephone and e-mail access for feedback. The sample of onsite emails is also submitted to the DOE. The email attachment is also checked by the assessment team and found correct. Following observations are made by the DOE:

- Different representative of stakeholders like local villagers, head of panchayat, NGOs, employees were invited for their comments via emails during stakeholder's feedback round
- No negative comments were received during the period starting from 17/01/2017 to 2 months' time period and local stakeholders were very satisfied with the project activity implementation and operation in their area.

Assessment team asked following queries to the stakeholders during the validation site visit and concludes that stakeholders are overall happy with the implementation of the project activity.

Some of the questions asked to the stakeholders mentioned in section 2.3 of this report are reported below:

Name of the stakeholder	Punaram
Occupation	Villager
<p>DOE QUESTION: Did this Solar power plant cause any pollution? Answer: No, the plant does not cause any pollution.</p> <p>DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, PP told us that employment will be generated and the locals will be given priority.</p> <p>DOE also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like water spraying, vegetation improvement and other unskilled work. DOE also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.</p>	

Name of the stakeholder	Om Prakash
Occupation	Villager
<p>DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants.</p> <p>DOE questions: Did the power plant destroy any crop fields? Answer: The plant is implemented in barren land and there were no any fertile land or crop which is damaged.</p> <p>DOE thus conclude that stakeholders are happy with the implementation of the project activity.</p>	

3.16.- Pre-Feasibility assessment

The project applied for registration of CDM project and has applied for the fast-track pre-feasibility assessment. The requirements mentioned in Annex P-PFA fast track rules of GS tool kit has been assessed by the audit team and found incompliance

4.- FINAL VALIDATION OPINION

Applus+ LGAI has performed a validation of the "20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan". The validation was performed on the basis of UNFCCC criteria VVS version 09.0, Gold Standard version 2.2 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the passport and the subsequent follow-up interviews has provided Applus+ LGAI 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+ LGAI for registration with the Gold Standard Registry.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ 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 34,882 tCO₂e per year.

The validation has been performed following the requirements of the latest version of the CDM VVS version 09, Gold Standard version 2.2 and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

- The project meets all eligibility criteria set by the GS PFA process.
- 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 Passport.
- 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.

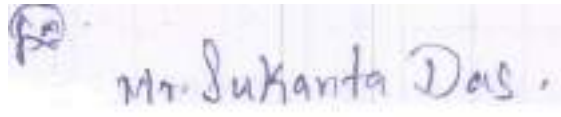
The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Assessment team:

Date: 28/02/2018

Leader Auditor: Mr. Sukanta Das

B.U. Systems Certification Area Manager: Mr. Juan Sendín Caballero

<p>Assessment Team Leader:</p> 	<p>Technical Reviewer:</p> <p>Denny Xue</p>
<p>B.U. Systems Certification Manager Director: Juan Sendín Caballero</p>	

Appendix 1: Corrective action/Clarification request/Forward Action request resolution table

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#1
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	
Description of the audit finding		Date:	06/02/2017
<p>During the document review of passport v.1 it is observed that the Sustainability feedback round documents were not submitted to the assessment team. SFR explanation in the passport is thus reserved till the document is submitted. The PP shall also provide the invitee list of stakeholder feedback round and how SD, NO Harm assessment, Sustainability monitoring parameters and GS aspects were discussed with local stakeholders.</p> <p>Corrective action is sought in this context.</p>			
Project Participant's response		Date:	24/10/2017
<p>Supporting documents for Sustainability feedback round documents are attached herewith.</p> <p>The GS Passport is updated considering SFR explanation. Further the details considering invitee list of stakeholder feedback round and how SD, NO Harm assessment, Sustainability monitoring parameters and GS aspects were discussed with local stakeholders are provided.</p> <p>Corrective action is sought in this context.</p>			
Documentation provided as evidence by Project Participant			
GS Passport Version 02, SFR documents, SFR Photos			
Auditor's assessment comment		Date:	07/11/2017
<p>The SFR invitation via email was provided to the Local NGO, interested stakeholders (like MoEF personnel, Gold Standard officials). The SFR is through online method and e mail is sent on 17/01/2017 to NGOs, CDM DNA, GS personnel. For local stakeholders like villagers, public notice has been put at site and village and feedback was requested for the project activity. The public notice mentioned about Grievance expressions, telephone and e-mail access for feedback. As per toolkit v2.2, section 2.10, this second consultation is the "Stakeholder Feedback Round" which may also include the physical meeting although this is not mandatory. As for stakeholder feedback round meeting, the physical meeting is not mandatory as per toolkit, however physical meeting was conducted for stakeholder feedback round for this project activity. Assessment team also checked that the public notice was put at common places i.e. site and village for local stakeholder. The public notice mentioned about Grievance expressions, telephone and e mail access for feedback. There were no comments received from stakeholders for first stakeholder consultation and also for stakeholder feedback round.</p>			

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Assessment team also checked the documents sought i.e. public notice to local stakeholder, SFR e mail to NGOs, GS officials, Indian DNA and found the same to be correct and appropriate.

During the site visit all the interested stakeholders were questioned by the assessment team and no negative comments envisaged for the project. Also the online link of the PP for submitting comments by interested stakeholders were also cross checked and no comments observed for the project during the period. The SFR round thus was conducted successfully and thus the CAR is closed.

Type:	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#2
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	
Description of the audit finding	Date:		06/02/2017
Section E.3 regarding grievance mechanism is not discussed in the GS passport. Corrective action is sought for the same.			
Project Participant's response	Date:		24/10/2017
Grievance procedure has been included in the revised GS Passport. A copy of procedure is attached herewith.			
Documentation provided as evidence by Project Participant			
GS Passport Version 02, Grievance procedure			
Auditor's assessment comment	Date:		07/11/2017
The grievance procedure is checked and found correct by the assessment team. The procedure is implemented onsite which was confirmed by the assessment team during the site visit. CAR is thus closed.			

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#3
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	
Description of the audit finding	Date:		06/02/2017

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Following observation are made by the DOE regarding DO not Harm assessment:

1. During the document review and site visit it was observed that Environment, Health, Safety and Social Guidelines for Power Projects are in place to tackle various environmental, employee safety and health issue. However, the same documents were not provided to the assessment team. Corrective action is sought.
2. The "Do not harm assessment" is not detailed out in the table mentioned in section F.1 of the passport version 01. No claims are being supported with the documents/links and thus not acceptable to the DOE.

Section F.1 is thus reserved till the submission of proper documentation and revised passport.

Project Participant's response	Date:	24/10/2017
<ol style="list-style-type: none"> 1. EHS Policy considering Environment, Health, Safety and Social Guidelines for Projects is attached herewith 2. The GS Passport version 2 has been updated to describe "Do not harm assessment" in detail in section F.1 along with references. 		
Documentation provided as evidence by Project Participant		
GS Passport Version 02		
Auditor's assessment comment	Date:	07/11/2017
<p>The EHS policy clearly mentions Environment, Health, Safety and Social Guidelines for Power Projects and the procedure to follow the same. The guideline depicted in the policy and also the code of conduct of the company clearly demonstrate that the company is very much concern with environment and well being of there employees safety. The same is followed across the company and thus is acceptable to DOE. CAR is thus closed.</p> <p>DO not harm assessment is now described clearly in the revised passport. CAR is thus closed.</p>		

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#4
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	
Description of the audit finding	Date:	06/02/2017	

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

1. Please provide evidence to demonstrate that the impacts on soil Condition (**Top Soil erosion**) during the construction phase has been adequately mitigated.
2. In section F.2 it is mentioned that "there will be no noise in the operation of solar farm". Please elaborate the meaning of the same and kindly submit the necessary evidence (**noise measurement report**).
3. During the document review it was observed that Health & Safety Trainings to employees were provided. Also, some of the staff may get training on different kind of issues like operation and maintenance of power plant. Please submit the training records to comply with the requirements.

Corrective action sought regarding document submission and correction require in the passport wherever applicable.

Project Participant's response	Date:	24/10/2017
<ol style="list-style-type: none"> 1. Soil excavated has been used for plantation, road construction and levelling for the project. The project is commissioned and photographs of site is attached herewith to demonstrate adequate top soil prevention by proper levelling of land. 2. Noise pollution due to solar farms are minimal, pls. refer MNRE report for the same. The GS Passport version 2 has been updated to refer the same. 3. Training records are attached herewith. 		
Documentation provided as evidence by Project Participant		
GS Passport Version 02, MNRE study, Training records		
Auditor's assessment comment	Date:	07/11/2017

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Following are the observations of the DOE:

1. Assessment team checked that the project would not emit any pollutants to the soil during the construction and operation period, with no negative impact on the soil quality. The top soil excavated during construction, is stock piled and is used for compaction, and thus there is no any impact on top soil erosion. Also as per report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013 indicates that for completed projects there is no any soil erosion observed.
2. Assessment team checked that for solar plants, there are no any moving parts, thus little noise of electrical equipment's will be there at site, however that noise is within permissible limit. Also as per report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013 indicates that for solar projects there is no any noise pollution observed.
3. Assessment team checked that PP has EHS policy and code of conduct. The same is submitted now to the assessment team. The PP is following the Environment, Health, Safety and Social Guidelines at project site. As a part of their policy, the companies conduct the training at regular intervals. The sample training records are submitted to DOE which is checked and found correct.

Based on the above revision and submission of supporting documents, CAR is thus closed.

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#5
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	06/02/2017
Description of the audit finding		Date:	

Following information is missing in the passport related to safeguard principles:

Safeguarding Principle #2: The PP shall also share information if any expropriation has been conducted on any private land or not. If land acquisition is done on a private land or estate, please share how the process has been managed.

Safeguarding Principle # 9: The PP shall provide justification on impacts on the environment due to the project activity and the precautionary approaches taken. The PP is required to discuss the minimum impacts as well, for e.g. impacts due to transmission lines, blasting activities (if any) during construction phase, road construction, etc.

Corrective action is sought for the same.

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Project Participant's response	Date:	24/10/2017
<p>Safeguarding Principle #2: No expropriation has been conducted on any private land. The Land for the project is private land and the same has been purchased directly from the Land owners. Land records are shared herewith.</p> <p>Safeguarding Principle # 9: GS Passport version 2 has been revised accordingly. Environmental impacts to solar farm development are minimal, pls. refer to study by MNRE regarding the same.</p>		
Documentation provided as evidence by Project Participant		
GS Passport Version 02, MNRE study		
Auditor's assessment comment	Date:	07/11/2017
<p>Following are the observation of the DOE:</p> <p>All the international convention the host party has signed to is included in all the SG principle.</p> <ol style="list-style-type: none"> 1. Assessment team observed that No expropriation has been conducted on any private land. The Land for the project is private land and the same has been purchased directly from the Land owners. Hence the safeguarding principle#2 is implemented properly. 2. During the validation site visit it was observed that as project was approachable by existing public road, no road construction was undertaken by the project except for internal plant road. Plant land was generally plain so no major excavation and filling work was required for making the land level save excavation for foundation of individual structure. As soil is/was alluvial, there was no need of blasting. Hence, the safeguarding principle#9 is implemented properly. <p>Based on the above CAR is closed</p>		

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#6
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	06/02/2017
Description of the audit finding	Date:		

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Annex 1 of Passport refers PDD section A.4.5 of the PDD for ODA assistance. However supporting is not submitted till date. Annex M and Annex S as required by GS are also missing. Environment Impact Assessment Report is also missing for the project activity.

Corrective action is sought for the same.

Project Participant's response	Date:	24/10/2017
Attached herewith is Annex D, Annex M and Annex S for the project. Since the project is Solar project EIA is not mandatory as per GOI directive thus EIA was not carried out for the project activity. However, the environmental impacts for solar projects have been assessed by MNRE and the impacts are considered to be minimal. Pls. refer the assessment report by MNRE.		
Documentation provided as evidence by Project Participant		
Annex D, Annex M and Annex S, MNRE Report		
Auditor's assessment comment	Date:	07/11/2017
The project has not considered any ODA assistance for the project. The declaration serves the purpose of GS and thus the same is acceptable to the DOE. Annex M and Annex S declaration for the project activity is also submitted to the assessment team. CAR is thus closed		

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	#7
Raised by:	SUKANTA DAS	Ref. to checklist in above tables:	06/02/2017
Description of the audit finding	Date:		
<p>1. The PP shall please note that all sustainable development indicators scored (-, 0 or +) must be justified with the help of reference document in SD Matrix. Therefore, provide justification paragraph & reference documents for all the sustainable development indicators in the table provided in the consolidated SD Matrix of GS passport version 01.</p> <p>2. Air Quality: The PP shall please include the discussion on dust emissions as a monitoring parameter during construction phase.</p>			

3. Water quality and quantity: PP mention that water will only be use for domestic use and Minor volumes of sewage will be generated from toilet facilities at the site office. The septic tank volume and quantity of domestic water usage is not provided. Moreover, as per DOE experience water is also required for panel operation and maintenance, the discussion of same is missing. Please elaborate.
4. Other pollutants: PP shall require to explain the noise "db" level during the operation of the power plant. Please elaborate how the sound from the transformer /generator/ alternator and other electrical equipment will be controlled.
5. Other pollutants: The PP shall discuss the impacts by the project on landscape by referring to a credible information source. The PP shall also discuss if any access roads were open for transportation of project equipment.
6. Quantitative employment opportunities and income generation: The PP shall provide the expected number of jobs shall be created in the crediting period.
7. The PP shall provide the ER estimation vintage wise in the form of DD/MM/YYYY to DD/MM/YYYY with the start date as expected start of crediting period. ER estimation is reserved till the submission of the proper documents.
8. The PP shall include the address detail in the table where address book will be placed
9. The parameter of salary payment which is better than local level is missing in the monitoring plan.
10. The PP shall provide reference sources/documents for all the sustainable indicators irrespective of the scores provided to the SD indicators
 - Livelihood of the poor. The PP is requested to provide more information on how the project activity has resulted in the improvement of livelihood of people in terms of various parameters discussed in Annex I and Annex G of GS Toolkit v2.2.
 - Human and Institutional Capacity. The PP shall discuss if the project activity will impact the education & skills, gender equality and empowerment. If the project activity will have a positive contribution to this indicator, which shall be added into monitoring plan. Please refer to GS Annex I and G of GS Toolkit v2.2 for more information.
 - Quantitative employment and income generation. The PP shall discuss the expected number of employments generated by the project activity and if the income paid is better than local level.

Corrective action sought.

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Project Participant's response	Date:	24/10/2017
<ol style="list-style-type: none"> 1. Justification and explanation for all the parameters under the SD Matrix have been provided in revised GS Passport. 2. Air Quality: GS passport is revised accordingly under "Justification choices, data source and provision of references" for each parameter. 3. Water quality and quantity: The septic tank volume and quantity of domestic water usage is now provided in the passport. Water required for panel operation and maintenance varies based on the seasonal parameters and cleaning frequency. 4. Other pollutants: Noise pollution due to solar farms are minimal, pls. refer the report from MNRE. GS Passport has been revised accordingly. 5. Other pollutants: The GS passport is revised accordingly. The project is located close to the main road, thus separate access road for the project was not required. 6. Quantitative employment opportunities and income generation: The expected number of jobs created in the crediting period are now provided in the passport. 7. The project has applied as CDM GS project, thus the ER estimation are as per the CDM PDD. A copy of the same is attached herewith. 8. The address detail in the table where address book will be placed is now mentioned in the passport. 9. The parameter of income generation in form of wages has been added in the revised passport. 10. The reference sources/documents for all the sustainable indicators irrespective of the scores provided to the SD indicators are now added in the revised GS Passport version 02.. 		
Documentation provided as evidence by Project Participant		
GS Passport Version 02, MNRE study, Training records, Income records		
Auditor's assessment comment	Date:	07/11/2017

DOE referred the documents from Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. The documents clearly mentioned that renewable projects such as Wind/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>. DOE mentioned the document reference in each of the parameter to prove the credentials like air pollution, noise pollutions etc.

Following observations are made by the DOE

1. Assessment team checked that there were limited dust emissions from project activity as most of the activity pertains to installation of solar panels. Dust emission was involved during for foundation of structure which was localized and controlled by spraying water in the area. Also the project site is away from residential area, thus there is no any impact of dust emissions. Please refer page 25, table 11 of report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. Thus the Air Quality is not considered as monitoring parameter.
2. The water required for solar panel cleaning is very negligible as compared with baseline thermal power plants. Also the cleaned water is directly fall down on soil and absorbed in soil. There is no any soil erosion at project site due to solar panel cleaning. The water usage for solar cleaning purpose is mentioned in revised GS passport which is acceptable to the assessment team.
3. Biodiversity: Access Road was available for transportation of equipment during construction. Vegetation and landscaping was done at site to give pleasant outlook at site. There is no impact on landscaping due to implementation of project activity. The vegetation status improves at site office of project activity. Thus there is no any impact on Biodiversity due to project activity. Please refer the report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE.
4. Other pollutants: There was no any noise pollution reported by local residents for the project activity. There are no issues of noise due to project as project site is away from local people residential area. Also report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report does not mention any noise pollution from solar power plants, thus there is no any impact of noise pollution due to project activity. This report clearly mentioned that solar farms operations do not result in any noise pollution.
5. Other pollutants: Access Road was available for transportation of equipment during construction. Vegetation and landscaping was done at site to give pleasant outlook at site. There is no impact on landscaping due to implementation of project activity. The vegetation status improves at site office of project activity. Thus there is no any impact on Biodiversity due to project activity.
6. The revised GS passport mentions the number of people to be employed. However as the parameter is subjected to monitoring the actual number will be determined during verification of the project activity.
7. The ER estimation sheet is provided with vintage wise duration considering the expected start date GS crediting period.
8. The project site address and PP office addresses are mentioned in GS passport for Grievance register which is acceptable to the DOE

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

9. The parameter of salary better than local people are added in second monitoring parameter along with no of staff employed in the project activity which is acceptable to the DOE.
10. The project activity helps for employment generation, thus people nearby site gets employment and their income increased due to project activity. Due to increase in income of local poor people, the standard living of poor is improved due to implementation of project activity. However, the impact is not significant and direct and parameter is considered as neutral
11. The project activity does not have any direct impact on education & skills, gender equality and empowerment, however this increase in income of nearby local people helps the human and institutional capacity indicators. In practice, only the employees working on the Project can be considered as the main beneficiaries. Thus, it is considered that the project activity does not have a significant impact on human and institutional capacity and considered this parameter as neutral.
12. The project activity envisages to employ at-least 10 local peoples from the nearby villages. However since the parameter is subjected to monitoring hence the same will be checked during the verification.

Based on the above observation CAR is thus closed.

VALIDATION REPORT

20 MW Solar Project in Sanwreej, Jodhpur, Rajasthan

Appendix 2: CV of the Audit team

1. Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India respectively. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than eight years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
2. Hanshen (Denny) Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in 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.

Appendix 3: List of documents

S. No.	Document/Evidence/Reference/Weblink, Version, Date
1.	Project Design Document (PDD) (CDM), dated 11/07/2017
2.	Passport, Version 1.0, dated 28/11/2016 Passport, version 2.0 dated 24/10/2017 Passport, version 3.0 dated 28/02/2018
3.	Minutes of Meeting for Local Stakeholders' Consultation are provided below: All the stakeholders have been invited through public notice (dated 20/06/2016) which were displayed/ placed to the nearby areas. Further, stakeholders were invited individually to attend the stakeholders meeting. The meeting was held on 11/07/2016.
4.	Emission Reduction Sheet for the project activity dated 24/10/2017
5	Methodology: ACM 0002 version 17.0.
6	Standard: CDM Project Standard Version 09
7	Standard: CDM Validation & Verification Standard Version 09
08	Procedure: CDM Project Cycle Procedure Version 09
09	Tools: <ul style="list-style-type: none"> • Tool to calculate the emission factor for an electricity system, Version 5.0 • Tool for the demonstration and assessment of additionality", Version 7.0.0
10.	Gold Standard Toolkit version 2.2(related documents)
11.	Stakeholders consultation process in CDM-PDD
12.	Training Records of project staff at site
13.	Declaration for non-receiving of ODA for project
14.	Universal declaration of Human Rights http://mha.nic.in/Human_Rights_Division
15.	Ministry of Labor http://labour.gov.in/upload/uploadfiles/files/footergallery_pdf/List%20ofILO%20Conventions%20Ratified%20by%20India.pdf
16	National Prevention of Corruption Act of Government of India http://www.persmin.gov.in/DOPT/EmployeesCorner/Acts_Rules/PCAct/pcact.pdf
17	Ministry of Environment and Forest http://moef.nic.in/division/environment-protection
18	Minutes of Meeting for Stakeholders' Feedback Meeting
19	Emails sent to NGO, Stakeholders, villagers for stakeholder feedback round
20	UNFCCC Website for CDM mechanism- http://cdm.unfccc.int/

21	AnnexD Template issued by Gold Standard– http://www.goldstandard.org/sites/default/files/v2.2_annex-d_0.doc
22	HR employment records 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	CDM Validation report dated 11/07/2017