# ANNEX R – PASSPORT TEMPLATE

**CONTENTS**

## SECTION A. Project Title

**[See Toolkit 1.6]**

Title: 30 MW Solar PV Project by Nirosha Solar Power Private Limited

Date: 17/02/2018

Version no.: 03

## SECTION B. Project description

**[See Toolkit 1.6]**

Estimated project start date: Start date of the project activity is the date of EPC contract for solar panels which is on 05/07/2016.

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. Nirosha Solar Power Private Limited is the promoter of the proposed project activity. The project activity involves installation of 30 MW (AC) solar power project Village: Bendo, District: Mahoba. Uttar Pradesh. The project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 46,815 tCO2e per year, thereon displacing 47,884 MWh/year amount of electricity over a 7 year crediting period from the generation-mix of power plants connected to the Indian grid, which is mainly dominated by thermal/fossil fuel based power plant.

The details of the project and the state of installation are mentioned in the table:-

| **Project Promoters' Name** | **Capacity in MW** | **Connection with Grid** | **State** | **Usage of Electricity** |
|---|---|---|---|---|
| Nirosha Solar Power Private Limited | 30 MW (AC) | Indian Grid | Uttar Pradesh | Sale to Grid |

The project activity aims to harness solar energy through installation of PV with total installed capacity of 30MW.

| **Technical detail of the equipment**[1] | **Remark** |
|---|---|
| Technology | Polycrystalline modules on Seasonal Tilt at 25 degree and 5 degree. |
| Solar photovoltaic module | (255 Wp,260 Wp Module make: BYD)<br>(260 Wp,265 Wp Module make: Suntech) |
| No. of modules | 132384 |

[1] It is to be noted that module configuration (i.e. module rated capacity and number of modules) may change in future if existing modules have any problem, but total project output capacity remains same.

| | |
|---|---|
| Total Number of Invertors | 38 Units |
| Transformer | Power transformer: 31500 KVA(1 Nos),<br>Aux. Trafo: 100 KVA(1 Nos),<br>Inv. Trafo.: 4080 KVA (1 Nos),2800 KVA (8 Nos),<br>Aux Trafo. ICR: 5 KVA (5 Nos) |
| Central inverters of nominal AC power output | 680 KW , Schneider-total 38 invertors |
| Technical & Operational Lifetime | 25 years |

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.

**Contribution of project activity to sustainable development:**
The project investors believes that the project activity has contributed to the sustainable development as discussed below according to the indicators stipulated by Ministry of Environment and Forests, Govt. of Ministry of Environment and Forests, Govt. of India has stipulated the following indicators for sustainable development in the guidelines for CDM projects:

**Social well-being**

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

**Environmental well-being**

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.

**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.

**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.

The Project falls as Category C as per ADB's Environmental Categorization criteria. The project activity does not have any adverse impacts and EIA is not required for this project activity.

http://www.adb.org/sites/default/files/institutional-document/33739/files/environment-safeguards-good-practices-sourcebook-draft.pdf

## SECTION C. Proof of project eligibility

### C.1. Scale of the Project

**[See Toolkit 1.2.a]**

| Project Type | Large | Small |
|---|---|---|
|  | ☑ | ☐ |
|  | ☐ | ☐ |
|  | ☐ | ☐ |
|  | ☐ | ☐ |
|  | ☐ | ☐ |

| | |
|---|---|
|  | ☐ |

### C.2. Host Country

**[See Toolkit 1.2.b]**

India

## C.3. Project Type

**[See Toolkit 1.2.c and Annex C]**

| Project type | Yes | No |
|---|---|---|
| Does your project activity classify as a Renewable Energy project? | ☑ | ☐ |
| Does your project activity classify as an End-use Energy Efficiency Improvement project? | ☐ | ☑ |
| Does your project activity classify as waste handling and disposal project? | ☐ | ☑ |

*Please justify the eligibility of your project activity:*

The Renewable Energy Supply category is defined as the generation and delivery of energy services (e.g. electricity) from non-fossil and non-depletable energy sources. The Project involves generation and delivery of electricity generated from solar energy sources, so the Project belongs to the Renewable Energy Supply category.
The type of the Project is not listed in specific guidance, Annex C of gold standard toolkit, thus there is no specific eligibility criteria for the project activity.

| Pre Announcement | Yes | No |
|---|---|---|
| Was your project previously announced? | ☑ | ☐ |

Explain your statement on pre announcement

The project activity has been announced for stakeholder consultation with the consideration of potential carbon credit revenues from GHG mechanisms. The project proponent has considered potential carbon credit benefits from the very conceptualisation stage of the proposed project activity. This is further evident from the following information regarding initial submission of project to Gold Standard:

The start date of the project activity is 05/07/2016 (earliest date when the EPC contracts for solar modules.). The first submission of project activity to GS is on 15/03/2017 which is within one year of start date, thus project activity qualifies as retroactive GS VER project activity. Thus prior consideration of carbon revenue for current project activity is demonstrated being first submission to Gold standard within one year of project start date.

## C.4. Greenhouse gas

**[See Toolkit 1.2.d]**

| **Greenhouse Gas** | |
|---|---|
| Carbon dioxide | ☑ |
| Methane | ☐ |
| Nitrous oxide | ☐ |

## C.5. Project Registration Type

**[See Toolkit 1.2.f]**

| **Project Registration Type** | |
|---|---|
| Regular | ☐ |

| Pre-feasibility assessment | Retroactive projects (T.2.5.1) | Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2) | Rejected by UNFCCC (T2.5.3) |
|---|---|---|---|
| | ☑ | ☐ | ☐ |

If Retroactive, please indicate Start Date of project activity dd/mm/yyyy: 20/09/2016 is the commissioning date of project activity and same will be considered as GS start date of crediting period.

## SECTION D. Unique project identification

## D.1. GPS-coordinates of project location

**[See Toolkit 1.6]**

| | Coordinates |
|---|---|
| **Latitude** | 25.42 N |
| **Longitude** | 79.44 E |

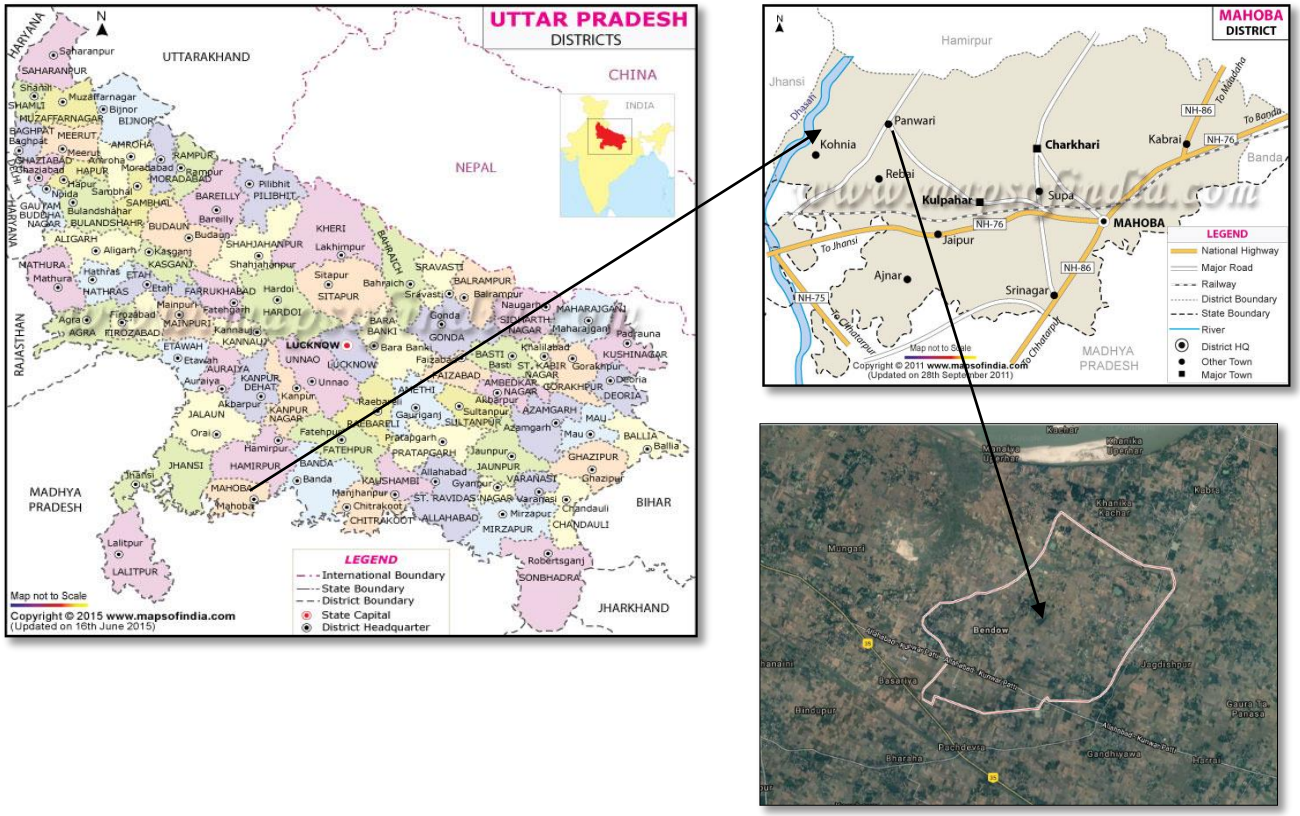
*Explain given coordinates*

The project is located in Village: Bendo, District: Mahoba of Uttar Pradesh state, India.

The nearest Railway Station is Harpalpur location: NH 76, Harpalpur, Uttar Pradesh 471111 which is around 26.2 Kms form the project site and takes around 44 minutes to reach the project site.

## D.2. Map

**[See Toolkit 1.6]**



## SECTION E. Outcome stakeholder consultation process

### E.1. Assessment of stakeholder comments

**[See Annex J]**

[See Local Stakeholder Consultation Report B.5 and insert table from "C.3.iii Assessment of all comments". Insert a summary of alterations based on comments]

It's not necessary for the retroactive project to take Local Stakeholder Consultation; the Stakeholder Feedback Round has been organized and corresponding information is available in the below section. However, LSC process has been carried out considering CDM project activity. For details regarding the Stakeholder Consultation for the project activity under consideration, please refer to sections E.1, E.2 and E.3 of the CDM PDD.

The Local Stakeholder Meetings were organized for local stakeholder consultation and informed local stakeholder regarding the meeting. The followings are the local stakeholders for the project activity:

- Local community
- Local village administration
- Technology suppliers
- Local vendors

All the stakeholders have been invited through invitation letters (delivered in hand) and public notice to attend the stakeholders meeting.

The details of the Stakeholder Meetings are as follows:

Date of invitation – 03/03/2016

Date of Meeting – 13/03/2016

Location of Meeting –Project Site: Village: Bendo, District: Mahoba, Uttar Pradesh

In the introductory speech, the representatives of Nirosha Solar Power Private Limited welcomed the gathering and given a brief about the CDM project activity. Subsequent to the introductory speech, stakeholders were explained about the electricity generation from solar project is an environmental friendly power generation technology contributing to reduction in GHG emissions. They were also explained about the benefits of the solar power projects like, increasing energy availability and improving quality of power and its assistance to the local population by providing employment opportunities to both skilled & unskilled labors.

For details regarding the Stakeholder Consultation for the project activity under consideration, please refer to sections E.1, E.2 and E.3 of the CDM PDD.

### E.2. Stakeholder Feedback Round

Please describe report how the feedback round was organized, what the outcomes were and how you followed up on the feedback.

**[See Toolkit 2.11]**

The SFR has been planned once project is listed on GS registry. The email was sent on 27/03/2017 to relevant stakeholders like NGOs, DNA officials, Gold Standard officials along with project documents

The process for the SFR was as follows;

- E mail and Invitations send to relevant stakeholders
- The non-technical summary of project activity.
- Grievance Mechanism Feedback/Questions from Stakeholders
- Answers for questions received from stakeholders during online SFR process.

**Identification of Stakeholders:**

The Stakeholder feedback round was planned to consider and received feedback from the possible stakeholders to the project, i.e. NGOs. Apart from these, the stakeholders as identified by Gold standard Board, i.e. Gold standard partnered NGOs in India and DNA of India (MoEFCC).

**Invitations to Stakeholders:**

The Stakeholder feedback round has been done through online method. Email invitations was sent to GS partnered NGO's and MoEFCC. The relevant documents of project activity like GS passport, project Technical summary will be made available during Stakeholder feedback round. The public notices will be put up at common places of nearby village.

The Mandatory Continuous Input & Grievance Expression Methods applied are described in below section E.3 ;

The monitoring of project shall be carried out periodically and the auditors would be visiting and meeting the stakeholders and in case any concerns the same can also be discussed with them.

DOE who will be appointed as the auditor for the project, will interact with stakeholders and observe their views regarding the SFR process and the project activity.

**Question/Comments session:**

No comments are received during 2 months period of stakeholder feedback round.

**Conclusion:**

No comments are received during 2 months period of stakeholder feedback round.

## E. 3. Discussion on continuous input / grievance mechanism

**[See Annex W]**

| | Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator) | Justification |
|---|---|---|
| Continuous Input / Grievance Expression Process Book | Grievance Register to be maintained office of PP and project site office at Project location.<br><br>Nirosha Solar Power Private Ltd., 30 MW Solar project at Village: Bendo, District: Mahoba of Uttar Pradesh state, India<br><br>PP office Address:<br><br>Nirosha Solar Power Private Ltd, Plot No.152, Sector – 44, Gurgaon - 122 002, Haryana, India | The project site office is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project.<br><br>This location is also conducive to continuous and regular checks for stakeholder comments. |
| Telephone access | Mr. Manish Dabkara, an authorized representative of Nirosha Solar Power Private Limited is responsible for comments and his number +91 99 07 53 4900 shall be available for any stakeholder to comment. | For those who are unable to travel to site or are not literate, they may contact via telephone.<br><br>Persons dialing this telephone number will have access to a Project representative who speaks both English and the national language, Hindi. |

| | | |
|---|---|---|
| Internet/email access | email address:<br><br>1. Nirosha Solar Power<br><br>Private Limited:<br><br>manish@enkingint.org<br><br>2. Gold Standard:<br><br>info@goldstandard.org | Two email id of the project Implementer has been provided for continuous input / grievance for the convenience of stakeholders with internet access. |
| Nominated Independent Mediator (optional) | No Independent mediator is assigned.<br><br>However, Mr. Manish Dabkara, an authorized representative of Nirosha Solar Power Private Limited has been assigned as the point of contact for all the local issues. | The use of a Nominated Independent Mediator is not being employed. As the use of the process book, telephone and internet will sufficiently capture feedback as necessary.<br><br>However a local employee shall be available in case stakeholders have any comments. |

There are no any issues (negative feedback) received from stakeholders, hence no any mitigation measures are required.

## SECTION F. Outcome Sustainability assessment

### F.1. 'Do no harm' Assessment

**[See Toolkit 2.4.1 and Annex H]**

The ACME group have EHS policy and same has been followed at project activity site.

The web links for this sustainability policy are as below

https://www.acme.in/mediadocument/2058547064_ACME-Solar-Newsletter-Issue%202.pdf

The business Principles which covers in the company policy consists of

Business Principles – which includes Legal Compliance, Anti-Corruption and anti- bribery and Human Rights

Labour Standards – which includes Freedom of Association, Forced labour, Wages and working hours, child labour and young workers, Non-discrimination, health and Safety, Prevention of alcohol and Drug use at work

Environment – which includes comply of environmental laws and regulations and to encourage diffusion of environmentally friendly technologies.

The above mentioned company policy indicates that safeguarding principles has been followed and there is no any risk involved.

| **Safeguarding principles** | **Description of relevance to my project** | **Assessment of my project risks breaching it (low/medium/high)** | **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 Right Abuses | The Project is not in conflict with the economic livelihood of the local community.<br><br>The Project does not cause any human rights abuse and respects internationally proclaimed human rights issue.<br>The India has ratified the United Nations Human Rights Rules and regulations. The India ratified the same as per web link[2] given below<br><br>The project adheres to the host country's commitment to:<br>Universal Declaration of Human Rights (UDHR) International Covenant on Economic, Social and | Low | Not applicable |

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

| | | | |
|---|---|---|---|
| | Cultural Rights, India Accession 10/04/79[3]<br>International Covenant on Civil and Political Rights India Accession 10.04.79[4] | | |
| 2. The project does not involve and is not complicit in involuntary resettlement | The project does not involve any resettlement.<br>India ( the Ministry of Rural development have the "The National Rehabilitation and Resettlement Policy, 2007<br>http://www.dolr.nic.in/nrrp2007.pdf<br>The project activity will 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<br>No Expropriation has been conducted on land involved in project activity. The land is used for project on mutual consent, thus there are no any issues of dissatisfaction regarding land utilisation for project activity. | Low | Not applicable |
| 3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage | No cultural heritage is observed on the project site, thus no harm observed.<br>Compliance with India's commitment to International Covenant on Economic, Social and<br>Cultural Rights 10.04.79 will ensure no damage to critical cultural heritage. | Low | Not applicable |

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

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

| | | | | |
|---|---|---|---|---|
| 4. | The project respects the employees freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights | This project involves a lot of contribution from employees all the time. Further, India is a party to ILO and forming employee associations is commonly practiced in India.<br><br>The project is in compliance with the laws of Government of India and there is no any restriction for freedoms and right. | Low | Not applicable |
| 5. | The project does not involve and is not complicit in any form of forced or compulsory labor | 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.<br>The project does not employ any form of forced or compulsory labour. Employees can quit their<br>Services at any time. The project complies with the Factories Act in India that prohibits forced or compulsory labour[5] | Low | Not applicable |
| 6. | The project does not employ and is not complicit in any form of child labour | Indulgence in Child 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 Child labour is illegal in India.<br>The project neither employs nor intends to employ child labour. As per the laws prevailing in India, the Child Labour (Prohibition & Regulation) Act [6] prohibits employment of children in certain specified hazardous occupations | Low | Not applicable |
| 7. | The project does not involve and is not in complicit in | The project Proponent does not indulge in discrimination on basis of | Low | Not applicable |

[5] http://www.ilo.org/dyn/natlex/docs/WEBTEXT/32063/64873/E87IND01.htm
[6] http://www.childlineindia.org.in/Child-Labour-Prohibition-and-Regulation-Act-1986.htm

| | | | | |
|---|---|---|---|---|
| | any form of discrimination based on gender, race, religion, sexual orientation or any other basis | gender, race, religion, sexual orientation.<br>The project will 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[7]<br>And International Convention on the Elimination of All Forms of Racial Discrimination; India ratified the convention on 03/12/1968 with certain reservation[8] | | |
| 8. | The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments | The project proponent has implemented Environment Health Safety and Social guideline which takes into account the same.<br>The project provides safe and healthy work condition to the employees. The programme complies with the Factories Act and<br>provides safe and healthy work environment[9] | Low | Not applicable |
| 9. | The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the | The project has received environmental clearance from the State Pollution control Board. Further the EHSS guidelines takes into account the same.<br>The project does not lead to release of any hazardous substances that pose threat to the environment. | Low | Not applicable |

[7] http://nhrc.nic.in/documents/india_ratification_status.pdf and http://www.un.org/womenwatch/daw/cedaw/
[8] http://nhrc.nic.in/documents/india_ratification_status.pdf and http://www.refworld.org/docid/3ae6b3940.html
[9] http://www.ilo.org/dyn/natlex/docs/WEBTEXT/32063/64873/E87IND01.htm

| | | | | |
|---|---|---|---|---|
| | precautionary principle. | 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[10] | | |
| 10. | The project does not involve or complicit in significant 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 | The project proponent has implemented Environment Health Safety and Social guideline which takes into account the same. The project activity does not pose any harm to the natural habitats of the native species | Low | Not applicable |
| 11. | The project does not involve and is not in complicit in corruption | 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 Against Corruption. India ratification 09.05.11[11] | Low | Not applicable |

[10] http://envfor.nic.in/legis/env/env1.html
[11] http://www.unodc.org/unodc/en/treaties/CAC/signatories.html

| Additional relevant critical issues for my project type | Description of relevance to my project | Assessment of relevance to my project (low/medium/high) | Mitigation measure |
|---|---|---|---|
| Not identified | Not relevant | No risk | Not required |

## F.2. Sustainable Development matrix

**[See Toolkit 2.4.2 and Annex I]**

The ACME group have EHS policy and same is following at site. Thus the project activity comply with all applicable Environment health & Safety requirements.

The 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, noise pollution. Please refer below web link for the same. http://mnre.gov.in/file-manager/UserFiles/report-on-developmental-impacts-of-RE.pdf

There are no any significant impacts due to implementation of project activity.

Based on above evidences, the score mentioned below are justified.

| Indicator | Mitigation measure | Relevance to achieving MDG | Chosen parameter and explanation | Preliminary score |
|---|---|---|---|---|
| **Gold Standard indicators of sustainable developme nt.** | **If relevant copy mitigation measure from "do no harm" – table, or include mitigation measure used to neutralise a score of '–'** | Check **www.undp.or/mdg** and **www.mdgmonitor.org** **Describe how your indicator is related to local MDG goals** | **Defined by project developer** | Negative impact: score '-' in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact: score '+' |
| Air quality | Not Required | Goal 7 – Ensure Environmental sustainability; Target 7.A - Integrate the | Operation Phase: Project activity leads to electricity production by solar power, which improves the air quality | 0 |

| | | | | |
|---|---|---|---|---|
| | | principles of sustainable development into country policies and programmers and reverse the loss of environmental resources | as compared to those by the fossil fuel dominated grid mix. As compared with emission reduction by project activity, the air pollution (which may occur due to transformers, other electrical equipment's etc) is less than 1% of overall emission reductions by the project activity and hence are negligible.<br><br>Construction Phase: The impact during the construction phase shall localized and temporary. Emissions will be substantially greater than emissions from project operation activities, but still limited in volume. Thus impact on local settlements will be negligible.<br>The minor dust emissions if any are localized and controlled by spraying water in the area.<br>Thus the Overall impact due to the project shall be positive in line with baseline scenario. However during the | |

| | | | | |
|---|---|---|---|---|
| | | | project activity operation, there is no any impact at site being renewable energy source. Hence this parameter is considered as neutral. As compared to baseline scenario, which is fossil fuel dominated grid connected electricity, the project activity reduces air pollution of baseline fossil fuel power plants equivalent of electricity generated by project activity.<br>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 | |
| Water quality and quantity | Not Required | MDG 7: Ensure Environmental Sustainability, target C "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. | Explanation: Thermal power plants produce considerable amount wastewater especially due to cooling. By the project activity, significant amount of wastewater discharge will be avoided.<br><br>During normal construction period, | 0 |

| | | | | |
|---|---|---|---|---|
| | | | water usage is negligible for domestic use in full capacity of workers. 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. For module cleaning, very less water is required. The water required for solar panel cleaning is around 1000 Lit per MW per cleaning and around 4 cleaning per month will be done. Thus around 1440 KL water will be used for cleaning of solar modules for 30 MW capacity as per as per CEEW (Council on Energy, Environment and Water). The water after cleaning of solar modules falls on soil and absorbs there in the soil. The water cleans the surface of module and waste water after cleaning mostly involves dust. Thus there is no any soil pollution due to waste water of solar panel cleaning.<br>The water used for solar panel cleaning is sourced from bore well, and plenty of water is available at project site region, thus there is no any impact of water availability on local stakeholders. | |

| | | | | |
|---|---|---|---|---|
| | | | Minor volumes of sewage will be generated from toilet facilities at the site office. This will be disposed to leak-proof septic tank, thus no significant impact is anticipated to surface or groundwater.<br>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 | |
| Soil condition | Not Required | MDG- 7: Ensure Environment Sustainability<br>7.A Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources<br>7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss | The project would not emit any pollutants to the soil during the construction and operation period, with no negative impact on the soil quality.<br>The top soil excavated during construction, stock pilled and used for compaction. The roads are not be paved and soling is done with excavated earth & rock material, so land disturbance will be minimized. All the drainage patterns are maintained as it is and wherever required road culverts will be provided. The cranes used for construction activities are placed on hard, flat surface area and if required, ground | 0 |

| | | | | |
|---|---|---|---|---|
| | | | levelling is done. Thus project does not involve any soil erosion. During operation of a project, no appreciable adverse changes in the soils are anticipated.<br>There was no excavated wastes. All excavated soils from foundation pits were spread in the plant area itself to provide required gradient in alignment with maximum solar radiation. Water Harvesting Structure is available inside the plant where water during rainy season is stored and allowed to recharge the ground water. The plant land is plain thus there was no any top soil stripping required. Also vegetation at site maintained the soil condition and there is no any impact.<br>Plantation activities at site controls the soil erosion.<br>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 | |
| Other pollutants | Not Required | MDG- 7: Ensure Environment Sustainability | Explanation: During the operation of the solar farm there will be no | 0 |

| | | | | |
|---|---|---|---|---|
| | | 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss | noise due to solar panels. However, there will be no negative impact on the settlement areas in this project due to the distance.<br>There are no other pollutants generated from the solar power project (renewable energy project).<br>Access Road was available for transportation of equipment during construction.<br>Vegetation and landscaping was done at site to give pleasant outlook at site.<br>The project activity have positive impact on other pollutants.<br>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.<br>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, However, to be conservative impact of the project on this indicator is scored to be | |

| | | | | |
|---|---|---|---|---|
| | | | neutral and will not be monitored. s. | |
| Biodiversity | Not Required | MDG- 7: Ensure Environment Sustainability<br>7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss | The project site is open land & no rare species has been found in the around area.<br>The project site is not on the migration route of migratory bird. Thus impacts on birds is minimal.<br>There is no any adverse impact on Bio adversity due to project implementation.<br>Please refer page 29, table 3.4.3 of report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013<br>The Overall impact due to the project shall be neutral. | 0 |
| Quality of employment | Necessary health and safety measures will be taken during construction and operation phase, relevant staff will be trained<br>to be able to work with high voltages. | MDG-1: Eradicate extreme poverty & hunger<br>1.B. Achieve full and productive employment and decent work for all, including women and young people | Parameter:<br>Health and Safety and other trainings<br><br>Explanation: Project developer ensures high standard health and safety conditions for the employees and provides Health & Safety Trainings to employees. Some of the staff may get training on different kind of issues like operation and maintenance of power plant. | + |

| | | | | |
|---|---|---|---|---|
| | | | All employees will be trained on Occupational Health and Safety issue.<br>There is positive impact on quality of employment due to project implementation.<br>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 | |
| Livelihood of the poor | Not Required | MDG-1: Eradication extreme poverty and hunger 1.A.Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day | Income generation by local orders with project activity will have indirect impacts to changing living standards of the local people.<br>There is positive impact on community due to project implementation.<br>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<br><br>However, the impact is not significant and direct and parameter is considered as neutral. | 0 |

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| Access to affordable and clean energy services | Not Required | Goal 7 – Ensure Environmental Sustainability; Target 7.A - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources | Explanation: The project will help to reduce high share of imported fossil fuel dependency of India.<br><br>The Overall impact due to the project is positive.<br>In baseline, equivalent quantity of electricity would have been generated from fossil fuel dominated grid connected power plants.<br>Thus project activity helps to increase renewable energy contribution for grid Connected power plants.<br>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.<br>Hence score of indicator is considered as neutral. | 0 |
| Human and institutional capacity | Not Required | MDG-1: Eradicate extreme poverty & hunger | 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 & | 0 |

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| | | | skills, gender equality and empowerment.<br>In practice, only the employees working on the Project can be considered as the main beneficiaries.<br><br>Thus, it is considered that the project activity does not have a significant impact on human and institutional capacity. | |
| Quantitative employment and income generation | Not Required | Goal 1 – Eradicate extreme hunger and poverty;<br>Target 1.B – Achieve full and productive employment and decent work for all, including women and young people | Project activity will lead to generate employment opportunities for both skilled and unskilled labours. Hence the parameter to be monitored for this indicator is the number of staff employed for the project activity.<br><br>***Parameter Monitored:*** *No. of staff employed in the project activity* | + |
| Balance of payments and investment | Not Required | MDG-8.D Develop a global partnership for development<br>8.D. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term. | There is no foreign investment envisaged for implementation or operation of the project activity at this stage. However, the project being a renewable power project leads to reduction in dependency on fossil fuels, there by leading to a reduction in purchase of fossil fuel in the country.<br><br>As the impact is not quantifiable thus, it is | 0 |

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| | | | considered that the project activity does not have a significant impact on balance of payments and investment. | |
| Technology transfer and technological self-reliance | | MDG 8 target F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications | 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. | 0 |

**Justification choices, data source and provision of references**

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| Air quality | According to the projections given in B.4 part of the PDD, in the baseline situation new capacity additions will most probably be fossil fuel fired power plants.<br>Electricity generated from the solar power plants partially substitute electricity generation from fossil fuel fired power plants that represent a large share of the Indian Power grid generation mix. Thus, besides greenhouse gases, all other air pollutants (e.g. SOx, NOx), particle and VOC emissions are avoided by the project activity.<br>Dust emergence connected to the project activity appears only for a short time during the construction phase and will be caused by digging foundations, land arrangement works and construction. Project developer has taken all precautionary actions to prevent dust emissions. Emissions during this phase |

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| | will be localized and temporary. Site dispersion of emissions is good due to the raised elevation of the site and higher than average wind speeds. Thus impact on local settlements will be negligible owing to the considerable distance from the project site.<br>Thus the Overall impact due to the project shall be positive in line with baseline scenario. However during the project activity operation, there is no any impact at site being renewable energy source. Hence this parameter is considered as neutral. As compared to baseline scenario, which is fossil fuel dominated grid connected electricity, the project activity reduces air pollution of baseline fossil fuel power plants equivalent of electricity generated by project activity.<br>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. |
| Water quality and quantity | In the baseline, thermal power plants discharges significant amount of waste water to the environment after usage for operational purposes like cooling. Having water treatment system in these power plants does not neutralize negative impact of waste water on environment as chemicals used for waste water treatment becomes problematic afterwards. With proposed project activity, usage and discharge of considerable amount of water will be avoided with partially substituting electricity generation from thermal power plants. Therefore, the impact of the project on this indicator is deemed to be positive. However, as a conservative approach the impacts on water quality and quantity has been considered as neutral.<br><br>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. |
| Soil condition | In the baseline, thermal power plants emits significant amount of NOx which have negative impact to the quality of soil. The adverse effect of emissions of NOx on soil conditions is acid rains. Acid rains can damage soil conditions badly. With proposed project activity significant amount of NOx emission will be avoided due to substituting partially thermal power plant electricity generation. 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, will be stock pilled and will be used for compaction. The roads will not be paved and soling will be done with excavated earth & rock material, so land disturbance will be minimized. All the drainage patterns will be maintained as it is and wherever required road culverts will be provided. The cranes used for construction activities will be placed on hard, flat surface area and if required, ground levelling will be done. |

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| | However, to be conservative impact of the project on this indicator is scored to be neutral and will not be monitored.<br><br>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. |
| Other pollutants | For this indicator, noise is defined as relevant parameter with the project activity. Since impact of noise can be negligible.<br>These are very low compare to background noise levels observed in surrounding of villages. Also, power plant control room is a well isolated area, therefore impact of noise from power plant on both employees and local residents is deemed to be negligible.<br>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.<br><br>The project have positive impact on the pollutants, there is no any air, soil, noise pollutions occurred due to project activity. The vegetation at site have positive impact as land was barren land prior to implementation of project activity.<br>Therefore, in the SDM the positive effect of the project. However, to be conservative impact of the project on this indicator is scored to be neutral and will not be monitored. |
| Biodiversity | The project site is rocky in nature & no rare species has been found in the around area. The Project site is not on the migration route of migratory bird.<br>With the implementation of Project, the greening water will be increased significant, the biodiversity will be improved with the vegetation improvement. There is no any adverse impact on Bio adversity due to project implementation. 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.<br>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. It is for these reasons that the clearances required for RE projects are not stringent. As long as the projects are developed on wasteland or agriculture land, they don't have significant biodiversity effects or long term irreversible impact on the local environment.<br>Therefore, in the SDM the negligible effect of the project on biodiversity is scored with (0) and not monitored. |

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| Quality of employment | Besides providing training to the employees, the Project will create permanent jobs for various technical services required to operate the solar power project. These jobs were created require qualified and skilled staff. So staff will be trained to have higher skills and certification to perform such power generation projects, the employment and training of skilled staff has an impact on job quality.<br><br>With regard to the health and safety of the staff, facilities will be provided following requirements of company EHSS guideline, example, a first aid kit shall be provided at the working area; regular technical and safety trainings will be organized by the project owner periodically, emergency and safety procedures will be included in the operation manual in ensure safe working condition for the staff;<br>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 forms create local employment.<br><br>As the project will provide employment so that the living standard of the employees can be improved, the indicator scores positive, since it is difficult to quantify and monitor the quality of employment except for training of staff, therefore training of staff was the chosen parameter for this indicator. |
| Livelihood of the poor | The Project will improve the livelihood of those hired through income. In addition, the tax paid by the Project will be used for local infrastructure construction. However, the impact is not significant and direct.<br>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. |
| Access to affordable and clean energy services | The Project utilises clean energy to displace fossil fuel. The Project exports electricity to the state grid, thus results in a small and positive contribution in meeting national power demand. The Project adds renewable energy based capacity in the country. Though there is frequent blackouts, voltage fluctuations which suggest unreliable energy service, there are no objective evidences available. Hence score of indicator is considered as neutral (0) and not monitored. |
| Human and institutional capacity | 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.<br>In practice, only the employees working on the Project can be considered as the main beneficiaries.<br>Thus, it is considered that the project activity does not have a significant impact on human and institutional capacity. |

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| Quantitative employment and income generation | Within the construction of the project, there will be created employment opportunities for workers.<br>The Project will recruit operation and management personnel responsible for operation and maintenance of the Project during project operation period, and pay salaries and welfares and also helps to increase their income. The proposed project will create new employments. Therefore, this indicator is scored with (+) and will be monitored. |
| Balance of payments and investment | There is no foreign investment envisaged for implementation or operation of the project activity at this stage. Thus, it is considered that the project activity does not have a significant impact on balance of payments and investment. |
| Technology transfer and technological self-reliance | The project developer considers the investment into and the operation of a well-known technology in the country. Further, some of the employees will be trained for solar power plant related issues. However, since these trainings are rather operation related trainings and will not lead an important know-how and technology transfer, this indicator is scored with (0) in the SDM |

## SECTION G. Sustainability Monitoring Plan

**[See Toolkit 2.4.3 and Annex I]**

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| No | | 1 |
| Indicator | | Quality of employment |
| Mitigation measure | | N/A as indicator scored positive. |
| *Repeat for each parameter* | | |
| Chosen parameter | | Training of staff. |
| Current situation of parameter | | Without the Project, local people have no such opportunities to be trained on the technology and the monitoring of the plant operation, and the emergency and safety procedures. |
| Estimation of baseline situation of parameter | | Without the Project, local people have no such opportunities to be trained on the technology and the monitoring of the plant operation, and the emergency and safety procedures. |
| Future target for parameter | | Together with the technology supplier, the Project organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures. |
| Way of monitoring | How | The training records for all the employees |
| | When | Annually |
| | By who | Monitored by the project owner |

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|---|---|---|
| No | | 2 |
| Indicator | | Quantitative employment and income generation |
| Mitigation measure | | Not Required |
| *Repeat for each parameter* | | |
| Chosen parameter | | No. of staff employed in the project activity |
| Current situation of parameter | | No. of staff employed in the project activity |
| Estimation of baseline situation of parameter | | 0 |
| Future target for parameter | | As per the requirements for plant operations. More than 10 people are expected to be employed during crediting period. |
| Way of monitoring | How | Employee rolls, pay-slips, attendance registers, etc. |
| | When | Annually |
| | By who | Project proponent |

**Additional remarks monitoring**

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| For details regarding the monitoring of the other parameters pertaining to the calculation of GHG emission reductions for the project activity under consideration, please refer to sections B.6.3 and B.7.1, B.7.3 of the CDM PDD. |

## SECTION H. Additionality and conservativeness

This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

### H.1. Additionality

**[See Toolkit 2.3]**

Please refer to section B.5. of the CDM PDD, step-wise approach to establish additionality of the project activity has been followed to demonstrate the additionality.

## H.2. Conservativeness

**[See Toolkit 2.2]**

The PP hereby wishes to clarify that the most conservative baseline scenario has been used for baseline establishment for the project, especially considering the relevant guidelines of the approved methodology *ACM0002: Grid-connected electricity generation from renewable sources- Version 17.0 (EB 89).* The CDM PDD applies the same version and fulfils the applicability of the project activity as the project is a Greenfield solar power generation project. Also project activity is in line with latest version of methodology i.e. ACM0002 Version 17.

Further, the PDD applies grid emission factor as per the latest available CEA database version 11 and the emission factor applied is 0.9777 $tCO_2$/MWh. The emission factor is calculated as per tool to calculate emission factor for an electricity system and is calculated in conservative manner. Since the emission factor is calculated based on latest available data at the time of first submission of GS documents to GS registry, no any comparison has been made.

## ANNEX 1 ODA declaration

**[See Toolkit Annex D]**

The PP hereby declares that no ODA was received for this project. Further, a declaration for the same is submitted to the DOE.