Gold Standard for the Global Goals
Key Project Information & Project Design Document (PDD)

Version 1.1 – August 2017

Gold Standard

KEY PROJECT INFORMATION

Title of Project	10 MWSolar Photovoltaic Power Plant in Rajkot, Gujarat (India)
Brief description of Project	The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The project activity has been implemented by Green Infra Solar Energy Limited (GISEL)
Expected Implemetation Date	11/11/2011 (Commisssioning date of the project)
Expected duration of Project	20 years
Project Developer	Green Infra Solar Energy Limited
Project Representative	Sembcorp Green Infra Limited
Project Participants and any communities involved	Green Infra Solar Energy Limited
Version of PDD	01
Date of Version	20/01/2020
Host Country / Location	India
Certification Pathway (Project Certification/Impact Statements & Products	Impact Statements & Products
Activity Requirements applied (mark GS4GG if none relevant)	GS4GG
Methodologies applied	AMS-I.D.: Grid connected renewable electricity generation - Version 18.0
Product Requirements applied	Gold Standard labels for Certified Emission Reductions (GSCERs)
Regular/Retroactive	Retroactive
SDG Impacts	**1 – SDG 7 –** Affordable and Clean Energy Contribution to Climate Security & Sustainable Development **2 – SDG 8 –** Decent Work and Economic Growth **3 – SDG 13 –** Climate Action
Estimated amount of SDG Impact Certified	17,523 MWh (for SDG 7) 1 training /annum and 10 people employed (for SDG 8) 16,415 tCO_2e / annum (for SDG 13)

SECTION A. Description of project

A.1. Purpose and general description of project

General Description:

The project activity is the installation of a 10 MW solar photovoltaic power plant in Rajkot district in the state of Gujarat. The project activity has been implemented by Green Infra Solar Energy Limited (GISEL).

Purpose of the project activity:

The purpose of the project activity is to generation clean power utilising solar energy and to sell it to Gujarat Urja Vikas Nigam Limited (GUVNL) through a long term Power Purchase Agreement (PPA).

Pre-project scenario

The project activity is a Greenfield project. There was no activity at the site prior to the implementation ofthis project activity.

Baseline

The baseline scenario is the electricity delivered to the grid by the project activity that otherwise wouldhave been generated by the operation of grid-connected power plants and by the addition of newgeneration sources. In the absence of the CDM project activity, the equivalent amount of electricity would have been generated from the connected / new power plants in the NEWNE grid. The installed capacity in NEWNE grid is predominantly fossil fuel based and therefore is a major source of carbon dioxideemissions. The main emission sources in the pre-project scenario are the power plants connected to the NEWNE grid and the main greenhouse gas involved is CO_2.

Nature of Project

The Project is a non-polluting solar power generation project that seeks to export green power to the NEWNE grid that otherwise primarily receives electricity from fossil fuel fired thermal power plants.

The project activity exports power to the state grid via a dedicated substation installed in the projectpremises. A set of main and check meters have been installed at the project site to measure export andimport of electricity from the project activity. The difference between export and import, i.e. net export isthen used for billing purposes.

The estimated emission reductions for the first year are 16,994 tCO_2e (with the annual average as 17,523 tCO_2e). The total GHG emission reductions for the chosen crediting period are 164,415 tCO_2e, taking into account an annual degradation factor of 0.7%.

Contribution to sustainable development

Ministry of Environment and Forests (MoEFCC), Govt. of India has formulated following guidelines for consideration of a CDM project:

Social well being

- The project activity will provide direct and indirect employment in the area, thus providing additional source of revenue to the villages. This will further be augmented by CSR (Corporate Social Responsibility) schemes that will be adopted by the investors during the lifetime of the power plant.

- The power generated by these plants is injected into distribution grid, and not in transmission grid, and thus the generated electricity is directly supplied to the local consumers.

Economic well-being

- Power generation from the project will contribute to the State Domestic Product (SDP) of the state where the plant is installed.
- This project will also provide business opportunities to the local contractors and suppliers.
- The project will increase availability of power in the grid that is generated from an emission-free resource and thereby contribute towards sustainable development

Environmental well being

- Generating power from solar energy, a renewable source, contributes to resource conservation. There is no harmful impact on the environment because of emissions.
- CO_2 abatement and reduction of greenhouse gas emissions through development of renewable technology.
- Reducing the average emission intensity (SOx, NOx, PM, etc.), average effluent intensity and average solid waste intensity of power generation in the system that would have been generated if electricity was produced in conventional fossil fuel based power plants in absence of CDM project activity.

Technological well being

- The project is one of the few Megawatt size solar power projects in India. It uses latest and most efficient thin film technology available in the country and will contribute to India's experience in a new technology area.
- This will also give rise to increased interest in solar energy in the country and it may encourage other investors implementing solar projects.

This project activity is registered under the CDM mechanism and the UN reference no. is ~~5871~~8917[1]. The project CDM activity is registered on ~~09/03~~31/12/2012.

As per prior consideration guideline, the major Milestone of Project activity are as below:

1. The PP signed the PPA agreement for the project on 06th December 2010.

2. EPC contract for theproject implementation was signed on 18th March 2011, which is also the project start date.

3. The project initial documents like GS4GG PDD, Cover Letter, ODA letter and Terms and conditions were submitted to GS on 22/01/2020 for preliminary review purpose.

A.2. Eligibility of the project under Gold Standard

Project Type: As discussed above, the project type is eligible.
Project Location: The project is located in India. Further details have been provided in section A.4 of this report.
Project area, boundary and scale: The project activity is 10 MW Solar Power Project and thus, qualifies

[1] https://cdm.unfccc.int/Projects/DB/SGS-UKL1355910618.03/view ~~https://cdm.unfccc.int/Projects/DB/BVQI1331114727.08/view~~

under small scale projects (non-micro scale project). Project Area and Boundary are defined in line with the applicable Methodologies or product Requirements.

A.3. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

Green Infra Solar Energy Limited is the project proponent (PP) of project activity and have the legal right to control and operate the project activities.

The project ownership has been demonstrated through below supporting documents:

1. **Commissioning certificates –** The letter from respective State Nodal Agency to Green Infra Solar Energy Limited for registration of commissioning of generation facility indicates that PP have the legal right to control and operate the project activities.

2. **Contract with Supplier –** The purchase order on the name of Green Infra Solar Energy Limited that PP have the legal right to control and operate the project activities.

Based on above evidences, the project ownership is with **Green Infra Solar Energy Limited.**

A.4. Location of project

A.4.1. Host Country

India

A.4.2. Region/State/Province etc.

State: Gujarat

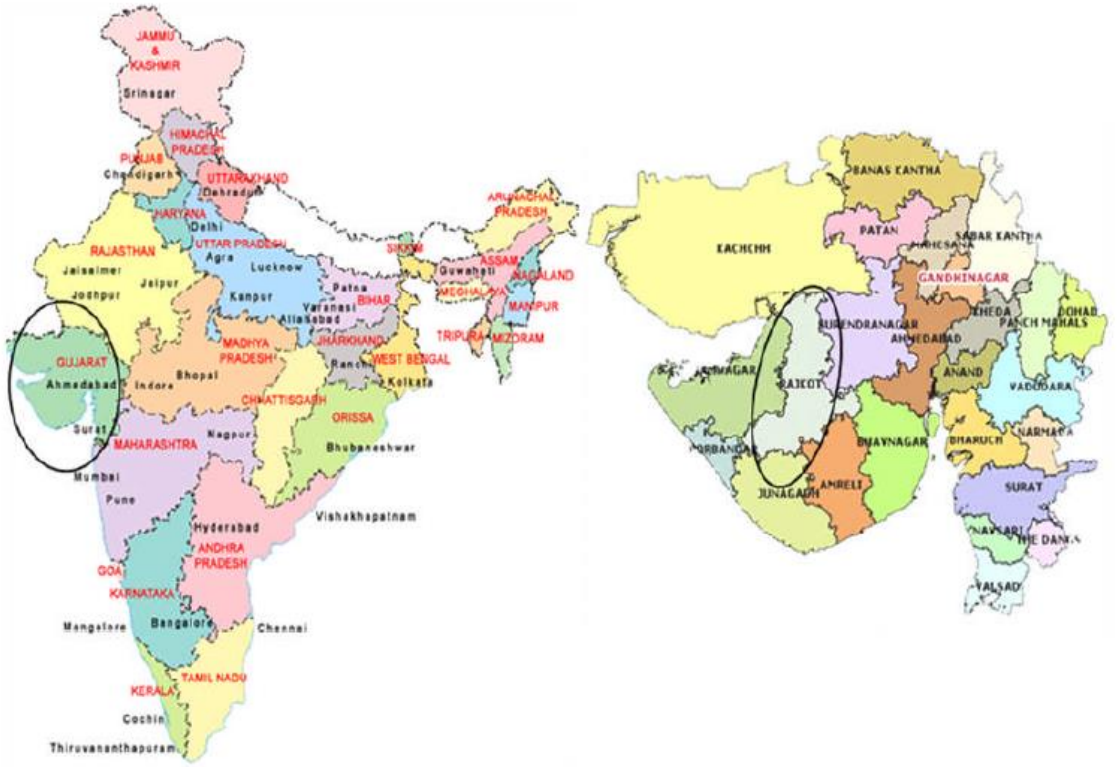
A.4.3. City/Town/Community etc.

District: Rajkot
Village: Meravadar
Taluka/Tehsil: Upleta

A.4.4. Physical/Geographical location

The project activity is situated at 21° 44′ 11.16″ N latitude and 70° 7′ 11.19″ E longitude at an altitude of about 48 m above mean sea level. The site is approximately 128 km from Rajkot city and is connected to the Meravadar village through an internal road. The site is 7.5 km away from National Highway NH 8b.

The physical location of the site is as follows:



A.5. Technologies and/or measures

The project activity is the installation of a 10 MW solar photovoltaic (PV) based power plant. The project uses fixed thin film Cadmium Telluride (CdTe) PV modules. In the baseline, equivalent amount of energy

was being produced by the regional grid, which is predominantly fossil fuel based. The project activity exports electricity produced from the solar PV plant, thereby resulting in GHG emission reductions.

A solar photovoltaic (SPV) system converts solar irradiation in to DC (direct current) electricity and then inverts in to AC (alternating current) power and steps up the voltage levels in transformer such that the energy generated shall be exported to grid with synchronization or to meet the load. The plant has been divided into 8 modular plots, with each plot comprising of 1.25 MWp of solar PV and two 630 kW inverters. The inverters convert the DC electrical output from the PV modules into AC. The PV modules face southwards and are titled at an angle of 150 from the ground to maximise solar irradiation on the panels. A summary of the technical details is given below:

Parameter	**Value**
PV Module	FS – 380
PV module peak power (Wp)	80
Modules per plant	125,025
Modules per plot	15,600
Strings per plot	1,040
Inverters	SMA SC 630CP
Inverter power (kVA)	630 kW
Inverters per plot	2
Total plots	8
Total inverters	16
Mounting structure	Haticon (German Make)

The technical specifications of the PV modules have been presented below:

Type	Thin Film Cadmium Telluride (CdTe)
Max. Output at STC (W), Pmax	80
Maximum Power Voltage, Vmpp (Volts)	50.7
Maximum Power Current, Impp (A)	1.58
Open-circuit voltage, VOC (V)	61.7
Short-circuit current, ISC (A)	1.76
Length (mm)	1200
Width (mm)	600
Thickness (mm)	6.8
Weight (kg)	12

The technical specifications of the inverters have been given below:

Inverter	SMA Sunny Central 630CP
Max. DC voltage	1000 V
PV voltage range, MPPT	500 – 820 V
Max. Input current	1,350
Number of MPP trackers	1
Max. Number of strings (parallel)	9
Nominal AC output	630 kVA
Max. Output current	1271 A
Nominal AC voltage/range	315 V ± 10%
AC grid frequency	50 Hz
Max. Efficiency	0.987
Euro ETA	0.985
Normal ambient temperature range	-20 0C - +50 0C

Operation temperature range	-20 oC - +50 oC
Consumption: operating (standby)/night	<1500 W/ 100W
Warranty	5 years

A.6. Scale of the project

The project is a small scale solar power project utilizing the solar energy to generate electricity. The total installed capacity of the project is 10 MW.

A.7. Funding sources of project

There is no public funding from Annex 1 countries and no diversion of Official Development Assistance (ODA) involved in the project activity.

A.8. Assessment that project complies with 'gender sensitive' requirements

As per mandatory requirement of "Gold Standard Gender Equality Guidelines & Requirements", the option " a) Foundation gender-sensitive requirements" are followed by PP.

All projects submitted for Gold Standard certification must have Gender Sensitive Procedures/ Strategies and must adhere to the Gender Principles as established in the Gold Standard Gender Policy. Steps 1 – 3 require all project developers to complete a gender safeguards assessment and gender-sensitive stakeholder consultations as part of initial project design and feasibility. Meeting these requirements enables projects to claim to be 'Gender-Sensitive'. This is a mandatory foundational requirement that applies to all Gold Standard certifications. This level of certification is based on adherence to process as described in Steps 1-3.

Also Steps 1-3 require four mandatory questions to be answered and the same are discussed as below.

Question 1: Does the project reflect the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy? Explain how.

Response: As per Gold Standard Gender Policy, p. 10 "Foundational gender-sensitive requirement – This strengthens Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations."

The project being a renewable energy project is not gender sensitive project. The project does not adversely impact women or men.

Question 2: Does the project align with existing country policies, strategies and best practices? Explain how.

Response: India is party to "Convention on the Elimination of All Forms of Discrimination against Women" and the project is aligned its labour policies which does not discriminate on gender.

Question 3: Does the project address the questions raised in the Gold Standard Safeguarding Principles & Requirements document? Explain how.

Response: The Project shall complete the following gender assessment questions below:

1. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits?

No, the Project being a solar project does not reduce access to or control of resources for women.

2. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)?

No, the Project beneficiaries in terms of employment and social upliftment of the area are common for both the gender.Further the project will carried out various CSR activities leading to welfare of community at large.

3. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?

No, the CSR activities carried our by the project proponent are discussed with the community consisting both the genders.

4. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?

Yes, the project takes into account gender roles and abilities of women/men. Job profile is allocated based on the type of work to be carried out.

5. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?

No, on the contrary the project leads to increased availability of electricity in the Indian grid thereby uplifiting the living standards.

6. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?

No, since the project is a renewable electiricity generation project, thus it will not have discriminated against women.

7. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?

No, in fact, the project leads to improved electricity in the Indian grid thereby leading to less usage of fuel for lighting.

8. Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards?

No, in fact, due to improved electricity availability the usage of fuel for lighting would be reduced as well as indoor air quality would be improved.

Question 4: Does the project apply the Gold Standard Stakeholder Consultation & Engagement Procedure Requirements? Explain how.

Response: The project is currently a GS project applying for retroactive GS registration. The LSC conducted as part of the GS project including local villages, suppliers, employees and general stakeholders.

Since the project is applying retroactively for GS registration, a Stakeholder Feedback round would be carried out.

SECTION B. Application of selected approved Gold Standard methodology

B.1. Reference of approved methodology

Title: Grid-connected electricity generation from renewable sources
Reference: The project activity meets the eligibility criteria of small scale project as it is more than 15 MW
Methodology: Grid-connected electricity generation from renewable sources AMS-I.D - Version 18.0[2]
Type I: Energy industries (renewable / non-renewable sources)
Category: Approved Consolidated Methodology (AMS-I.D- Version 18.0)

Tools referred with above methodology and applicable for project activity are:

- Tool to calculate the emission factor for an electricity system[3] - Version 07.0 (EB 100, Annex 04)

B.2. Applicability of methodology

The project activity involves generation of grid connected electricity from renewable solar energy. The project activity has a proposed capacity of 10 MW which will qualify for a Small scale project activity under Type-I of the large scale methodologies. The project status is corresponding to the methodology AMS I.D version 18.0 and applicability of methodology are discussed below.

Applicability Criterion	Project Case
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: Supplying electricity to a national or a regional grid. Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity is a Renewable Energy Project i.e. solar Power Project which falls under applicability criteria option 4(a) i.e., "Install a Greenfield plant;". Hence, the project activity meets the given applicability criterion.

[2] https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK
[3] http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf

<table>
<tr><th>Applicability Criterion</th><th>Project Case</th></tr>
<tr><td>2. Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies is included below:

<table>
<tr><th></th><th>Project type</th><th>AMS-I.A</th><th>AMS-I.D</th><th>AMS-I.F</th></tr>
<tr><td>1</td><td>Project supplies electricity to a national/regional grid</td><td></td><td>√</td><td></td></tr>
<tr><td>2</td><td>Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)</td><td></td><td></td><td>√</td></tr>
<tr><td>3</td><td>Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)</td><td></td><td>√</td><td></td></tr>
<tr><td>4</td><td>Project supplies electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel</td><td></td><td></td><td>√</td></tr>
<tr><td>5</td><td>Project supplies electricity to household users (included in the project boundary) located in off grid areas</td><td>√</td><td></td><td></td></tr>
</table>
</td><td>The 1st and 3rd option of Table of AMS I.D. Version 18, is applicable.</td></tr>
<tr><td>3. This methodology is applicable to project activities that (a) install a Greenfield plant; (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) involve a replacement of (an) existing plant(s).</td><td>The project is installation of new solar based electricity generation plants (not addition to existing system). Option (a) is applicable.</td></tr>
<tr><td>4. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</td><td>The project is solar power project and thus the criterion is not applicable to this project activity.</td></tr>
</table>

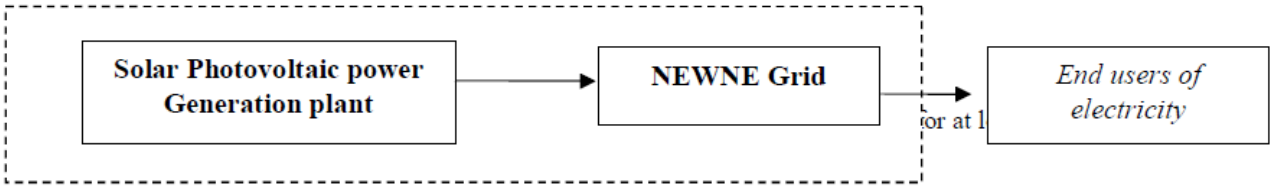
Applicability Criterion	Project Case
• The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2; • The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2.	
5. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The project activity is a solar electricity generation. Unit does not co-fire fossil fuels. Hence, the criterion is not applicable to the project activity.
6. Combined heat and power (co-generation) systems are not eligible under this category.	The Project activity is a renewable solar energy project and is not a combined heat and power system. Hence, the criteria is not applicable to the project activity
7. In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The project activity is Greenfield and there is no existing power generation facility at the site. Hence, the criteria is not applicable to the project activity
8. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	Not applicable, the solar project is a Green field project activity and this project is not the enhancement or up gradation project.
9. In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	The Project activity is a renewable solar power project and is not a landfill gas, waste gas, waste water treatment and agro-industries projects or recovered methane emissions project. Hence, the criteria is not applicable to the project activity
10. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	The Project activity is a renewable solar power project and is not a biomass project. Hence, the criteria is not applicable to the project activity.

B.3. Project boundary

As per the approved small scale methodology AMS I.D, the project boundary "includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to".

Thus, the project boundary consists of the all the solar PV modules, the allied equipments including the inverters, transformers and metering system and the state grid to which the project activity is connected.

The project boundary has been depicted below:



The greenhouse gases and emission sources included in or excluded from the project boundary are shown below:

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project scenario	CO_2 emissions from combustion of fossil fuels for electricity generation	CO_2	No	No project emissions
		CH_4	No	No project emissions
		N_2O	No	No project emissions

B.4. Establishment and description of baseline scenario

Baseline Senario:

As the project activity is the installation of a Greenfield power plant, the baseline scenario is the following as per applied methodology:

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

The project activity involved setting up of a solar plant to harness the power of solar energy to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the state grid (part of Indian grid), which is fed mainly by fossil fuel fired plants.

In the absence of the project activity, the equivalent amount of power would have been drawn from the state grid. Hence, the baseline for the project activity is the equivalent amount of power from the INDIAN grid.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin is based upon CEA Database for Indian Power System, Version 14.0, dated December 2018. This data base is the latest available data at the time of PDD submission to DOE for validation purpose.

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

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.9368 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y.	Calculated as the weighted average of the operating margin (0.50) & build margin (0.50) values, sourced from Baseline CO_2 Emission Database, Version 14.0, Dec 2018[4] published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,OM,y}$	0.9610 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y.	Calculated as the last 3 year (2015-16, 2016-17 & 2017-18) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 14.0, Dec 2018[5] published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,BM,y}$	0.8644 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y.	Baseline CO_2 Emission Database, Version 14.0, Dec 2018[6] published by Central Electricity Authority (CEA), Government of India.

Calculation of Baseline Emission:

As per the approved consolidated Methodology AMS I.D (Version 18.0) para 42:

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid- connected power plants. The baseline emissions are to be calculated as follows:

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

Where:

BE_y = Baseline emissions in year y (t CO_2/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

As per methodology, combined grid emission factor as per the "Tool to calculate the emission factor for an electricity system" version 07 is calculated as below.

CO_2 Baseline Database for the Indian Power Sector, Version 14, December 2018[7] published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.

[4] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf
[5] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf
[6] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf
[7] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

As per Methodological tool: Tool to calculate the emission factor for an electricity system (Version 07.0, EB 100, Annex 4), following six steps have been followed:

(a) **Step 1:** Identify the relevant electricity systems;
(b) **Step 2:** Choose whether to include off-grid power plants in the project electricity system (optional);
(c) **Step 3:** Select a method to determine the operating margin (OM);
(d) **Step 4:** Calculate the operating margin emission factor according to the selected method;
(e) **Step 5:** Calculate the build margin (BM) emission factor;
(f) **Step 6:** Calculate the combined margin (CM) emission factor.

Step 1: Identify the relevant electricity systems

As described in tool "For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity systems". It also states that "If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used". Keeping this into consideration, the Central Electricity Authority (CEA), Government of India has divided the Indian Power Sector into five regional grids viz. Northern, Eastern, Western, North-eastern and Southern.

However since August 2006, however, all regional grids except the Southern Grid had been integrated and were operating in synchronous mode, i.e. at same frequency. Consequently, the Northern, Eastern, Western and North-Eastern grids were treated as a single grid named as NEWNE grid from FY 2007-08 onwards for the purpose of this CO_2 Baseline Database. As of 31 December 2013, the Southern grid has also been synchronised with the NEWNE grid, hence forming one unified Indian Grid. Since the project supplies electricity to the Indian grid, emissions generated due to the electricity generated by the Indian grid as per CM calculations will serve as the baseline for this project.

Table: Geographical Scope of Indian Electricity Grid

Northern	Eastern	Western	North-Eastern	Southern
Chandigarh	Bihar	Chhattisgarh	Arunachal Pradesh	Andhra Pradesh
Delhi	Jharkhand	Gujarat	Assam	Karnataka
Haryana	Orissa	Daman & Diu	Manipur	Kerala
Himachal Pradesh	West Bengal	Dadar& Nagar Haveli	Meghalaya	Tamil Nadu
Jammu & Kashmir	Sikkim	Madhya Pradesh	Mizoram	Telangana
Punjab	Andaman & Nicobar	Maharashtra	Nagaland	Puducherry
Rajasthan		Goa	Tripura	Lakshadweep
Uttar Pradesh				
Uttarakhand				

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

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

Option I: Only grid power plants are included in the calculation.

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

The Project Participant has chosen only grid power plants in the calculation.

Step 3: Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods, which are described under Step 4:

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

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers. The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must-run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal, wind, low cost biomass, nuclear and solar generation.

Share of Must-Run (Hydro/Nuclear) (% of Net Generation)

	2013-14	2014-15	2015-16	2016-17	2017-18
India	18.6%	16.8%	15.1%	14.6%	14.3%

Data Source: Central Electricity Authority (CEA) database Version 14, Dec 2018[8]

The above data clearly shows that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the Indian grid is less than 50 % of the total generation. Thus the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation.

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

For the simple OM, the simple adjusted OM and the average OM, the emissions factor can be calculated using either of the two following data vintages:

(a) **Ex-ante option:** if the ex-ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required.

OR

(b) **Ex-post option:** if the ex-post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring.

PP has chosen ex-ante option for calculation of Simple OM emission factor using a 3-year generation-weighted average, based on the most recent data available at the time of submission of the PD to the DOE for validation.

OM determined at validation stage will be the same throughout the crediting period. There will be no requirement to monitor & recalculate the emission factor during the crediting period.

[8] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

Step 4: Calculate the operating margin emission factor ($EF_{grid,OMSimple,y}$) according to the selected method

The operating margin emission factor has been calculated using a 3 year data vintage:

Net Generation in Operating Margin (GWh) (incl. Imports)			
	2015-16	**2016-17**	**2017-18**
INDIAN Grid	871,753	916,278	960,693

Simple Operating Margin (tCO2/MWh) (incl. Imports)			
	2015-16	**2016-17**	**2017-18**
INDIAN Grid	0.9655	0.9636	0.9543

Weighted Generation Operating Margin	
INDIAN Grid	0.9610

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

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 72:

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

(a) **Option 1 -** For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of PD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

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

Option 1 as described above is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent information available at the time of submission of PD and is fixed for the entire crediting period.

Build Margin (tCO_2/MWh) (not adjusted for imports)	
	2017-18
INDIAN Grid	0.8644

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

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 81:

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

(a) Weighted average CM; or
(b) Simplified CM.

PP has chosen option (a) i.e weighted average CM to calculate the combined margin emission factor for the project activity.

The combined margin emissions factor is calculated as follows:

$$\mathbf{EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}}$$

Where:

$EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year y (t CO_2/MWh)
$EF_{grid,OM,y}$ = Operating margin CO_2 emission factor in year y (t CO_2/MWh)
W_{OM} = Weighting of operating margin emissions factor (per cent)
W_{BM} = Weighting of build margin emissions factor (per cent)

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

Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods. Since project activity is of solar power generation, the above weightage has been considered for OM and BM.

Therefore, $EF_{grid,CM,y}$ = 0.9610 * 0.75 + 0.8644 * 0.25
= 0.9368 tCO_2/MWh

Baseline emission factor (EF_y):

The baseline emission factor is calculated using the combined margin approach as described in Step 6 above:

Therefore, $EF_y = EF_{grid,CM,y}$ = 0.9368 tCO_2/MWh.

BE_y = 17,523 x 0.9368 = 16,415 tCO_2 during a given year y.

B.5. Demonstration of additionality

Specify the methodology or activity requirement or product requirement that establish deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	Not Applicable
Describe how the proposed project meets the criteria for deemed additionality.	Not Applicable

Please refer to section B.5 of the registered CDM PDD.

Weblink: https://cdm.unfccc.int/Projects/DB/SGS-UKL1355910618.03/view

B.6. Sustainable Development Goals (SDG) outcomes

B.6.1. Relevant target for each of the three SDGs

SDG Goal	Relevant SDG Target	Corresponding indicator
SDG 7 – Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all.	7.2- By 2030, increase substantially the share of renewable energy in the global energy mix.	Electricity produced and supplied to the grid. (7.2.1 Renewable energy share in the total final energy consumption)
SDG 8 – Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment and decent work for all.	8.5- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. 8.6- By 2020, substantially reduce the proportion of youth not in employment, education or training	1.. Quality of Employment and No. of trainings provided to the employees. 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training) 2. Employment generated due to project activity. (8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities)
SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts.	13.2- Integrate climate change measures into national policies, strategies and planning.	Emission reductions in tCO_2.

B.6.2. Explanation of methodological choices/approaches for estimating the SDG outcome

SDG Goal	Methodological choices/approaches for estimating the SDG outcome
SDG 7 –Affordable and Clean Energy : Ensure access to affordable, reliable, sustainable and modern energy for all.	**Measurement Method:** - Electricity produced and supplied to the grid is monitored through energy meter. Net electricity will be calculated based on REA issued by WRLDC/WRPC. The other parameters used for net electricity supplied to grid are mentioned in monitoring plan. **QA/QC Process:** This parameter is monitored monthly and value of parameter will be cross checked with invoices. The meters will be calibrated on regular frequency.
SDG 8 – Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment and decent work for all.	**Measurement Method:** - Training and employment generation is monitored through training records, staff register or letter from O&M contractor for training and employment details or HSE/HR records. **QA/QC Process:** This parameter is based on records, data and no any QA/QC procedure required. The DOE can confirm this parameter with interview with PP or Site incharge or employees for training and employment generation.

SDG 13 – Climate Action : Take urgent action to combat climate change and its impacts.	**Measurement Method:** - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is ex-ante parameter and determined based on data obtained from "CO_2 Baseline Database for Indian Power Sector" version 14.0, published by the Central Electricity Authority, Ministry of Power, Government of India. This is in line with "Tool to calculate the emission factor for an electricity system, version 7.0". The emission reductions are calculated as per registered PDD and as per methodology requirement. **QA/QC Process:** This parameter is calculated, and no any QA/QC procedure required.

B.6.3. Data and parameters fixed ex ante for monitoring contribution to each of the three SDGs

Relevant SDG Indicator	**SDG 13**
Data/parameter	**$EF_{grid,OM,y}$**
Unit	tCO_2/MWh
Description	Operating margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018
Value(s) applied	0.9610
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 7.0" as 3-year generation weighted average using data for the years 2015-16, 2016-17 & 2017-18. The data are obtained from "CO2 Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	**SDG 13**
Data/parameter	**$EF_{grid,BM,y}$**
Unit	tCO_2/MWh
Description	Build margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018
Value(s) applied	0.8644
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 7.0" as per the latest data available for the most recent year 2017-18. The data is obtained from "CO2 Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	**SDG 13**
Data/parameter	**$EF_{grid,CM,y}$**
Unit	tCO_2/MWh

Description	Combined margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018
Value(s) applied	0.9368
Choice of data or Measurement methods and procedures	The combined margin emissions factor is calculated as follows: $\mathbf{EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}}$ Where: $EF_{grid,BM,y}$= Build margin CO_2 emission factor in year y (tCO_2/MWh) $EF_{grid,OM,y}$= Operating margin CO_2 emission factor in year y (tCO_2/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM}= Weighting of build margin emissions factor (%) = 25%
Purpose of data	Computing Baseline emissions
Additional comment	The Build Margin Emission Factor has been fixed for the duration of the entire crediting period.

It is to be noted that the grid emission factor as per latest version of 'Tool to calculate the emission factor for an electricity system." Version 7 and as per latest CO2 Baseline Database Version 14.0 for the Indian Power Sector prepared by Central Electricity Authority, the combined margin grid emission factor comes as 0.9368 tCO2/MWh. The value of grid emission factor 0.9529 tCO2/MWh mentioned in CDM registered PDD is higher than than grid emission factor as per latest data, hence lower value of 0.9368 tCO2/MWh as per CEA Database Version 14 is considered as grid emission factor for the GS4GG project activity.

B.6.4. Ex ante estimation of outcomes linked to each of the three SDGs

The emission reduction ER_y by the project activity during a given year y is the difference between baseline emissions (BE_y) and project emissions (PE_y) as per the consolidated methodology AMS I.D (Version 18.0) as follows:

$$\mathbf{ER_y = BE_y - PE_y - LE_y}$$

Where:
ER_y: Emission Reductions in year y (tCO_2e/yr)
BE_y: Baseline Emissions in year y (tCO_2/yr)
PE_y: Project Emissions in year y (tCO_2/ yr)
Le_y: Leakage Emissions in year y (tCO_2/yr)

Project activity emissions (PE_y)

As per the approved consolidated Methodology AMS I.D (Version 18.0) para 34: "For most renewable energy power generation project activities, PE_y= 0. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$\mathbf{PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}}$$

Where:

PE_y = Project emissions in year y (t CO_2e/yr)
$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (t CO_2/yr)

$PE_{GP,y}$ = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO_2e/yr)
$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (t CO_2e/yr)

As the project activity is the installation of a new grid-connected solar plant and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore $PE_{FF,y}$, $PE_{GP,y}$, $PE_{HP,y}$ are equal to zero and thus,

$PE_y = 0$.

Leakage Emissions (LE_y)

No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected.

As per AMS I.D (Version 18.0) baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$$\mathbf{BE_y = EG_{PJ,y} * EF_{grid,CM,y}}$$

Where:
BE_y = Baseline emissions in year y (tCO_2/yr)
EG_y = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Hence, BE_y = 17,523 (MWh) * 0.9368 (tCO_2/ MWh) = 16,415 tCO_2

Since, $ER_y = BE_y$

So, Emission reductions (ER_y) = 16,415 tCO_2

SDG 7 : Affordable and Clean Energy

The project activity will generate Affordable and Clean Energy of 17,523 MWh per year

SDG 8 : Decent Work and Economic Growth

The project leads to employment opportunities and provides employment to around 10 persons.

Also project activity improves the quality of employment by giving training to employee. Thus, 1 training per year will be conducted by the project activity.

B.6.5. Summary of ex ante estimates of each SDG outcome

SDG 13 Climate Action

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

Year	Baseline estimate	Project estimate	Net benefit
~~31/03/2019~~31/08/2019 to ~~30/03/2020~~30/08/2020	16,590	0	16,590
~~31/03/2020~~31/08/2020 to ~~30/03/2021~~30/08/2021	16,473	0	16,473
~~31/03/2021~~31/08/2021 to ~~30/03/2022~~30/08/2022	16,356	0	16,356
~~30/03/2022~~31/08/2022 to 30/12/2022	16,240	0	16,240
Total	**65,659**	**0**	**65,659**
Total number of crediting years	**5**		
Annual average over the crediting period	**16,415**	**0**	**16,415**

SDG 7 : Affordable and Clean Energy

Year	Baseline estimate	Project estimate	Net benefit
31/08/2019 to 30/08/2020~~Year 1~~	0	17,710	17,710
31/08/2020 to 30/08/2021~~Year 2~~	0	17,585	17,585
31/08/2021 to 30/08/2022~~Year 3~~	0	17,460	17,460
31/08/2022 to 30/12/2022~~Year 4~~	0	17,336	17,336
Total	**0**	**70,092**	**70,092**
Total number of crediting years	**5**		
Annual average over the crediting period	**0**	**17,523**	**17,523**

SDG 8 : Decent Work and Economic Growth

The project leads to employment opportunities and provides employment to around 10 persons.

Also project activity improves the quality of employment by giving training to employee. Thus, 1 training per year will be conducted by the project activity.

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Relevant SDG Indicator	**7.2.1 Renewable energy share in the total final energy consumption**
Data / Parameter	**$EG_{PJ,y}$**
Unit	MWh/y
Description	Net electricity supplied to the grid by the project activity during the year y
Source of data	Monthly Joint Meter Reading reports.
Value(s) applied	17,523 (estimated)
Measurement methods and procedures	The net export is calculated as the difference between energy exported to grid and energy imported by the project activity.
Monitoring frequency	Continuous basis with monthly recording
QA/QC procedures	This value can also be cross checked from the invoices raised by the PP.
Purpose of data	Calculation of baseline emission

Additional comment	The data will be archived for the crediting period +2 years by the project participant.

Relevant SDG Indicator	**SDG 13**
Data / Parameter	**ER_y**
Unit	tCO_{2e}/year
Description	Emission reductions achieved per year
Source of data	As per Esitimated ER sheet. During the verification, the results shall be obtained from the Actual ER sheet.
Value(s) applied	16,415 (estimated)
Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	To Monitor the SDG 13 Indicator
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-CERs for this project activity, whichever occurs later

Relevant SDG Indicator	**8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities**
Data / Parameter	**Number of employment generation**
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc
Value(s) applied	10
Measurement methods and procedures	The total number of persons working in the plant would be calculated based on the daily log available at site. This parameter also monitor number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women. "The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, local/ non-local etc. Also it is ensured that people will get equal payment for equal work. The payment will be based on work and no any gender inequality for payment for work of equal value".
Monitoring frequency	Monthly monitoring and annual compilation
QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with attendance register.
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

Relevant SDG Indicator	**8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training**
Data / Parameter	**Quality of Employment**
Unit	-
Description	Training of Staff
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc
Value(s) applied	1 training per year
Measurement methods and procedures	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.
Monitoring frequency	Annual
QA/QC procedures	The training records for all the employees
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

B.7.2. Sampling plan

No sampling is required

B.7.3. Other elements of monitoring plan

Energy meters (main and check) have been installed at the transformer yard of the dedicated substation, situated within the project premises. The energy meters are owned and managed by Gujarat Energy Transmission Corporation Limited (GETCO). During commissioning of the project activity, the meters were sealed in the presence of officials from GETCO and the project proponent representative(s).

Monitoring of power generation at Inverter end:

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

Monitoring of power supplied from the project site:

The power supplied from the project activity is monitored using energy meters (main and check) positioned at the Transformer Yard of the dedicated substation situated within the project premises. Joint Meter Reading (JMR) is taken every month by GETCO / GUVNL officials and site personnel from these Transformer Yard meters. A monthly State Energy Accounting statement is generated by State Load Dispatch Centre (SLDC - GETCO) and sent to the project proponent. The project proponent raises an invoice on the basis of the statement and submits it to GUVNL. These readings (net export to the grid) from the JMR shall form the basis of estimation of emission reductions in the project activity.

The project activity supplies power to the grid through two feeders. Each feeder has a set of main and check meters. The meter serial numbers are as follows:

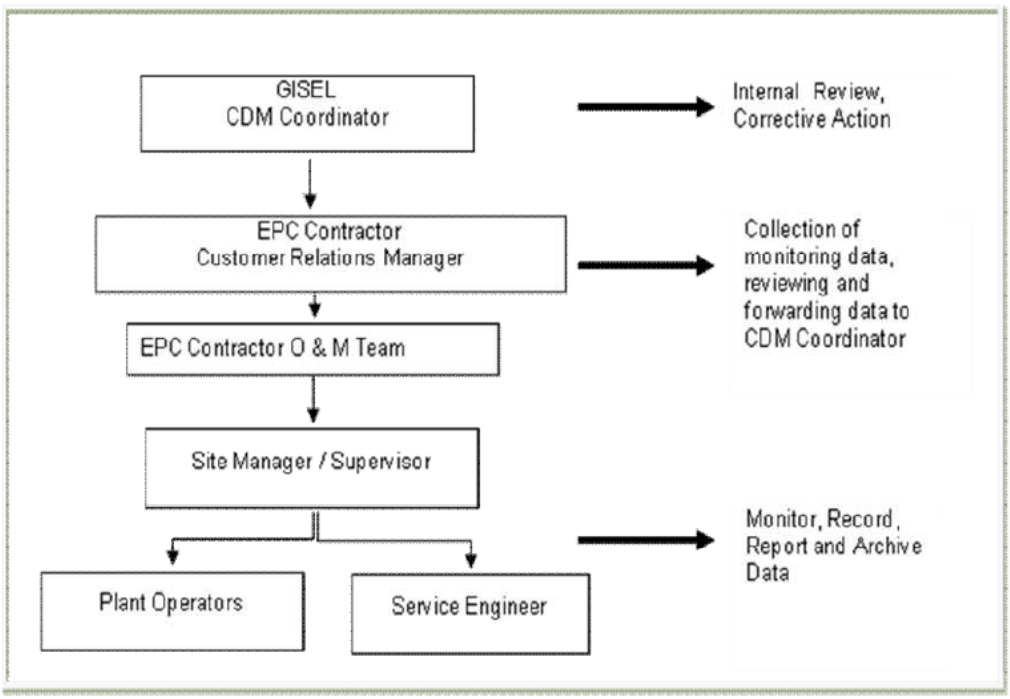
	Sr. No.
Main Meter-1	GJU62650
Main Meter-2	GJU62651

Check Meter-1	GJ 0952 A
Check Meter-2	GJ 0953 A

In case of an error/fault in the meters, the board shall replace the same as soon as possible. For such period, where readings from the main meter are not available, the export values from the check meter reading shall be considered.

Roles and Responsibility structure:

The operations and maintenance of the project activity has been outsourced to the EPC contractor (Juwi India Renewable Energies Private Limited). The roles and responsibility structure is as follows:



Handling data Uncertainty:

- Main meter is faulty- Main meter is immediately replaced by a new meter and meter reading from the replaced meter is used thereafter. The generation during the intervening period is forfeited
- Error is identified during annual meter testing- If during the annual tests, the meter is found to be beyond the permissible limits of error (0.2%), the meter shall be immediately calibrated and replaced, if necessary. The error that is identified in the calibration would be applied to entire range of data from the date of last calibration. Billing for the period thereafter till the next monthly reading shall be as per the calibrated meter.

Apportioning procedure used by PP in case of mismatches in monitoring period date and billing date:

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

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

monthly statement showing the energy generated, and the ratio of inverter readings of the intervening period and total period as shown in monthly statement showing the energy generated.

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

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

C - ratio of A and B; A/B

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

Data Archiving:

All data shall be electronically archived and stored for the entire crediting period and two years thereafter.

SECTION C. Duration and crediting period

C.1. Duration of project

C.1.1. Start date of project

18/03/2011 (Date of EPC contract for the project activity).

C.1.2. Expected operational lifetime of project

25 years

C.2. Crediting period of project

C.2.1. Start date of crediting period

~~01/10/2017~~31/08/2019 (this is two years back from expected GS registration)

C.2.2. Total length of crediting period

The crediting period in GS4GG will start from two years prior to the date of GS registration. But as the project is registered under CDM mechanism and is being developed a GS-CER project under GS4GG mechanism, the project will follow the CDM crediting period and the GS crediting period of the project will be till 30/12/2022 only. This is because, the CDM crediting period is 31/12/2012 to 30/12/2022 (fixed).

SECTION D. Safeguarding principles assessment

D.1. Analysis of social, economic and environmental impacts

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes/potentially/no)	Justification	Mitigation measure (if required)
3.0 Social & Economic Safeguarding	1. The Project Developer and the Project shall respect internationally proclaimed human	No	The Project is not in conflict with the economic livelihood of the local community.	Not Applicable

Principles and Requirements 3.1 Principle 1 – Human Rights	rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. 2. The Project shall not discriminate with regards to participation and inclusion.		The Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. Further, the Project meets the Indian labour law requirements thus does not cause any human rights abuse. India has ratified the United Nations Human Rights Rules and regulations. The India ratified the same as per web link[9] given below The project adheres to the host country's commitment to: Universal Declaration of Human Rights (UDHR) International Covenant on Economic, Social and Cultural Rights, India Accession 10/04/79[10] International Covenant on Civil and Political Rights India Accession 10.04.79[11] The project does not involve any conflict with livelihood of local people and respect all human rights. Stakeholder consultation had been carried out to take their opinion. The host country prohibits discrimination on the basis of a person's race, sex, religion, place of birth, or social status.	
3.2 Gender Equality and Women's Rights	1. The Project shall complete the following gender assessment questions in order to	No	There a no possibility that the Project might reduce or put at risk women's access to or	Not Applicable

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

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

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

	inform Requirements 2-4, below: • Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits? • Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)? • Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the Decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)? • Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)? • Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities? • Would the Project potentially reproduce or further deepen discrimination against		control of resources, entitlements and benefits. There is no any possibility that the Project can adversely affect men and women in marginalised or vulnerable communities. Project does not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities. Project does not take into account gender roles and the abilities of women or men to benefit from the Project's activities The Project design does not contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities Project does not potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits. The Project does not potentially limit women's	

	women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits? • Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services? • Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards? 2. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. Specifically, this shall include (not exhaustive): • Sexual harassment and/or any forms of violence against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking. •Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. • Restriction of women's rights or access to resources (natural or economic). • Recognise women's ownership rights regardless of marital status – adopt project		ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services There is no any likelihood that the proposed Project would expose women and girls to further risks or hazards The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. For project, every employee is treated with respect and afforded equitable treatment. The grievance register has maintained at site to take stakeholder feedback. There is no any sexual harassment and/or any forms of violence against women. The project does not involve any slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. The project does not restrict of women's rights or access to resources. The project Recognise women's ownership rights regardless of marital status	

	measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources. 3. Projects shall apply the principles of non discrimination, equal treatment, and equal pay for equal work, specifically: • Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities. • Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. • Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits. 4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.		Projects shall apply the principles of non discrimination, equal treatment, and equal pay for equal work. The project has equal opportunity for both men and women. The project has HR policy and same is followed equally. The project ensures participation of both men and women and they are benefitted based on pregnancy, maternity/paternity leave, or marital status. There is no limit to the access of women or men to Project participation and benefits. India ratified the International Convention on the Elimination of All Forms of Racial Discrimination[12] on 03/12/1968 with certain reservation. The project activity is in line with strategy of elimination of discrimination.	
3.3 Principle 3 – Community Health, Safety and Working Conditions	The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the	No	The project is renewable energy technology and does not have exposure to increased health risks and shall not adversely affect the	Not Applicable

[12] http://nhrc.nic.in/documents/india_ratification_status.pdf

	workers and the community.		health of the workers and the community. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments" - PP ensures safe access and planned prevention to avoid any kind of accident. The HSE (Health and Safety Executive) states that best practice when installing and operation of solar project requires trained, dedicated working at height maintenance teams to access risks and select appropriate equipment before any work is carried out. All the safety and hygiene measures are being ensured in order maintain a safe and healthy environment for the workers at site. In case of any emergency, the site incharge will ensure to take adequate action and preventive measures to avoid any miss happening. Necessary health and safety measures will be taken during construction and operation phase, relevant staff will be trained to be able to work with safety. The project is in compliance with all relevant local and national laws.	
3.4 Principle 4 – Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g.,	No	No cultural heritage is observed on the project site, thus no harm observed. Compliance with India's commitment to International Covenant on Economic, Social and Cultural Rights 10.04.79 will ensure no	Not Applicable

3.4.1 Sites of Cultural and Historical Heritage	knowledge, innovations, or practices)?		damage to critical cultural heritage. As per the list of cultural heritage sites in India [13] by UNESCO, it is clear that the project site is not a cultural heritage site	
3.4.2 Forced Eviction and Displacement	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project has received the necessary approvals from the local authorities and does not lead to any resettlement. India (the Ministry of Rural development have the "The National Rehabilitation and Resettlement Policy, 2007[14]	Not Applicable
3.4.3 Land Tenure and Other Rights	1. Does the Project require any change to land tenure arrangements and/or other rights? 2. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	No	No Expropriation has been conducted on any private land involved in project activity. Land has been utilised by PP directly from the owner of the land through direct negotiation of commercial terms. There has not been involvement of any government agency in the acquiring the land. The land is acquired on mutual consent between private land owner and PP, thus there are no any issues of dissatisfaction of private land owner. The Project Developer hold uncontested land title for the entire Project Boundary to complete Project Design Certification. The land rights are with project developers.	Not Applicable
3.4.4 Indigenous Peoples	Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples	No	The project is located at site where there are no any peoples residing. The project is located at barren land.	Not applicable
3.5 Principle 5 – Corruption	(a) Does not recognise Projects that engage in, contribute to or	No	The project is renewable energy technology and does not contribute to or reinforce corruption of any kind.	Not Applicable

[13] http://whc.unesco.org/en/statesparties/in

[14] http://www.dolr.nic.in/nrrp2007.pdf

	reinforce corruption of any kind. The Project shall not involve, be complicit in or inadvertently contribute to orreinforce corruption or corrupt Projects.		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 [15] is made on 09.05.11	
3.6 Principle 6 – Economic Impacts 3.6.1 Labour Rights	1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard. 2. Workers shall be able to establish and join labour organisations. 3. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise: (a) Working hours (must not exceed 48 hours per week on a regular basis),	Yes	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. India have laws in place prohibiting forced and compulsory labour[16] The project respects fundamental right of employee. There is law in India since 1926 by The Trade Unions Act, 1926 [17] which protects rights of industrial trade unions and their members. The agreements are in place for permanent employees	Not Applicable

[15] http://www.unodc.org/unodc/en/treaties/CAC/signatories.html

[16] http://labour.nic.in/content/

[17] http://ncw.nic.in/acts/TheTradeUnionsAct1926.pdf

	AND (b) Duties and tasks, AND (c) Remuneration (must include provision for payment of overtime), AND (d) Modalities on health insurance, AND (e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND (f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.			
	4. The Project Developer shall justify that the employment model applied is locally and culturally appropriate.		The project prefers the local employment and culture is maintained at project site.	
	5. Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development, AND		The country have strict prohibition for child labour[18]. Thus project does not involve child labour during construction and operation of project activity.	

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

	(c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design. 6. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.		The project follows the health, safety and environment guidelines at project site. The project ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.	
3.6.2 Negative Economic Consequences	Is project involves Negative Economic Consequences 1. The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. 2. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in Project design, implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalised social groups in targeted communities and that benefits are socially-inclusive and sustainable.	No	No potential risks to the local economy. The financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. The financial sustainability is demonstrated in registered PDD and these calculations are for entire lifetime of project activity. The project does not involve any negative impacts and no any potential risk to local economy. The project leads to economic development of the local area by means of generating employment opportunities for local people either directly or indirectly.	Not Applicable
4.1.1 Emissions	Will the Project increase greenhouse gas	No	The project is renewable energy technology and does not lead any increase in	Not Applicable

	emissions over the Baseline Scenario?		greenhouse gas emissions over the Baseline Scenario.	
4.1.2 Energy Supply	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	Yes	The project activity supplies energy to national grid and project activity displaces equivalent quantity of electricity which would have been generated by fossil fuel dominated grid connected power plants. During running condition, self generated power is used. The project activity requires very less electricity from grid and the same is reflecting as import of project activity. The state electricity board is deducting this import consumption from export and net electricity supplied to grid is monitored. Thus import from grid accounts auxiliary consumption of the power plant which is being monitored regularly. The clean energy supply to the grid increases and hence Locals can get benefit of having continuous excess to clean power. During running condition, self generated power is used. The project activity requires very less electricity from grid and the same is reflecting as import of project activity. The state electricity board is deducting this import consumption from export and net electricity supplied to grid is monitored. Thus import from grid accounts auxiliary consumption of the power plant which is being monitored regularly. The clean energy supply to the grid increases and hence Locals can get benefit of having continuous excess to clean power.	Not Applicable
4.2.1 Impact on natural	Will the Project affect the natural or pre-	No	The project is renewable energy technology and does	Not Applicable

water patterns and flow	existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?		not affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s).	
4.2.2 Erosion and/or water body stability	1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2. 2. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	No	The project is renewable energy technology and does not affect Erosion and/or water body stability.	Not Applicable
4.3.1 Landscapte modification and soil	Does the Project involve the use of land and soil for production of crops or other products?	No	The project proponent has implemented Environment Health Safety and Social guideline which takes into account the same. The project activity involves barren land and does not involve use of land and soil for production of crops or other products.	Not Applicable
4.3.2 Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability to Solar, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The project is renewable energy technology. Thus this section is Not Applicable.	Not Applicable
4.3.3 Genetic Resources	Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	The project is renewable energy technology. Thus this section is Not Applicable	Not Applicable

4.3.4 Release of pollutants	Could the Project potentially result in the release of pollutants to the environment?	No	The project has received environmental clearance from the State Pollution control Board. Further the EHSS guidelines takes into account the same. The project does not lead to release of any hazardous substances that pose threat to the environment. Rather it aims at reducing the air pollution that is prevalent due to use of fossil fuel power plants. The project promotes environmental protection through the use of cleaner technology. The project abides by the stipulations of the Indian Environment Protection Act 1986[19].	Not Applicable
4.3.5 Hazardous and Non-hazardous Waste	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	The project is renewable energy technology. The project does not involve generation of Hazardous and Non-hazardous Waste. Standard procedure is followed at site during operation and maintenance.	Not Applicable
4.3.6 Pesticides and fertilizers	Will the Project involve the application of pesticides and/or fertilisers?	No	The project is renewable energy technology. Thus this principle is Not Applicable.	Not Applicable
4.3.7 Harvesting of forests	Will the Project involve the harvesting of forests?	No	The project is renewable energy technology. Thus this principle is Not Applicable.	Not Applicable
4.3.8 Food	Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project is renewable energy technology. Thus this principle is Not Applicable	Not Applicable
4.3.9 Animal Husbandry	Will the Project involve animal husbandry?	No	The Project does not involve animal husbandry. Thus Not Applicable	Not Applicable
4.3.10 High Conservation Value Areas	Does the Project physically affect or alter largely intact or High Conservation Value	No	The Project does not affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats,	Not Applicable

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

and Critical Habitats	(HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?		landscapes, key biodiversity areas or sites identified. The project is not located in any HCV areas as per the list of approved HCV areas of India[20].	
4.3.11 Endangered Species	1. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? 2. Does the Project potentially impact other areas where endangered species may be present through trans boundary affects?	No	1. There are no endangered species identified as potentially being present within the Project boundary. 2. The Project does not impact other areas where endangered species may be present through trans boundary affects.	Not Applicable

SECTION E. Local stakeholder consultation

E.1. Solicitation of comments from stakeholders

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

A stakeholder consultation meeting was held at the project site on 10/02/2012. In the meeting, the project proponent representatives explained the local stakeholders of the project activity and its benefits. The stakeholders were details about the benefits of producing clean energy as compared to producing energy from fossil fuel based power plants. This was followed by a discussion round where comments/views from local stakeholders were invited. The project proponents responded to the comments of the stakeholders.

Since the project is being developed under the GS4GG mechanism, a stakeholder meeting was organized on 17/10/2019.

E.2. Summary of comments received

The stakeholders appreciated the efforts of the project proponent to promote clean energy. The stakeholders expressed satisfaction on the project activity and were happy about the fact that local people were provided employment at the project site.

No negative comments were received during the stakeholder consultation process.

The stakeholders also acknowledged the socio-economic benefits of the project activity including improved infrastructure in the region, and employment opportunities for local residents.

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

Also during second consultation (online SFR process), the information about Input and Grievance mechanism was being provided to Local, national and global Stakeholders and feedback requested. The sustainable monitoring parameters, safeguarding principle justification (through GS4GG PDD) was being provided to stakeholders during SFR process and feedback was requested.

Identification of Stakeholders:

The Stakeholder feedback round will be conduct to consider and receive 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 was being done online method. Email invitations were sent to GS partnered NGO's and MoEFCC. The relevant documents of project activity like GS passport, project Technical summary were made available during Stakeholder feedback round.

As per GS toolkit, for SFR process physical meeting is not mandatory. Thus online e mail will be sent to NGOs, Govt officials, GS personnel etc.

The online SFR will be initiated for a period of 90 days.

For local stakeholders, public notice has been put at project site. Also SFR process are mainly to cover the issues raised during local stakeholder consultation and there were no any negative comments raised during physical local stakeholder consultation.

Thus public notice put at project site village and requested the feedback for this project activity as a part of SFR was sufficient and meets the requirement as per GS4GG. This public notice covers all local stakeholders for feedback during SFR process. The public notice has mentioned different feedback methods like the grievance register, telephone access, internet access so that local stakeholders can give their feedback for the project activity.

For local people physical stakeholder feedback meeting was being organized on 17/10/2019 at project site and local people were being invited by means of public notice and personal invitations. Due consideration was being taken care to ensure participation of local people irrespective of any gender biaseness. Thus stakeholder feedback round witnessed participation of both men and women from local community who expressed their comments or suggestions during the same.

Thus the requirement of "GS4GG Gold Standard for the Global Goals Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines" has been followed by the project activity.

The PP also placed a grievance register onsite in where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately.

E.3. Report on consideration of comments received

No negative comments were received on project activity from any of the local stakeholders consulted. As all comments were very positive about the project, no further action is required.

There were no further comments raised by the stakeholders, and they were totally in support for setting up of these kinds of projects in the region. The local stakeholders expressed their support to the project.

The meeting was concluded by vote of thanks to all the participants..

Stakeholder feedback Round:

The SFR will be planned for 90 days after listing project with GS. The email will be send to relevant stakeholders like NGOs, DNA officials, Gold Standard officials along with project documents
The process for the SFR is as follows;

- E mail and Invitations send to relevant stakeholders
- The non technical summary of project activity along with Registered PDD, web link of UNFCCC web page for the same registered project in CDM, draft GS4GG PDDsubmission to relevant stakeholders, GS Public view section web link.
- Grievance Mechanism Feedback/Questions from Stakeholders
- Answers for questions received from stakeholders during online SFR process.

Identification of Stakeholders:

The Stakeholder feedback round will be conducted to consider and receive 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 will be done online method. Email invitations were sent to GS partnered NGO's and MoEFCC. The relevant documents of project activity like GS4GG PDD, project Technical summary were made available during Stakeholder feedback round.

As per GS toolkit, for SFR process physical meeting is not mandatory. Thus, online e mail will be sent to NGOs, Govt officials, GS personnel etc.

The list of invites to whom the SFR e mail has been sent will be mentioned.

For local stakeholders, public notice has been put at project site. Also SFR process are mainly to cover the issues raised during local stakeholder consultation and there were no any negative comments raised during initial physical local stakeholder consultation.

Thus public notice put at project site village and requested the feedback for this project activity as a part of SFR was sufficient and meets the requirement as per GS4GG. This public notice covers all local stakeholders for feedback during SFR process. The public notice has mentioned different feedback methods like the grievance register, telephone access, internet access so that local stakeholders can give their feedback for the project activity.

The Mandatory Continuous Input & Grievance Expression Methods applied are described in below section

	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 at office of PP and O&M site office at Project location, i.e. Meravadar village in Rajkot district, Gujarat.	The project activity site office is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for stakeholder comments.

		Also Grievance Register has been kept at PP office so that any stakeholder can give their comments to PP.
Telephone access	Mr. Mayank Tyagi, representative of Project Participant is responsible and his mobile number +91 124 3896972 shall be available for any stakeholder to comment.	For those who are unable to travel to site or are not literate, they may contact the Project Implementer via telephone. 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: 1. PP representative: mayank.tyagi@sembcorp.com 2. Gold Standard: info@goldstandard.org	The 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. However, Mr. Mayank Tyagi, representative of Project Participant 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. However a local employee shall be available in case stakeholders have any comments.

Question/Comments session:

This section will complete once SFR process is complete.

Conclusion:

This section will complete once SFR process is complete.

Appendix 1. Contact information of project participants

Organization name	M/s Green Infra Solar Energy Limited
Registration number with relevant authority	-
Street/P.O. Box	DLF Cybercity
Building	5th floor, Tower C, Building No. 8
City	Gurgaon
State/Region	Haryana
Postcode	122002
Country	India
Telephone	+91 124 3896972
Fax	+91 124 3896710
E-mail	-
Website	-
Contact person	Mr. Mayank Tyagi
Title	Manager
Salutation	Mr.
Last name	Tyagi
Middle name	-
First name	Mayank
Department	Power Sales
Mobile	-
Direct fax	+91 124 3896710
Direct tel.	+91 124 3896972
Personal e-mail	mayank.tyagi@sembcorp.com

Appendix 2. Summary of post registration design changes

Not Applicable

Revision History

Version	Date	Remarks
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1	10 July 2017	Initial adoption