Gold Standard
for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v.1.5**

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document

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KEY PROJECT INFORMATION

GS ID of Project	GS7071
Title of Project	400 MW Solar Power Project at Bhadla, Rajasthan
Time of First Submission Date	30/12/2023
Date of Design Certification	10/04/2020
Version number of the PDD	8.1
Completion date of version	31/12/2024
Project Developer	Adani Renewable Energy DEVCO Private Limited (Formerly known as SB Energy Pvt. Ltd.)
Project Representative	EKI Energy Services Limited
Project Participants and any communities involved	**Project Participant:** Adani Renewable Energy DEVCO Private Limited (Formerly known as SB Energy Pvt. Ltd.) **Communities Involved:** Not Applicable
Host Country (ies)	India
Activity Requirements applied	☐ Community Service Activity ☒ Renewable Energy ☐ Land-Use and Forests Activity Requirements/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	NA
Methodology (ies) applied and version number	ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☐ Regular ☒ Retroactive

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action	Emission Reduction	906,917 tCO_2e	GS-VERs
8 Decent Work and Economic Growth	Trainings Employees	1 training/annum and employment to 10 persons	Number of trainings and Employment generated through project
7 Affordable and Clean Energy	MWh of renewable energy generated	974,133	MWh

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

The purpose of the project activity is to generate power using renewable energy source (solar energy) and sell the power generated to the state grid. The project activity generates electricity using solar energy. The generated electricity is exported to the regional grid system, which is under the purview of the INDIAN electricity grid of India. The project activity replaces anthropogenic emissions of greenhouse gases estimated to be approximately 906,917 tCO_2e per year, thereon displacing 974,133 MWh/year amount of electricity from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel-based power plant.

The total installed capacity of the current project activity is 400 MW, which involves operation of Solar PV Project in the state of Rajasthan in India. The project is promoted by Adani Renewable Energy DEVCO Private Limited (Earlier known as SB Energy Pvt Ltd). The project activity is located in village Bhadla, District Jodhpur, Rajasthan.

Project Investor	Project Type	Project Capacity	Date of Commissioning	State	Usage
Adani Solar Energy Jodhpur three private		100 MW	21/09/2018		

limited (earlier known as SB Energy One Private Limited)	Solar PV	100 MW	24/09/2018	Rajasthan	Sale to State Discom
		100 MW	24/09/2018		
Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Private Limited)		20 MW	04/10/2018		Sale to State Discom
		20 MW	04/10/2018		
		30 MW	18/09/2018		
		30 MW	18/09/2018		

The project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of renewable solar energy and further selling the generated energy to the Indian Grid. In this process, there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity is generated through sustainable means without causing any negative impact on the environment.

As per prior consideration guideline, the major milestone of project activity is as below:

1. The PP decided to implement the project activity on 01/09/2017.
2. The erection and commissioning agreement for Solar project between Mahindra Susten Private Limited and SB Energy One Pvt. Ltd on 12/03/2018.
3. The erection and commissioning agreement for Solar project between Sterling & Wilson Private Limited and SB Energy One Pvt. Ltd on 12/03/2018.
4. The initial PPA is signed on 06/10/2017 between Solar Energy Corporation of India Limited and SB Energy One Private Limited.
5. Construction work started on 30/03/2018
6. The initial PPA is signed on 06/10/2017 between Solar Energy Corporation of India Limited and SB Energy Three Private Limited.

7. Commissioning of project activity completed in between 18/09/2018 to 04/10/2018.
8. Publication of VCS PD for Global Stakeholder Consultation- 21/09/2018.
9. Public commenting period from 24/09/2018 to 24/10/2018.
10. The project initial documents like GS4GG PDD, Cover Letter, ODA letter and Terms and conditions are submitted to GS on 06/11/2018 for preliminary review purpose.
11. Listing of GS4GG PDD on Sustain-Cert done on 08/01/2019.
12. Final Validation and Verification Report submission to VCS on 05/03/2019. Monitoring period from 27/02/2017 to 31/12/2018.

In the Pre- project scenario the entire 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.

Project Boundary:

The project activity utilizing the electricity via the Indian grid. The project boundary includes the solar PV installation; pooling and respective State electricity utility's sub-stations. The project activity evacuates the power to the Indian grid. Therefore, all the power plants contributing electricity to the Indian grid are taken in the connected (project) electricity system for the purpose of baseline estimation and all connected power plants have been considered in the project boundary for the project activity.

Contribution to the sustainable development

Ministry of Environment and Forests, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

- **Social well-being**: The project would help in generating employment opportunities during the construction and operation phases. The project activity will lead to development in infrastructure in the region like development of roads and also may promote business with improved power generation.
- **Economic well-being**: The project is a clean technology investment in the region, which would not have been taken place in the absence of the carbon credit benefits the project activity will also help to reduce the demand supply gap in the state.

The project activity will generate power using zero emissions solar based power generation which helps to reduce GHG emissions and specific pollutants like SOx, NOx, and SPM associated with the conventional thermal power generation facilities.

- **Technological well-being**: The successful operation of project activity would lead to promotion of Solar based power generation and would encourage other entrepreneurs to participate in similar projects.
- **Environmental well-being**: Solar being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions.

GS has already approved the Design Certification review for GS 7071, with the start date of the crediting period clearly stated in Section C.1. Therefore, the PD should refer to the registered documents of GS 7071 for the GS RCP and apply the crediting period dates accordingly.

The PD has not applied for project transition but has instead applied for a fresh design certification under GS, reassessing the additionality, baseline, and other applicability conditions of the methodology and methodological tools applied to the project. Since this is a new GS project, the start date of the crediting period used is the same as the commissioning date, in accordance with the GHG Emissions Reductions & Sequestration Requirements v.3.0, clause 10.2.1[1].

A.1.1. Eligibility of the project under Gold Standard

The project activity meets the eligibility criteria as per section 3.1.1 of Gold Standard for the Global Goals Principles & Requirements (version 1.2[2]) as described below:

Section	Eligibility Criteria Category	Description	Justification	Is criterion met?
		The project type is a large-scale solar power plant	The Solar Power Plant	

[1] https://globalgoals.goldstandard.org/501-pr-ghg-emissions-reductions-sequestration/
[2] https://globalgoals.goldstandard.org/101-par-principles-requirements/

3.1.1.(a)	Types of Project	which generates power using solar energy. The project activity belongs to the type of renewable energy that generate and deliver power to the Indian grid. The project applies methodology ACM0002 Version 21.0, which is an approved methodology under Gold Standard.	Project is conceived as a grid connected large solar power plant within the category of renewable energy supply. See section A.1.	Yes
3.1.1.(b)	Location of Project	The Project activity is located at Jodhpur district in Rajasthan Further details have been provided in section A.2 of this report.	The Power purchase agreement between PP and SECI. It has been submitted to the VVB.	Yes
3.1.1.(c)	Project Area, Project Boundary and Scale	Project area and boundary are defined in line with the applicable methodology ACM0002, Version 21. The project activity includes 400 MW installed capacity and is greenfield large solar power plants with an installed capacity above or equal to 15 MW to be qualified as a large-scale solar plant (in accordance with UNFCCC rules).	The Project is located at Jodhpur district in Rajasthan. The project has an installed capacity of 400 MW which is more than 15 MW, therefore applies as a Large-Scale project. See section A.4.	Yes

3.1.1.(d)	Host Country Requirements	Projects shall be in compliance with applicable Host Country's legal, environmental, ecological and social regulations.	The project has obtained all the requirement for the commissioning of the project from the Government of India.	Yes
3.1.1.(e)	Contact Details	Project Participant: Adani Renewable Energy DEVCO Private Limited (Formerly known as SB Energy Pvt. Ltd.) Name of the contact person: Mr. Rajkumar Jain	GS4GG Cover Letter	Yes
3.1.1.(f)	Legal Ownership and Other Rights	The project activity is being developed by the PPs	The PPA is in the name of SB Energy One and SB Energy Three Private Limited (which is now known as Adani Renewable Energy DEVCO Private Limited), and has been submitted to the VVB.	Yes
3.1.1.(g)	Official Development	The project had private funding and funding from	The Project Owner	Yes

	Assistance (ODA) Declaration	bank. The PP hereby confirms that there is no public funding from Annex 1 countries and no diversion of Official Development Assistance (ODA) involved in the project activity. The project is funded by bank.	declares that the project has not directly or indirectly received or benefited from official development assistance. An ODA declaration has been submitted to VVB.	

Also, the project follows the General Eligibility Criteria under Renewable Energy Activity Requirements (v.1.4[3]), given below:

Project Type: As discussed above, the project type is eligible.

Project Location: The project is located in Rajasthan, India.

Project scale: The project activity is a 400 MW (solar) project and thus qualifies under large scale projects.

Suppressed Demand: This project does not account for a suppressed demand baseline scenario.

Stacking: As the project does not account for a suppressed demand baseline scenario and since it is not registered under the REC mechanism of India as descripted below, stacking is not applicable for this project activity. The project proponent hereby confirms that there would not be double counting of credits for any particular monitoring period. The project is not registered under the REC.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

[3] https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf

The project participant Adani Renewable Energy DEVCO Private Limited (formerly known as SB Energy Private Limited) is the legal owner of the project and have the legal rights for the credits that shall be generated by this project activity.
The project ownership has been demonstrated through below supporting documents:

1. **Commissioning certificates** – The letter from respective State Nodal Agency to SB Energy Pvt Ltd. (now, Adani Renewable Energy DEVCO Private Limited)[4] for commissioning of generation facility indicates that PP have the legal right to control and operate the project activities.
2. **Contract with EPC contractor** – The purchase order on the name of SB Energy Pvt Ltd (now, Adani Renewable Energy DEVCO Private Limited)[5] indicates that PP have the legal right to control and operate the project activities.

A.2 Location of project

This Project activity is located in village Bhadla, District Jodhpur, Rajasthan. Details of the location of the Project Activity:

Project Investor	Project Capacity	Date of Commissioning	Latitude	Longitude
Adani Solar Energy Jodhpur three private limited (earlier	100 MW	21/09/2018	27°29'04.49"N to 27°28'43.00"N	71°58'54.09"E to 71°58'56.00"E
	100 MW	24/09/2018	27°29'29.04"N to 27°29'34.00"E	71°59'15.89"E to 71°59'22.00"E

[4] The change in the name of the PP is supported by the Name Changing Certificate, which has been submitted to the VVB.
[5] The change in the name of the PP is supported by the Name Changing Certificate, which has been submitted to the VVB.

known as SB Energy One Private Limited)	100 MW	24/09/2018	27°28'10.08"N to 27°27'57.00"N	72°00'02.97"E to 72°00'31.00"E
Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Private Limited)	20 MW	04/10/2018	27°32'08.45"N to 27°31'56.00"N	71°57'19.10"E to 71°57'32.00"E
	20 MW	04/10/2018	27°32'25.47"N to 27°32'26.00"N	71°57'24.23"E to 71°57'50.00"E
	30 MW	18/09/2018	27°31'55.48"N to 27°31'42.00"N	71°57'58.23"E to 71°58'06.00"E
	30 MW	18/09/2018	27°32'21.8"N to 27°32'25.00"N	71°57'47.54"E to 71°57'15.00"E

Both the solar plant of respective project investor is located at a single region and the details are as follows-

Location of the Plant	Village - Bhadla, Tehsil - Phalodi, District- Jodhpur, State-Rajasthan
Location details	Latitude: 27° 10' 38.6" N Longitude: 71° 55' 49.16" E Elevation: 180 m above MSL
Distance from District Headquarter	159 km from Jodhpur
Access by Road	Connected by Road- NH65
Access by Rail	Nearest Railway station- Phalodi: 83 km
Access by Air	Nearest Airport – Jodhpur
Telecommunication	Fairly available
Land	Approximately 140 ha land available for 70 MW Solar PV plant.
Climate	Annual Rainfall – 3 mm

	Max Temp: 50°C 13 Min Temp: -3°C Max Relative Humidity: 100 % Min Relative Humidity: 5% Wind Speed: 1.4 M/s (Min) to 5.7 M/s (Max)

The location of the project activity has been highlighted in the map shown below:

Figure 1. Country map for Bhadla Solar Park

Figure 2. State and district Map of Rajasthan and Jodhpur

Figure 3: Site Location in Jodhpur

A.3 Technologies and/or measures

The total installed capacity of the project is 400 MW, which comprises of two projects owned by Adani Solar Energy Jodhpur three private limited (earlier known as SB Energy One Private Limited) & Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Private Limited) in Rajasthan. The main purpose of the project activity is to generate electrical energy through sustainable means using green energy generation sources, to utilize the generated output for selling it to the state electricity utility and replacing fossil fuel-based grid connected power plants. Hence the project activity is contributing to climate change mitigation efforts. The design lifetime of all the Solar PV Plant in the project activity is 25 years.

Technical specifications of 300 MW Solar PV Project by Adani Solar Energy Jodhpur Three Private Limited (Earlier known as SB Energy One Pvt. Ltd.) are as follows:

Sr. No.	Particulars	Details
1.	Capacity of the Project	100*3 MW
2.	Technology used	Polycrystalline
3.	Rating of Solar Modules	325 to 330 Wp
4.	Angle from horizontal at which the array is installed	20°
5.	Number of modules of each type	325 Wp- 2,64,840 Nos 330 Wp- 1,78,650 Nos
6.	Source of modules installed of each type	Jinergy solar in
7.	Number of invertors installed	32 numbers
8.	Rating of invertors	3.125 MVA
9.	Date of installation of full capacity	19-09-2018
10.	PV Arrays	100%
11.	Invertors	100%
12.	Transformers	100%

Technical specifications of 100 MW Solar PV Project by Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Pvt.) Ltd are as follows:

Sr. No.	Particulars	Details
1.	Capacity of the Project	30*2 and 20*2 MW
2.	Technology used	Polycrystalline
3.	Rating of Solar Modules	325 to 330 Wp
4.	Angle from horizontal at which the array is installed	20°
5.	Number of modules of each type	325 Wp- 34,920 Nos 330 Wp- 60,250 Nos
6.	Source of modules installed of each type	Jinergy solar in
7.	Number of invertors installed	16 numbers
8.	Rating of invertors	3.125 MVA
9.	Date of installation of full capacity	04-10-2018

10.	PV Arrays	100%
11.	Invertors	100%
12.	Transformers	100%

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

The project activity is a Voluntary initiative by the PP and is contributing to the SDG goals set forth by GS as detailed below:
1 – SDG 7 – Affordable and Clean Energy (Contribution to Climate Security & Sustainable Development) – 974,133 MWh/year
2 – SDG 8 – Decent Work and Economic Growth – Minimum 1 training /annum and 10 people employed
3 – SDG 13 – Climate Action- 906,917 tCO_2e / annum.

A.4 Scale of the project

As per para 3.3.2 of GS4GG "Renewable Energy Activity Requirements" V 1.4[6], the project is a large-scale project utilizing Solar PV Plant to generate electricity. The project falls under the category of large-scale project by utilizing solar PV modules to generate electricity, with an installed capacity of 400 MW.

A.5 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.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

Title: Grid-connected electricity generation from renewable sources

[6] https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf

Reference: The project activity meets the eligibility criteria of large-scale project as it is more than 15 MW
Methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0[7]
Type I: Energy industries (renewable / non-renewable sources)
Category: Approved Consolidated Methodology (ACM0002)

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

- Tool 07 - Tool to calculate the emission factor for an electricity system - Version 07.0[8] (EB 100, Annex 04)
- Tool 01 - Tool for the demonstration and assessment of additionality - Version 07.0.0[9] (EB 70, Annex 08)
- Tool 27 - Investment analysis - Version 9.0.0[10] (EB 101, Annex 02)
- Tool 24 – Common practice (Version 03.1, EB 84, annex 7)[11]
- Tool 11 - Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 03.0.1[12].

B.2. Applicability of methodology (ies)

The project activity is Grid connected renewable power generation and meets the applicability conditions of the chosen methodology as follows:

Applicability Conditions for ACM0002 (v.21.0)		
Para no.	**Applicability Conditions**	**Justification of eligibility**
4.	This methodology is applicable to grid-connected renewable energy power generation project activities that:	The project activity is a Renewable Energy Project i.e., Solar Power Project

[7] https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9
[8] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[9] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[10] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v9.0.pdf
[11] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v11.0.pdf
[12] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf

	a. Install a Greenfield power plant; b. Involve a capacity addition to (an) existing plant(s); c. Involve a retrofit of (an) existing operating plant(s)/unit(s); d. Involve a rehabilitation of (an) existing plant(s)/unit(s); or e. Involve a replacement of (an) existing plant(s)/unit(s).	which falls under applicability criteria option 4(a) i.e., "Install a Greenfield power plant". Hence this clause is applicable to the project activity.
5.	In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: a. Integrate BESS with a Greenfield power plant; b. Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic1 or wind power plant(s)/unit(s); c. Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); d. Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s).	This project activity does not involve any integration of a Battery Energy Storage System (BESS). Hence, this clause is not applicable to the project activity.
6.	The methodology is applicable under the following conditions: a. Hydro power plant/unit with or without reservoir, wind power	The project activity involves construction and operation of greenfield grid-connected solar power

	plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; b. In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; c. In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g., by referring to feasibility studies or investment decision documents); d. The BESS should be charged with electricity generated from the associated renewable energy power	project and hence, condition 6(a) is applicable to the project activity. Since the project activity does not include capacity additions, retrofits, rehabilitations or replacements of existing plant/unit the applicability condition 6(b) is not applicable/relevant for the project activity. Since, there is no integration of BESS in the project activity, hence applicability conditions 6(c) and 6(d) are not applicable to the project.

	plant(s). Only during exigencies 2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g., week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.	
7.	In case of hydro power plants, one of the following conditions shall apply: a. The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or b. The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using	The project activity is a grid connected renewable Solar energy project. This condition is applicable only for hydro power plants and not applicable for Solar projects. Therefore, this condition is not applicable for project activity.

	equation (7), is greater than 4 W/m^2; or c. The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m^2; or d. The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m^2, all of the following conditions shall apply: i. The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m^2; ii. Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; iii. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 shall be: a) Lower than or equal to 15 MW; and b) Less than 10 per cent of the total installed	

	capacity of integrated hydro power project.	
8.	In the case of integrated hydro power projects, project participants shall: **a.** Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or **b.** Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	The project activity is a grid connected renewable Solar PV energy project. This condition is applicable only for hydro power plants and not applicable Solar projects. Therefore, this condition is not applicable for project activity.

9.	The methodology is not applicable to: **a.** Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; **b.** Biomass fired power plants/units.	The project activity is an installation of a new grid connected renewable energy project and does not involve switching from fossil fuel to renewable energy and hence this criterion is not applicable to the project activity.
10.	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	The project activity is a new grid connected renewable Solar energy plant and not a retrofits, replacement or capacity additions and therefore this criterion is not applicable to the project activity.
11.	In addition, the applicability conditions included in the tools referred to below apply.	The applicability of the tools is outlined below.

Applicability conditions for Tool 7: Tool to calculate the emission factor for an electricity system (version 07.0)		
Para No.	**Applicability Conditions**	**Justification of eligibility**
3.	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies	As per the approved consolidated methodology ACM0002 (Version 21.0), para 24: "If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the

	electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	project activity, which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the Tool to calculate the emission factor for an electricity system (Version 07.0)". Since the project activity is a greenfield grid connected solar power project this condition is applicable, therefore OM, BM and CM are estimated using this tool (under section B.6.1) for calculating of the baseline emission.
4.	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e., option II a and option II b. If option II a is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" of TOOL07 should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid	Since the project activity is grid connected, the condition is applicable and emission factor has been calculated accordingly.

	power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	
5.	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	The project activity is located in India, a Non-Annex I country. Therefore, this condition is not applicable to the project activity.
6.	Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	The project activity involves construction and operation of greenfield grid-connected solar project using renewable energy for generation of electricity, and hence the condition of biofuel emission factor is not applicable.

Applicability conditions for Tool 1: Tool for the demonstration and assessment of additionality Version 07.0.0		
Para No.	**Applicability Conditions**	**Justification of eligibility**
9.	The use of the "Tool for the demonstration and assessment of additionality" is not mandatory for project participants when proposing new methodologies. Project	The project owner does not propose any new methodologies to demonstrate additionality. The methodology ACM0002 (version 21.0) is approved in CDM and the tool is

	participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.	included by the same approved. Thus, the criteria is found to be applicable.
10.	Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.	The methodology ACM0002 (version 21.0) is approved in CDM and the tool is included by the same approved. Thus, the criteria is found to be applicable.

Applicability conditions for Tool 27: Investment analysis (Version 9.0)		
Para No.	**Applicability Conditions**	**Justification of eligibility**
2.	This methodological tool is applicable to project activities that apply the methodological tool "Tool for the demonstration and assessment of additionality", the methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality", the guidelines "Non-binding best practice examples to demonstrate additionality for SSC project activities", or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.	Project activity applies "Tool for the demonstration and assessment of additionality". Hence this tool is applicable.

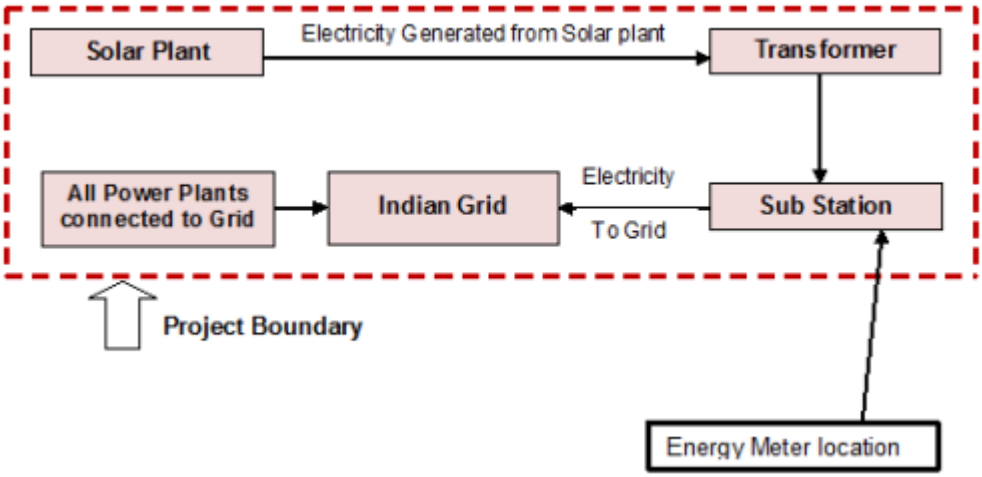
3.	In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.	The methodology ACM0002 (version 21.0) is approved in CDM and the project activity tool is included by the same approved. And the project activity applies "Tool for the demonstration and assessment of additionality". Thus, the criteria is found to be applicable.

Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, TOOL11, Version 03.0.1.	
1. This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism.	This condition is applicable. Stepwise procedure has been demonstrated under section B.4 for assessment of the validity.
2. The tool consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period.	This condition is applicable. Stepwise procedure has been demonstrated under section B.4 for assessment of the validity.

B.3. Project boundary

Project boundary has ascertained using ACM0002 (Version 21.0, para 22) - "The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the project power plant is connected to."

The project boundary includes the Solar PV Plant, transformer, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the Indian grid. Therefore, the entire Indian grid and all connected power plants have been considered in the project boundary for the proposed GS4GG project activity.



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

B.4. Establishment and description of baseline scenario

As per the approved consolidated Methodology ACM0002 (Version 21.0, para 24): "If the project activity is the installation of a Greenfield power plant with or without a BESS, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in Tool 07 (Tool to calculate the emission factor for an electricity system).

The project activity involves setting up of Solar project to harness the power of Solar to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants.

Updated baseline for the second crediting period in line with the "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period." Version 03.0.1, EB 66, Annex 47[13].

This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism.

The tool stipulates the following steps to be carried out.

Step 1: Assess the validity of the current baseline for the next crediting period

The "Procedures for the renewal of the crediting period of a registered CDM project activity" approved by the CDM Executive Board require assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline.

The validity of the current baseline is assessed using the following Sub-steps:

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The baseline scenario remains unchanged and is in complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period, go to Step 1.2.

Step 1.2: Assess the impact of circumstances

The baseline scenario identified at the validation of the project activity was 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. Thus, this project activity was a voluntary investment which intends to replace equivalent amount of electricity at grid from renewable source. PP was not bound to incur this investment; hence absence of project activity (i.e., the investment) does not lead to any continued baseline practice for PP within their scope whereas the continued operation of the project activity would continue to replace equivalent amount of electricity at grid. Hence, the same baseline as identified in the previous crediting period is still valid for the project. Therefore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period under CDM.

[13] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf

Nevertheless, there is an impressive growth attained by the Indian Power Sector within the recent years, the installed capacity has grown from mere 1,713 MW in 1950 to 399,496.61 MW as on 31.03.2022. Sector-wise de-tails of installed capacity are shown in Table 1. However, it is evident from Table 1[14] that the installed capacity is predominantly coal based and therefore, is a major source of carbon dioxide emissions in India. Hence, there exists scope for reducing the CO_2 emissions in the country by increased use of renewable energy sources.

Furthermore, project participant has considered the latest available CO_2 Baseline Database (CEA database, version 18) at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission. As per below table, the fossil fuel based thermal power generation is dominant over the renewable based power generation, thus baseline scenario remains same as original.

Table 1: Sector- wise installed capacity (MW) as on 31/03/2022 (CEA Database version 18)

Sector	Thermal					Nuclear	Hydro	RES	Total
	Coal	Lignite	Gas	Diesel	Total				
State	66831.50	1150.00	7087.36	236.01	75304.86	0.00	27126.80	2423.31	104854.98
Central	64050.00	3640.00	7237.91	0.00	74927.91	6780.00	15646.72	1632.30	99004.93
Private	73198.00	1830.00	10574.24	273.70	85875.95	0.00	3931.00	105829.76	195636.71
All In-dia	204079.50	6620.00	24899.51	509.71	236108.72	6780.00	46722.52	109885.38	399496.61

Thus, current baseline remains same and there is no impact if circumstances, existing at the time of requesting renewal of crediting period.

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

As explained in step 1.2, the baseline scenario was the electricity import/generation from the power plants connected to the electricity grid. The project activity in green field project and there is no any baseline equipment or investment involved in project activity. Therefore, this condition is not applicable to the project activity.

[14] https://cea.nic.in/wp-content/uploads/baseline/2023/01/Approved_report_emission__2021_22.pdf#page=26

Step 1.4: Assessment of the validity of the data and parameters

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

In the context of the present project activity the emission factor has been updated along with the approach used to calculate the emission factor.

Step 2: Update the current baseline and the data and parameters

As evident from the explanation provided above the baseline scenario remains unchanged. Only the approach used to calculate the baseline emission factor is updated as per the latest version of CEA database available at the time of PDD submission for renewal.

In line with the project standard version 03.0, the impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period; and the correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period Impact of the national and/or sectoral policies and circumstances upon the baseline scenario of the project activity.

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

Section 3 of the said act required the Central Government to prepare the national electricity policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy. In accordance with the section 3 of the Electricity Act 2003, the Central Government notified the National Electricity Policy[15] on 12th February 2005 which was in force at the time of completion of the baseline study as stated in the registered PDD of the project activity. This policy has not been revised since then and is currently in force as well.

[15] http://www.cercind.gov.in/Act-with-amendment.pdf

In addition to the above policies, State Electricity Regulatory Commissions (SERCs) have announced preferential tariffs and Indian Renewable Energy Development Agency (IREDA) provides term loan assistance towards establishing biomass power projects. All these fiscal and financial incentives were in force at the time of completion of the baseline study for the registered PDD of the project activity and still continue to exist.
The state electricity regulatory commission issues tariff order in respect of procurement of power generated from renewables and there is no mandatory national and/or sectoral policies have come into effect that would affect the compliance of the current baseline. Hence, it can be concluded the current baseline complies with all relevant mandatory national and/or sectoral policies that have come into effect after the submission of the project activity for validation and are applicable at the time of requesting renewal of the crediting period.
However, in spite of the financial incentives given by the government to renewable power projects in India the generation from the low cost must run resources connected to the Southern Grid has not increased to such an extent that this would lead to more than 50% contribution from the low cost must run resources towards the total generation from the Southern Grid.
The approved large-scale methodology for Grid-connected electricity generation from renewable sources, ACM0002 (Version 21.0), has been used to determine the baseline and the estimation of emission reductions for the applicable crediting period. As referred in the methodology "Tool to calculate the emission factor for an electricity system" (version 07.0) has been used to determine continued validity of the baseline based on combined margin (CM) calculations.
As per CEA database version 18, the fossil fuel dominated electricity is more than renewable sector and is continuing with same pattern. In light of the above discussion, it is to be concluded that in accordance with relevant guidelines stipulated in the Project Standard version 03.0, national and/or sectoral policies and circumstances had been considered towards formulating the OM & BM baseline scenario. Hence the baseline scenario as applied for the present project activity remains justified.
As per the approved large-scale methodology for Grid-connected electricity generation from renewable sources, ACM0002 (Version 21.0) para 24: "If the project activity is the installation of a Greenfield power plant, the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".
The project activity involves setting up of wind project to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants.
In the absence of the project activity, the equivalent amount of power would have been drawn from the Indian grid. Hence, the baseline for the project activity is the equivalent amount of power from the Indian grid.
The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official

source (where available) and made publicly available. The CEA database version 18 is the latest available data at the time of PDD submission to VVB for validation, hence same is considered for emission factor calculations.

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

Annexure 3 of the EB 22 states that national and/or sectoral policies and circumstances have to be accounted for when considering the baseline scenario.

Para 7(a) of the same states that, only those national and/or sectoral policies or regulations under paragraph 6(a) i.e., type E+ policy that increase GHG emissions, that have been implemented before adoption of the Kyoto Protocol by the COP (decision 1/CP.3, 11 December 1997), shall be taken into account when developing a baseline scenario. The Electricity Act of 2003 promoted cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity (Refer Section 86(1) of Electricity Act 2003). Therefore, it could be seen that the provincial and sectoral policies are E- i.e., policies that decrease GHG emissions and are after November 2001. Hence the baseline scenario is the electricity generation by grid connected fossil fuel dominated power plants confirming to Annex 3 of EB 22.

Further, the baseline alternative mentioned above is in compliance with all the applicable regulatory policies and laws. Additionally, the project participant is under no compulsion to opt for any particular technology or even a renewable mode of power generation. There is no governmental body or EB policy which requires a particular kind of fuel to be chosen and there is no legal requirement to which the above alternative does not conform. The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official source (where available) and made publicly available. The CEA database version 18[16] is the latest available data at the time of PDD submission to VVB for validation, hence same is considered for emission factor calculations.

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

Parameter	Value	Nomenclature	Source
			Calculated as the weighted average of the operating margin (0.75) &

[16] https://cea.nic.in/wp-content/uploads/baseline/2023/01/version_18.zip

$EF_{grid,CM,y}$	0.9310	Combined margin CO_2 emission factor for the project electricity system in year y	build margin (0.25) values, sourced from Baseline CO_2 Emission Database, Version 18.0, Dec 2022 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,OM,y}$	0.9518	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3-year (2019-20, 2020-21, 2021-22) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 18.0, Dec 2022 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8687	Operating margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 18.0, Dec 2022 published by Central Electricity Authority (CEA), Government of India

Calculation of Baseline Emission

As per the approved consolidated Methodology ACM0002 (Version 21.0, para 47)

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:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad \text{……Equation 11}$$

Where:

BE_y = Baseline emissions in year y (tCO_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)

$EG_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using TOOL07 (tCO_2/MWh)

CO_2 Baseline Database for the Indian Power Sector, Version 18, Dec 2022 published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.

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 synchronized 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	Rajasthan
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, Solar, low-cost biomass, nuclear and solar generation.

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

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
India	14.3%	14.5%	17.0%	16.5%	15.8%

Data Source: Central Electricity Authority (CEA) database Version 18, Dec 2022[17]

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:

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

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 PDD to the VVB 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.

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

[17] https://cea.nic.in/wp-content/uploads/baseline/2023/01/version_18.zip

Net Generation in Operating Margin (GWh) (incl. Imports)			
	2019-2020	2020-2021	2021-2022
INDIAN Grid	965,009	958,218	1,035,672

Simple Operating Margin (tCO_2/MWh) (incl. Imports)			
	2019-2020	2020-2021	2021-2022
INDIAN Grid	0.9541	0.9402	0.9605

Weighted Generation Operating Margin	
INDIAN Grid	0.9518

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 PDD submission to the VVB 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 VVB. 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 PDD and is fixed for the entire crediting period.

Build Margin (tCO_2/MWh) (not adjusted for imports)	
	2021-2022
INDIAN Grid	0.8687

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}:

Solar 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, $EF_{grid,CM,y}$ = 0.9518 * 0.75 + 0.8687 * 0.25

= 0.9310

Baseline emission factor (EF_y)

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

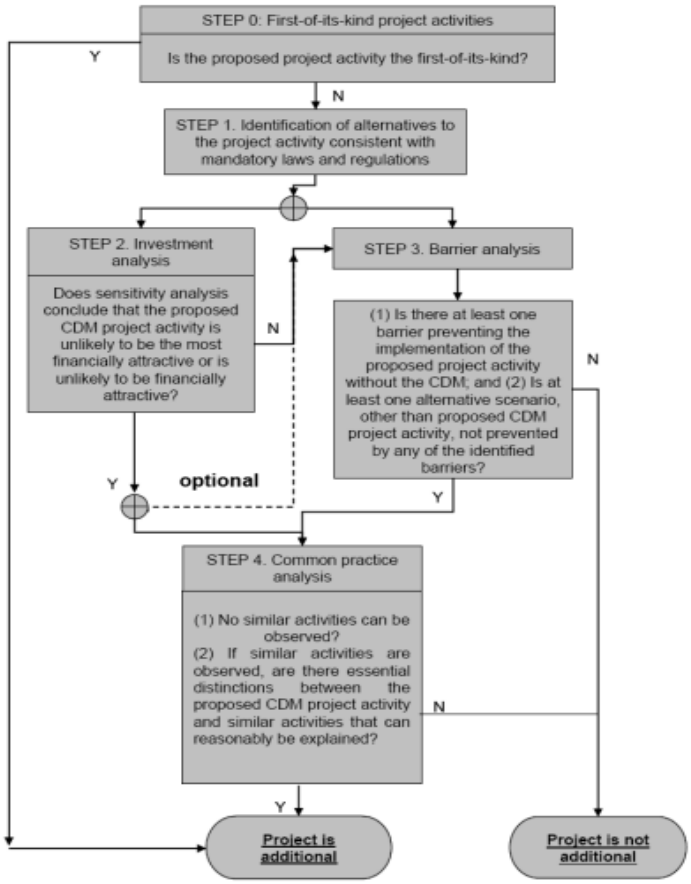
Therefore, $EF_y = EF_{grid,CM,y}$ = 0.9310 tCO_2/MWh

BE_y = 974,133 x 0.9310

= 906,917 tCO_2e

B.5. Demonstration of additionality

The project generates power using solar energy which is a renewable, zero emission source of energy. Baseline considerations for the project are based on approved consolidated baseline methodology ACM0002 (Version 21.0). The methodology requires the project investor to determine the additionality based on "Methodological Tool 01-Tool for the demonstration and assessment of additionality", Version 7.0.0. The step-wise approach to establish additionality of the project activity has been followed, details of which are provided in the following paragraphs -



The additionality of the Project activity is ascertained in line with the applicable guidance from the UNFCCC. The demonstration of additionality for the proposed Project activity is being carried out in accordance with the additionality tool provided by the UNFCCC i.e., "Tool for demonstration and assessment of additionality" Version 07.0, The tool provides a step-wise approach to demonstrate additionality which is displayed below.

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

The proposed project activity is not the first-of-its-kind. Hence not applicable.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

As per the applied methodology ACM0002 version 21.0; Para 24, if the project activity is the installation of a Greenfield power plant with or without a BESS, the baseline scenario is electricity generated by the project activity would have otherwise been generated by the operation of grid connected power plant and by the addition of new generation sources.

As the baseline scenario is prescribed by applied methodology, hence no further analysis is carried out to identify alternatives.

Step 2: Investment analysis

Determine whether the proposed project activity is economically or financially less attractive than at least one other alternative, identified in step 1, without the revenue from the sale of emission reductions credits. To conduct the investment analysis, use the following sub-steps:

Sub-step 2a: Determine appropriate analysis method

As per "Tool for the demonstration and assessment of additionality" (version 07.0.0, EB 70 annex 08), for financial analysis of the project, the following three options are available:

Option I: Simple Cost Analysis

Option II: Investment Comparison Analysis

Option III: Benchmark Analysis

The project will generate revenues from savings occurred from electricity generation from Solar PV plant being a captive project, therefore Option I is not applicable. Option II also does not apply since there is no comparable investment alternative available to the project participant. The most appropriate financial analysis method is therefore option III: the benchmark analysis, where the returns on investment in the project activity are compared to benchmark returns that are available to any investors in the country.

Sub-step 2b (Option III): Apply benchmark analysis

Project participant has considered Post-Tax Equity IRR for investment analysis at the time of decision-making. As Project participant is only interested in the returns project is generating on the portion of investment costs, which is financed by them in the form of equity.

The guidance of Investment Analysis is used for project activity. As per guidance Required/expected returns on equity are appropriate benchmarks for an equity IRR. Therefore, the Expected return on equity is considered appropriate benchmark.

Accordingly, the post-tax Equity IRR has been considered as the relevant financial indicator for Investment Analysis.

Choice of Benchmark:

As per Investment Analysis tool, Required/expected returns on equity are appropriate benchmarks for equity IRR. The Equity IRR is considered as the financial indicator and the benchmarks used is cost of equity. Hence the benchmarks used are applicable to the project activity and the type of IRR calculation presented.

Version 9.0 of methodological tool "Investment Analysis" is used, which is appropriate and more conservative for benchmark calculation and PP has considered the same tool for default value of return on equity for the respective SPVs. The default value of Return on Equity for Group-1 projects in India is 9.79 % as per EB 101, Annex 11.

Appropriateness of using benchmark analysis for additionality demonstration and its conformity to guidance 16 of Annex 11, EB 101[18]-

Considering the fact that the alternative to the project is the supply of electricity from the grid & the choice of the developer is to invest or not to invest, benchmark analysis has been considered appropriate to circumstances where the baseline does not require investment or is outside the direct control of the project developer, i.e., cases where the choice of the developer is to invest or not to invest. Benchmark analysis has been considered appropriate for demonstration of additionality, which is in conformity with guidance 16 of Annex 11 EB 101.

Benchmark Calculation

As per the guidelines of Methodological Tool- Investment Analysis (para 15, version 9.0) "The applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate". Since in this project activity, equity IRR has been considered as financial indicator, hence as per guidance 16, Required/expected returns on equity are considered as appropriate benchmarks and benchmark supplied by relevant national authorities has been used.

Since the choice of benchmark is based upon parameters that are standard in the market, hence as per Guidance 19 of EB 101 Annex 11, "the cost of equity should be determined either by: (a) selecting the values provided in the Appendix; or by (b) calculating the cost of equity using CAPM". Hence as per option (a), the default value for India is being considered as per the value provided in Appendix of EB 101 Annex

[18] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v9.0.pdf

11[19]. The benchmark thus selected complies as per the relevant guidelines on Investment Analysis.

Further as per guidance 16 of EB 101 Annex 11, "In situations where an investment analysis is carried out in nominal terms and the available IRR benchmarks are in real terms, project participants shall convert the real term values of benchmarks to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period". Following the above guidance, the default value is being converted to nominal values by adding inflation rate for 10 years[20], as per the inflation forecast rate provided by Reserve Bank of India.

Default Value Benchmark:

The cost of equity is determined by selecting the values provided in the Appendix, i.e., Default values for cost of equity (expected return on equity) is presented below: Appendix A in EB 101, Annex 11 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = 9.79%

The required return on equity (benchmark) was computed in the following manner:

Nominal Benchmark= {(1+Real Benchmark) * (1+Inflation rate)}-1

Where:

- Default value for Real Benchmark = 9.79%

- Inflation Rate forecast for by Reserve Bank of India (RBI) (i.e., Central Bank of India) for India & in case where RBI Inflation forecast was not available Average Inflation rate forecast for India has been sourced from IMF web site.

Benchmark estimation:

Appendix A in EB 101, Annex 11 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = 9.79%

Inflation Forecast for India as per RBI website[21]-

Project Investor	**Inflation Forecast WPI Median value from RBI**	**Benchmark**

[19] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v9.0.pdf
[20] Since RBI provides inflation forecast only for 5 years and 10 years, hence inflation forecast for 10 years is being considered keeping in view length of crediting period to be 7 years.
[21] Reserve Bank of India - Publications (rbi.org.in)

Adani Solar Energy Jodhpur three private limited (earlier known as SB Energy One Private Limited)	7.63%	13.41%
Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Private Limited)	7.63%	13.41%

Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):

Input values used in all investment analysis shall be valid and applicable at the time of the investment decision taken by the project participant which can be clearly validated by the VVB; thus, it complies with guidance 10 of EB 101, Annex 11. Key assumptions used for calculating post-tax Equity IRR applicable at the time of investment decision, which is in line with are set out below:

Input Values for 300 MW Solar PV project by Adani Solar Energy Jodhpur three private limited (earlier known as SB Energy One Private Limited) are as follows:

Cost of the Project Activity	
SPV Name	Adani Solar Energy Jodhpur three private limited
Project Location	Bhadla
State	Rajasthan
AC Project Capacity (MW)	300
Date of Commissioning	31-Aug-2018
Life of Plant in years	25
	DPR
	14-Mar-17

in INR MN

Items	Cost	Tax	Cost + Tax
Total Project Cost	15,000.00	-	15,000.00
Total	15,000.00	-	15,000.00
O&M Expenses	150.00	-	150.00
	5% Escalation, starting from 2nd Yr.		

Assumptions and Values considered for Financial Analysis are as follows:

Adani Solar Energy Jodhpur three private limited		Equity IRR	Benchmark (Equity IRR)
		7.63%	13.41 %
Assumption and financial of the project			
Details of the project		Source	Link
State where the project is situated	Rajasthan	As per DPR	
Total Capacity (MW)	300.00	As per DPR	
Expected Date of Commissioning	31-Aug-18	As per DPR	
Life of the plant (Yrs.)	25	As per DPR	
Generation of electricity			
PLF (%)	28.08%	As per Actual maximum achieved PLF	
Annual generation (kWh)	737,942,400	Calculated Value	
Annual Degradation per year	0.50%	As per DPR and per Rajastha n tariff order	http://rerc.rajasthan.gov.in/TariffOrders/error PG
Tariff rate at the decision making (INR/kWh)	2.45	As per DPR	
Operation and maintenance cost and Insurance			
O & M Expenses (INR Mn.)	150.00	As per DPR	
Escalation in the Operational expenses (%)	5.00%	As per DPR	
Insurance (INR Mn.)	150.00	CERC order	http://www.cercind.gov.in/2016/orders/SO17. Pdf
Financial parameters			
TOTAL COST (INR Mn.)	15,000.00	As Per DPR	
Loan Amount (INR Mn.)	10,500.00	As Per DPR	
Equity Investment (INR Mn.)	4,500.00	As Per DPR	
Term loan			

Loan Amount (INR Mn.)	10,500.00	As Per DPR	
Interest rate (%)	11.00%	As Per DPR	
Loan Tenure (Qtr.)	48	Assumption	
Moratorium Period (Qtr.)	-	Assumption	
Repayment Period (Qtr.)	48	Calculated Value	
Repayment value instalments (INR Mn.)	218.750	Calculated Value	
1st instalment from (Qtr. end)	31-Dec-18	Considered from the next Quarter End	
Book Depreciation (SLM Method)			
Gross Depreciable Value (INR Mn.)	15,000.00	Calculated Value	
Salvage Value (%)	10.00%		
Salvage value (INR Mn.)	1,500.00	Calculated Value	
Net Depreciable Value (INR Mn.)	13,500.00	Calculated Value	
Residual Value (INR Mn.)	1,500.00	Calculated Value	
IT Depreciation			
IT Depreciation (%)	80%	IT act	https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm
Income Tax			
Financial Year	FY 2018-19		
Income tax rate (%)	30.00%	As Per Income Tax Rule, Pg 29, Para E(I)	https://www.indiabudget.gov.in/budget2017- 2018/ub2017-18/fb/bill.pdf
Corporate Tax / MAT (%)	33.00%	As Per IT rule	https://www.bankbazaar.com/tax/corporate-tax.html
GST (%)	18.00%	As Per Income Tax Rule	https://www.indiabudget.gov.in/budget2017-2018/ub2017-18/fb/bill.pdf
Surcharge (%)	10.00%	As Per Income Tax Rule	https://taxguru.in/income-tax/income-tax-slabs-ay-201819-fy-201718.html
Education cess (%)	4.00%	As Per Income Tax Rule, Pg 5, 11 and 12	https://taxguru.in/income-tax/education-cess- increased-3-4-health-education-cess-fy201819-effect-taxpayers-tax-liability.html

Final Tax rates			
Income tax rate (%)	34.32%	Calculated Value	
MAT (%)	37.75%	Calculated Value	
Service Tax (%)	18.72%	Calculated Value	

Sensitivity analysis is as follows-

Final Results	Equity IRR		Benchmark (Equity IRR)	
	7.63%		13.41%	
Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	4.51%	7.63%	11.18%	15.72%
O&M	8.10%	7.63%	7.17%	-126.30%
Project Cost	11.04%	7.63%	5.19%	-15.23%
Tariff Rate	4.51%	7.63%	11.18%	15.72%

Input Values for 100 MW Solar PV project by Adani Solar Energy Jodhpur four private limited (earlier known as SB Energy Three Private Limited) are as follows:

Cost of the Project Activity	
SPV Name	Adani Solar Energy Jodhpur four private limited
Project Location	Bhadla
State	Rajasthan
AC Project Capacity (MW)	100
Date of Commissioning	31-Aug-2018
Life of Plant in years	25
	DPR
	8-Mar-17

in INR MN

Items	Cost	Tax	Cost + Tax
Total Project Cost	5,000.00	-	5,000.00
Total	5,000.	-	5,000.0

	00		0
O&M Expenses	50.00	-	50.00
	5% Escalation, starting from 2nd Yr.		

Assumptions and Values considered for Financial Analysis are as follows:

Adani Solar Energy Jodhpur four private limited	Equity IRR	Benchmark (Equity IRR)
	7.63%	13.41%

Assumption and financial of the project			
Details of the project		Source	Link
State where the project is situated	Rajasthan	As per DPR	
Total Capacity (MW)	100.00	As per DPR	
Expected Date of Commissioning	31-Aug-18	As per offer letter	
Life of the plant (Yrs.)	25	As per DPR	
Generation of electricity			
PLF (%)	28.08%	As per Actual maximum achieved PLF	
Annual generation (kWh)	245,980,800	Calculated Value	
Annual Degradation per year	0.50%	As per DPR and per Rajasthan tariff order	http://rerc.rajasthan.gov.in/TariffOrders/ errorPG
Tariff rate at the decision making (INR/kWh)	2.45	As per DPR	
Operation and maintenance cost and Insurance			
O & M Expenses (INR Mn.)	50.00	As per DPR	
Escalation in the operational expenses (%)	5.00%	As per DPR	
Insurance (INR Mn.)	50.00	CERC order	http://www.cercind.gov.in/2016/orders/SO17.pdf
Financial parameters			

TOTAL COST (INR Mn.)	5,000.00	As Per DPR	
Loan Amount (INR Mn.)	3,500.00	As Per DPR	
Equity Investment (INR Mn.)	1,500.00	As Per DPR	
Term loan			
Loan Amount (INR Mn.)	3,500.00	As Per DPR	
Interest rate (%)	11.00%	As Per DPR	
Loan Tenure (Qtr.)	48	Assumption	
Repayment Period (Qtr.)	48	Calculated Value	
Repayment instalments value (INR Mn.)	72.917	Calculated Value	
1st instalment from (Qtr. end)	31-Dec-18	Considered from the next Quarter End	
Book Depreciation (SLM Method)			
Gross Depreciable Value (INR Mn.)	5,000.00	Calculated Value	
Salvage Value (%)	10.00%		
Salvage value (INR Mn.)	500.00	Calculated Value	
Net Depreciable Value (INR Mn.)	4,500.00	Calculated Value	
Residual Value (INR Mn.)	500.00	Calculated Value	
IT Depreciation			
IT Depreciation (%)	80%	IT act	https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.Html
Income Tax			
Financial Year	FY 2018-19		
Income tax rate (%)	30.00%	As Per Income Tax Rule, Pg 29, Para E(I)	http://indiabudget.nic.in/budget2015-2016/ub2015-16/fb/bill.pdf
Corporate Tax / MAT (%)	33.00%	As Per IT rule	https://www.bankbazaar.com/tax/corporate-tax.html

Service Tax (%)	18.00%	As Per Income Tax Rule	http://taxguru.in/service-tax/service-tax- rate-chart-effect-01062016.html
Surcharge (%)	10.00%	As Per Income Tax Rule	http://taxguru.in/income-tax/income- tax-rate-chart-assessment-year-201516-financial-year-201415.html
Education cess (%)	4.00%	As Per Income Tax Rule, Pg 5, 11 and 12	http://taxguru.in/income-tax/income- tax-rate-chart-slabs-for-ay-2017-18-fy- 2016-17.html
Final Tax rates			
Income tax rate (%)	34.32%	Calculated Value	
MAT (%)	37.75%	Calculated Value	
Service Tax (%)	18.72%	Calculated Value	

Sensitivity Analysis of the project are as follows-

Final Results	Equity IRR		Benchmark (Equity IRR)	
	7.63%		13.41%	
Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value
PLF	4.51%	7.63%	11.18%	15.72%
O&M	8.10%	7.63%	7.17%	-126.30%
Project Cost	11.04%	7.63%	5.19%	-15.23%
Tariff Rate	4.51%	7.63%	11.18%	15.72%

The project activity cannot be considered as financially attractive as the equity IRR for the project activity is less than the Benchmark.

Project Investor	Equity IRR	Benchmark (Equity IRR)
Adani Solar Energy Jodhpur three private limited	7.63%	13.41%

Project Investor	Equity IRR	Benchmark (Equity IRR)
Adani Solar Energy Jodhpur four private limited	7.63%	13.41%

Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):

The Post tax Equity IRR is evaluated for the entire lifetime of the project activity, i.e., 25 years. It is calculated based on the cash outflows from and cash inflows into the project activity.

Key Assumptions supporting financial projections are provided in excel spreadsheet to the VVB and the same has been summarized in Annex-1 of this report.
Based on result of IRR excel spreadsheets, equity IRR is less than Benchmark.

This substantiates that the investment is not financially attractive (Equity IRR for the project activity is less than the Benchmark). Thus, it can be easily concluded that project activity is additional & is not business as usual scenario.

Sub-step 2d: Sensitivity Analysis

Addressing Guidance 28 & 29 of EB 101, Annex 11, following factors has been subjected to sensitivity analysis:

1. PLF
2. O&M Cost
3. Project Cost
4. Tariff

The rationale of sensitivity is, "The ultimate objective of the sensitivity analysis is to determine the likelihood of the occurrence of a scenario other than the scenario presented, in order to provide a cross-check on the suitability of the assumptions used in the development of the investment analysis."

The results of sensitivity analysis show that even with a variation of +10% & -10% in project cost, O&M cost, PLF and Tariff Rate Equity IRR is significantly lower than the benchmark. And it is evident from the results given above; the project remains additional even under the most favorable conditions.

Probability to breach the benchmark:
Sensitivity Parameter 1: PLF
PLF considered in financials for is as per DPR submitted by PP to financial institutions which is in line with **"Guidelines for the reporting and validation of Plant load factors" stated in EB48 Annex11 option 3(a).** Hence, variation in PLF of more than 10% is unlikely to happen as the PLF has been reported as per the Third-Party Report based on long term data.

Sensitivity Parameter 2: O&M
The sensitivity analysis reveals that O&M will breach the benchmark at negative values and is hypothetical case. Since the O&M cost is subject to escalation (as evidence by the O&M agreement) and also subject to inflationary pressure, any reduction in the O&M costs is highly unlikely. Hence, the reduction in the O&M cost is highly unlikely.
Sensitivity Parameter 3: Project Cost
Project Cost for financial analysis is considered from DPR of the project activity, being available at the time of investment making decision to go ahead with the project activity. The actual project cost is lower within 10% than the DPR cost. Since the Purchase Order cost is firm, there is no possibility of project cost going below this level. However, Sensitivity is carried out for threshold level below which benchmark is not breached.
Sensitivity Parameter 4: Tariff Rate
The tariff is determined by PPA which is fixed for entire lifetime of the project activity. Hence, there is no probability to get variation for the same. However, Sensitivity is carried out for +/-10% even then the benchmark is not breached.

Outcome of Step 2:

This substantiates that the investment is not financially attractive (Equity IRR for the project activity is less than the Benchmark Equity IRR) for any of the investor. Thus, it can be easily concluded that project activity is additional & is not business as usual scenario.

Step 3: Barrier analysis

Barrier analysis has not been used.

Step 4: Common practice analysis

For the concerned project activity, Common Practice Analysis has been carried out for 400 MW capacity Solar Project by Adani Renewable Energy DEVCO Private Limited (earlier known as SB Energy Pvt. Ltd.)

Stepwise approach for common practice analysis has been carried out as per Methodological tool "Common Practice", version 03.1 EB 84, Annex 7:

Step (1): Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.

Range	**Capacity**	**Unit**
+50%	600	MW
Capacity of the proposed project activity	400	MW
-50%	200	MW

Step (2): Identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

(a) The projects are located in the applicable geographical area;

(b) The projects apply the same measure as the proposed project activity;

(c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;

(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g., clinker) as the proposed project plant;

(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;

(f) The projects started commercial operation before the project design document (GS4GG-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Identification of the similar projects (CDM and non-CDM) is carried out as per sub-steps of Step (2) as follows:

a) As the project is located in Rajasthan state of India, therefore, projects in the geographical area of Rajasthan have been chosen for analysis. The project activity involves generation of electricity from Solar energy. The project activity is located in the states of Rajasthan in India and the policy applicable for the Solar projects is regulated by respective state policy. The policies/tariff for each state is regulated by State Electricity Regulatory Commissions of respective states and they differ for respective states. The project implemented in different states are claimed as different since the policies and regulations differ in each state. Each state has different policies regarding renewable energy; hence Rajasthan state is considered as geographical region for common practice analysis.

b) The project activity is a green-field Solar power project and uses measure (b) "Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies". Therefore, projects applying same measure (b) are candidates for similar projects.

c) The energy source used by the project activity is Solar. Hence, only Solar energy projects have been considered for analysis.

d) The project activity produces electricity; therefore, all power plants that produce electricity are candidates for similar projects.
e) The capacity range of the projects is within the applicable capacity range from 200 MW to 600 MW.
f) The start date of the concerned project activity is 12-March-2018. Therefore projects, which have started commercial operation before 12-March-2018, have been considered for analysis.

Numbers of Similar projects identified, which fulfil above-mentioned conditioned are $N_{Solar} = 0$

State wise commissioning status of grid connected Solar Power Projects (As on 31.03.2017)-MNRE, India and Publicly available data for solar projects in Rajasthan till March 2017[22].
http://mnre.gov.in/file-manager/UserFiles/state-wise-commissioned-grid-connected-solar-power- projects.htm

List of Solar Projects in Rajasthan (RRECL- Website) as on 31.10.2016. The projects of having capacity of 200 MW to 600 MW was being considered from publicly available data till Oct 2016.
http://energy.rajasthan.gov.in/content/dam/raj/energy/rrecl/pdf/Activities/Solar/4.37%20Details%20of%2 0commissioned%20Solar%20Projects.pdf

Step (3): Within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number, N_{all}.
The project activities, which have got registered or are under validation have been excluded in this step. The list of the power plants identified is provided to the VVB. After excluding the registered and under validation projects the total number of projects.
$N_{all} = 0$

[22] The source does not provide the COD dates; however, the list of eligible projects is being identified from the same source as it provides list of solar projects commissioned till 31/03/2017 and hence the latest available source of information. The list of identified projects is being crosschecked from the second source and all the projects falling in the identified range have been included for further consideration.

Step (4): Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}.

As per the tool on Common Practice, the project activities have been separated from the different technologies on the basis two criteria:

1. Size of Installation – Since project activity is large scale project, small and micro scale projects are considered as different technology project. Based on these criteria, there are no any different technology project out of similar identified projects.
2. Investment climate on the date of the investment decision – For proposed project activity, there are no any different technology project considered out of similar identified projects.
3. Hence, projects where either of the conditions is satisfied those projects are counted for calculating N_{diff} projects.

N_{diff} = 0

Step (5): Calculate factor F=1-Ndiff/Nall representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

Calculate F=1-Ndiff/Nall

F = 1-(0/0) = 1

As per methodological tool "common practice" version 03.1, the proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor F is greater than 0.2 and Nall - Ndiff is greater than 3.

Thus, if both conditions are fulfilled, then project activity will be a common practice otherwise, the project activity is treated as not a common practice.

Outcome of Common Practice analysis:

As,

i. F = 1; is greater than 0.2
ii. Nall - Ndiff = 0; is not greater than 3

The project activity does not satisfy second condition. Hence, project activity is not a common practice.

Thus, the proposed project activity is not a "common practice" within a sector in the applicable geographical area.

The above discussions show that solar power development is not a common practice and the project activity is not financially attractive; hence the project activity is additional.

B.5.1 Prior Consideration

As per rule update by Gold Standard dated 22/01/2015, "In order to be eligible under Gold Standard a retroactive project must submit the required documents to Gold Standard (time of first submission) within one year of its start date". Start date of the project activity is 18/09/2018. The GS listing was done on 08/01/2019. Thus, all GS documents were submitted to GS within 1 year of project start date.

B.5.2 Ongoing Financial Need

>> The project is seeking Design Certification renewal as the project was not financially lucrative considering the low IRR. The investment decision of the project was based on revenue from carbon financing that could boost lower rate of return from the project. The amount of electricity generated and sold to the grid is the only source of company's income and is central to the project's cash flow.

The generation amount of the project activity since its operation was higher compared to the estimated in the IRR of the project activity and the same can be checked with the previous verification of the project activity. The O&M cost of the project activity has also been increased from the cost considered in the registration time, the CER revenue is the critical in the project activity for positive return and to continue the project, the price 3 euro considered during the registration time, however the price of carbon credits reduced drastically in last several years[23] and it is less than 1$ in current market.

These incidents had forbidden the project proponent to realise revenue from sale of GS VER. Jeopardised with the burden of non-revenue realisation from carbon credit the project proponent was unable to cover up the financial requirement in proper schedule, nor could meet up the periodic cost of verification and certification cost.

[23] https://carboncredits.com/carbon-prices-today/

As the investment analysis was conducted throughout the life cycle of project activity, the same investment analysis is applicable for GS Project Cycle. The summary of investment analysis is given below:

1. **Selection of Benchmark:**

The benchmark was calculated by adding target inflation rate to default IRR value (Default IRR value for Type 1 project was defined by UNFCCC) to convert nominal value to real value. Default IRR value is 9.79%.

The inflation rate forecast for the ten years is published in Reserve Bank of India (RBI) "Results of the Survey of Professional Forecasters on Macroeconomic Indicators – 47th Round (Q2:2017-18)". The ten-year inflation forecast by RBI is 3.3%.

Benchmark = (1+ Expected return on equity (in real terms)) * (1+inflation rate) – 1

= 13.41%

2. **Equity IRR**

The Equity IRR was calculated as 7.63% which is smaller than the benchmark value which suggest that the project is dependent on carbon revenue to sustain. Also, the sensitivity analysis shows that even with a variation of +10% and -10% of Operation & Maintenance Cost (O&M Cost), Plant Load Factor (PLF), Tariff Rate, Project Cost, Interest Rate and Debt Equity Ratio, the equity IRR remains within Benchmark range. It is only with the expected revenue realisation of carbon finance the project financial viability could be attained.

The project is continuing the debt repayment for this project activity. Besides loan, the project was funded with equity also. The project activity is supplying power at PPA rate which is fixed. The income from GS certification will be used for loan repayment. Repayment of debt is required in order to sustain the project. Hence the financial need to sustain the project still remains same.

Realisation of carbon revenue is therefore essential to ensure the financial sustainability of the project towards ensuring contribution of sustainable development by the project.

The key development milestone for the project activity is given below:

Date (DD/MM/YYYY)	Activity
12/03/2018	Date of EPC Contract (supply agreement)
27/03/2018	Stakeholder Consultation for GS4GG
27/02/2017	Start date of the first crediting period in Verra
27/02/2017	Start Date of first monitoring period in Verra
18/09/2018	Earliest date of Solar project commissioning
31/12/2018	End Date of first monitoring period in Verra
01/01/2019	Start date of the first crediting period in Gold Standard
31/12/2023	End date of the first crediting period in Gold Standard
01/01/2024	Start date of the second crediting period in Gold Standard
31/12/2028	End date of the second crediting period in Gold Standard

Details of 1st CP issuances with amounts and dates are given below -

1. 01/01/2019 to 31/08/2019 – 608,592 tCO_2
2. 01/09/2019 to 30/09/2020 – 989,457 tCO_2
3. 01/10/2020 to 30/09/2021 – 943,156 tCO_2
4. 01/10/2021 to 30/09/2022 – 909,798 tCO_2

Table for estimated generation and realized amount during previous issuances are given below –

Sr. No.	Monitoring period	Estimated generation	Actual generation	Reason
1	01/01/2019 to 31/08/2019	554,273 MWh	649,658 MWh	This is mainly due to favorable environmental condition and not in control of PP during the current monitoring period from January 2019 to August 2019 which involved higher solar isolation.
2	01/09/2019 to 30/09/2020	903,260 MWh	1,056,224.83 MWh	This is due to higher PLF achieved due to increased solar radiation and is thus nature dependent and not in control of PP.
3	01/10/2020 to 30/09/2021	832,550 MWh	1,006,796.48 MWh	This is due to higher PLF achieved due to increased solar radiation and is thus nature dependent and not in control of PP.
4	01/10/2021 to 30/09/2022	832,550 MWh	971,188 MWh	This is due to higher PLF achieved due to increased solar radiation and is thus nature dependent and not in control of PP.

Though there are several barriers to the project proponent but project proponent has decided to continue the project activity with carbon revenue support. Further the project activity also contributing clear power in the grid as well as creating job opportunity and provides other economic benefits to neighbouring communities.

Thus, it is clearly evident that continue run the project is unsustainable without supporting carbon revenue. Hence, carbon revenue is therefore essential to ensure the financial sustainability of the project.

Investment analysis conducted during the second crediting period shows that the project is not economically feasible without GS VER credit income. Also, the sensitivity analysis confirms that the proposed project activity is unlikely to be financially attractive without the revenues from VERs as the IRR result (7.63%) is below the benchmark, which is 13.41%.

Consequently, the project activity was deemed as additional. Furthermore, the agreement signed with the supplier established a maintenance regime of the equipment. In line with this agreement, maintenance work is being carried out.

This maintenance work of the project proves to be a significant financial burden for the Project Activity. Therefore, carbon revenues derived from Gold Standard certification have played an essential role in helping Project Developer pay maintenance works of the equipment.

Ability of the project proponent to remit the debts in proper time and schedule depends on the revenue realisation from the carbon credits. More importantly, carbon finance is essential to ensure the financial sustainability and operational continuity of the project towards ensuring contribution of sustainable development.

It is in the context of the ongoing financial requirement, towards reducing the financial constraint of the project proponent and enhance project operational sustainability the revenue from sale of VER credit is essential for the project.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	SDG IMPACT **INDICATOR (PROPOSED OR SDG INDICATOR)**
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

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. 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 and better salary given due to project activity (8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities)
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	MWh of renewable energy generations (7.2.1 Renewable energy share in the total final energy consumption)

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

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 by state electricity board and O&M operator on monthly basis and provided in the share certificate/monthly report or equivalent. The other parameters used for net electricity supplied to grid are mentioned in monitoring plan. **QA/QC Process:** This parameter is monitored monthly and value of parameter will be cross checked with invoices. The meters will be calibrated on regular frequency.
SDG 8 – Decent Work and Economic Growth: Promote	**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

inclusive and sustainable economic growth, employment and decent work for all	**QA/QC Process**: This parameter is based on records, data and no any QA/QC procedure required. The VVB 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 18, 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.6.2 Data and parameters fixed ex ante

SDG13

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 18, Dec 2022[24]
Value(s) applied	0.9518
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07.0" as per the latest data available for the most three recent years 2019-20, 2020-21 and 2021-22. The data is obtained from "CO_2 Baseline Database for Indian Power Sector" version 18.0, 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.

[24] https://cea.nic.in/wp-content/uploads/baseline/2023/01/version_18.zip

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 18, Dec 2022[25]
Value(s) applied	0.8687
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most recent year 2021-22. The data is obtained from "CO_2 Baseline Database for Indian Power Sector" version 18, 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.

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 18, Dec 2022[26]
Value(s) applied	0.9310
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: $\mathbf{EF_{grid,BM,y}}$= Build margin CO_2 emission factor in year y (tCO_2/MWh) $\mathbf{EF_{grid,OM,y}}$= Operating margin CO_2 emission factor in year y (tCO_2/MWh) $\mathbf{W_{OM}}$ = Weighting of operating margin emissions factor (%) = 75% $\mathbf{W_{BM}}$= Weighting of build margin emissions factor (%) = 25%

[25] https://cea.nic.in/wp-content/uploads/baseline/2023/01/version_18.zip
[26] https://cea.nic.in/wp-content/uploads/baseline/2023/01/version_18.zip

Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

B.6.3 Ex ante estimation of SDG Impact

SDG 7: Affordable and Clean Energy-Project expected to generate 974,133 MWh clean energy every year

SDG 8: Decent Work and Economic Growth - Minimum 1 training to be carried out annually, apart from providing employment to approximately 10 persons.

SDG13: Climate Action - The project leads to mitigation of 906,917 tCO_2 per annum.

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13: Climate Action

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
01/01/2024 to 31/12/2024	916,032	0	916,032
01/01/2025 to 31/12/2025	911,452	0	911,452
01/01/2026 to 31/12/2026	906,895	0	906,895
01/01/2027 to 31/12/2027	902,360	0	902,360
01/01/2028 to 31/12/2028	897,848	0	897,848
Total	**4,534,587**	0	**4,534,587**
Total number of crediting years	5 years		
Annual average over the crediting period	906,917	0	906,917

SDG 7: Affordable and Clean Energy

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
01/01/2024 to 31/12/2024	0	983,923	983,923

01/01/2025 to 31/12/2025	0	979,004	979,004
01/01/2026 to 31/12/2026	0	974,109	974,109
01/01/2027 to 31/12/2027	0	969,238	969,238
01/01/2028 to 31/12/2028	0	964,392	964,392
Total	0	**4,870,665**	**4,870,665**
Total number of crediting years	5 years		
Annual average over the crediting period	0	974,133	974,133

Since project activity is renewable electricity generation, the quantity of Affordable and Clean Energy is mentioned under project estimate. In baseline, no any renewable energy generation, hence mentioned as zero.

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment to around 10 persons. Also due to implementation of project activity, the local people are getting better salary than the national average.

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

SDG Indicator: 7.2.1 Renewable energy share in the total final energy consumption

Data / Parameter	$EG_{PJ, y}$
Unit	MWh/y
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Source of data	Monthly joint meter reading reports

Value(s) applied	974,133
Measurement methods and procedures	Data Type: Measured Monitoring equipment: Energy Meters of accuracy class 0.2s Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually. Archiving Policy: Paper &/or Electronic Calibration frequency: Once in 5 years as per CEA guidelines[27]. Net electricity supplied to the grid by the project plant in a given month: (Export, kWh – Import, kWh) Common metering at the substation: All the plants (including the project activity solar plant and other investors solar plant) are connected to a Pooling substation 132/220 KV GSS II and further electricity is transferred to 220/400 KV RRVPNL substation. The common metering point at RRVPNL substation consists of both main & check meters (ABT Meters) having accuracy class of 0.2s. The export/import losses between these two substations are apportioned based on pooling substation readings. PD has used invoices for crosschecking with JMR for monthly meter readings. The difference of final apportioned value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.
Monitoring frequency	Continuous measurement & monthly recording
QA/QC procedures	Calibration of all the meters will be undertaken once in 5 years as per CEA guidelines[28]. The meters will be of accuracy class 0.2s. Please refer to Annexure 1 for meter details.
Purpose of data	To Monitor the SDG 7 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-VERs for this project activity, whichever occurs later.

[27] https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf
[28] https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf

SDG Indicator: 13.2.1

Data / Parameter	ER_y
Unit	tCO_2e/year
Description	Emission reductions achieved per year
Source of data	As per Estimated ER sheet. During the verification, the results shall be obtained from the Actual ER sheet.
Value(s) applied	906,917
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-VERs for this project activity, whichever occurs later

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 and Salary
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data	Plant records, Salary slips or the training records for all the employees/Letter from O&M contractor for employment generation/ VVB 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 monitors 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 ensued that peoples 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". Also due to implementation of project activity, local people are getting better salary than national average.
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	-

SDG Indicator: 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training

Data / Parameter	Quality of Employment
Unit	Number
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/ VVB interview with employees, local stakeholders etc.
Value(s) applied	1 training per year
Measurement methods and procedures	Together with the technology supplier, the Project organize training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures. The training will be based upon soft as well as hard skills such as behavioral changes, computer skills, safety procedures, working at height etc.
Monitoring frequency	Annual
QA/QC procedures	The training records for all the employees
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

Principle 9.5 (Hazardous and non-hazardous waste)

Data / Parameter	Solid waste pollution from E-wastes
Unit	tonnes/year
Description	To mitigate/reduce the environmental impact identified with the generation of E-wastes during the operation of the project activity
Source of data	Records of E-waste maintained at the site
Value(s) applied	-
Measurement methods and procedures	E-waste generation during the operation of the project activity, is treated and disposed of as per the law. E-Waste Management Amendment rules, 2018.
Monitoring frequency	Annual
QA/QC procedures	The waste will be disposed to licensed third party vendor in compliance with all the local laws and E- waste management rules
Purpose of data	-
Additional comment	-

Data / Parameter	Solid waste pollution from Hazardous wastes
Unit	tonnes/year
Description	To mitigate/reduce the environmental impact identified with the generation of Hazardous solid wastes during the operation of the project activity
Source of data	Records of Hazardous waste maintained at the site
Value(s) applied	-
Measurement methods and procedures	Hazardous waste generated (transformer oil) during the operation of the project activity which is treated and disposed of as per the law. 1. Used Cotton 2. Damaged Transformers & Used Transformer Oil 3. Any other Waste categorized as Hazardous
Monitoring frequency	Annual
QA/QC procedures	The waste will be disposed to licensed third party vendor in compliance with all the local laws and hazardous waste management rules
Purpose of data	-
Additional comment	-

B.7.2 Sampling plan

No sampling is required

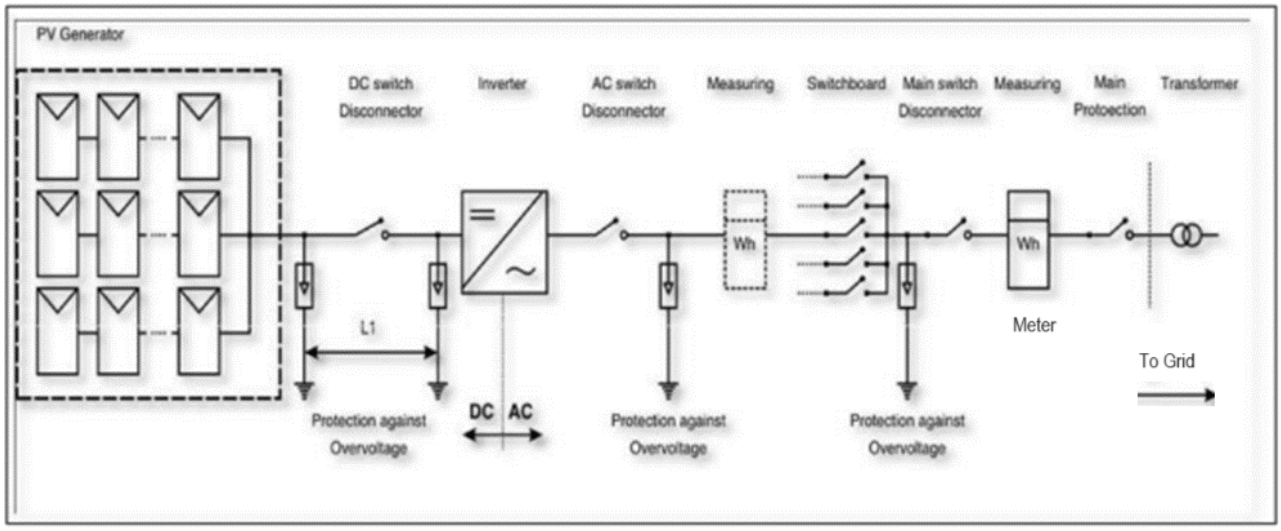
B.7.3 Other elements of monitoring plan

Aim of monitoring:

The monitoring methodology specified in the methodology requires that the project-monitoring plan to consist of monitoring of quantity of net electricity supplied to the grid in the year y. In order to monitor the mitigation of GHG due to the project activity, the total energy exported needs to be measured. The net energy supplied to grid by the project activity multiplied by emission factor for regional grid, would form the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

Single line diagram of the project is as below:



Monitoring roles and responsibilities:

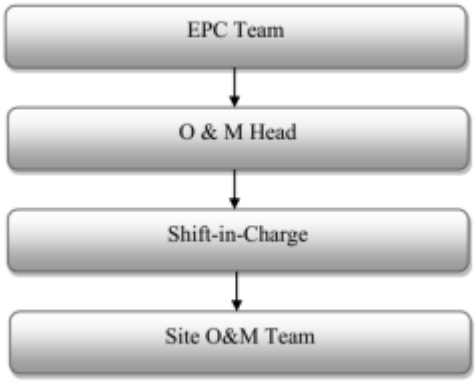
The operational and management structure implemented for data monitoring is as follows:

The monitoring plan is developed in accordance with the modalities and procedures for project activities and is proposed for grid-connected solar power project being implemented within India territory. The monitoring plan, which will be implemented by the project proponent describes about the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for monitoring, measurement, reporting and reviewing of the data rests with the project proponent. PP proposed the following structure for

data monitoring, collection, data archiving and calibration of equipment's for this project activity.

The team comprises of the following members:



Responsibilities of O & M Head: Overall functioning and maintenance of the project activity and overall responsibility of compliance with the Monitoring Plan.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data. Regularly verifying the monthly energy generation date with energy sales receipt or installed meters reading for identification of any discrepancies in data collection and taking suitable action to rectify them.

Responsibilities of Shift In-charge: Responsibility for day-to-day data collection and maintains day to day log book for monitored data. Responsibility for monthly and annual report generation. Quality assurance of the data/reports and preliminary check of data for any discrepancies.

QA/QC procedures: The energy meters at the feeders are maintained and owned by state electricity board. Neither the project proponent nor the site personnel have any control over it. The records will be cross-checked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

Data Measurement: The export and import energy will be measured continuously using above mentioned Main & Check meters. Export & Import readings of Main & Check meters shall be taken on monthly basis by authorized officer of state electricity board

in the presence of PP or representative of PP. The meter reading will be taken jointly and signed by the representatives of the state electricity board and project investors. Based on the readings, invoices will be raised by project investors. These invoices can be used for cross checking the meter readings taken for the project activity. It is to be noted though PP or PP representative is available during meter reading, the calculations of net electricity supplied to grid is completely under purview of state electricity board officer and PP do not have any control on it. Also, accuracy class of meters and calibration frequency is under purview of state electricity board officer and PP do not have any control on it. PP got the monthly credit report from where net electricity supplied to grid is obtained and used for emission reduction calculations.

Apportioning: In case of common metering arrangement, the apportioning will be done by state electricity board and PP is getting break up sheet where the energy supplied by project activity to grid is mentioned.
The same break up sheet will be used for invoice purpose. This apportioning process is under control of state electricity board and PP do not have any control on it.

Data Archiving: Monthly data shall be archived electronically and in paper form and stored for the entire crediting period and two years thereafter.

Emergency preparedness: The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.
In the event that the main meter, which is used to record the net electricity exported by the project, is found to be faulty it will be repaired or replaced and the data from the check meter will be used in its place. In the unlikely event that the check meter fails it will also be repaired or replaced.

Training and maintenance requirements: Each and every site personnel is provided with proper training to meet the requirements of the Operations and maintenance. This ultimately leads to creativity in problem solving.

Personnel training: In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff (O&M team) will be trained. The plant helpers will be trained in equipment operation, data recording, reports writing,

operation and maintenance and emergency procedures in compliance with the monitoring plan.

Apportioning: In case of mismatch of date between the start date of the billing cycle and the start date of monitoring period the data will be apportioned in line to the daily generation values for the said mismatch period.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

12/03/2018. This date corresponds to the date of supply agreement for Solar PV Project. Being a GSVER project and applied in retroactive mode, the start date of project activity will be same as the date of supply agreement.

C.1.2 Expected operational lifetime of project

25 Years 00 Months

C.2. Crediting period of project

C.2.1 Start date of crediting period

The crediting period of the project activity is for 5 years (renewable twice).

The length of first crediting period from 01/01/2019 to 31/12/2023 (Both dates inclusive).

The length of the second crediting period is 01/01/2024 to 31/12/2028 (both dates inclusive).

Further since the start date of crediting period under VCS 1805[29] was 27/02/2017 and total emission reductions claimed from a project activity cannot exceed the total limit of 15 years combining all the emissions years from all the standards. Therefore, the end date of crediting period under GS4GG will be 26/02/2032.

[29] https://registry.verra.org/app/projectDetail/VCS/1805

C.2.2 Total length of crediting period

5 years (Renewable Crediting Period i.e., it is second crediting period so it will be renewed once and maximum up to 15 years i.e., 5years+5years+5years).

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in Appendix 1. The monitoring requirements for Principle 9.5 (Hazardous and non-hazardous waste) of the Safeguarding Principles Assessment are outlined, and description of monitoring parameter is given in section B.7.1.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	Project participants do not involve and promote any discrimination about the gender differences. As per Gold Standard Gender Policy, para 13(i) "Foundational gender-sensitive requirement - This strengthens Gold Standard's 'do no harm' approach and addresses safeguard 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 does not seek to graduate to gender-grade GS certification and thus foundational gender sensitive requirements have been described. HR Policy takes into account

	various gender sensitive measures such as: 1. There is no gender pay gap and there is transparency in pay and opportunities for promotion and advancement. There is no discrimination between employees by: (a) Paying a wage to employees of one sex or gender identity at an equal rate; and (b) Providing equivalent employment opportunities as defined by the law, based on sex and gender identity. 2. There are Gender Unbiased Leave policies, working hours, compliance to minimum wage standards, no harassment policy in the organization. Thus, the project does not involve and is not complicit in any form of discrimination based on gender difference.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	India is party to "Convention on the Elimination of All Forms of Discrimination against Women" and the project has aligned its policies which does not discriminate on gender.

Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	The project does not seek to graduate to gender-grade GS certification and thus foundational gender sensitive requirements have been justified. As per GS4GG GENDER EQUALITY REQUIREMENTS & GUIDELINES, "Gold Standard may require that the Project seek the input of an Expert Stakeholder and to include their recommendations in the Project design. For projects seeking gender-responsive certification, the Gold Standard VVBs audit teams shall include gender consultants with relevant sector expertise to verify the gender claims of the project". The Project participants do not involve and promote any discrimination about the gender differences. The same is ensured into HR Policy, hence no expert Stakeholder inputs are required. Further the questions raised in the Gold Standard Safeguarding Principles & Requirements document are described under Appendix 1.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No Expert is required to assist with Gender issues at the Stakeholder Consultation as the stakeholders were invited in a 'gender-sensitive' manner and efforts has been made to solicit input from women and marginalized groups.

PP has ensuring that waste is disposed in compliance with the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016[30] and E-Waste (Management) Rules, 2022[31].

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

E.1 Summary of stakeholder mitigation measures

For 400 MW Solar Project at Rajasthan by Adani Renewable Energy DEVCO Private Limited (earlier known as SB Energy Pvt Ltd.)
Date of invitation – 20/03/2018
Date of Meeting – 27/03/2018
Location of Meeting - Project site, Rajasthan

In the introductory speech, the representative of Adani Renewable Energy DEVCO Private Limited (earlier known as SB Energy Pvt. Ltd) welcomed the gathering and given a brief about the climate mitigation project activity. Subsequent to the introductory speech, stakeholders were explained about the electricity generation from solar project is an environmental friendly power generation technology contributing to reduction in GHG emissions. They were also explained about the benefits of the Solar power projects like, increasing energy availability and improving quality of power and its assistance to the local population by providing employment opportunities to both skilled & unskilled labours.
The Minutes of meeting with commenting sheet from LSH, invitation letter receipt copy is to be submitted to the VVB during validation.
Meeting started with opening speech by representative of project participant. He introduced all guests on dais. The representative of project participant explained technical aspects of project to stakeholders. He also explained about social, environmental & economical benefits of the project. He also elaborated about carbon mechanism & its requirement for the current project. After the detailed discussions, the session was open for questions from stakeholders.

[30] https://cpcb.nic.in/uploads/hwmd/July_Amendment_HOWM.pdf
[31] https://cpcb.nic.in/uploads/Projects/E-Waste/e-waste_rules_2022.pdf

Summary of the comments Received:

During the Local Stakeholder's Meet, the villagers raised various queries and clarification provided is as summarized below:

Comments	Response
1. Will the project provide employment opportunities or improve economic development of the area?	Yes, the project will provide economic development of the area and will provide employment opportunities to the local people depending upon their skill and qualification.
2. Will the operation of the plant result in increased temperature in the surroundings?	There will be no impact on ambient temperature due to operation of the plant.
3. How the project activity benefits the villages around the project site and their residents?	The project activity will benefit the nearby villagers by providing employment opportunities to local or nearby people and also provides immense opportunity for economic development of the area like increase in business opportunities, improvement in transportation; and various social activities shall help to uplift the standard of living.

The project is submitted to GS4GG under retroactive type as start date of project was prior to first stakeholder consultation round of project activity.

The physical local stakeholder consultation was carried out by inviting the local stakeholders through public notice on 27/03/2018. The notice was for all Local stakeholders and not a gender specific. Thus, gender equality has been followed during consultation. Since project is developed in particular site, for project the nearby local villagers are most relevant and who are directly and indirectly may be affected. Thus, putting public notice at project site/nearby village involves engagement of all stakeholders for the project activity. During that physical stakeholder consultation, the project information was given and taken feedback for the project activity. The information about feedback registers also given to stakeholders so that they can give their feedback at any time. The stakeholder meeting witnessed participation from all

the society and attended by men and women from nearby villagers who expressed their full support to the project activity. The queries of stakeholders were addressed adequately and were resolved satisfactorily. Finally, the meeting concluded with vote of thanks. Thus, continuous input and grievance mechanism has been followed during physical consultation.

Also, during second consultation (online SFR process), the information about Input and Grievance mechanism is being provided to Local Stakeholders (initiated on 28th March 2019 and ended on 28th May 2019) and feedback was being requested, however no any comments or feedback had been received during the same period. The sustainable monitoring parameters, safeguarding principal justification (through GS4GG PDD) has been provided to stakeholders during SFR process and feedback had been requested. For local people, again notice was being put at project site/nearby village and feedback was being requested.

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 where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately. PP has not conducted any complementary stakeholder meeting for 2nd crediting period.

E.2 Final continuous input / grievance mechanism

METHOD	INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.
Continuous Input / Grievance Expression Process Book (mandatory)	Grievance Register to be maintained at office of PP and O&M site office at Project location.
GS Contact (mandatory)	help@goldstandard.org

	PP Representative Email address mentioned in the Grievance Book: Mr. Manish Dabkara, and his mobile number +91 9907534900 shall be available for any stakeholder to comment.
Other	2 email address: PP representative: 1. manish@enkingint.org Gold Standard: 2. info@goldstandard.org

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the Guide to Completing this Form.

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 |HUMAN RIGHTS		
P.1.1.1 |	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	☐ YES ☒ NO
P.1.1.1 |	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	☐ YES ☒ NO
P.1.1.2 |	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.1.1.3 |	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	☐ YES ☒ NO
P.1.1.3 |	Does this project undermine national or regional measures for the realisation of the right to development?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.		
Please add text here…		
Would the project potentially involve or lead to:		
P.1.1.1 |	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.2 |	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project incorporates a human rights-based approach.
For example, by describing how the project design:

- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)
- includes measures to assist the government to realise (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

Please add text here….

P.2 |GENDER EQUALITY AND WOMEN'S EMPOWERMENT

P.2.1.1 |	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.2.1.2 |	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	☐ YES ☒ NO
P.2.1.2 |	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	☐ YES ☒ NO
P.2.1.2 |	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	☐ YES ☒ NO
P.2.1.2 |	Is information about project objectives being communicated in a way that is inappropriate for the local context and not tailored to the methods of understanding of both women and men, which could hinder their participation?	☐ YES ☒ NO
P.2.1.3 |	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	☐ YES ☒ NO
P.2.1.4 |	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:	

P.2.1.1 |	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.1 |	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

Please add text here….

P.3 |COMMUNITY HEALTH AND SAFETY

P.3.1.1 |	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	☐ YES ☒ NO
P.3.1.2 |	Does the project involve any potential risks to the workers' safety and health?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:

P.3.1.1 |	construction and/or infrastructure development (e.g., roads, buildings, dams)?	☐ YES ☒ NO
P.3.1.2 |	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	☐ YES ☐ POTENTIALLY ☒ NO

P.3.1.2 |	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.

Please add text here….

P.4 |CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 |Sites of Cultural and Historical Heritage

P.4.1.1 |	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:

P.4.1.1 |	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the law, scope and nature of proposed development and its potential consequences?	☐ YES ☐ NO ☒ NA

P.4.1.3 |	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.4.2 |*Forced Eviction and Displacement*

P.4.2.1 |	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:

P.4.2.1 |	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	If answer to question above is "YES" or "POTENTIALLY", - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design?	☐ YES ☐ NO ☒ NA
P.4.2.3 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

P.4.2.3 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.4.3 |LAND TENURE AND OTHER RIGHTS

P.4.3.1 |	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:

P.4.3.1 |	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.1 |	uncertainties with regards to 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.	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.2 |	Changes in legal arrangements, if yes, are the changes done in line with relevant laws and regulations?	☐ YES ☐ NO ☒ NA
P.4.3.2 |	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	☐ YES ☐ NO ☒ NA
P.4.3.3 |	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	☐ YES ☒ NO ☐ NA
P.4.3.4 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.3.4 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA
P.4.3.5 |	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	☒ YES ☐ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

P.4.4 |INDIGENOUS PEOPLES		
P.4.4.1 |	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
Please add text here….

Would the project potentially involve or lead to:		
P.4.4.1 |	affect areas where indigenous peoples are present (including project area of influence)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	affect areas, land and territory claimed by indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.7 |	If answer to above questions is ''YES'' or "POTENTIALLY", - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines?	☐ YES ☐ NO ☒ NA
P.4.4.3 |	risk of forcibly removing indigenous people from their lands and territories?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.4 |	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	☐ YES ☐ POTENTIALLY ☒ NO

P.4.4.5 | P.4.4.6 |	If answer to question above is "YES" or "POTENTIALLY" - Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ? - Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive? - Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	☐ YES ☐ NO ☒ NA
P.4.4.8 |	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	☐ YES ☒ NO ☐ NA
P.4.4.8 |	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	☐ YES ☒ NO ☐ NA
P.4.4.9 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA
P.4.4.9 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.5 |CORRUPTION

P.5.1.1 |	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	☐ YES ☒ NO
P.5.1.1 |	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	☐ YES

		☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

ECONOMIC SAFEGUARDING PRINCIPLES

P.6 |ECONOMIC IMPACTS

P.6.1 |LABOUR RIGHTS AND WORKING CONDITIONS

P.6.1.1 |	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	☐ YES ☒ NO
P.6.1.1 |	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	☐ YES ☒ NO
P.6.1.2 |	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	☐ YES ☒ NO
P.6.1.3 |	Does the project violate national laws, if available regarding non-discrimination in employment?	☐ YES ☒ NO
P.6.1.4 | P.6.1.5 |	Does the project allow child labor?	☐ YES ☒ NO
P.6.1.7 | P.6.1.8 |	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	☐ YES ☒ NO
P.6.1.9 |	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	☐ YES ☒ NO
P.6.1.10 |	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project potentially involve or lead to:
(NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)

P.6.1.1 |	use of forced labour?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that do not meet national labour laws and international commitments?	☐ YES ☐ POTENTIALLY ☒ NO

P.6.1.1 |	working conditions that may deny freedom of association and collective bargaining?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	absence of documented working agreements with all individual workers *if such agreements do not exist, or do not address working conditions and terms of employment, the project developer shall provide reasonable working conditions and terms of employment.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	use of migrant workers? *if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	having no arrangements for basic services[32] for workers? *the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	harassment, intimidation, and/or exploitation, especially in regard to women?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.3 |	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	use of child labour? (including third-party engaged workers)	☐ YES ☐ POTENTIALLY ☒ NO

[32] Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

P.6.1.4 |	inadequate and verifiable mechanisms for age verification?	☐ YES ☒ NO
P.6.1.7 |	no processes and measures in place for the safety and health of project workers?	☐ YES ☒ NO
P.6.1.7 |	No provision of safety and health training provisions, including on the proper use and maintenance of personal protective equipment conducted by competent persons and the maintenance of training records?	☐ YES ☒ NO
P.6.1.7 |	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	☐ YES ☒ NO
P.6.1.8 |	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	☐ YES ☒ NO
P.6.1.9 |	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	☐ YES ☒ NO
P.6.1.10 |	No grievance mechanism available for workers to voice workplace concerns.	☐ YES ☒ NO
P.6.1.11 |	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	☐ YES ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES

P.6.2.1 |	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	☐ YES ☒ NO
P.6.2.2 |	Does the project have potential negative impacts or pose a risk to the local economy?	☐ YES ☒ NO
P.6.2.2 |	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here…

Would the project involve or lead to:

P.6.2.2 |	economic impacts (negative/detrimental) to the local economy?	☐ YES ☐ POTENTIALLY

		☒ NO
P.6.2.2 |	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.7 |CLIMATE AND ENERGY

P.7.1 |GHG EMISSIONS

P.7.1.1 |	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.7.1.1 |	increase greenhouse gas emissions over the Baseline Scenario?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.7.2 |ENERGY SUPPLY

P.7.2.1 |	Does the project pose a risk to the availability and reliability of energy supply to other users?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.7.2.1 |	negative impact on the availability and reliability of energy supply to other users?	☐ YES ☐ POTENTIALLY

		☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.8 |WATER

P.8.1 |IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 |	Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?	☐ YES ☒ NO
P.8.1.1 |	Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?	☐ YES ☒ NO
P.8.1.1 |	Does the project have the potential risk to exceed the rate of recharge for the groundwater source?	☐ YES ☒ NO
P.8.1.1 |	Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.8.1.1 |	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.8.2 |EROSION AND/OR WATER BODY INSTABILITY		
P.8.2.1 |	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.8.2.2 | - P.8.2.5 |	negatively impact on the catchment area? *If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length assessment. Regular reassessment of these measures is necessary.*	☐ YES ☐ POTENTIALLY ☒ NO
P.8.2.6 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		
P.9 |ENVIRONMENT, ECOLOGY AND LAND USE		
P.9.1 |LANDSCAPE MODIFICATION AND SOIL		
P.9.1.1 | - P.9.1.3 |	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project? *If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.*	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		

Would the project involve or lead to:		
P.9.1.4 |	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.1.4 |	if answer to above question "yes" or "potentially", does project adopt appropriate and culturally sensitive sustainable resource management practices?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		

P.9.2 |VULNERABILITY TO NATURAL DISASTER

P.9.2.1 |	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.2.2 |	any potential risks that require emergency preparedness and response planning?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.2.2 |	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		

P.9.3 |BIOSAFETY AND GENETIC RESOURCES

P.9.3.1 |	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		

Would the project involve or lead to:		
P.9.3.1 |	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	☐ YES ☐ POTENTIALLY ☒ NO
P.9.3.1 |	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	☐ YES ☐ NO ☒ NA
P.9.3.2 |	If answer to above question is "yes" has any risks identified in the risk assessment?	☐ YES ☐ NO ☒ NA
P.9.3.3 |	Forestry (for example Afforestation/Reforestation) involving GMO planting? *Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.*	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		
P.9.4 |RELEASE OF POLLUTANTS		
P.9.4.1 |	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.4.1 |	any potential risk of pollutant release that cannot be avoided?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.4.3 |	If answer to above question is "Yes" or "potentially", has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	☐ YES ☐ NO ☒ NA
P.9.4.2 |	If answer to above question is "Yes" or "potentially", do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	☐ YES ☐ NO ☒ NA

P.9.4.3 |	If answer to above question is "Yes", is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.9.5 |HAZARDOUS AND NON-HAZARDOUS WASTE

P.9.5.1 |	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	☒ YES ☐ NO
P.9.5.3 |	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☒ YES ☐ NO
P.9.5.5 |	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

P.9.5.1 and P.9.5.3- A hazardous waste inventory is maintained as per the provisions of the Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016[33]. The waste is disposed to the waste handlers and the firm complies with all the local laws for monitoring and disposal.

Would the project involve or lead to:

P.9.5.1 |	the generation and management of waste materials?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.5.1 |	treatment, destruction, or disposal of waste material?	☐ YES ☒ NO ☐ NA
P.9.5.1 |	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues resulting from the handling and processing of waste material?	☐ YES ☐ NO ☒ NA
P.9.5.3 |	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO ☐ NA
P.9.5.3 |	If answer to above question is "yes", does project has measures in place to address health risks?	☐ YES ☐ NO

[33] https://cpcb.nic.in/uploads/hwmd/July_Amendment_HOWM.pdf

		☒ NA
P.9.5.4 |	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.9.6 |PESTICIDES & FERTILISERS

P.9.6.1 |	Does the project involve the use of chemical pesticides?	☐ YES ☒ NO
P.9.6.5 |	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	☐ YES ☒ NO
P.9.6.6 |	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.9.6.1 |	chemical pesticides use for pest management?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.4 |	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	☐ YES ☐ NO ☒ NA
P.9.6.5 |	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.5 |	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.9.7 |HARVESTING OF FORESTS		
P.9.7.1 |	Does the project have a risk of unsustainable forest management, including timber harvesting?	☐ YES ☒ NO
P.9.7.1 |	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	☐ YES ☒ NO
P.9.7.1 |	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
P.9.8 |FOOD SECURITY		
P.9.8.1 |	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	☐ YES ☒ NO
If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.8.1 |	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here….		
P.9.9 | ANIMAL WELFARE		
P.9.9.1 |	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	☐ YES ☒ NO
P.9.9.2 |	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	☐ YES ☒ NO
P.9.9.4 |	Does the project involve the risk of administering synthetic growth promoters, including hormones?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here….		
Would the project involve or lead to:		
P.9.9.1 |	animal husbandry or harvesting of fish populations or other aquatic species?[34]	☐ YES ☐ NO ☒ NA
P.9.9.1 |	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.9.3 |	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	☐ YES ☐ NO ☒ NA
P.9.9.5 |	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	☐ YES ☐ NO ☒ NA
P.9.9.6 |	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	☐ YES ☐ NO ☒ NA
P.9.9.7 |	inappropriate spacing per animal and stocking rates per land unit?	☐ YES ☐ NO ☒ NA
P.9.9.8 |	inadequate measures to address the specific needs of aquatic animals?	☐ YES ☐ NO ☒ NA
P.9.9.9 | P.9.9.10 |	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		

[34] 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

Please add text here….

P.9.10 |HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS		
P.9.10.1 |	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	☐ YES ☒ NO
P.9.10.2 |	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.9.10.1 |	identified habitats as HCV areas and or Critical habitats?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.1 |	If answer to above question is "yes", does the project have any risks that could negatively impact the catchment, project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	☐ YES ☐ NO ☒ NA
P.9.10.1 |	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	☐ YES ☐ NO ☒ N/A
P.9.10.2 |	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.2 |	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	☐ YES ☐ No ☒ NA
P.9.10.3 |	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	☐ YES ☐ No ☒ NA
P.9.10.4 |	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native	☐ YES ☐ No ☒ NA

	ecosystems following HCV approach as per the given requirements?	
P.9.10.5 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.9.11 |ENDANGERED SPECIES

P.9.11.1 |	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:

P.9.11.2 |	distortion of habitats of endangered species?	☐ YES ☐ POTENTIALLY ☒ NA
P.9.11.2 |	If answer to the above question is "yes", does the project plan to protect and enhance them?	☐ YES ☐ POTENTIALLY ☐ NO ☒ N/A
P.9.11.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here….

P.9.12 |INVASIVE ALIEN SPECIES

P.9.12.1 |	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here….

Would the project involve or lead to:		
P.9.12.1 |	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.1 |	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.2 |	risk of spreading alien species into areas in which they have not already been established?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
Please add text here….

APPENDIX 2 - CONTACT INFORMATION OF PROJECT DEVELOPER(S)

Organization name	Adani Renewable Energy DEVCO Private Limited (Earlier known as SB Energy Pvt. Ltd.)
Registration number with relevant authority	U74140DL2015PTC283928
Street/P.O. Box	5th Floor, Aerocity, NH 8
Building	Worldmark II
City	New Delhi
State/Region	New Delhi
Postcode	110037
Country	India
Telephone	+911149217999
E-mail	npsingh@sbenergy.com
Website	-
Contact person	Mr. N. P. Singh
Title	General Manager-Assurance & Taxation
Salutation	Mr.
Last name	Singh
Middle name	-
First name	N.P.
Department	-
Mobile	-
Direct tel.	-
Personal e-mail	npsingh@sbenergy.com

APPENDIX 3 - LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	N/A
Risk of change to the Project activities during Project Certification Period:	N/A
Land-use history and current status of Project Area:	N/A
Socio-Economic history:	N/A
Forest management applied (past and future)	N/A
Forest characteristics (including main tree species planted)	N/A
Main social impacts (risks and benefits)	N/A
Main environmental impacts (risks and benefits)	N/A
Financial structure	N/A
Infrastructure (roads/houses etc):	N/A
Water bodies:	N/A
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	N/A
Where indigenous people and local communities are situated:	N/A
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	N/A

APPENDIX 4 - DESIGN CHANGES

A4.1. Details of proposed or actual design change

SB-1 – 300 MW - It is realized that PLF of the project activity was under estimated at the time of registration. The actual PLF during the crediting period is found to be 28.08% which is highest achieved hence conservative. So, PP would like to update the PLF as 28.08%. PP has also calculated the IRR at PLF 28.08%. The IRR is 7.63% however the benchmark is 13.41%. As the IRR below the benchmark hence project is found to be additional at actual PLF. PP would like to update the PD by modifying the actual PLF. This is also in response of comment from Sustaincert asking to design changes.

SB-3 – 100 MW - It is realized that PLF of the project activity was under estimated at the time of registration. The actual PLF during the crediting period is found to be 28.08% which is highest achieved hence conservative. So, PP would like to update the PLF as 28.08%. PP has also calculated the IRR at PLF 28.08%. The IRR is 7.63% however the benchmark is 13.41%. As the IRR below the benchmark hence project is found to be additional at actual PLF. PP would like to update the PD by modifying the actual PLF. This is also in response of comment from Sustaincert asking to design changes.

A4.2. Describe the impacts of design change on the following

a. Additionality

The design change is change in PLF. The actual PLF is crediting period is higher than the PLF at the time of registration. So, the additionality is checked at the updated PLF, IRR is below the benchmark hence project is found to be additional.

b. Applicability of methodology and other methodological regulatory documents with which the project activity has been certified

It has no impact on Applicability of methodology and other methodological regulatory documents.

c. Compliance with the monitoring plan of the applied methodology

Monitoring plan & monitoring equipment is still remained same as during registration.

d. Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan

Level of accuracy and completeness in the monitoring of the project activity is still remained same as during registration.

e. Scale of the project activity

There is no change in the project capacity with increased PLF and thus no change in the project scale.

f. Stakeholder consultation

Stakeholder consultation is still remained same as during registration.

g. Sustainable development criteria

Sustainable development criteria are still remained same as during registration.

h. Safeguarding assessment

Safeguarding assessment is still remained same as during registration.

i. Compliance with applicable legislation

Compliance with applicable legislation is still remained same as during registration.

j. <u>Only for LUF Projects</u>: Transparent summary of all approved changes in Project Area, Eligible Area and accompanying changes in ex-ante emissions removals.

DATE OF APPROVED DESIGN CHANGE (MM/DD/YYYY)	PROJECT AREA (HA)		ELIGIBLE AREA (HA)		EX-ANTE (tCO_2e)	ESTIMATE
	INCREASE OR DECREASE?	VALUE (HA)	INCREASE OR DECREASE?	VALUE (HA)	INCREASE OR DECREASE?	PERCENTAGE (%)

ANNEXURE 1 - CALIBRATION DETAILS

For SB Energy One Private Limited (Adani Solar Energy Jodhpur Three Private Limited):

Meter Number	Accuracy Class & Make	Calibration Date	Due date of Calibration
For Plot L1 A			
02843291 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
02843292 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
02843293 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L1 B			
2843294 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843295 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843296 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L1 C			
2843297 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843298 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843299 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L1 D			
2843300 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843301 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843302 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025

Meter Number	Accuracy Class & Make	Calibration Date	Due date of Calibration
For Plot L4 A			
2843327 (Main Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2843328 (Check Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2843329 (Standby Meter)	0.2 s, Elster	16/09/2020	15/09/2025
For Plot L4 B			

2843330 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843331 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843332 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L4 C			
2843333 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843334 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843335 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L4 D			
2843336 (Main Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2843337 (Check Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2843338 (Standby Meter)	0.2 s, Elster	16/09/2020	15/09/2025

Meter Number	**Accuracy Class & Make**	**Calibration Date**	**Due date of Calibration**
For Plot L5 A			
2843339 (Main Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2843340 (Check Meter)	0.2 s, Elster	16/09/2020	15/09/2025
2861545 (Standby Meter)	0.2 s, Elster	16/09/2020	15/09/2025
For Plot L5 B			
2861546 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2861547 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2861548 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L5 C			
2861549 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2861550 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2861551 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025
For Plot L5 D			
2861552 (Main Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2861553 (Check Meter)	0.2 s, Elster	15/09/2020	14/09/2025
2843326 (Standby Meter)	0.2 s, Elster	15/09/2020	14/09/2025

For SB Energy Three Private Limited (Adani Solar Energy Jodhpur Four Private Limited):

Meter Number	**Accuracy Class & Make**	**Calibration Date**	**Due date of Calibration**

For Plot P2F1			
RJB92278 (Main Meter)	0.2 s, Secure	25/09/2019	24/09/2024
RJB92275 (Check Meter)	0.2 s, Secure	25/09/2019	24/09/2024
RJB92281 (Standby Meter)	0.2 s, Secure	25/09/2019	24/09/2024
For Plot P2F2			
RJB92279 (Main Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92276 (Check Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92282 (Standby Meter)	0.2 s, Secure	25/09/2019	24/09/2024
For Plot P2F3			
RJB92280 (Main Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92277 (Check Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92283 (Standby Meter)	0.2 s, Secure	24/09/2019	23/09/2024

Meter Number	**Accuracy Class & Make**	**Calibration Date**	**Due date of Calibration**
For Plot P3F1			
RJB92288 (Main Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92289 (Check Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92292 (Standby Meter)	0.2 s, Secure	24/09/2019	23/09/2024
For Plot P3F2			
RJB92285 (Main Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92284 (Check Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92291 (Standby Meter)	0.2 s, Secure	24/09/2019	23/09/2024
For Plot P3F3			
RJB92286 (Main Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92287 (Check Meter)	0.2 s, Secure	24/09/2019	23/09/2024
RJB92290 (Standby Meter)	0.2 s, Secure	24/09/2019	23/09/2024

Revision History

Version	Date	Remarks
1.5	29 June 2023	Editorial changes to match V2.1 of the Safeguarding Principles Requirements
1.4	21 June 2023	Editorial changes to match V2.0 of the Safeguarding Principles Requirements
1.3	14 April 2023	Integrated the design change memo as annex of the document. Editorial changes
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption.