المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL

Project Submission Form

V3.2 - 2020

Contents

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(Shall be consistent with De-registered CDM Type B Projects)</td><td>M/s Sun Photo Voltaic Energy India Private Limited
EKI Energy Services Limited[1]</td></tr>
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<tr><td>Eligible GCC Project Type as per the Project Standard
(Tick applicable project type)</td><td>☒ Type A:
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[1] Act as project owner

	☐ **Type B – De-registered CDM Projects:**[2] ☐ Type B1 ☐ Type B2
Minimum compliance requirements	☒ Real and Measurable GHG Reductions ☒ National Sustainable Development Criteria (if any) ☒ Apply credible baseline and monitoring methodologies ☒ Additionality ☒ Local Stakeholder Consultation Process ☒ Global Stakeholder Consultation Process ☒ No GHG Double Counting ☒ Contributes to United Nations Sustainable Development Goal 13 (Climate Action)
Choose optional and additional requirements (Tick applicable label categories)	☒ Do-no-net-harm Safeguards to address Environmental Impacts ☒ Do-no-net-harm Safeguards to address Social Impacts ☒ Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)
Applied methodologies (Shall be approved by the GCC or the CDM)	ACM0002 Grid-connected electricity generation from renewable sources - Version 20.0
GHG Sectoral scope(s) linked to the applied methodology(ies)	GHG-SS 1 (Energy (renewable/non-renewable sources)

[2] Owners of Type B projects shall fill in the form provided in Appendix 7.

Applicable Rules and Requirements for Project Owners

(Tick applicable Rules and Requirements)

Rules and Requirements		Reference	Version
☒ ISO 14064-2			
☒ Applicable host country legal requirements /rules			
☒ GCC Rules and Requirements[3]	☒ Project Standard	31/12/2020	03.1
	☐ Approved GCC Methodology (XXXXX)		
	☒ Program Definitions	31/12/2020	03.1
	☒ Environment and Social Safeguards Standard	17/08/2020	02
	☒ Project Sustainability Standard	31/12/2020	02.1
	☒ Instructions in Project Submission Form (PSF)-template	31/12/2020	03.2
	☐ Add rows if required		
☒ CDM Rules[4]	☒ Approved CDM Methodology (XXXX)	ACM0002	20.0
	☒ Tool for the demonstration and assessment of additionality	TOOL 01	7.0.0
	☐ Combined tool to identify the baseline scenario and demonstrate additionality	TOOL 02	
	☒ Tool to calculate the emission factor for an electricity system	TOOL 07	7.0
	☐ Demonstration of additionality of microscale project activities	TOOL 19	
	☐ Demonstration of additionality of small-scale project activities	TOOL 21	

[3] GCC Program rules and requirements: https://www.globalcarboncouncil.com/resource-centre.html
[4] CDM Program rules: https://cdm.unfccc.int/Reference/index.html

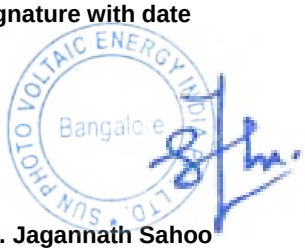
		☐ Additionality of first-of-its-kind project activities	TOOL 23	
		☒ Common practice	TOOL 24	3.1
		☒ Investment analysis	TOOL 27	10.0
		☐ Positive lists of technologies	TOOL 32	
		☐ Guidelines for objective demonstration and assessment of barriers		
		☐ Add rows if required		

Choose Third Party External Project Verification by approved GCC Verifiers[5] (Tick applicable verification categories)	☒ GHG emission reductions (i.e., Approved Carbon Credits **(ACCs)**) ☒ Environmental No-net-harm Label (**E+**) ☒ Social No-net-harm Label (**S+**) ☒ United Nations Sustainable Development Goals (**SDG+**) ☐ Bronze SDG Label ☐ Silver SDG Label ☐ Gold SDG Label ☒ Platinum SDG Label ☐ Diamond SDG Label ☒ CORSIA requirements (**C+**) ☒ Host Country Attestation on Double counting

[5] **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.

Declaration to be made by the Project Owner(s)[6] (Tick all applicable statements)	The Project Owner(s) declares that: ☒ The Project Activity complies with the eligibility of the applicable project type (A1, A2, B1 or B2) as stipulated by the Project Standard. ☒ The Project Activity shall start operations, and start generating emission reductions, on or after 1 January 2016. ☒ The Project Activity is eligible to be registered under the GCC program. ☒ No carbon credits generated by the proposed Project Activity will be claimed as carbon credits in any other GHG program anywhere in the world, either for compliance or voluntary purposes, for the entire 10-year GCC crediting period. ☒ The proposed Project Activity, if Type A, is NOT registered as a GHG Project Activity in any other GHG program or any other voluntary program anywhere in the world. ☒ The proposed Project Activity is NOT included as a component Project Activity (CPA) in a registered GHG Programme of Activities (PoA) under any GHG program (such as the CDM or any other voluntary program) anywhere in the world. ☒ The proposed Project Activity is NOT a CPA that has been excluded from a registered PoA under any GHG program (such as the CDM or any other voluntary program) anywhere in the world.
	☒ If a GCC project chooses to apply to use ACCs under CORSIA, the Project Owner(s) is required to declare that they are aware that they must obtain and provide to the GCC and its Registry (operated by IHS Markit) a written attestation from the host country's national focal point (e.g., Ministry of Environment or Civil Aviation Authority) or focal point's designee, as required by CORSIA Emissions Unit Eligibility Criteria, which: ☒ Confirms the avoidance of double counting as required by CORSIA; ☒ Shall be made publicly available prior to the use of units from the host country under CORSIA; and ☒ Places all responsibility on the Project Owner(s) to replace any and all doubly claimed or counted ACCs by the host country, in the GCC registry operated by IHS Markit. No attestation from host country's national focal point e.g., Ministry of Environment or Civil Aviation Authority) or focal point's designee is required for pilot phase of 2021-23 (accepting credits issued for monitoring periods between 2016-2020).

[6] The "Project Owner" means the legal entity or organization that has overall control and responsibility for the Project Activity.

	The Project Owner(s) declares that: ☒ All of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct; ☒ They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions. Provide details below for the boxes ticked above
Appendixes 1-7	Appendixes 1 -6, Appendix 7 is not applicable as project is not deregister from CDM
Name, designation, date and signature of the Project Owner(s)	**Mr. Jagannath Sahoo** **Manish Dabkara**
	Designation **Authorized Signatory** **(M/s Sun Photo Voltaic Energy India Private Limited)** **MD & CEO** **(EKI Energy Services Limited)**
	Signature with date  **Mr. Jagannath Sahoo** Date: 08/10/2021  **Mr. Manish Dabkara** Date: 08/10/2021

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

The Project Activity is the installation of a new grid-connected 78 MW wind power plant/unit at a site where no renewable power plant was operating prior to the implementation of the project activity (green-field plant). The project is implemented in Karnataka state of India by M/s Sun Photo Voltaic Energy India Private Limited.

Sun Photo Voltaic Energy India Private Limited ("Borrower" or "SPVEPL" or "Company") is a special purpose vehicle (SPV) promoted by Acciona Group, Spain. Acciona Group is a Spanish conglomerate with more than 150 years operational history. It is one of the leading global infrastructure developer with operations spread across 30 countries in 5 continents. Acciona SA is the ultimate holding company of the group. The Group has interests in infrastructure, renewable energy, construction, real estate, cargo transportation, water and infrastructure management services, with a presence in more than fourteen countries.

The electricity generated from Project Activity is exported to the Indian grid in India there by displacing electricity from the regional grid electricity distribution system generated by fossil fuel based power plants.

The electricity generated by the Project Activity thus replaces the equivalent amount of electricity generated by the operation of existing/ grid connected power plants (mostly fossil fuel based power plants) and by addition of new generation sources into the grid. The Project Activity thus reduces the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel) and by addition of new generation sources into the grid.

The commissioning details are given below:

Sl. No	Organization Name	Capacity (MW)	Location	Date of commissioning (earliest)
1	M/s Sun Photo Voltaic Energy India Private Limited	78	Kannamadi, Karnataka	01/03/2017

Details of Phase Wise Commissioning is given below:

S.No.	Organization name	Capacity	Location	Date of commissioning
1	M/s Sun Photo Voltaic Energy India Private Limited	18 MW	Kannamadi, Karnataka	01/03/2017
2		42 MW		25/03/2017
3		12 MW		14/08/2017

4		6 MW		28/09/2017

M/s Sun Photo Voltaic Energy India Private Limited is Project Implementer. The annual estimated emission reductions over crediting period is 146,876 tCO_2e/annum.

The Project contributions to the sustainable development of the local area as well as the host country are as follows:

Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, has stipulated the following indicators for sustainable development in the interim approval guidelines for CDM projects.

1. Social well-being;
2. Economic well-being;
3. Environmental well-being; and
4. Technological well-being

1. Social well-being

The Project Activity will result in creating job opportunities for the local population on temporary and permanent basis. Manpower is required both during erection and operation of the renewable energy projects. This would result in the improvement in living standards of the local community.

The installation of the renewable energy projects also led to development of basic infrastructure like roads, communication with the nearby cities etc. which also improved in living standards of the local population.

2. Economic well-being

The Project Activity will create direct and indirect job opportunities to the local community during installation and operation of the renewable energy projects.

The investment for the Project Activity would lead to the improvement in the economic activity in the local area.

3. Environmental well-being

The Project Activity utilizes renewable energy for generating electricity which otherwise would have been generated through alternate fuel (most likely - fossil fuel) based power plants, contributing to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions. As renewable energy projects produce no end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power. Being a renewable resource, to generate electricity contributes to resource conservation. Thus the Project Activity causes no negative impact on the surrounding environment.

4. Technological well-being:

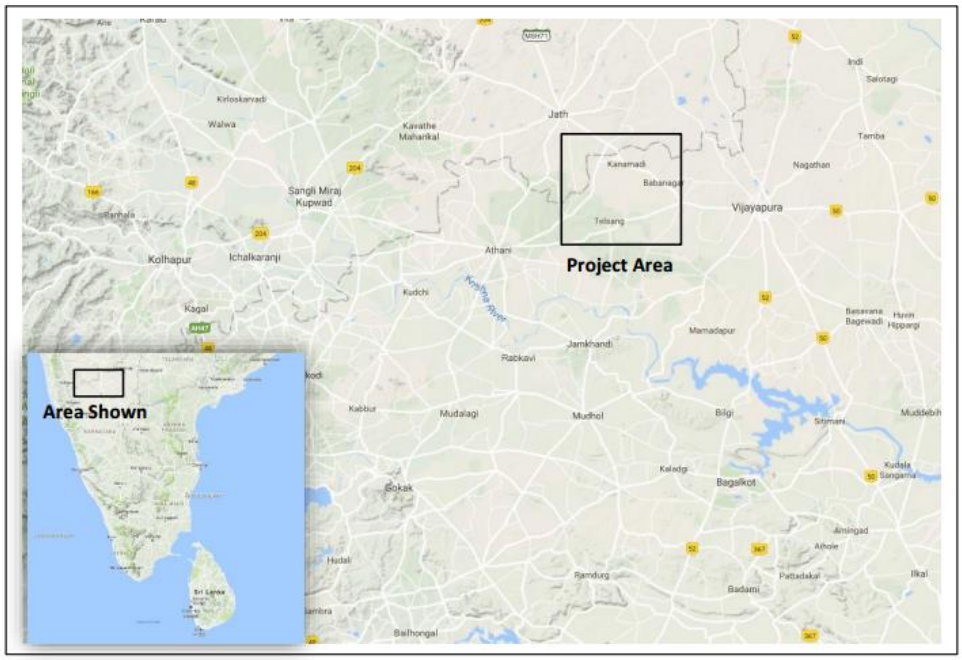
Clean technology transfer in renewable energy generation and optimal use of renewable energy in the industry.

The estimated emission reductions achieved for the entire crediting period of 10 years are 1,468,760 tCO_2e

A.2. Location of the Project Activity

Wind Farm is located in Karnataka, approximately 35 km north west of Bijapur town. The wind farm consists of 26 AW125/3000 wind turbines with a hub height of 120 m.
Measurements of the wind regime have been made at 3 meteorological masts on the Bannur site.

The Location of the wind farm is given below:



The coordinates of the wind turbines are given below:

Turbine	Turbine model	Hub height [m]	Initiation mast	Easting[a] [m]	Northing[a] [m]
BAN01	Acciona AW125/3000 1.09 kgm³	120	BAN	537322	1868004
BAN02	Acciona AW125/3000 1.09 kgm³	120	BAN	537212	1867516
BAN03	Acciona AW125/3000 1.09 kgm³	120	BAN	537321	1866948
BAN04	Acciona AW125/3000 1.09 kgm³	120	BAN	537248	1866449
BAN05	Acciona AW125/3000 1.09 kgm³	120	BAN	537350	1865933
BAN06	Acciona AW125/3000 1.09 kgm³	120	BAN	537322	1865511
BAN07	Acciona AW125/3000 1.09 kgm³	120	BAN	540424	1869839
BAN08	Acciona AW125/3000 1.09 kgm³	120	BAN	540356	1869054
BAN09	Acciona AW125/3000 1.09 kgm³	120	BAN	540277	1868703
BAN10	Acciona AW125/3000 1.09 kgm³	120	BAN	540254	1868176
BAN11	Acciona AW125/3000 1.09 kgm³	120	BAN	540254	1867747
BAN12	Acciona AW125/3000 1.09 kgm³	120	BAN	540338	1867214
BAN13	Acciona AW125/3000 1.09 kgm³	120	BAN	540245	1866835
BAN14	Acciona AW125/3000 1.09 kgm³	120	BAN	540361	1866375
BAN15	Acciona AW125/3000 1.09 kgm³	120	BAN	540468	1865870
BAN16	Acciona AW125/3000 1.09 kgm³	120	BAN	542197	1870695
BAN17	Acciona AW125/3000 1.09 kgm³	120	BAN	542293	1870184
BAN18	Acciona AW125/3000 1.09 kgm³	120	BAN	542233	1869744
BAN19	Acciona AW125/3000 1.09 kgm³	120	BAN	542262	1868971
BAN20	Acciona AW125/3000 1.09 kgm³	120	BAN	542131	1868459
BAN21	Acciona AW125/3000 1.09 kgm³	120	BAN	542141	1868117
BAN22	Acciona AW125/3000 1.09 kgm³	120	BAN	542200	1867670
BAN23	Acciona AW125/3000 1.09 kgm³	120	BAN	542213	1867336
BAN24-26	Acciona AW125/3000 1.09 kgm³	120	BAN	542222	1866916
BAN25-24	Acciona AW125/3000 1.09 kgm³	120	BAN	542213	1866613
BAN26-25	Acciona AW125/3000 1.09 kgm³	120	BAN	542201	1866215

A.3. Technologies/measures

The Project Activity involves the installation of wind power project. The total installed capacity of the project is 78 MW of wind power plant located in Karnataka state in India. The Project Activity is promoted by **M/s Sun Photo Voltaic Energy India Private Limited.**

The Project Activity is a new facility (Greenfield) and the electricity generated by the project will be exported to the Indian electricity grid. The Project Activity will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The estimated lifetime of the project activity is considered as 25 years for wind technology. This may increase depending on the operation & maintenance of the plant. 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.

The project shall result in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 146,876 tCO_2e per year, thereon displacing 157,154 MWh/year amount of electricity from the gird. The project activity aims to harness wind energy through installation of wind power project with total installed capacity of 78 MW.

It is to be noted that the project technical specification of the not commissioned plant may change

but the project capacity and location would remain same throughout the crediting period.

Technical specifications are given below:

Acciona AW3000:

Rotor Diameter	125 m
Wind Class	IEC IIb/IIIa
Turbine stability	Medium wind sites with low turbulence intensity
Cut-in wind speed	3.5 m/s
Cut-out wind speed	25 m/s
Swept area	12,305 m²
Gearbox	3 stages: 2 planetary, 1 parallel (helical)
Bearings	Double spherical roller bearings
Lubrication	Pressure and splash with oil cooler/oil filter
Actuation	Hydraulic cylinders
Failsafes	Blade-independent piston accumulators on hub
YAW SYSTEM	
Type	Four-point ball bearing, external gear
Slewing ring	External
Braking system	Disk+callipers, plus electro-mechanical brake per motor drive
GENERATOR	
Type	6 poles, double feeding
Frequency	50/60 Hz
Nominal voltage	12,000 V (able to eliminate step-up transformers depending on wind farm layout)
TOWER	
Steel hub height	87.5
Steel tower number of sections	4
Concrete hub height	100, 120, 137.5
Concrete tower number	5, 6, 7

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable[7], indicate if the host country has provided approval (Yes/No)
India	M/s Sun Photo Voltaic Energy India Private Limited.	Not Applicable

7 For example, Project Coordination Form is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

India	EKI Energy Services Limited	Not Applicable

A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
01/03/2017	28/02/2027	M/s Sun Photo Voltaic Energy India Private Limited	146,876/annum

The project owner confirms that the ACC's generated from the project will not be double counted in any other mechanism.

A.6. Additional requirements for CORSIA

Please see Section E and F.

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies)

Title: ACM0002 Grid-connected electricity generation from renewable sources --- Version 20.0

Tools involved in the project are listed below:

1. Tool for the demonstration and assessment of additionality - Version 7.0.0[8]
2. Tool to calculate the emission factor for an electricity system - Version 7.0[9]
3. Common practice – Version 3.1[10]
4. Investment analysis – Version 10.0[11]

B.2. Applicability of methodology(ies)

[8] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[9] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[10] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf
[11] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v10.0.pdf

The project activity is grid-connected wind power project. Version 20.0 of ACM0002 methodology is applicable to grid-connected renewable power generation project activities that:

(a) Install a Greenfield power plant.

(b) Involve a capacity addition to (an) existing plant(s);

(c) Involve a retrofit of (an) existing operating plants/units.

(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or

(e) Involve a replacement of (an) existing plant(s)/unit(s).

The project activity is wind based renewable energy source, zero emission power project connected to the different state grids, which forms part of the Indian electricity grid. The project activity will displace fossil fuel based electricity generation that would have otherwise been provided by the operation and expansion of the fossil fuel based power plants in Indian grid. The approved consolidated baseline and monitoring methodology ACM0002 Version 20.0 is the choice of the baseline and monitoring methodology and it is applicable because:

Comparison of project activity characteristics and eligibility criteria of version 20.0 of ACM0002

Para No.	Applicability Conditions as per ACM0002	Applicability to this Project Activity
1	The project activity may include renewable energy power plant/unit of one of the following types:: • hydro power plant/unit with or without reservoir, • Wind power plant/unit, • Geothermal power plant/unit, • Solar power plant/unit, • Wave power plant/unit or • Tidal power plant/unit.	The project activity is grid connected renewable power generation from wind energy.
2	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.	This condition is not relevant, as the project activity does not involve capacity additions, retrofits or replacements.

3	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 of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2 ; or (c) The project activity results in new single or multiple reservoirs and the power density of the project activity, as per definitions given in the Project Emissions section, 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, as per definitions given in the Project Emissions section, is lower than or equal to 4 W/m2 , all of the following conditions shall apply. (i) The power density calculated using the total installed capacity of the integrated project, as per definitions given in the Project Emissions section, 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/m2 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.	This condition is not relevant, as the project activity is not the installation of a hydro power plant.
4	In the case of integrated hydro power	This condition is not relevant, as the

	projects, project proponent 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.	project activity is not the installation of a hydro power plant.
5	The methodology is not applicable to the following: • 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; • Biomass fired power plants;	The project activity does not involve any of the given criteria hence methodology is applicable for the project activity.
6	In the case of retrofits, 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, i.e. 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 wind power plants. Also no replacement, modification and retrofit measures are implemented here. Hence, this criterion is also not relevant to the project activity.

This comparison shows clearly that ACM0002 is applicable to the project activity.

B.3. Project boundary, sources and greenhouse gases (GHGs)

The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		GHG	Included ?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project activity	wind energy projects under the Project activity	CO_2	No	As a zero emission grid connected wind power project no emissions will result.
		CH_4	No	As a zero emission grid connected wind power project no emissions will result.
		N_2O	No	As a zero emission grid connected wind power project no emissions will result.

B.4. Establishment and description of the baseline scenario

As per the approved consolidated Methodology ACM0002 (Version 20.0) para 22: “If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system Version 7.0”.

The project activity involves setting up of wind projects to harness the wind 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 publically available. The CEA database version 16 is the latest available data at the time of PSF submission to GCC verifier for project verification, 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
$EF_{grid,CM,y}$	0.9346 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.25) & build margin (0.75) values, sourced from Baseline CO_2 Emission Database, Version 16.0, March - 21 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,OM,y}$	0.9568 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3 year (2017-18, 2018-19, 2019-20) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 16.0, March -21 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8682 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 16.0, March -21 published by Central Electricity Authority (CEA), Government of India

During the implementation of the project activity, the relevant national and/or sectoral policies, regulations and circumstances are taken into account.

- Implementation of wind based power projects for electricity generation is not mandatory under any law in India, the project activity is a voluntary action.
- Despite the gradual increase in renewable energy sources (including wind energy) in power sector, still about two-third of installed power generation capacity is based on fossil-fuel based energy sources, hence the electricity grid is fed by electricity generated predominantly in fossil-fuel based power plants.

Wind based power plants belong to white category as per Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and are exempted from Environmental Impact Assessment (EIA).

B.5. Demonstration of additionality

The additionality of a GCC Project shall be demonstrated by applying the following approach, consisting of two components: (i) A Legal Requirement Test; and (ii) An Additionality Test either based on a Positive List test or a projects-specific additionality test.

The project is not enforced by law. Since voluntary commitments/agreements within a sector or by an entity do not constitute the legal requirement, the project is additional as per paragraph 46.

Specify the methodology or activity requirement or product requirement that establish deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	This project follows the an approved large scale UNFCCC methodology which is ACM0002 "Consolidated baseline methodology for grid connected electricity generation from renewable sources", Version 20.0. Selected methodology has been applied together with the "tool to calculate the emission factor for an electricity system, version 7.0" and "tool for assessment and demonstration of additionality, version 7.0.0". These are the latest version of the methodology and related additionality & calculation tool.
Describe how the proposed project meets the criteria for deemed additionality.	1. Project without carbon revenue is not financially attractive as discussed in investment analysis section below (benchmark and sensitivity analysis). 2. Continuation of the current situation supply of equal amount of electricity by the newly built grid connected power plants. Continuation of the current situation is not considered as a realistic alternative due to increasing electricity demand therefore new power plants should be constructed which includes mainly thermal power plants. Implementation of the project is additional to the baseline scenario which is an alternative 2 above and therefore reduces the emissions. 3. The project activity comes under white category as per local regulation, thus there shall be no necessity of obtaining the Consent to Operate'' for White category of industries. Since project activity falls under white category and the non-polluting nature of project fulfils the compliance to the local laws and regulations The Project activity conforms to all the applicable laws and regulations in India: ✓ Power generation using renewable energy is not a legal requirement or a mandatory option. ✓ There are state and sectoral policies, framed primarily to encourage wind power projects.

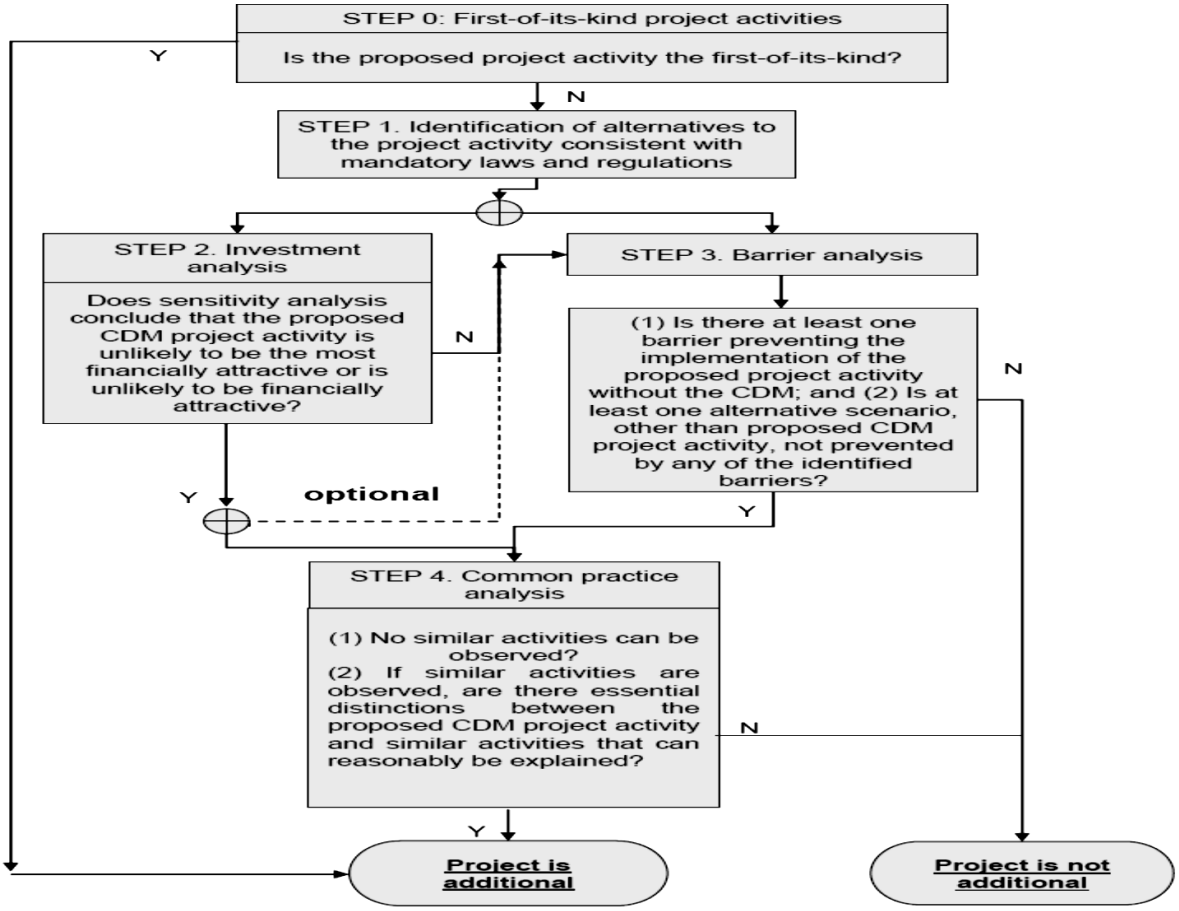
	✓ These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments. ✓ The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation. ✓ There is no legal requirement on the choice of a particular technology for power generation. The both alternatives are in compliance with laws and regulations required. There is no any mandatory requirement to implement the project activity. 4. In accordance with common practice analysis there is no plants similar to the proposed project and built without carbon revenue, the proposed type of project should not be considered as a common practice.

Additionality Assessment for large scale project activity Instances

The table below is only applicable if the proposed project activity is a type of project activity which is deemed automatically additional, as defined by the applied approved methodology or standardized baseline.

Specify the methodology or standardized baseline that establish automatic additionality for the proposed project activity (including the version number and the specific paragraph, if applicable).	NA
Describe how the proposed project activity meets the criteria for automatic additionality in the relevant methodology or standardized baselines.	NA

The present project generates power using wind energy which is a renewable, zero emission source of energy. Baseline considerations for the project are based on approved consolidated baseline methodology ACM0002 (Version 20.0). The methodology requires the project investor to determine the additionality based on “Methodological Tool- 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 7.0.0,. 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

Sub-step 1a: Define alternatives to the project activity:
Identify realistic and credible alternative(s) available to the GCC project owner or similar project developers that provide outputs or services comparable with the proposed project activity.

The purpose of the project activity is to generate electrical power using wind energy and feed the electricity generated to the grid. Hence, the following alternatives are considered:

Alternative 1: The proposed project activity not undertaken as a GCC project activity.
The PP could proceed with the implementation of the project without Carbon credit benefits. The electricity produced from the renewable energy project would have been sold to the grid. This is in compliance with all applicable legal and regulatory requirements and can be a part of the baseline. However, the Project activity is not feasible without revenues from sale of Carbon Credits. This argument has been discussed in step 2 of the Additionality section.

Alternative 2: No proposed project activity and equivalent amount of energy would have been produced by the grid electricity system through its currently running power plants and by new capacity addition to the grid i.e. Continuation of the present situation.

The PP would have continued without investment in Project activity with usual business activities. The grid would continue with the fossil fuel-based power projects and this would result in GHG emissions. Hence, the new capacity add-on from a fossil fuel-based power plant is appropriate, realistic & credible baseline alternative for the project activity.

Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above.
Thus though two alternatives are mentioned above as per step of additionality tool, the first alternative is not possible as project activity is not viable without carbon credit benefits and second alternative is the baseline scenario for the project activity as per methodology as mentioned in section B.4 of PSF.

It is to be noted that being the green field project activity, “the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system Version 7.0”.

Sub-step 1b: Consistency with mandatory laws and regulations:
The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. The project activity comes under white category as per local regulation, thus there shall be no necessity of obtaining the Consent to Operate’’ for White category of industries. Since project activity falls under white category and the non-polluting nature of project fulfils the compliance to the local laws and regulations (This sub-step does not consider national and local policies that do not have legally-binding status.).

The relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006
- The factories act 1948

The Project activity conforms to all the applicable laws and regulations in India:

- Power generation using renewable energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage wind power projects.

- These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

The both alternatives are in compliance with laws and regulations required. There is no any mandatory requirement to implement the project activity.

Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. Since wind projects are categorized as white category, no any consent to operate required from pollution control board.

However, Alternative 2 has been selected as the appropriate baseline alternative for this project activity in line with methodology.

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
The Project activity envisages to export the power to Indian grid and the revenues from the sale would be generated in accordance with the terms and tariffs established in the Power Purchase Agreement (PPA). Thus, simple cost analysis (Option I) cannot be used as the analysis method as the sale of the units of generated electricity shall result in a revenue stream during the operations of the Project activity.

In the absence of the project activity grid electricity would have been the obvious choice for the Project which requires no investment. Hence investment comparison analysis (Option II) is also not appropriate for the project activity.

After eliminating Option I and Option II, the use of Benchmark analysis (Option III) is the method of analysis that has been selected as the most suitable method. This method determines the attractiveness of the project activity for the investors, as well as provides a measure of the viability of the investment to generate revenues during its operation, as compared with other avenues and investment options. Hence, the Benchmark analysis method is to be employed for analysis of the said project.

Sub-step 2b (Option III): Apply benchmark analysis
The investment analysis using Benchmark analysis approach (Option III) has been chosen. Further, this method illustrates the evaluation of the Project by the PP before the decision to undertake the project was taken and management approval granted.

Choice of Financial Indicator:

According to the "Tool for demonstration and assessment of Additionality Version 7.0.0", the financial indicator can be based either on (1) project IRR or (2) equity IRR. There is no general preference between the approaches (1) or (2). The benchmark chosen for analysis shall be fully consistent with the choice of approach. Therefore in accordance with the guidance, the relevant financial indicator for project activity has been chosen as post tax equity IRR.

Default Value Benchmark:
As per para 17 of EB 105, Annex 06 of Investment analysis tool Version 10, 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 in EB 105, Annex 06 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = **10.24%**

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

Nominal Benchmark[12] = {(1+Real Benchmark)*(1+Inflation rate)}-1

Where:
- Default value for Real Benchmark = 10.24% (as per Appendix of EB 105, Annex 06)

- Inflation Rate forecast for by Reserve Bank of India (RBI) (i.e. Central Bank of India) for India.

Benchmark estimation:
Appendix in EB 105, Annex 06 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = **10.24%**

- Inflation Rate forecast for by Reserve Bank of India (RBI) (i.e. Central Bank of India) for India

Benchmark Calculations	Value	Sources Link	Document Date
Default Value for India as per UNFCCC guidelines	**10.24 %**	EB 105 annex 06	28-11-19
Inflation forecast (WPI Mean) as per RBI for 10yrs	**3.30 %**	https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=16828	05-04-16
Benchmark (with 10yrs Forecast)	**13.88 %**	Calculated	

[12] As per Fisher Equation, https://en.wikipedia.org/wiki/Fisher_equation

Benchmark	**13.88 %**	Calculated	

Decision date: 11/05/2016

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 GCC Verifier. Based on result of IRR excel spreadsheets, equity IRR is less than Benchmark. The input assumption and the IRR outcome can be referred in below:

Sl. No	Organization Name	Capacity (MW)	Location	Decision date
1	M/s Sun Photo Voltaic Energy India Private Limited	78	Kannamadi, Karnataka	11/05/2016

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.

Details of the project		Source	Link
State where the project is situated	Karnataka	As per DPR	
Total Capacity (MW)	78.00	As per DPR	
Date of Commissioning	1-Mar-17	As per extension commissioning certificate	
Life of the plant (Yrs.)	25	As per DPR	-
Generation of electricity			
PLF (%)	23.00%		-
Annual generation (kWh)	157,154,400	Calculated Value	
Annual Degradation	0.00%	As per DPR	-

per year			
Tariff rate (INR/kWh)	4.50	As per PPA	-
Escalation in tariff rate	0.0%		-
Transmission & Wheeling Losses (%)	0.00%		-
Operation and maintenance cost and Insurance			-
O & M Expenses (INR Mn.)	54.60	As per DPR	-
O & M free for (Yr.)	-		-
Escalation in the operational expenses (%)	5.00%	As per DPR	-
Insurance (INR Mn.)	36.14	CERC order	-
Financial parameters			-
TOTAL COST (INR Mn.)	7,228.00	As Per DPR	-
Loan Amount (INR Mn.)	5,421.00	As Per DPR	-
Equity Investment (INR Mn.)	1,807.00	As Per DPR	
Term loan			
Loan Amount (INR Mn.)	5,421.00	As Per DPR	-
Interest rate (%)	12.00%	As Per DPR	-
Loan Tenure (Qtr.)	48	As Per DPR	-
Moratorium Period (Qtr.)	-	Assumption	
Repayment Period (Qtr.)	48	Calculated Value	-
Repayment		Calculate	-

instalments value (INR Mn.)	112.938	d Value	
1st instalment from (Qtr. end)	30-Jun-17	Considered from the next Quarter End	-
Book Depreciation (SLM Method)			
Land (Millions)	-	As per DPR	-
Gross Depreciable Value (INR Mn.)	7,228.00	Calculated Value	
Salvage Value (%)	10.00%	CERC order	http://cercind.gov.in/2015/orders/so4.pdf
Salvage value (INR Mn.)	722.80	Calculated Value	
Net Depreciable Value (INR Mn.)	6,505.20	Calculated Value	
Residual Value (INR Mn.)	722.80	Calculated Value	-
IT Depreciation			
IT Depreciation (%)	80.00%	IT act	https://www.incometaxindia.gov.in/_layouts/15/dit/mobile/viewer.aspx?path=https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm&k=&IsDlg=0
Income Tax			
Financial Year	FY 2016-17		
Income tax rate (%)	30.00%	As Per Income Tax Rule	https://taxguru.in/income-tax/income-tax-rate-chart-slabs-for-ay-2017-18-fy-2016-17.html
Corporate Tax (%)	33.00%	As Per IT rule	https://taxguru.in/income-tax/income-tax-rate-chart-slabs-for-ay-2017-18-fy-2016-17.html
Service Tax (%)	15.00%	As Per Income Tax Rule	https://taxguru.in/income-tax/income-tax-rate-chart-slabs-for-ay-2017-18-fy-2016-17.html
Surcharge (%)	0.00%	As Per Income Tax Rule	As per service tax guidelines for FY 2016-17

Health & Education cess (%)	0.00%	As Per Income Tax Rule	As per service tax guidelines for FY 2016-17
Final Tax rates			
Income tax rate (%)	30.0000 %	Calculated Value	
Corporate Tax/MAT (%)	33%	Calculated Value	
Service Tax (%)	15.0000 %	Calculated Value	

Sub-step 2d: Sensitivity Analysis

Addressing Guidance 28 & 29 of EB 92, Annex 5, 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 favourable conditions.

Probability to breach the benchmark:
Sensitivity Parameter 1: PLF
PLF considered in financials for is as per Third Party DPR which is in line with **"Guidelines for the reporting and validation of Plant load factors" stated in EB 48 Annex11 option 3(b)**. 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 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.

Sensitivity Analysis	Equity IRR			
Variation %	**-10%**	**Normal**	**10%**	**Breaching Value**
PLF	2.64%	4.86%	7.25%	**32.60%**
O&M	5.16%	4.86%	4.56%	**-297.83%**
Project Cost	7.18%	4.86%	3.11%	**-26.82%**
Tariff Rate	2.64%	4.86%	7.25%	**32.60%**

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.

Equity IRR without CDM	Benchmark (Equity IRR)
4.86%	13.88%

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.

The project activity involves generation of electricity from wind energy. The project activity is located in Karnataka in India and the policy applicable for the wind power projects is regulated by State Electricity regulation Commission (SERC) of the respective state. The boundary of Karnataka is considered for Common practice analysis.
Stepwise approach for common practice analysis has been carried out as per Methodological tool "Common Practice", version 3.1 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%	117	MW
Capacity of the proposed project activity	78	MW

-50%	39	MW

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

- The projects are located in the applicable geographical area;
- The projects apply the same measure as the proposed project activity;
- 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;
- 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;
- The capacity or output of the projects is within the applicable capacity or output range calculated in
- The projects started commercial operation before the project design document (CDM-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:

- As the projects are located in Karnataka, therefore, projects in the geographical area of Karnataka have been chosen for analysis. The project activity involves generation of electricity from wind energy. The project activity are located in Karnataka in India and the policy applicable for the wind 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 have different policies regarding renewable energy, hence Karnataka is considered as geographical region for common practise analysis.
- The project activity is a green-field wind 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.
- The energy source used by the project activity is wind. Hence, only wind energy projects have been considered for analysis.
- The project activity produces electricity; therefore, all power plants that produce electricity are candidates for similar projects.
- The capacity range of the projects is within the applicable capacity range from 39 MW to 117 MW.
- The start date of the concerned project activity is 01-03-2017. Therefore projects, which have started commercial operation before 01-03-2017 have been considered for analysis.

Numbers of Similar projects identified, which fulfil above-mentioned conditioned are
N_{wind}= 1[13]

The projects found within the capacity range are given below:

[13] https://kredlinfo.in/wind/commissioned_status.pdf

S.No.	Project Name	Capacity	PPA/Wheeling & Banking
1	Fortune Five Hydel Projects (P) Limited	51.2	Third Party
2	Mytrah Vayu (Krishna) Private Limited	56.95	PPA
3	Vyshali Energy Private Limited	48	Captive
4	Energon KN Wind Power Private Limited	46	Captive
5	Vyshali Energy Private Limited	50	Captive
6	Clean Wind Power (Manvi) Private Limited	44	Third Party

Out of the above six projects only one (Mytrah Vayu (Krishna) Private Limited) is of similar technology and hence is considered for similar projects.

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}.

CDM 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 DOE Verifier. After excluding the registered and under validation projects the total number of projects.
$N_{all} = 0$[14]

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 this criteria, there are no any different technology project out of similar identified projects.
2. Investment climate on the date of the investment decision – The wind projects developed under different phases and different batches of National Wind Mission (NSM) can considered as different technology projects. For proposed project activity, there are no any different technology project considered out of similar identified projects.

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 $F= 1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate

[14] Mytrah Vayu (Krishna) Private Limited is registered under VCS 1728.

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 $F= 1 - N_{diff}/N_{all}$
$F= 1 - (0/0) = 1$

As per methodological tool "common practise" 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 $N_{all} - N_{diff}$ is greater than 3.
Thus if both conditions are fulfilled, then project activity will be a common practise. Otherwise, the project activity is treated as not a common practise.

Outcome of Common Practise analysis:

As,
i. F = 1; which is greater than 0.2
ii. $N_{all} - N_{diff} = 0-0 = 0$; which 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.

B.6. Estimation of emission reductions

As per the para 57 of ACM0002, version 20.0, the formula to calculate the emission reduction is
$ER_y = BE_y – PE_y$

As the project activity is a wind project, there is no any leakage emissions from the project activity.

Hence, $LE_y = 0$

Therefore, Emission Reductions for this project activity are calculated as follows:

$ER_y = BE_y – PE_y$

Where:

ER_y	=	Emission reductions in year y (t CO_2e/yr)
BE_y	=	Baseline emissions in year y (t CO_2/yr)
PE_y	=	Project emissions in year y (t CO_2e/yr)

Therefore, Net GHG Emission Reductions and Removals are calculated as follows:
$ER_y = BE_y – PE_y$

B.6.1. Explanation of methodological choices

As per the approved consolidated Methodology ACM0002, version 20.0:

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

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

Where:

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

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

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system Version 7.0" (t CO_2/MWh)

As per methodology, combined grid emission factor as per the "Tool to calculate the emission factor for an electricity system" version 7.0 is calculated as below.

CO_2 Baseline Database for the Indian Power Sector, Version 16, March 2021[15] 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 7.0, 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.

[15] https://cea.nic.in/wp-content/uploads/baseline/2021/06/User_Guide_ver_16_2021-1.pdf

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 have Indian grid.

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	**Karnataka**
Haryana	Orissa	Daman & Diu	Manipur	Kerala
Himachal Pradesh	West Bengal	Dadar& Nagar Haveli	Meghalaya	Tamil Nadu
Jammu & Kashmir	Sikkim	Madhya Pradesh	Mizoram	Telangana
Punjab	Andaman & Nicobar	Maharashtra	Nagaland	Puducherry
Rajasthan		Goa	Tripura	Lakshadweep
Uttar Pradesh				
Uttarakhand				

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

GCC project owner 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.
GCC project owner has chosen only grid power plants in the calculation.

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

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

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

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

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

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
India	16.8%	15.1%	14.6%	14.3%	14.5%	17.0%

Data Source: Central Electricity Authority (CEA) database Version 16, March 2021[16]

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

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

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

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

OR

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

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

[16] https://cea.nic.in/wp-content/uploads/baseline/2021/06/User_Guide_ver_16_2021-1.pdf

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:

Net Generation in Operating Margin (GWh) (incl. Imports)				
	2016-17	**2017-18**	**2018-19**	**2019-20**
INDIAN Grid	916,278	960,639	995,957	965,009

Simple Operating Margin (tCO_2/MWh) (incl. Imports)				
	2016-17	**2017-18**	**2018-19**	**2019-20**
INDIAN Grid	0.9636	0.9543	0.9603	0.9555

Weighted Generation Operating Margin	
INDIAN Grid	**0.9568**

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 7.0, EB 100, Annex 4) para 72:

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

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

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

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

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

Build Margin (tCO_2/MWh) (not adjusted for imports)	
	2019-20
INDIAN Grid	**0.8682**

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 7.0, 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:

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

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}:

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

Therefore, $EF_{grid,CM,y}$ = 0.8682 * 0.25 + 0.9568 * 0.75
= 0.9346 tCO_2/MWh

Baseline emission factor (EF_y):

The baseline emission factor is calculated using the combined margin approach as described in

Step 6 above:

Therefore, $EF_y = EF_{grid,CM,y} = 0.9346\ tCO_2/MWh$.

B.6.2. Data and parameters fixed ex ante

Data / Parameter Table 1.

Data / Parameter:	**$EF_{grid, OM, ,y}$**
Methodology reference	ACM0002 (version 20.0)
Data unit	tCO_2e/MWh
Description	Operating Margin CO_2 emission factor in year y
Measured/calculated /default	Calculated as the last 3 year (2017-18, 2018-19, 2019-20) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 16.0, March 2021 published by Central Electricity Authority (CEA), Government of India.
Data source	CO_2 Emission Database, Version 16.0, March- 2021 published by Central Electricity Authority (CEA), Government of India.
Value(s) of monitored parameter	0.9568
Measurement/ Monitoring equipment (if applicable)	<table><tr><td colspan="2"></td></tr><tr><td>Type of meter</td><td></td></tr><tr><td>Location of meter</td><td></td></tr><tr><td>Accuracy of meter</td><td></td></tr><tr><td>Serial number of meter</td><td></td></tr><tr><td>Calibration frequency</td><td></td></tr><tr><td>Date of Calibration/ validity</td><td></td></tr><tr><td>Reference No. of Calibration Certificate</td><td></td></tr><tr><td>Calibration Status</td><td></td></tr></table> Not Applicable
Measuring/reading/ recording frequency (if applicable)	Not Applicable
Calculation method (if applicable)	Not Applicable
QA/QC procedures	This parameter is fixed ex-ante for the entire crediting period.
Purpose of data	For the calculation of the Baseline Emission.
Additional comments	-

Data / Parameter:	**$EF_{grid, BM, y}$**
Methodology reference	ACM0002 (version 20.0)
Data unit	tCO_2e/MWh
Description	Build Margin CO_2 emission factor in year y
Measured/calculated /default	Calculated as the last 3 year (2017-18, 2018-19, 2019-20) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 16.0, March 2021 published by Central Electricity Authority (CEA), Government of India.
Data source	CO_2 Emission Database, Version 16.0, March - 2021 published by Central Electricity Authority (CEA), Government of India.
Value(s) of monitored parameter	0.8682
Measurement/ Monitoring equipment (if applicable)	<table><tr><td colspan="2"></td></tr><tr><td>Type of meter</td><td></td></tr><tr><td>Location of meter</td><td></td></tr><tr><td>Accuracy of meter</td><td></td></tr><tr><td>Serial number of meter</td><td></td></tr><tr><td>Calibration frequency</td><td></td></tr><tr><td>Date of Calibration/ validity</td><td></td></tr><tr><td>Reference No. of Calibration Certificate</td><td></td></tr><tr><td>Calibration Status</td><td></td></tr></table> Not Applicable
Measuring/reading/ recording frequency (if applicable)	Not Applicable
Calculation method (if applicable)	Not Applicable
QA/QC procedures	This parameter is fixed ex-ante for the entire crediting period.
Purpose of data	For the calculation of the Baseline Emission.
Additional comments	-

Data / Parameter:	**$EF_{grid, CM, ,y}$**
Methodology reference	ACM0002 (version 20.0)
Data unit	tCO_2e/MWh
Description	Combined Margin CO_2 emission factor in year y

<table>
<tr><td>Measured/calculated /default</td><td>Calculated as the last 3 year (2017-18, 2018-19, 2019-20,) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 16.0, March 2021 published by Central Electricity Authority (CEA), Government of India.</td></tr>
<tr><td>Data source</td><td>CO_2 Emission Database, Version 16.0, Mar 2021 published by Central Electricity Authority (CEA), Government of India.</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>0.9346</td></tr>
<tr><td>Measurement/ Monitoring equipment (if applicable)</td><td><table><tr><td colspan="2"></td></tr><tr><td>Type of meter</td><td></td></tr><tr><td>Location of meter</td><td></td></tr><tr><td>Accuracy of meter</td><td></td></tr><tr><td>Serial number of meter</td><td></td></tr><tr><td>Calibration frequency</td><td></td></tr><tr><td>Date of Calibration/ validity</td><td></td></tr><tr><td>Reference No. of Calibration Certificate</td><td></td></tr><tr><td>Calibration Status</td><td></td></tr></table>
Not Applicable</td></tr>
<tr><td>Measuring/reading/ recording frequency (if applicable)</td><td>Not Applicable</td></tr>
<tr><td>Calculation method (if applicable)</td><td>The combined margin emissions factor is calculated as follows:
$\mathbf{EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}}$
Where:
$EF_{grid,BM,y}$= Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EF_{grid,OM,y}$= Operating margin CO_2 emission factor in year y (tCO_2/MWh)
W_{OM} = Weighting of operating margin emissions factor (%) = 75%
W_{BM}= Weighting of build margin emissions factor (%) = 25%</td></tr>
<tr><td>QA/QC procedures</td><td>This parameter is fixed ex-ante for the entire crediting period.</td></tr>
<tr><td>Purpose of data</td><td>For the calculation of the Baseline Emission.</td></tr>
<tr><td>Additional comments</td><td>-</td></tr>
</table>

B.6.3. Ex-ante calculation of emission reductions

Ex-ante calculation of emission reductions is equal to ex-ante calculation of baseline emissions as project emissions and leakage are nil.

Emission reductions are calculated as follows:

$ER_y = BE_y - PE_y$

Where:
ER_y = Emission reductions in year y (t CO_2e/yr)

BE_y = Baseline emissions in year y (t CO_2e/yr)

PE_y = Project emissions in year y (t CO_2/yr)

Project emissions = 0

Leakage = 0

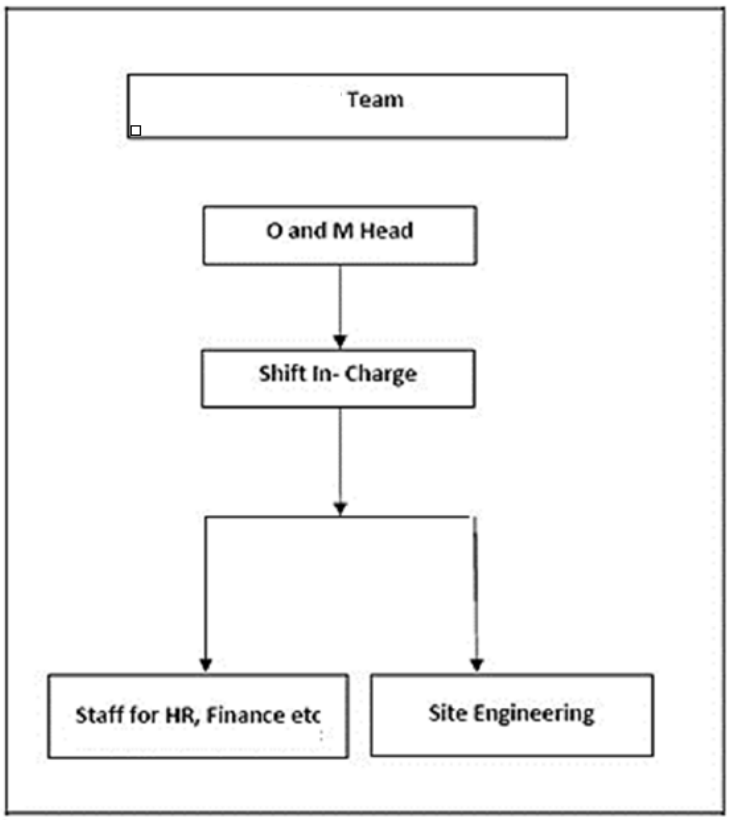
B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
Year 1	146,876	0	0	146,876
Year 2	146,876	0	0	146,876
Year 3	146,876	0	0	146,876
Year 4	146,876	0	0	146,876
Year 5	146,876	0	0	146,876
Year 6	146,876	0	0	146,876
Year 7	146,876	0	0	146,876
Year 8	146,876	0	0	146,876
Year 9	146,876	0	0	146,876
Year 10	146,876	0	0	146,876
Total	1,468,760	0	0	1,468,760
Total number of crediting years	10			
Annual average over the crediting period	146,876	0	0	146,876

B.7. Monitoring plan

The monitoring plan is developed in accordance with the modalities and procedures for GCC project activities and is proposed for grid-connected wind power project being implemented. The monitoring plan, which will be implemented by the GCC Project Owner describes about the monitoring organisation, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the GCC Project Owner. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipments for this project activity. The team comprises of the following members:



Responsibility
• Reviewing the monthly and annual generation statistics. • Evaluating the GHG performance of the project activity. • Identifying the opportunities for future improvement • Addressing grievance related to project activity.
• Implementation of corrective appropriate measures in case any discrepancies are identified in the reported parameters. • Review of monthly report. • Ensuring calibration of monitoring equipment as and when required.
• Monitoring and reporting the GHG performance related parameters following the guidance provided in the project design document • Preparation of monthly and annual generation statistics. • Reporting of any discrepancies identified in the reporting parameters. • Ensuring calibration of the monitoring equipments as and when required.

Data Measurement:

The export and import energy will be measured continuously using above mentioned Main and Check meters located at the substations. Readings of meters shall be taken on monthly basis by authorized officer of SEB in the presence of PP or representative of PP. Based on the Meter Reading Statement to PP, invoices will be raised. These invoices can be used for cross checking the meter readings taken for the respective project activity.

Data collection and archiving

Readings from meters will be collected in the presence of the plant in-charge. Export and Import data would be recorded and stored in logs as well as in electronic form on a daily basis. The records are checked periodically by the Plant Manager and discussed thoroughly with the plant supervisor. The period of storage of the monitored data will be 2 years after the end of crediting period or till the last issuance of ACCs for the project activity whichever occurs later.

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.

Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff 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.

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 crosschecked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

B.7.1. Data and parameters to be monitored

Data / Parameter Table 01.

<table>
<tr><td>Data / Parameter:</td><td>$EG_{PJ,y}$ (SDG 7)</td></tr>
<tr><td>Methodology reference</td><td>ACM0002 (version 20.0)</td></tr>
<tr><td>Data unit</td><td>MWh/y</td></tr>
<tr><td>Description</td><td>Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh</td></tr>
<tr><td>Measured/calculated /default</td><td>Measured</td></tr>
<tr><td>Data source</td><td>Monthly Regional Energy Account issued by SRLDC</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>157,154</td></tr>
<tr><td>Measurement/ Monitoring equipment</td><td>
<table>
<tr><td colspan="2"></td></tr>
<tr><td>Type of meter</td><td>Energy meter</td></tr>
<tr><td>Location of meter</td><td>Substation</td></tr>
<tr><td>Accuracy of meter</td><td>02. or 0.5</td></tr>
<tr><td>Serial number of meter</td><td>To be confirmed during issuance time asper records</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td>Calibration frequency</td><td>Once in 5 years.[17]</td></tr><tr><td>Date of Calibration/ validity</td><td>To be conformed during issuance</td></tr><tr><td>Reference No. of Calibration Certificate</td><td>To be conformed during issuance</td></tr><tr><td>Calibration Status</td><td>To be conformed during issuance</td></tr></table>
Measuring/reading/ recording frequency	Continuous measurement & monthly recording
Calculation method (if applicable)	-
QA/QC procedures	The meters is approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of data	Calculation of baseline emissions
Additional comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.

Data / Parameter:	**Employment (SDG 1)**
Methodology reference	GCC Project Sustainability Standard_V2.1.
Data unit	Number
Description	Unskilled employment for below poverty line (BPL) category people
Measured/calculated /default	Measured
Data source	Appointment Letter and Below poverty Line (BPL) card no. or ration card issued by state government

[17] http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

Value(s) of monitored parameter	Minimum 5
Measurement/ Monitoring equipment	<table><tr><td colspan="2">Not Applicable</td></tr><tr><td>Type of meter</td><td></td></tr><tr><td>Location of meter</td><td></td></tr><tr><td>Accuracy of meter</td><td></td></tr><tr><td>Serial number of meter</td><td></td></tr><tr><td>Calibration frequency</td><td></td></tr><tr><td>Date of Calibration/ validity</td><td></td></tr><tr><td>Reference No. of Calibration Certificate</td><td></td></tr><tr><td>Calibration Status</td><td></td></tr></table>
Measuring/reading/ recording frequency	Yearly
Calculation method (if applicable)	The total number of unskilled employed for below poverty line (BPL) category people can be confirmed from the appointment letter and BPL card or ration card issued by state govt..
QA/QC procedures	The number of persons employed is mentioned in the plant register, which can be crossed checked with daily attendance register.
Purpose of data	To justify SDG Goal 1 - End poverty in all its forms everywhere
Additional comments	-

Data / Parameter:	**Gender Equality and Economic Growth (SDG 5)**
Methodology reference	GCC Project Sustainability Standard_V2.1.
Data unit	Number
Description	Equal pay for work of equal value for both men and women
Measured/calculated /default	Measured
Data source	Salary Slip
Value(s) of monitored parameter	Minimum 1

Measurement/ Monitoring equipment	<table><tr><td colspan="2">Not Applicable</td></tr><tr><td>Type of meter</td><td></td></tr><tr><td>Location of meter</td><td></td></tr><tr><td>Accuracy of meter</td><td></td></tr><tr><td>Serial number of meter</td><td></td></tr><tr><td>Calibration frequency</td><td></td></tr><tr><td>Date of Calibration/ validity</td><td></td></tr><tr><td>Reference No. of Calibration Certificate</td><td></td></tr><tr><td>Calibration Status</td><td></td></tr></table>
Measuring/reading/ recording frequency	Yearly
Calculation method (if applicable)	The equality in payment to both men and women for equal work can be verified from the payment slips.
QA/QC procedures	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. Payment slips from the HR department can confirm the same.
Purpose of data	To justify SDG Goal 5 – Achieve gender equality and empower all women and girls
Additional comments	-

Data / Parameter:	**Local Employment Generation (SDG 8)**
Methodology reference	GCC Project Sustainability Standard_V2.1.
Data unit	Number
Description	Number of local employment generation
Measured/calculated /default	Measured
Data source	Appointment letter
Value(s) of monitored parameter	At least 2 persons for each site

Measurement/ Monitoring equipment	**Not Applicable** Type of meter Location of meter Accuracy of meter Serial number of meter Calibration frequency Date of Calibration/ validity Reference No. of Calibration Certificate Calibration Status
Measuring/reading/ recording frequency	Yearly
Calculation method (if applicable)	The total number of local people employed can be confirmed from the appointment letter.
QA/QC procedures	The number of persons employed is mentioned in the plant register, which can be crossed checked with daily attendance register.
Purpose of data	To justify SDG Goal 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Additional comments	-

Data / Parameter:	**Climate Action (SDG 13)**
Methodology reference	GCC Project Sustainability Standard_V2.1.
Data unit	tCO_2e/Year
Description	Emission reductions achieved per year
Measured/calculated /default	Calculated
Data source	As per Estimated ER sheet. During the verification, the results are obtained from the Actual ER sheet.
Value(s) of monitored parameter	146,876 tCO_2e

<table>
<tr><td>Measurement/ Monitoring equipment</td><td>
<table>
<tr><th colspan="2">Not Applicable</th></tr>
<tr><td>Type of meter</td><td></td></tr>
<tr><td>Location of meter</td><td></td></tr>
<tr><td>Accuracy of meter</td><td></td></tr>
<tr><td>Serial number of meter</td><td></td></tr>
<tr><td>Calibration frequency</td><td></td></tr>
<tr><td>Date of Calibration/ validity</td><td></td></tr>
<tr><td>Reference No. of Calibration Certificate</td><td></td></tr>
<tr><td>Calibration Status</td><td></td></tr>
</table>
</td></tr>
<tr><td>Measuring/reading/ recording frequency</td><td>Monthly</td></tr>
<tr><td>Calculation method (if applicable)</td><td>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.</td></tr>
<tr><td>QA/QC procedures</td><td>Reduction of Greenhouse gases results in clean environment.</td></tr>
<tr><td>Purpose of data</td><td>To justify SDG Goal 13 – Take urgent action to combat climate change and its impacts</td></tr>
<tr><td>Additional comments</td><td>-</td></tr>
</table>

B.7.2. Monitoring-program of risk management actions

Not Applicable

B.7.3. Sampling plan

Not Applicable

B.7.4. Other elements of the monitoring plan

Refer monitoring plan details mentioned in section B.7

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

Start date of the project activity is the earliest date of interconnection with the grid i.e. 01/03/2017.

The details of the commissioning dates of the individual project activity.

Sl. No	Organization Name	Capacity (MW)	Location	Date of Commissioning
1	M/s Sun Photo Voltaic Energy India Private Limited	78	Kannamadi, Karnataka	01/03/2017

C.2. Expected operational lifetime of the Project Activity

25 years

C.3. Crediting period of the Project Activity

Crediting Period Start date: 01/03/2017
Crediting Period End date: 28/02/2027

C.3.1. Fixed crediting period

Yes

C.3.2. Start date of the crediting period

01/03/2017

C.3.3. Duration of the crediting period

10 years

Section D. Environmental impacts

D.1. Analysis of environmental impacts

The project activity does not involve any major construction activity. It primarily requires the installation of the wind turbines, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that wind project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same.

Thus, there is no any significant impact due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity. However, further analysis has been done in section E.

D.2. Environmental impact assessment

The guidelines on Environmental Impact Assessment have been published by Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India (GOI) under Environmental Impact Assessment notification 14/09/2006 . Further amendments to the notification have been done on 14/07/2018. As per the notification:

“The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category ‘A’ in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category ‘B’ in the said Schedule, before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity:

1) All new projects or activities listed in the Schedule to this notification;
2) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernization;
3) Any change in product - mix in an existing manufacturing unit included in Schedule beyond the specified range.”

As the wind generation projects are not listed in any of the categories of the schedule, So, the project is considered environmentally safe and as per Host party- India no EIA is required.

Section E. Environmental and social safeguards

E.1. Environmental safeguards

>>

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards									Project Owner's Conclusion	
		Description of Impact *(both positive and negative)*	**Legal requirement / Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Environmental impacts on the identified categories[18] indicated below.	*Indicators for environmental impacts*	*Describe anticipated environmental impacts, both positive and negative from all sources (stationary and mobile), that may result from the Project Activity, within and outside the project boundary, over which the Project Owner(s) has control, and beyond what would reasonably be expected to occur in the absence of the Project Activity.*	*Describe the applicable national regulatory requirements /legal limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Not Applicable** (No actions required)*	*If environmental impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ below the legal limits, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Harmless** (No actions required)*	*If environmental impacts are anticipated that will not be in compliance with the applicable national regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as **Harmful** (Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as **Harmful**.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce the risk of impacts that have been identified as **Harmful**.*	*Re-evaluate risks after Risk Mitigation Action Plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as **Harmless** (No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative environmental impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for **Yes** or and -1 for **No**)*
Environmental Safeguards												
Environment - *Air*	*SO_x emissions*	The wind power project does not cause any SOx emissions in the	The Air (Prevention & Control of Pollution) Act	Not Applicable as no emissions	Not Applicable. No Action Required	Not Applicable. No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified	NA

[18] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

		project scenario. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SOx emissions, on which data is not available and can't be quantified.	1981stipulates thresholds for both ambient air quality as well as stack emissions..	occur in the project scenario and therefore is not expected to or does not cause any harm.							direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SOx emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	NO_x emissions	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White	NA

											category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted NOx emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	CO_2 emissions	In absence of the project activity the stated amount of generated electricity would be generated by the operation of grid - connected power plants. The caused CO2 emissions by the grid - connected power plants is expressed as grid emission factor, i.e. t CO2/MWh generated grid electricity, due	The Air (Prevention & Control of Pollution) Act 1981stipulates thresholds for both ambient air quality as well as stack emissions. .	Not Applicable as no emissions occur in the project scenario and therefore is not expected to or does not cause any harm.	Not Applicable. No Action Required	Not Applicable. No action required	Not Applicable	Not Applicable	No Action Required	The generated electricity the project activity will be continuously measured and the related CO2 emission reduction will be calculated according to the applied methodol	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to	+1

		to fossil fuel based grid power plants. Therefore the non -fossil fuel, zero emission - generated electricity by the project activity will substitute the grid electricity and related CO2 emissions, i.e. CO2 emission reduction = generated electricity by the project activity x grid emission factor								ogy ACM002 (version 20)	Operate'' for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO2 emissions, which has been calculated by the combined margin emission factor as mentioned in the PSF. Therefore, emission reductions are expected to be reduced which will be regularly monitored and verified ex-post and therefore is eligible to be scored.	
	CO emissions	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries	NA

											However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Suspended particulate matter (SPM) emissions	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SPM emissions, on	NA

											which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Fly ash emissions	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted fly ash emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this	NA

											parameter will not be scored.	
	Non-Methane Volatile Organic Compounds (NMVOCs)	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Con sent to Operate'' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted NM/VOCs emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	NA

	Odor emissions	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981 .	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) wind power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate'' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted Odor emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	NA
	Noise Pollution	Wind turbines produce noise when operating. The noise is generated primarily from mechanical and	Noise (Regulation and Control) Rules 2000 amended in 2010)	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	The noise pollution related to the wind power plant complies with the Noise (Regulation and Control) Rules 2000	NA

		aerodynamic sources. Mechanical noise may be generated by machinery in the nacelle. Aerodynamic noise emanates from the movements of air around the turbine blades and tower. The types of aerodynamic noise may include low frequency, impulsive low frequency, tonal and continuous broadband. In addition, the amount of noise may rise with increasing rotation speed of the turbine blade,									amended in 2010). Due to the technical specification of the wind turbine and the distance between two wind farms maintained at site, it is expected that noise will be significantly low from the project activity.	
	Shadow Flicker	Shadow flicker occurs when the sun passes behind the wind turbine and casts a shadow. As the rotor blades rotate, shadows pass over the same point causing an effect termed shadow flicker. Shadow flicker may become a problem when potentially sensitive receptors (e.g., residential properties, workplaces, learning and/or	No Indian legislation exists. As guidance the Environmental, Health and Safety Guidelines for Wind Energy issued by the IFC (international finance corporation)	NA	NA	NA	NA	NA	NA	NA	Proposed wind turbines are coated with non-reflective paint, which will avoid reflection of light from towers. Similar to shadow flicker, blade or tower glint occurs when the sun strikes a rotor blade or the tower at a particular orientation. This can impact the community, as	NA

		health care spaces/facilities) are located nearby, or have a specific orientation to the wind energy facility									the reflection of sunlight off the rotor blade may be angled toward nearby residences. Blade glint is a temporary phenomenon for new turbines only, and typically disappears when blades get soiled after a few months of operation. Since the settlements are more than 500 m away from the project site this problem is not anticipated in the operational stage of the project. Also, WTGs considered in this project are painted with non-reflective coatings; reflection from tower is not anticipated.	
	Add more rows if required											
Environment - *Land*	*Solid waste Pollution from Plastics*	Not Applicable	Plastic Waste (Management and Handling) Rules, 2016	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant plastic waste is expected from the project activity during operational	NA

											phase Hence,, this parameter will not be scored.	
	Solid waste Pollution from Hazardous wastes	Not applicable	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	As per MoEFCC notification dated 01.03.2019 (G.S.R. 178(E)) the Occupier (developer) is not required to obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Amendment, Rules, 2019 if they are exempted from obtaining consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. However, M/s Sun Photo Voltaic Energy India Private Limited management should ensure proper disposal of Hazardous Waste (DG oil, if DG is installed) through actual user, waste collector or operator of the	NA

											disposal facility, in accordance with the Central Pollution Control Board guidelines. Moreover, though not covered under the rule, the broken wind turbines are recommended to be sent back to the manufacture or an authorized recycler Hence,, this parameter will not be scored.	
	Solid waste Pollution from Bio-medical wastes	Not Applicable	Bio-medical Waste Management Rules, 2016	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant bio-medical waste will be generated from the project activity. Hence,, this parameter will not be scored.	NA
	Solid waste Pollution from E-wastes	Not Applicable	E-waste (Management and Handling) Rules	Not Applicable	-	-	Records all electrical & electronics waste of projects sites and filling of return	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and filling of returns as per applicable law	Not Applicable	Not Applicable	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and filling of returns as per applicable law and have no significant impact. Hence,, this parameter will not be scored.	NA

	Solid waste Pollution from Batteries	No batteries are involved in the project activity	Batteries (Management and Handling) Rules	Not Applicable	-	-	Records all electrical & electronics waste of projects sites and filling of return	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and filling of returns as per applicable law	Not Applicable	Not Applicable	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and filling of returns as per applicable law and have no significant impact. Hence,, this parameter will not be scored.	NA
	Solid waste Pollution from end of life products/ equipment	Not Applicable	Solid Waste Management Rules, 2016	Not Applicable	-	-	Sold waste from the project activity must be disposed as applicable law	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and dispose all products after ending lifecycle as per applicable law	Not Applicable	Not Applicable	M/s Sun Photo Voltaic Energy India Private Limited management is responsible to maintain records and dispose all products after ending lifecycle as per applicable law and it will not applicable for the project activity Hence,, this parameter will not be scored.	NA
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury)	Not Applicable	In India, there are no comprehensive soil quality regulations and standards to ascertain the seriousness of contamination	Not Applicable	-	-	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant soil pollution from chemicals during operation phase of the project activity However, the in the baseline scenario (grid) some of the fossil fuel power plants may have	NA

											emitted soil emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Soil erosion	Not Applicable	In India, there are no comprehensive soil quality regulations and standards to ascertain the seriousness of contamination	Not Applicable	No Action Required	-	-	Not Applicable	No Action Required	Not Applicable	There is no chance of soil erosion during operation phase of the project activity However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted soil erosion emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	NA
	Others	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Add more rows if required											
Environment - *Water*	*Reliability/ accessibility of water supply*	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	Not Applicable	-	-	Not Applicable	No Action Required	Not Applicable	Supply water from local body will be used and necessary approval to be obtained.	NA

											However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted accessibility of water emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Water Consumption from ground and other sources	Not Applicable	Permission for abstraction of Ground water under Environmental (Protection) Act 1986	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No ground water will be consumed in all sites of the project activity & necessary permission to be obtained from concerned local authority in case use ground water in future. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted water consumption emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this	NA

											parameter will not be scored.	
	Generation of wastewater	Negative	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels However, the in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	NA
	Wastewater discharge without/with insufficient treatment	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There is no significant effect as provisions of septic tank and soak pits	NA

											will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels However, the in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water or its treatment on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Pollution of Surface, Ground and/or Bodies of water	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the	NA

											impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels However, the in the baseline scenario (grid) some of the fossil fuel power plants may have from surface water on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	Others	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Add more rows if required											
Environment – *Natural Resources*	*Conserving mineral resources*	Not Applicable	In India, there are no conserving mineral resources regulations and standards to ascertain	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	This is wind project activity and it is not using any natural minerals. therefore this parameter will not be scored.	NA
	Protecting/ enhancing plant life	Not Applicable	In India, there are no comprehensive regulations and standards to	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	The project activity has been implemented in barrel land	NA

			ascertain for protecting plant life								and no trees have been removed from the site due to project activity. therefore this parameter will not be scored.	
	Protecting/ enhancing species diversity	There may be harmful effects on birds and bats due to the project activity	In India, there are no comprehensive regulations and standards to ascertain for protecting plant life	Not Applicable	Harmless	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There are no wildlife sanctuaries, bird sanctuaries or migratory paths within the 10 km radius of the Study area Wind turbine blade and towers visible to birds as blade tips and tower is painted with orange or red colour as per international standard measure to isolate from the sky and mitigates risk of bird collisions. wind turbine blades shall rotate between 12 to 18 RPM as per SOP .The slow rotating blades are made more visible to the birds Installed spike guards on poles/channels to avoid any bird sitting on	

											them and reduce the chances of electrical shocks Covered the jumpers on the electric poles by HDPE pipes to insulate jumpers which would prevent electrocution of birds. Hence it is expected that no significant impact bird and bat species habitat the project activity is unlikely to cause any harm. . therefore	
	Protecting/ enhancing forests	Not Applicable	The Forest (Conservation) Act 1980 & 1981	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No forest land has been used for the project activity.	NA
	Protecting/ enhancing other depletable natural resources	Not Applicable	National Forest Policy (Revised) 1988	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	The project activity has been implemented in barrel land and no trees have been removed from the site due to project activity or no other natural resource has been used to operate project activity	NA

											therefore this parameter will not be scored.	
	Conserving energy	Not Applicable	Energy Conservation Act 2001	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	All efficient products & instruments has been used in the project activity, hence no significant impact due to this. therefore this parameter will not be scored.	NA
	Replacing fossil fuels with renewable sources of energy	Not Applicable	Energy Conservation Act 2001	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No impact as project activity is not replacing fossil fuels with renewable resources	NA
	Replacing ODS with non-ODS refrigerants	Not Applicable	In India, there are no comprehensive regulations and standards to ODS & non ODS	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No impact Therefore this parameter will not be scored.	NA
	Others											
	Add more rows if required											

Note: If the score is: (a) zero or greater, the overall impact is neutral or Negative and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	**+1**
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to the environment.

E.2. Social Safeguards

Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**									**Project Owner's Conclusion**	
		Description of Impact (*both Negative and negative)*	**Legal requirement /Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Social impacts on the identified categories[19] indicated below.	*Indicators for social impacts*	*Describe the impacts on society and stakeholders, both Negative and negative, that may result from constructing and operating of the Project Activity.*	*Describe the applicable national regulatory requirements / legal limits related to the identified risks of social impacts.*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Not Applicable** (No actions required)*	*If social impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ legal limits, then it the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Harmless** (No actions required)*	*If social impacts are anticipated that will not be in compliance with the applicable national regulatory requirements/ legal limits, then the Project Activity is likely to cause harm (may be unsafe) and shall be indicated as **Harmful** (Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as **Harmful**.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., construction of crèche for workers) that will be adopted to reduce the risk of impacts that have been identified as **Harmful**.*	*Re-evaluate risks after Risk Mitigation Actions plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as **Harmless** (No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and to be described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative social impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for **Yes** or and -1 for **No**)*
Social Safeguards												
Social - *Jobs*	*Long-term jobs (> 1 year) created/ lost*	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	New short-term jobs (< 1 year) created/ lost	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

[19] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

	Sources of income generation increased / reduced	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Social - *Health & Safety*	*Disease prevention*	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Reducing / increasing accidents	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Reducing / increasing crime	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Reducing / increasing food wastage	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Reducing / increasing indoor air pollution	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Efficiency of health services	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Sanitation and waste management	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Other health and safety issues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Add more rows if required											
Social - *Education*	*Job related training imparted or not*	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Educational services improved or not	Not Applicable	The created permanent jobs will receive specific job	Not Applicable	No Action Required	No action required	Not Applicable	Not Applicable	No Action Required	Training records/evidence by the	M/s Sun Photo Voltaic Energy India Private Limited should take initiative	+1

			training by the project owner as per CSR policy of M/s Sun Photo Voltaic Energy India Private Limited							project owner	Promotion of education, including special education and employment enhancing vocation skills especially among children, women, elderly and the differently abled and livelihood enhancement projects	
	Project-related knowledge disseminatio n effective or not	Negative	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Other educational issues	Negative	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Add more rows if required											
Social - *Welfare*	*Improving/ deteriorating working conditions*	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Community and rural welfare	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Poverty alleviation (more people above poverty level)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Improving / deteriorating wealth distribution/ generation of	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

	income and assets											
	Increased or / deteriorating municipal revenues	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Women's empowerment	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Reduced / increased traffic congestion	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Other social welfare issues	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Add more rows if required											

Note: If the score is: (a) zero or greater, the overall impact is neutral or Negative and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to society. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	+1
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.

Section F. United Nations Sustainable Development Goals (SDG)

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UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs					Project Owner(s)'s Conclusion	
			Project-level SDGs	Project-level Targets/ Actions	Project-level Indicators	Contribution of Project-level Actions to SDG Targets	Monitoring	Explanation of Conclusion	Are Goal/ Targets Likely to be Achieved?
Describe UN SDG targets and indicators *See: https://unstats.un.org/sdgs/indicators/indicators-list/*	*Describe the UN-level target(s) and correspo-nding indicator no(s)*	*Has the host country declared the SDG to be a national priority? Indicate Yes or No*	*Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope.* ***For guidance see:*** *Integrating the SDGs into Corporate Reporting- A Practical Guide: https://www.unglobalcompact.org/docs/publications/Practical_Guide_SDG_Reporting.pdf* *Case-study from Coca-Cola and other organizations to develop organization-wide SDGs (page 114):* https://pub.iges.or.jp/pub/realising-transformative-potential-sdgs	*Define project-level targets/actions, by suitably modifying and customizing UN/Country-level targets to the project scope. Define the target date by which the Project Activity is expected to achieve the project-level SDG target(s).*	*Define project-level indicators by suitably modifying and customizing UN/Country-level indicators to the project scope or creating a new indicator(s). Refer to the previous column for guidance*	*Describe and justify how actions taken under the Project Activity are likely to result in a direct Negative effect that contributes to achieving the defined project-level SDG targets and is additional to what would have occurred in the absence of the Project Activity*	*Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG target and Indicator*	*Describe how the Project Owner has concluded that the project is likely to achieve the identified Project level SDGs target(s).*	*Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or No)*

				Refer to the previous column for guidance					
Goal 1: End poverty in all its forms everywhere	End poverty in all its forms everywhere	Yes See also: Voluntary national review of the republic of India on the implementation of the 2030 agenda for sustainable development https://sustainabledevelopment.un.org/content/documents/26279VNR_2020_India_Report.pdf	Unskilled employment for below poverty line (BPL) category people	At least 5 including all sites	No of Unskilled employment for below poverty line (BPL) employees at site	Providing employment to BPL person helps to reduce poverty	BPL or Ration card issued by the state govt. Employee logbook or register at site	PP shall ensure the first preference to be given to BPL person for unskilled work as per their CSR policy. Number of unskilled employment for below poverty line (BPL) employed directly due to the project activity	Yes
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture									

Goal 3. Ensure healthy lives and promote well-being for all at all ages									
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all									
Goal 5. Achieve gender equality and empower all women and girls	**Achieve gender equality and empower all women and girls by 2030**	Yes See also: Voluntary national review of the republic of India on the implementation of the 2030 agenda for sustainable development https://sustainabledevelopment.un.org/content/documents/26279VNR_2020_India_Report.pdf	Equal pay for work of equal value" for both men and women as per CSR policy and shall hired at least 1 women employee at site	No discrimination against women.	No of women employees at site	Contribute to achieve equal rights for men & women	Employment register, complain register & pay slip	Number of women employed directly due to the project activity As per company policy of M/s Sun Photo Voltaic Energy India Private Limited, men & women have equal rights and no discrimination will be tolerated against women.	Yes
Goal 6. Ensure availability and									

sustainable management of water and sanitation for all									
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	SDG target 7.2 "By 2030, Increase substantially the share of renewable energy in the global energy mix" Indicator 7.2.1 Renewable energy share in the total final energy consumption	Yes See also: Voluntary national review of the republic of India on the implementation of the 2030 agenda for sustainable development https://sustainabledevelopment.un.org/content/documents/26279VNR_2020_India_Report.pdf	The project activity provides 78 MW installed capacity of renewable energy and will deliver up to 157,154 MWh/y (ex-ante estimation) zero emission electricity annually.	From the start of operation onwards the project activity will deliver renewable energy to the grid to increase the share of renewable energy in the national grid.	The net generated renewable electricity, which will be delivered to the grid over a period y will be used as project level indicator.	The wind power plant contributes directly to achieve the SDG target, because the project activity delivers renewable energy, which would otherwise generate by fossil fuel dominated grid connect power plants.	The net electricity supplied to the grid by the project activity is continuously monitored through energy m-eter (main and check meter) installed at the sub-station. The meters remain under the custody of state utility.	Project owner operates the plant since 01/03/2017 and complies with targeted SDGs so far.	Yes
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	SDG Target 8.2 "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a	Yes, Same as described under goal 7.	The project activity will create at least 2 permanent jobs in the renewable power sector.	The vacancies of the jobs due to the project will be occupied one year after the operation start of the project activity	The number of permanent created jobs, will be used as project-level indicator	The wind power plant contributes directly to achieve the SDG target, because the project activity The project activity creates	The total number of persons working in the plant would be calculated based on the daily log available at site.	Number of people employed directly due to the project activity	Yes

	focus on high value added and labour intensive sectors". Indicator 8.2.1: Annual growth rate of real GDP per employee					jobs in the renewable energy sector, which diversify and upgrades the commonly used technology in the energy sector of India			
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation									
Goal 10. Reduce inequality within and among countries									
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable									
Goal 12. Ensure sustainable consumption and production patterns									
Goal 13. Take urgent action to combat climate change and its impacts	Integrate climate change measures into national policies, strategies and planning.	Yes	The project will generate around 157,154 MWh electricity without greenhouse gas emissions. The project activity will avoid around	From the operation onwards the project activity will	The reduced greenhouse gas emissions per year will be used as proper project-level indicator.	The wind power plant contributes directly to achieve the	The net generated electricity supplied to the grid (measured with electricity meters)	Project owner operates the plant since 01/03/2017 and	Yes

	Indicator13.2.2: Total greenhouse gas emissions per year.		146,876 tCO_2e/year greenhouse gas emissions compared to the current used grid connected power plant technology and used power sources (mainly fossil fuels).	deliver electricity without greenhouse gas emissions, i.e. 0t CO2/net generated MWh.		SDG target, because the project activity delivers renewable energy, which would otherwise generated by fossil fuel dominated grid power plants.	multiplied with the CO2 emission factor of the grid (as described by the UNFCCC CDM methodology CDM Methodological tool 07 "Tool to calculate the emission factor for an electricity system"– Version 07.0.) will give the reduced greenhouse gas emissions	complies with targeted SDGs so far.	
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development									
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss									

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels									
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development									

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**5**	**5**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	Platinum	Platinum

Section G. Local stakeholder consultation

G.1. Modalities for local stakeholder consultation

The local stakeholder consultation for the project activity have been carried out. The Local Stakeholder consultation documents have been provided to GCC Verifier during project verification of project activity.

Sl. No	Organization Name	Capacity (MW)	Location	Invitation date	Meeting date
1	M/s Sun Photo Voltaic Energy India Private Limited	78	Kannamadi, Karnataka	12/06/2016	28/06/2016

Project representatives explained the project benefits and how project would help to fight against climate change and no any negative comments received during the local stakeholder round. The Minutes of meeting with commenting sheet from LSH, invitation letter receipt copy is submitted to the GCC Verifier for further check. Few queries raised during local stakeholder consultation are addressed satisfactorily.
Villagers were totally in support for setting up of these kinds of projects in the region. The PP also placed a grievance register onsite in where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately. Also, regular stakeholder engagement is one the key focus at the site

G.2. Summary of comments received

The Meeting started with opening speech by representative of GCC project owner. He introduced all guests on dais. The representative of GCC project owner explained Technical aspects of project to stakeholders. He also explained about social, environmental & economic 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.
Most of the questions were related to employment opportunities, economic development, benefits from project to villagers and other development activities. The question raised by the villagers are summarised below:
Q: Will there be free supply of power to the local people?
A: The generated power will be fed in the grid. Project promoter can't supply directly power to the local people. They have to get authorized connection from Govt. body. But due to the project activity the supply of power in the area will increase.
Q: Will there be employment generation due to the project activity for youth from the adjoining areas?
A: Responding about the increased possibilities for employment of local youth due to the project activity, it was pointed out that preference would be given for locals in the employment opportunities.
Q: Will it impact the underground water level in the nearby area?
A: No, it will not impact the underground water level of the nearby area.
Also the project was listed for global stakeholder commenting and no comments received during the above period

G.3. Consideration of comments received

There were no comments raised by the stakeholders and they were totally in support for setting up of these kinds of projects in the region.

Section H. Approval and authorization

Not Applicable

Appendix 1. Contact information of project owners

Organization name	M/s Sun Photo Voltaic Energy India Private Limited
Country	India
Address	Tower A, 3rd Floor, The Millenia No. 1 & 2 Murphy Road, Ulsoor Bangalore Bangalore Karnataka 560008 India
Telephone	+91-9540519320
Fax	-
E-mail	jsahoo@acciona.com
Website	-
Contact person (primary contact)	Mr. Jagannath Sahoo
Contact person (secondary contact)	-
Telephone	-
E-mail	jsahoo@acciona.com

Organization name	EKI Energy Services Limited
Country	India
Address	Office No 201, Plot No 48, Scheme 78, Part 2, Vijay Nagar, Indore, Madhya Pradesh-452010
Telephone	+91-9907534900
Fax	+91-0731-4289086
E-mail	manish@enkingint.org
Website	www.enkingint.org
Contact person (primary contact)	Mr. Manish Dabkara
Contact person (secondary contact)	Mr. Naveen Sharma
Telephone	+91-9907534900
E-mail	manish@enkingint.org

Appendix 2. Affirmation regarding public funding

M/s Sun Photo Voltaic Energy India Private Limited that there would be no divergence of Official Development Assistance (ODA) in any of the project activity. This would be confirmed through undertaking / declaration from the project owner.

Appendix 3. Applicability of methodology(ies)

Refer to section B.6.1.

Appendix 4. Further background information on ex ante calculation of emission reductions

Refer to section B.6.2.

Appendix 5. Further background information on monitoring plan

Refer to section B.7.

Appendix 6. Summary report of comments received from local stakeholders

Refer to section G.2.

Appendix 7. Summary of de-registered CDM project (Type B)

Not Applicable as project category is A2.

Complete this form in accordance with the instructions attached at the end of this form.	
CDM Project registration number	
Date of registration of CDM Project	
Title of the Project Activity	
CDM Project de-registration reference number	
Date of de-registration of the CDM Project	
Project Participants (authorized by the host / annex 1 country letter of approval)	
Country where the project is located	

<table>
<tr><td>Applied CDM methodology(ies)
(provide reference and version number(s))</td><td></td></tr>
<tr><td>Pre-registration changes to the CDM Project Activity
(Tick as applicable)</td><td>
<table>
<tr><th>CDM Pre-registration Changes</th><th>Reference number</th><th>Approved</th><th>Provide a summary of pre-registration changes</th></tr>
<tr><td>Deviations from the CDM methodology</td><td></td><td>☐</td><td></td></tr>
<tr><td>Deviations from the CDM Tool</td><td></td><td>☐</td><td></td></tr>
<tr><td>Deviations from the CDM rules</td><td></td><td>☐</td><td></td></tr>
<tr><td>Other…….</td><td></td><td>☐</td><td></td></tr>
</table>
</td></tr>
</table>

Post-registration changes to the CDM Project Activity

(Tick as applicable)

CDM Post registration Changes	Reference number	Approved	Provide a summary of post-registration changes
Change in project design		☐	
Request for revision of monitoring plan		☐	
Request for change in start date of crediting period		☐	
Renewal of crediting period		☐	
Temporary deviations		☐	
Other…….		☐	

Crediting Period(s)

Crediting period(s)			Period (start & end dates)	ERs as per registered PDD/MR	CERs issued
Crediting Period (shall start on or after 1 Jan 2016)	Fixed 10 year				
	Renewable (7 years, with 2 approved renewals)	1st			
		2nd			
		3rd			
Period for which CERs have been issued					
Period for which CERs have been requested but not issued					-
Period for which CERs have never been requested for issuance (no monitoring reports submitted)					-
Period for which CERs have never been requested for issuance prior to CDM de-registration					-
Remaining Crediting period, after CDM de-registration, for which CERs have not been issued by the UNFCCC CDM Executive Board, subject to a ceiling of 10 years as allowed under the GCC Program					-

<table>
<tr><td>Details of Previous CDM Issuance Requests</td><td>
<table>
<tr><th>Issuance Request</th><th>Period
(start & end dates)</th><th>ERs as per registered PDD</th><th>Quantity of CERs requested to be issued</th><th>Quantity of CERs issued</th></tr>
<tr><td>1st</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2nd</td><td></td><td></td><td></td><td></td></tr>
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<tr><td>Total</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>List any open issues in the Validation and last Verification Report (e.g., FARs, if any) and how they have been addressed</td><td></td></tr>
<tr><td>Any other relevant information that has not been reported in the registered CDM documents and that may have adverse impacts on the environmental integrity of the Project Activity</td><td></td></tr>
<tr><td>Provide the list of all the registered documents related to this project, as available on the UNFCCC/CDM website and the corresponding URLs.</td><td></td></tr>
</table>

DOCUMENT HISTORY

Version	Date	Comment
V 3.2	31/12/2020	▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.1	17/08/2020	▪ Editorial revisions made ○ Revised Table in section B.7.2 on Monitoring-program of risk management actions ○ Revised Table in section E.1 on Environmental Safeguards ○ Revised Table in section E.1 on Social Safeguards ○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)
V 3.0	05/07/2020	▪ Revised version released on approval by Steering Committee as per GCC Program Process; ▪ Revised version contains following changes: ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by Steering Committee: ➢ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➢ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020). ○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for approval under CORSIA[20];
V 2.0	25/06/2019	▪ Revised version released for approval by the GCC Steering Committee. ▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

[20]See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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