PROJECT CONCEPT NOTE
CARBON OFFSET UNIT (CoU) PROJECT

Title: 25.2 MW Wind Project by Sun-N-Sand Hotels in Maharashtra & Rajasthan
Version 1.0
Date 31/05/2025
First CoU Issuance Period: 11 years 11 months 31 days
Date: 01/01/2013 to 31/12/2024

Project Concept Note (PCN)
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	25.2 MW Wind Project by Sun-N-Sand Hotels in Maharashtra & Rajasthan
The scale of the project activity	Large-Scale Wind Project
Completion date of the PCN	03/05/2025
Project participants	Sun N Sand Hotels Pvt ltd
Host Party	India
Applied methodologies and standardized baselines	ACM0002-Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0
Sectoral scopes	01 Energy industries (Renewable/Non-renewable Sources)
Estimated amount of total GHG emission reductions	**26,623** CoUs (Annually)

SECTION A. Description of project activity

A.1. Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project "25.2 MW wind Project by Sun N Sand Hotel Pvt Ltd" in Jaisalmer Satara & Sangli, district in the State of Maharashtra & Rajasthan. The project activity involves supply, erection, commissioning and operation of 32 machines of rated capacity 800 kW & 600kW each. The machines are Enercon E-48, E-40 & E-53 make. The project is owned by SUN N SAND HOTELS PVT LTD (hereinafter referred to as the Project Proponent or PP).

The details of the registered project are as follows:

Purpose of the project activity:

SUN N SAND HOTELS PVT LTD has installed 25.2 MW wind farm in the state of Maharashtra & Rajasthan in India. There are 32 Wind Energy Convertors ("WEC's") of with rated capacity 800 kW & 600kW each. The generated electricity is supplied to Electricity Distribution Company (DISCOM) under a long-term power purchase agreement (PPA). The expected operational lifetime of the project is for 20 years. The project being a renewable energy generation activity, leads to reduction in fossil fuel dominated electricity generation from the Indian grid.

The purpose of the project activity is to generate emission free and environment friendly electricity from the wind energy potential available in the region. The project is expected to generate and supply **38,852 MWh** of electricity annually to the Indian grid. The project thus addresses the demand–supply gap in the state of Maharashtra & Rajasthan and will assist the sustainable growth, conservation of resources and reduction of greenhouse gas emissions by using renewable energy source like wind energy. The project activity will contribute towards reduction of greenhouse gas (GHG) emission from the atmosphere, which has been estimated to be approximately **28,587 tCO2e** per year, by displacing an equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly of fossil fuel-based power plants. Thus, the project does not only reduce the demand-supply gap of the respective grid, but also helps in reducing other pollutants like SOx, NOx, etc. from the atmosphere. In the absence of the project activity the equivalent amount of electricity would have been generated from the connected/ new power plants in the Indian grid, which are/ will be predominantly based on fossil fuels.

This is also the pre-project scenario. The technology employed for the project is well proven and safe.

Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.):

The WECs under the project activity were commissioned between 28/12/2001 and 19/08/2015. The expected operational lifetime of the project is for 25 years.

Customer Name	Make	Location	Total Capacity	Date of Commissioning	SITE
SUN N SAND HOTELS PVT LTD	E-48	45	0.8	01-12-2008	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	46	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	48	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	49	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	59	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	8	0.8	01-03-2006	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	33	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	34	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	11	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	12	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	31	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	28	0.8	01-04-2006	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	42	0.8	01-05-2006	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	20	0.8	01-06-2006	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	22	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	9	0.8	01-07-2006	BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	10	0.8		BHAMBRWADI
SUN N SAND HOTELS PVT LTD	E-48	509	0.8	01-03-2009	PANCHPATTA
SUN N SAND HOTELS PVT LTD	E-53	136	0.8	01-05-2011	CHAVNESHWAR
SUN N SAND HOTELS PVT LTD	E-40	313	0.6	28-12-2001	VAREKRWADI
SUN N SAND HOTELS PVT LTD	E-40	314	0.6		VAREKRWADI
SUN N SAND HOTELS PVT LTD	E-53	404	0.8	09-07-2015	SALKHA
SUN N SAND HOTELS PVT LTD	E-53	427	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	428	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	433	0.8		SALKHA

SUN N SAND HOTELS PVT LTD	E-53	2402	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	424	0.8	19-08-2015	SALKHA
SUN N SAND HOTELS PVT LTD	E-53	425	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	2001	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	2404	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	2406	0.8		SALKHA
SUN N SAND HOTELS PVT LTD	E-53	2407	0.8		SALKHA

A.2 Do no harm or Impact test of the project activity>>

There are social, environmental, economic and technological benefits which contribute to sustainable development.

Social benefits:

- The project activity will contribute to socio-economic development through improving the infrastructure for road network and other mode of communications in the remote part of the state during both the construction and operational period.
- The project activity will utilize renewable energy source for electricity generation instead of fossil fuel-based electricity generation which would have emitted gaseous, liquid and/or solid effluents/wastes. Thus, the project causes no negative impact on the surrounding environment and contributes to environmental well-being.
- The project activity will contribute towards reduction of the GHG emissions as well as emission of pollutants like SOx, Suspended Particulate Matters (SPMs) etc. by avoiding equivalent amount of power generation from fossil fuel-based power plants.

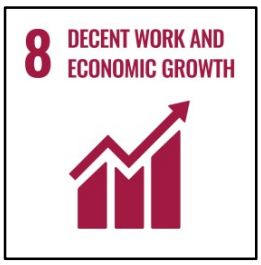
Environmental benefits:

- Utilizing wind energy instead of burning fossil fuels for electricity generation significantly decreases the emission of harmful pollutants, fostering cleaner air, water, and soil.
- Leveraging wind energy aids in preserving natural resources and minimizing detrimental impacts on the environment, contributing to overall ecological well-being.
- Moreover, harnessing wind energy offers a sustainable alternative to burning fossil fuels, which not only mitigates pollution but also conserves natural habitats and biodiversity, supporting healthier ecosystems and enhancing environmental resilience.

Economic benefits:

- The project will generate electricity utilizing renewable source like wind, thus will increase the contribution of renewable based power generation in the region and will also help in reducing the demand - supply gap of the respective grid.
- The project activity involves substantial amount of investment, thus will contribute towards generation of direct and indirect employment opportunities as per the requirement of the skilled and semi-skilled manpower.
- Use of a renewable source of energy reduces the dependence on imported fossil fuels and associated price variation, thereby leading to increased energy security.

Goal 7 	➢ The project activity will generate clean energy, which with increased share will increase the affordability at a cheaper rate to end user. The project activity will utilize energy (renewal resource) to generate power. The project activity will increase the share of renewable resource-based electricity to global mix of energy consumption.

Goal 8 	➢ Decent work and economic growth. This project generates additional employment for skilled and unskilled people, also the project situated in remote area will provide employment opportunities to unskilled people from villages. The training on various aspects including safety, operational issues and developing a skill set will also be provided to employees ➢ This project will achieve full and productive employment and decent work.
Goal 13 	➢ This 25.2 MW Wind power project meets the SDG 13 goal by saving fossil fuel and producing clean energy. This project is expected to reduce 28,587 **tCO_2** annually. ➢ In a Greenfield project, electricity delivered to the grid by the project would have otherwise been generated by the operation of grid connected power plants. Thereby the project activity reduces the dependence on fossil fuel-based generation units and as there are no emissions associated with this project it contributes to the reduction of greenhouse gases (GHG) emissions.

A.3. Location of project activity >>

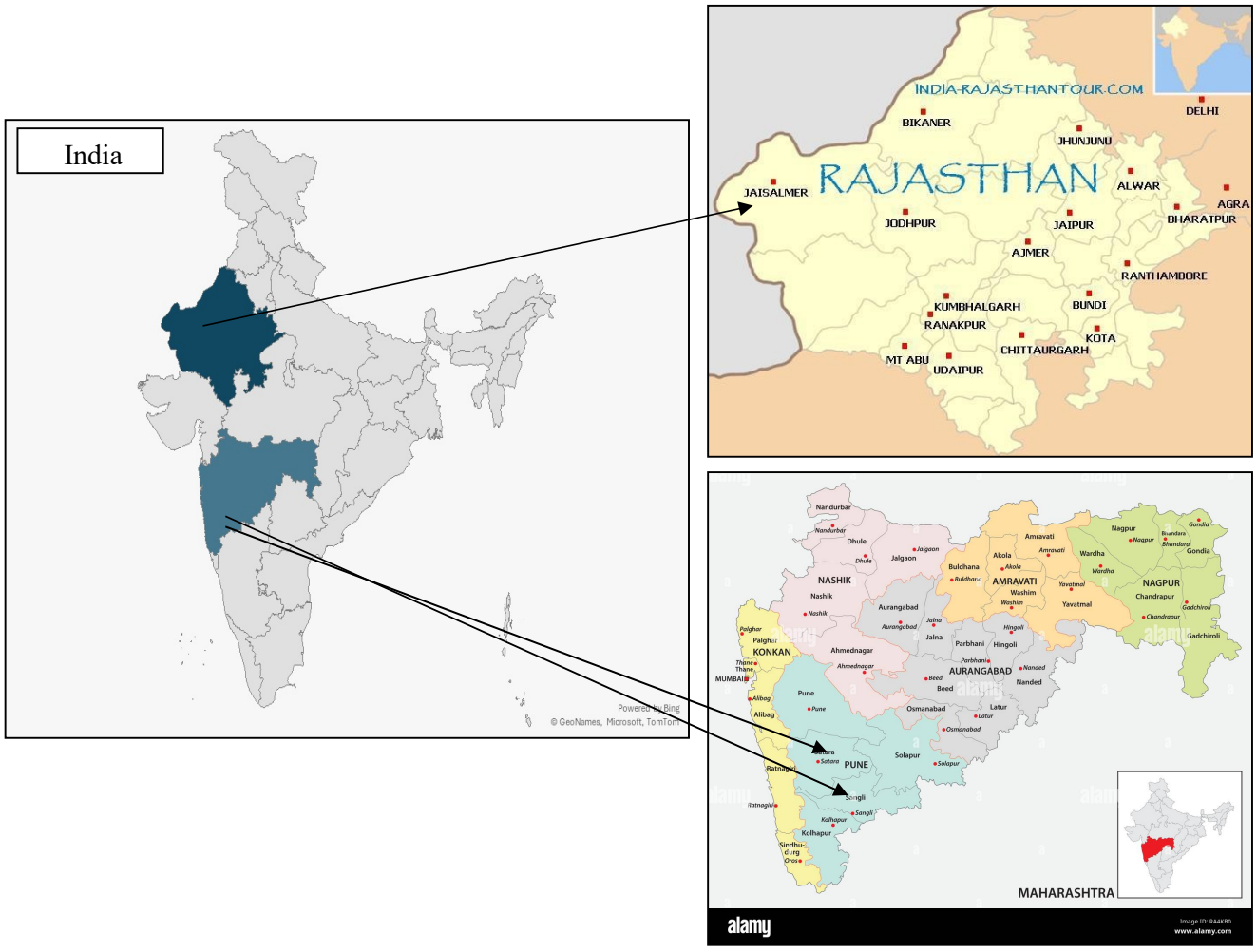
The Project activity is located at Jaisalmer, Satara & Sangli District in the state of Maharashtra & Rajasthan.

Details of Latitude & Longitude of Individual machines have been Given below: -

Name	Make	No of WEC	Total Capacity	Site	Location	Longitude	Latitude
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	45	17.150519	73.914809
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	46	17.149048	73.914804
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	48	17.145455	73.920946
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	49	17.146567	73.920683
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	59	17.16076	73.918822
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	8	17.111591	73.933359
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	33	17.137161	73.929459
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	34	17.139178	73.92819
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	11	17.116606	73.940891
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	12	17.118611	73.941787
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	31	17.132625	73.925221
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	28	17.126608	73.935518
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	42	17.132322	73.914042
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	20	17.121049	73.933509
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	22	17.113386	73.939523
SUN N SAND	E-48	1	0.8	BHAMBRWADI	9	17.113391	73.935494

HOTELS PVT LTD							
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	BHAMBRWADI	10	17.115027	73.941041
SUN N SAND HOTELS PVT LTD	E-48	1	0.8	PANCHPATTA	509	19.61210918	73.78887322
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	CHAVNESHWAR	136	17.94393209	74.01100011
SUN N SAND HOTELS PVT LTD	E-40	1	0.6	VAREKRWADI	NA	17.127183	73.588857
SUN N SAND HOTELS PVT LTD	E-40	1	0.6	VAREKRWADI	NA	17.126925	73.588573
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	404	26.84342329	70.6259129
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	427	26.87181126	70.64001768
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	428	26.86933164	70.64211568
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	433	26.89312081	70.60329819
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	2402	26.84592639	70.62410714
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	424	26.87463449	70.62537281
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	425	26.8753851	70.63072839
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	2001	26.83334878	70.61654222
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	2404	26.85244915	70.61259693
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	2406	26.84717816	70.61333732
SUN N SAND HOTELS PVT LTD	E-53	1	0.8	SALKHA	2407	26.84800074	70.61086337

The location of the project site has been shown below:



A.4. Technologies/measures >>

The project activity involves 32 numbers of wind energy converters (WECs) of Enercon make (800 KW, E48, E40, E48) with internal electrical lines connecting the project activity with local evacuation facility. The WECs generate 3-phase power at 400V, which is stepped up to 33 KV. The other salient features of the state-of-art-technology are:

E-53		E-48		E-40	
Feature	Value	Feature	Value	Feature	Value
General		General		General	
Manufacturer	Enercon	Manufacturer	Enercon (Allemagne)	Rated power	600.0 kW
Model	E53/800	Model	E48/800	Flexible power ratings	-

Rated power	800 kW	Rated power	800 kW	Cut-in wind speed	2.5 m/s
Rotor diameter	52.9 m	Rotor diameter	48 m	Rated wind speed	12.0 m/s
Availability	No more available	Availability	No more available	Cut-out wind speed	28.0 m/s
Wind class	IEC S (WZ II exp)	Wind class	IEC IIa (DIBt WZ III)	Rotor	
Offshore model	no	Offshore model	no	Diameter	43.7 m
Swept area	2,198 m²	Swept area	1,810 m²	Swept area	1,521.0 m²
Specific area	2.75 m²/kW	Specific area	2.27 m²/kW	Number of blades	3
Number of blades	3	Number of blades	3	Rotor speed, max	34.0 U/min
Power control	Pitch	Power control	Pitch	Tipspeed	78 m/s
Rotor		Rotor		Type	AERO E-40
Minimum rotor speed	11 rd/min	Minimum rotor speed	16 rd/min	Material	GFK
Maximum rotor speed	29.5 rd/min	Maximum rotor speed	31.5 rd/min	Manufacturer	Enercon
Cut-in wind speed	2 m/s	Cut-in wind speed	3 m/s	Power density 1	394.5 W/m²
Rated wind speed	13 m/s	Rated wind speed	14 m/s	Power density 2	2.5 m²/kW
Cut-off wind speed	25 m/s	Cut-off wind speed	25 m/s	Buy spares	Buy blades for Enercon E-40/6.44
Gear Box		Manufacturer	Enercon	Gear box	No
Gear box	no	Gear Box		Buy spares	Buy gearbox for Enercon E-40/6.44
Generator		Gear box	no	Generator	
Type	SYNC Wounded	Stages	-	Type	synchronous
Number	1	Gear ratio	-	Number	1
Maximum speed	28.3 rounds/minute	Manufacturer	-	Speed, max	34.0 U/min
Voltage	400 - 690 V	Generator		Voltage	440.0 V

Tower		Tower		Grid connection	WR
Minimum hub height	60 m	Minimum hub height	50 m	Grid frequency	50 Hz
Maximum hub height	75 m	Maximum hub height	76 m	Manufacturer	Enercon

A.5. Parties and project participants >>

Party (Host)	Participants
India (Host)	Sun N Sand Hotel Pvt ltd

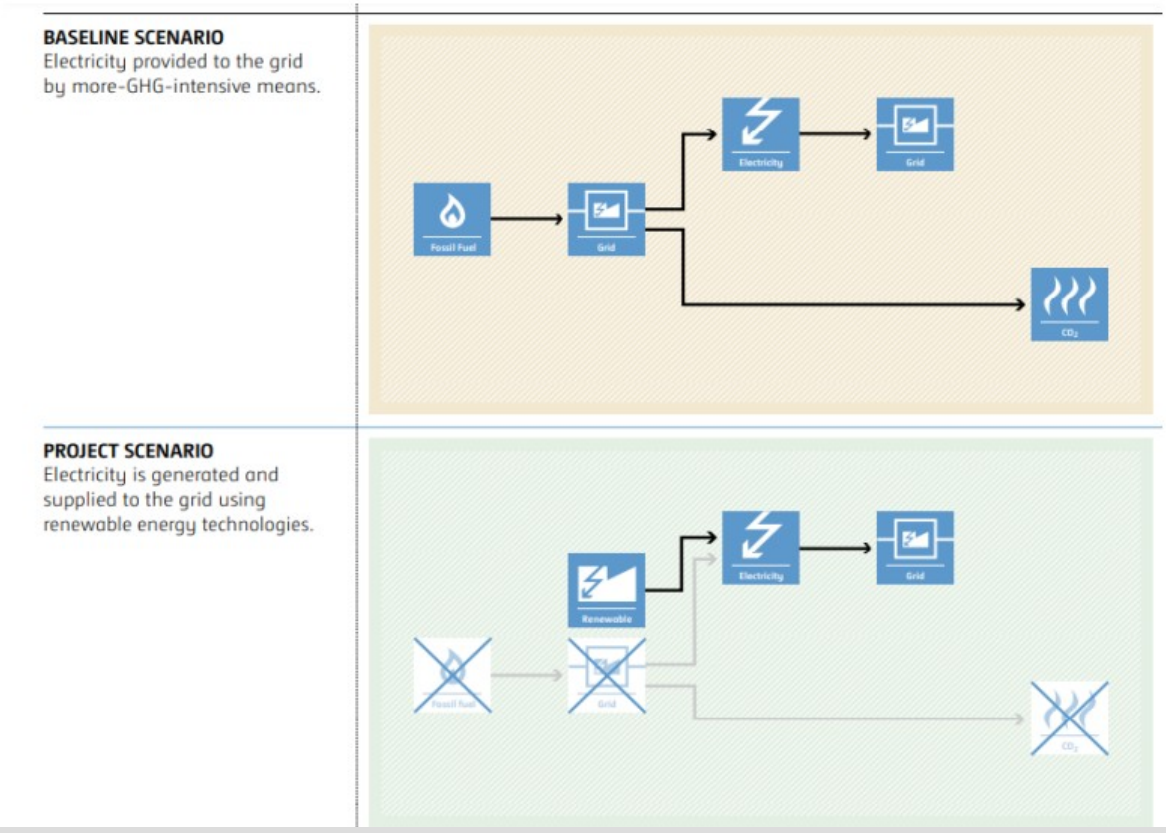
A.6. Baseline Emissions>>

The baseline scenario identified at the PCN stage of the project activity is:

The scenario existing prior to the implementation of the project activity, is electricity delivered to the facility by the project activity that would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources. This is a green field project activity. There was no activity at the site of the project participant prior to the implementation of this project activity. Hence pre-project scenario and baseline scenario are the same.

As per the approved consolidated methodology ACM0002 Version 22, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: "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 to the grid".

The Schematic diagram showing the baseline scenario:



A.7. Debundling>>

This Project is not a debundled component of a larger project activity.

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines >>

SECTORAL SCOPE –01 Energy industries (Renewable/Non-renewable sources)

TYPE **- Renewable Energy Projects**

CATEGORY- ACM0002., Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0

B.2. Applicability of methodologies and standardized baselines >>

Applicability Criteria.	**Applicability status**
1)This methodology is applicable to grid-connected renewable energy 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 plant(s)/unit(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s), or (e) Involve a replacement of (an) existing plant(s)/unit(s). (f) Install a Greenfield power plant together with a grid-connected Greenfield pumped storage power plant. The greenfield power plant may be directly connected to the PSP or connected to the PSP through the grid.	The proposed project involves establishing a new grid-connected renewable wind power plant, confirming to the specified criteria.
2) In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a)Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic1 or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). (e) Integrate a BESS together with a Greenfield power plant that is operating in coordination with a PSP. The BESS is located at site of the greenfield renewable power plant.	The project entails installing a new grid-connected renewable wind power project without the integration of a Battery Energy Storage System (BESS). Therefore, this condition does not apply to the project activity.
3)The methodology is applicable under the following conditions: (a) 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; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power	The proposed project involves installing new wind power plants without integrating a Battery Energy Storage System (BESS). Thus, the mentioned criterion does not apply

capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; (c) In case of Greenfield project activities applicable under paragraph 7(a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g., by referring to feasibility studies or investment decision documents); (d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g., week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period. (e) In case the project activity involves PSP, the PSP shall utilize the electricity generated from the renewable energy power plant(s) that is operating in coordination with the PSP during pumping mode	
4)In case of hydro power plants, one of the following conditions shall apply: a)The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or b)The project activity is implemented in an existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (7) is greater than 4 W/m2; or c)The project activity results in new single or multiple reservoirs and the power density calculate equation (7), is greater than 4 W/m2. d)The project activity is an integrated hydro power project involving multiple reservoirs, where the power density of any of the reservoirs, calculated using equation (7), 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	The proposed project involves the installation of wind power plants/units. Hence, the mentioned criterion is not applicable.

capacity of the integrated project, as per equation (8), is greater than 4 W/m2; (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 are: 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.	
5)In the case of integrated hydro power 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 indifferent 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 five years prior to implementation of CDM project activity.	The proposed project activity involves the installation of wind power plants/units. Therefore, the mentioned criteria are not applicable.
6) In the case of PSP, the project participants shall demonstrate in the PDD that the project is not using water which would have been used to generate electricity in the baseline.	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.
7)The methodology is not applicable to: a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b) Biomass-fired power plants;	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.
8)In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.

B.3. Applicability of double counting emission reductions >>

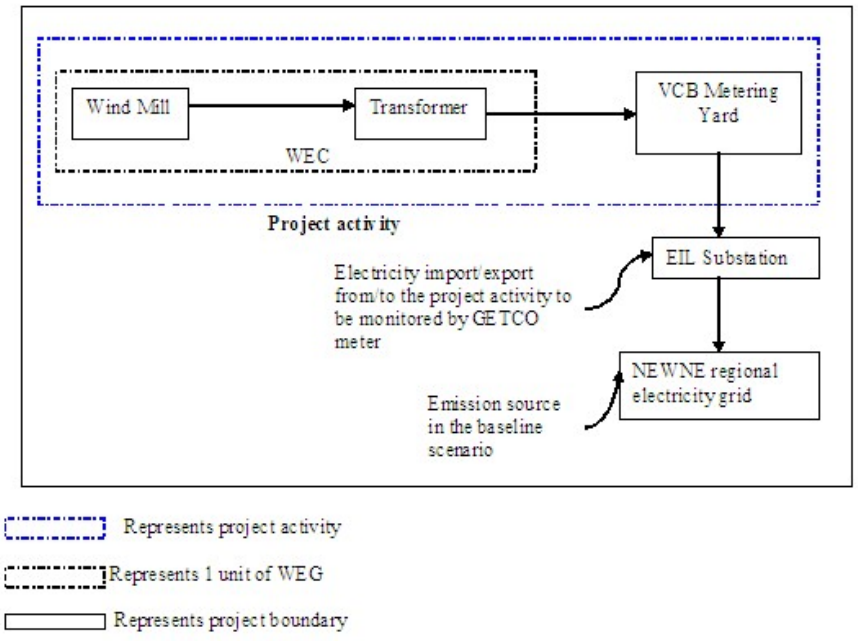
There is no double accounting of emission reductions in the project activity due to the following reasons:

- Project is uniquely identifiable based on its location coordinates,
- Project has dedicated commissioning certificate and connection point,
- Project is associated with energy meters which are dedicated to the consumption point for project developer.

B.4. Project boundary, sources and greenhouse gases (GHGs)>>

According to the applicable methodology, the spatial extent of this project activity includes the project site and all the power plants connected physically to the electricity system (grid) that the power project is connected to. Therefore, the project boundary includes all the 32 WECs of PP along with the WECs of the other customers connected to the sub-station and the metering points. The project activity is further connected to the network of state transmission utility which Falls under the network of Indian grid. Thus, the project boundary also includes all the power plants physically connected to the Indian grid.

Project boundary:



The baseline study of the Indian grid shows that the main sources of GHG emissions under the baseline scenario are CO_2 emissions from the conventional power generating systems. Other emissions are that of CH_4 and N_2O but both emissions have been excluded for simplification. The

project activity generates

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Grid connected electricity generation	CO_2	Yes	In the baseline scenario, the electricity would have been sourced from the Indian grid which in turn would be connected to fossil fuel fired power plants which emit CO_2.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.
Project Scenario	Greenfield wind energy conversion system	CO_2	No	The project activity does not emit any emissions.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.

B.5. Establishment and description of baseline scenario >>

As per the approved consolidated methodology ACM0002. version - 22, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

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

The project activity involves setting up of a new grid connected Wind power plant to harness the green power from wind energy. 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. The power produced at grid from the other conventional sources which are predominantly fossil fuel based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

As per approved consolidated methodology ACM0002, version 22.0, emission reduction is estimated as difference between the baseline emission and project emission after factoring into leakage

Emission reductions are calculated as per methodology ACM0002, Version 22.0 Equation 17:

$$ER_y = BE_y - PE_y \quad \textbf{(Eq. 1)}$$

Where,

ER_y = Emissions reductions in year y (t CO2)

BE_y = Baseline emissions in year y (t CO2)

PE_y = Project emissions in year y (t CO2)

Baseline Emissions

The baseline emissions as per methodology ACM0002, Version 22.0, para 57; encompass solely the CO2 emissions stemming from electricity generation in power plants displaced by the project activity. The methodology operates on the assumption that any electricity generation exceeding baseline levels would have originated from established grid-connected power plants and the integration of new grid-connected power plants.

The Baseline emissions as per methodology ACM0002, Version 22.0 Equation 17 in year y can be calculated as follows:

BE y = EG PJ, y * EF grid, CM, y

Where:

BE_y= Baseline emissions in year *y* (tCO_2/yr)

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

$EF_{grid,y}$= Grid Emission factor in year y (tCO_2/MWh)

Since the project activity is the installation of a new grid connected renewable power plant (green field project), hence, $EG_{PJ,y}$ has been calculated as :

EGPJ,y = EGfacility,y

Where:

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

A "grid emission factor" denotes the CO2 emission factor (measured in tCO2/MWh) associated with each unit of electricity supplied by an electricity system. The UCR suggests employing an emission factor of 0.9[1] from 2013 to 2023 and Emission Factor of 0.757 tCO2/MWh for 2024.

[1]As per UCR CoU Standard Update: 2024 Vintage UCR Indian Grid Emission Factor Announced | by Universal Carbon Registry | Jan, 2025 | Medium

Project Emission:
Regarding project emissions, ACM0002 version 22.0 specifies that only emissions related to fossil fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, and emissions from water reservoirs of hydroelectric plants should be taken into account. Since the project involves a wind power project, emissions from renewable energy plants are negligible
Hence (PEy = 0).

Leakage Emission:
Leakage, as outlined in ACM0002 version 22.0, para 5.6, is considered to be zero as there is no transfer of energy-generating equipment in the project activity
Hence (LEy = 0).

While the actual emission reduction achieved during the initial crediting period will be submitted during the first monitoring and verification, an ex-ante estimation is provided for reference.

Estimated Annual or Total baseline emission reductions (BEy)= 28,587CoUs /year (28,587tCO2eq/year)

Year	Net Generation	Baseline Emissions	Project Emissions	Leakage	Emission Reductions	EF
	MWh	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO2/MWh)
Year 1	19867.68	17880.91	0.00	0.00	17880.91	0.9
Year 2	19867.68	17880.91	0.00	0.00	17880.91	0.9
Year 3	19867.68	17880.91	0.00	0.00	17880.91	0.9
Year 4	19867.68	17880.91	0.00	0.00	17880.91	0.9
Year 5	19867.68	17880.91	0.00	0.00	17880.91	0.9
Year 6	37527.84	33775.06	0.00	0.00	33775.06	0.9
Year 7	37527.84	33775.06	0.00	0.00	33775.06	0.9
Year 8	37527.84	33775.06	0.00	0.00	33775.06	0.9
Year 9	37527.84	33775.06	0.00	0.00	33775.06	0.9
Year 10	46357.92	41722.13	0.00	0.00	41722.13	0.9
Year 11	46357.92	41722.13	0.00	0.00	41722.13	0.9
Year 12	46357.92	35092.95	0.00	0.00	35092.95	0.757
Total Emission reduction	**388523**	**343041**	**0**	**0**	**343042**	
Average Emission Reduction	32377	28587	0	0	28,587	

B.6. Prior History>>
The project activity is registered under Clean Development Mechanism (CDM) with the IDs: 560[2] ,1542[3],5334[4] The crediting period of this project under CDM is given below. Therefore, PP only

[2]CDM 560
[3]CDM 1542
[4]CDM 5334

claims exclusively for periods outside the established CDM crediting period.

Project Name	CDM Registration No	Crediting Period	Site
Generation of electricity from 1.2 MW capacity wind mills by Sun-n-Sand Hotels Pvt. Ltd. at Satara, Maharashtra	560	01 Jan 02 - 31 Dec 11 (Fixed)	Satara
Generation of electricity from 9.6 MW capacity wind mills by Sun-n-Sand Hotels Pvt. Ltd. at Bhambarwadi, Maharashtra	1542	17 Jun 08 - 16 Jun 18 (Fixed)	Bhambarwadi II
Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra	5334	01 Feb 12 - 31 Jan 22 (Fixed)	Bhambarwadi

B.7. Changes to start date of crediting period >>

There is no change in the start date of crediting period.

B.8. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>

There are no permanent changes from registered PCN monitoring plan and applied methodology

B.9. Monitoring period number and duration>>

First Issuance Period: 11 years 11 months 31 days – 01-01-2013 to 31/12/2024

B.8. Monitoring plan>>

Data and Parameters available at validation (ex-ante values):

Data/Parameter	*EF*Grid,y
Data unit	tCO2 /MWh
Description	A "grid emission factor" refers to a CO2 emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO2/MWh for the 2013 – 2023 years & 0.757 tCO2/MWh for 2024 onwards as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the

	emission reduction under conservative approach.
Source of data Value(s) applied	UCRCoUStandardAug2022updatedVer6_090822220127104470.pdf (rackcdn.com) https://medium.com/@UniversalCarbonRegistry/ucr-cou-standard-update-2024-vintage-ucr-indian-grid-emission-factor-announced-ddb790cdc603
Measurement methods and procedures	- All the cluster meters and sub-station meters (main & check meters) are electronic and two-way (bi-directional) meters that measure both export and import of electricity and provide net electricity exported to the grid.
Monitoring frequency	Ex-ante fixed parameter
Purpose of data	For the calculation of Emission Factor of the grid

Data / Parameter:	$EGpj_{,y}$ net
Data unit:	MWh
Description:	Net electricity supplied to the Indian grid facility by the project activity.
Source of data:	Joint Meter Reading Report
Measurement procedures (if any):	- Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Archiving Policy: Electronic Calibration frequency: Once in 5 years (considered as per provision of CEA India). The net electricity generated by the project activity will be calculated.
Value Applied	**38,852 MWh** (Annualized average value has been considered here for an ex-ante estimation only, whereas this is an-ex post parameter hence actual value shall be applied during monitoring and verification)
Monitoring frequency:	Monthly
QA/QC procedures:	Continuous monitoring, hourly measurement monthly recording. Tri-vector (TVM)/ABT energy meters with accuracy class 0.2s.
Any comment:	-