Monitoring Report

CARBON OFFSET UNIT (CoU) PROJECT

Title: 3.75 MW Bundled Wind Power Project by GARL, Gujarat

Version 2.0
Date of MR: 23/10/2023
UCR ID: 374
UCR MR Period: 01
1st CoU Issuance Period: 01/01/2013 to 31/12/2022 (10 years 00 months 00 days)
1st Monitoring Period: 01/01/2013 to 31/12/2022 (10 years 00 months 00 days)

Monitoring Report (MR)
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	**3.75 MW Bundled Wind Power Project by GARL, Gujarat**
Scale of the project activity	Small Scale
UCR Project ID	374
Completion date of the MR	23/10/2023
Project participants	**Project Proponents**: **Project Proponent**: Gokul Agro Resources Limited (GARL) **UCR ID**: 341368293
Host Party	India
Applied methodologies and standardized baselines	**Type I** (Renewable Energy Projects) **UNFCCC Methodology Category AMS-I.D**. Small-scale Methodology *Grid connected renewable electricity generation, Ver 18.0* **UCR Protocol Standard Baseline Emission Factor For Indian Grid**
Sectoral scopes	01 Energy industries (Renewable/NonRenewable Sources)
SDG Impacts:	SDG 7 Affordable and Clean energy SDG 8 Decent work and economic growth SDG 13 Climate Action
Estimated amount of total GHG emission reductions per year	**01/01/2013-31/12/2013: 5114** CoUs/yr (**5114** tCO_{2eq}/yr) **01/01/2014-31/12/2014: 5385** CoUs/yr (**5385** tCO_{2eq}/yr) **01/01/2015-31/12/2015: 5296** CoUs/yr (**5296** tCO_{2eq}/yr) **01/01/2016-31/12/2016: 5542** CoUs/yr (**5542** tCO_{2eq}/yr) **01/01/2017-31/12/2017: 5652** CoUs/yr (**5652** tCO_{2eq}/yr) **01/01/2018-31/12/2018: 5605** CoUs/yr (**5605** tCO_{2eq}/yr) **01/01/2019-31/12/2019: 5204** CoUs/yr (**5204** tCO_{2eq}/yr) **01/01/2020-31/12/2020: 3615** CoUs/yr (**3615** tCO_{2eq}/yr) **01/01/2021-31/12/2021: 5136** CoUs/yr (**5136** tCO_{2eq}/yr) **01/01/2022-31/12/2022: 4185** CoUs/yr (**4185** tCO_{2eq}/yr)
Estimated amount of total GHG emission reductions during this MR	**50734** CoUs (**50734** tCO_{2eq})

SECTION A. Description of project activity

A.1. Purpose and general description of project activity >>

a) Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project activity titled, **3.75 MW Bundled Wind Power Project by GARL, Gujarat,** is located as follows:

WTG ID	Survey No	Village	Taluka/District	State/Country
V05	34/2	Motisindhodi	Abdasa,/ Kutch	Gujarat/India
M16	114p	Kadoli		
ADO-33	289/8P/p1	Ratanpar	Porbandar	

The project activity employs three (3) wind turbine generators (WTGs) of Suzlon make with each having a capacity of **1250 kWh** (total **3.75 MWh** installed capacity) by **M/s Gokul Agro Resources Limited** (GARL, Project Proponent or PP).

The PP is one of the leading FMCG companies in India with international presence in the edible and non-edible oils industry. GARL is engaged in the manufacturing and exports of industrial products viz. castor oil of various grades and its derivatives. The PP has the full ownership of the project activity. This project is an operational activity with continuous reduction of GHGs, currently being applied under the "Universal Carbon Registry" program (i.e. UCR CoU Standard), which rewards wind power programs with carbon credits as an incentive for positive climate action in the Global South, as opposed to carbon finance in other international voluntary carbon programs.

The generated electricity from the WTGs are connected to the state electric utility grids of Gujarat, India. The commissioning date of the first WTG in the bundle is considered as the start date of the project activity and is recorded as **18/07/2006**.

The bundled wind power projects are operational activities with continuous reduction of GHGs, currently being applied for voluntary carbon offset units (CoUs) under "Universal Carbon Registry" (UCR). In the absence of the project activity, electricity would have been delivered to the grid by the operation of fossil fuel-based grid-connected power plants and by the addition of new fossil fuel-based generation sources in the grid.

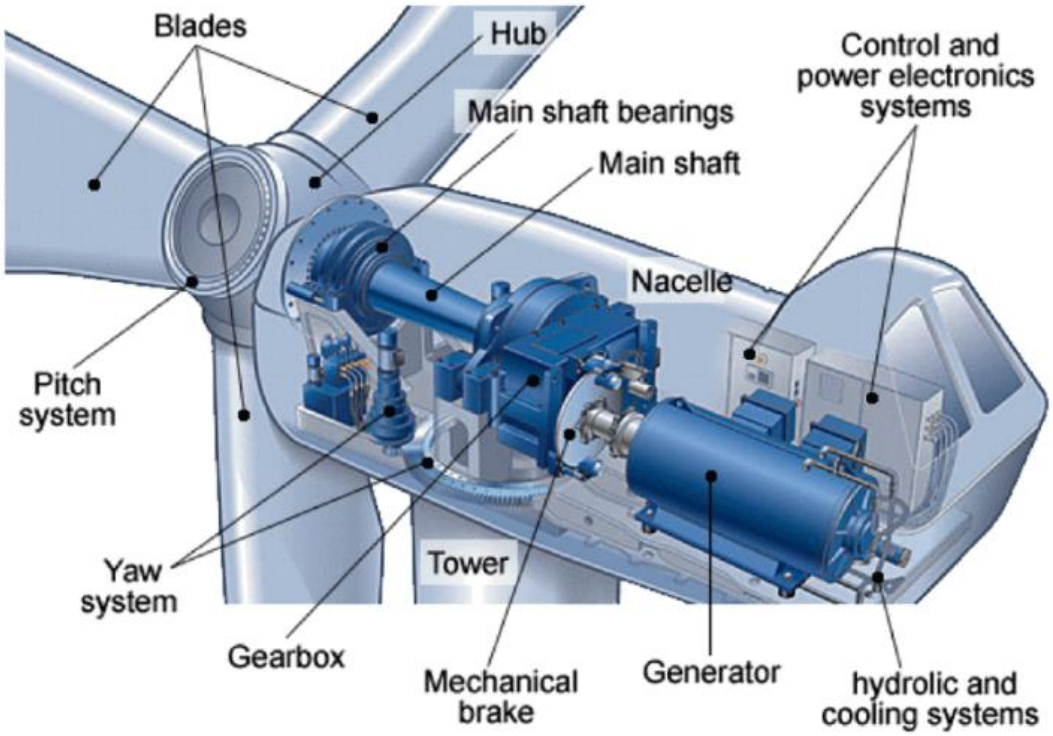
As is the nature of wind projects (renewable energy), no fossil fuel is involved for power generation in the project activity. The electricity produced by the project is directly contributing to climate change mitigation by reducing the anthropogenic emissions of greenhouse gases (GHGs, i.e. CO_2) into the atmosphere by displacing an equivalent amount of power at grid. In wind energy based power generation, the kinetic energy of the wind is being converted to mechanical energy and subsequently to electric energy. The kinetic energy is converted into mechanical energy. The wind blade supplies the mechanical energy to the generator thereby producing electricity.

The project activity is hence the installation of new grid connected renewable power plants/units. The baseline scenario and scenario existing prior to the implementation of the project activity are both the same.

The project activity has displaced/avoided an estimated annual net electricity generation i.e., **56377 MWh** from the Indian grid system, which otherwise would have been generated by the operation of fossil fuel-based grid-connected power plant. The estimated CO_{2e} emission reductions by the project activity for this monitored period is **50734 tCO_{2e}**,

b) Brief description of the installed technology and equipment>>

The project activity incorporates installation of three (3) numbers of 1250KW WTGs of Suzlon Energy Limited. In wind energy based power generation, the kinetic energy of the wind is being converted to mechanical energy and subsequently to electric energy. The kinetic energy is converted into mechanical energy. The wind blade supplies the mechanical energy to the generator thereby producing electricity.



The project activity is using clean renewable wind energy to produce electricity. The WTGs are connected through substation through 33 KV overhead transmission lines. The applied technology is considered to be one of the most environment friendly technologies available as the operation of the wind power plants do not emit any GHGs or any other harmful gases unlike the operation of conventional power plants.

Specification of S64/1250 WTG Rotor: Diameter 64 m Number of rotor blades 3 Orientation Upwind/Horizontal axis Rotational speed 13.8 / 20.7 rpm Rotational direction Clockwise Rotor blade material: GRP Swept area 3217 m2 Hub height 65 m Regulation Pitch regulated	**Operational data** Cut in wind speed 3 m/s Rated wind speed: 14 m/s Cut out wind speed 25 m/s Gearbox Type Integrated 3 stage 1 planetary and 2 Helical Gear ratio 1:74.917 Manufacturer Flender – Winergy Nominal load 1390 kW Generator Type Asynchronous 4/6 pole Rotation speed 1006/1506 RPM Rated output 250/1250 kW Rated voltage: 690 V Frequency: 50 H
Specification of S70/1250 WTG: Rotor Diameter: 69.1m Number of rotor blade: 3	**Operational data** Cut in wind speed: 3 m/s Rated wind speed: 12 m/s

Orientation: Upwind/Horizontal axis Rotational speed: 13.2 / 19.8 rpm Rotational direction: Clockwise Rotor blade material: GRP Swept area: 3750 m2 Hub height: 74 m Regulation: Pitch regulated	Cut off wind speed: 20 m/s Gearbox Type: Integrated 3 stage 1 planetary and 2 Helical Gear ratio: 1:77.848 Manufacturer: Flender – Winergy Nominal load: 1390 KW Generator Type: Asynchronous 4/6 pole Rotation speed: 1000/1515 RPM Rated output: 250/1250 KW Rated voltage: 690 V Frequency: 50 Hz
Specification of S66-1250kW WTG: Rotor Diameter: 66 m Number of rotor blade: 3 Orientation: Upwind/Horizontal axis Rotational speed: 13.5 / 20.3 rpm Rotational direction: Clockwise Rotor blade material: Epoxy bonded fiber glass Swept area: 3217 m2 Hub height: 65 m Regulation: Pitch regulated	**Operational data** Cut-in wind speed 3 m/s Rated wind speed 14 m/s Cut-off wind speed 22 m/s Survival wind speed 52.5 m/s Gearbox Type: Integrated 3 stage 1 planetary and 2 Helical Gear ratio: 1:74.9 Manufacturer: Flender – Winergy Nominal load: 1390 KW Type of cooling: Oil cooling system, Forced lubrication Generator Type: Asynchronous 4/6 pole Rotation speed: 1006/1506 RPM Rated output: 250/1250 KW Rated voltage: 690 V Frequency: 50 Hz

Control unit

• Microprocessor control with graphic backlit LCD display indicating operation conditions.
• Control includes thyristor switchgear watchdog for operation, log with real time, local control and servicing interface.
• Optional remote monitoring and operation.
• UPS back up system.

Reactive Current compensation.

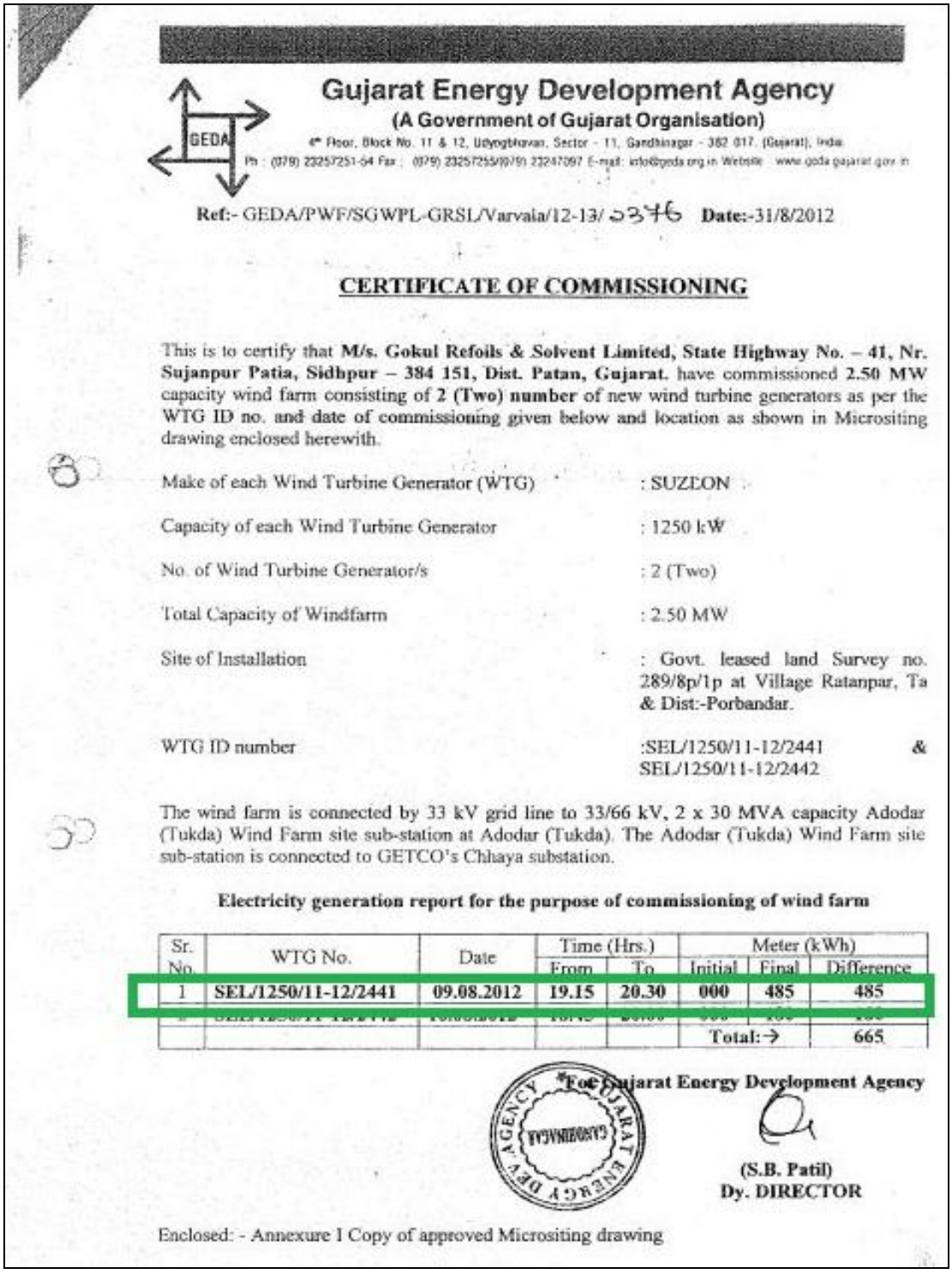
Compensation: Dynamic and intelligent, with PF greater than 0.9

WTG ID	WTG No	Commissioning Date	Survey No	Village	Taluka/District
V05	SEL/1250/05-06/0156	18/07/2006	34/2	Motisindhodi	Abdasa,/ Kutch
M16	SEL/1250/06-07/0224	22/12/2006	114p	Kadoli	
ADO-33	SEL/1250/11-12/2441	09/08/2012	289/8P/p1	Ratanpar	Porbandar

Trivector meters of accuracy class 0.2 S will be used to monitor the electricity imported from and exported to grid. This meter is located at the pooling substation. The meters are under the control of the state utility company. The meters are tested/calibrated at least once in three years by Suzlon through a third party agency. There has been no major downtime of the equipments, overhaul times or exchange of equipments in the project activity during the current monitoring period.

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

UCR Project ID: 374
Start Date of 1st UCR Crediting Period: 01/01/2013
Project 1st Commissioning Date: 18/07/2006
UCR Monitoring Period No: 01
1st UCR Monitoring Period: 01/01/2013 to 31/12/2022 (1**0 years 00 months 00 days)**



Gujarat Energy Development Agency
(A Government of Gujarat Organisation)
4th Floor, Block No. 11 & 12, Udyogbhavan, Sector - 11, Gandhinagar - 382 017. (Gujarat), India.
Ph : (079) 23257251-54 Fax : (079) 23257255/(079) 23247097 E-mail: info@geda.org.in Website : www.geda.gujarat.gov.in

Ref:- GEDA/PWF/SGWPL-GRSL/Varvala/12-13/ 5346 **Date:-**31/8/2012

CERTIFICATE OF COMMISSIONING

This is to certify that **M/s. Gokul Refoils & Solvent Limited, State Highway No. – 41, Nr. Sujanpur Patia, Sidhpur – 384 151, Dist. Patan, Gujarat.** have commissioned **2.50 MW** capacity wind farm consisting of **2 (Two) number** of new wind turbine generators as per the WTG ID no. and date of commissioning given below and location as shown in Micrositing drawing enclosed herewith.

Make of each Wind Turbine Generator (WTG)	: SUZLON
Capacity of each Wind Turbine Generator	: 1250 kW
No. of Wind Turbine Generator/s	: 2 (Two)
Total Capacity of Windfarm	: 2.50 MW
Site of Installation	: Govt. leased land Survey no. 289/8p/1p at Village Ratanpar, Ta & Dist:-Porbandar.
WTG ID number	:SEL/1250/11-12/2441 & SEL/1250/11-12/2442

The wind farm is connected by 33 kV grid line to 33/66 kV, 2 x 30 MVA capacity Adodar (Tukda) Wind Farm site sub-station at Adodar (Tukda). The Adodar (Tukda) Wind Farm site sub-station is connected to GETCO's Chhaya substation.

Electricity generation report for the purpose of commissioning of wind farm

Sr. No.	WTG No.	Date	Time (Hrs.)		Meter (kWh)		
			From	To	Initial	Final	Difference
1	**SEL/1250/11-12/2441**	**09.08.2012**	**19.15**	**20.30**	**000**	**485**	**485**
					Total:→		665

For Gujarat Energy Development Agency

(S.B. Patil)
Dy. DIRECTOR

Enclosed: - Annexure I Copy of approved Micrositing drawing

Gujarat Energy Development Agency
Surajplaza II - 2nd Floor, Sayajigunj, Vadodara - 390 005 Gujarat India.
Ph.: (0265) 2363123, 2362058, 2361409 Fax : 0265-2363120
E-mail : info@geda.org.in Website : www.geda.org.in

Ref No.: GEDA/SGWPP/PWL/GR & SE Kadoli/2006-07/ 618 Date : 4.01.2007

CERTIFICATE OF COMMISSIONING

This is to certify that **M/s Gokul Refoils & Solvents Ltd, N. H. no. 41, Near Sujanpura Patiya, Sidhpur:- 384151** have commissioned 2.50 MW capacity Wind farm on 22/12/2006 as detailed below at location **W-13 & W-14** as shown in micrositting drawing enclosed here with.

Make of each Wind Turbine Generator (WTG)	: SUZLON
Capacity of each Wind Turbine Generator	: 1.250 MW
No. of Wind Turbine Generator/s	: Two
Total capacity of the Windfarm	: 2.50 MW
Site of installation	: Survey no. 113/p & 114/p Village Kadoli, Ta:-Abdasa, Dist: - Kutch
WTG ID number	: SEL/1250/06-07/0224 & SEL/1250/06-07/225

This windfarm is connected by 33 kV grid line to 66 kV capacity Vanku site sub-station at Vanku. The Vanku site sub station is connected to GETCO Kothara sub station.

Electricity generation report for the purpose of commissioning of windfarm.

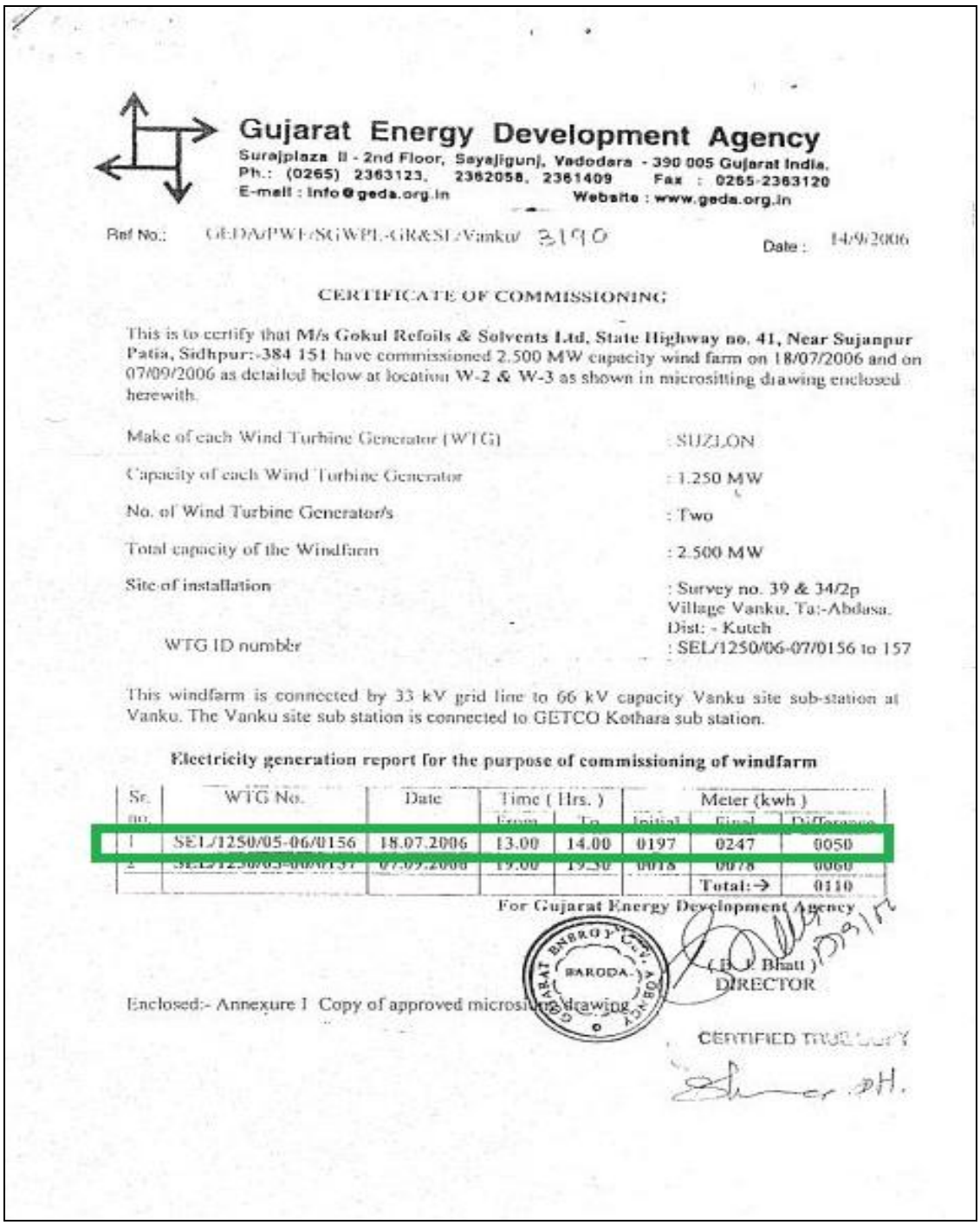
Sr. no.	WTG No.	Date	Time (Hrs.)		Meter (kWh)		
			From	To	Initial	Final	Difference
1	SEL/1250/06-07/0224	22.12.2006	15.45	16.25	013	101	088
2	SEL/1250/06-07/0225	22.12.2006	15.55	16.30	012	170	158
						Total:→	0146

For Gujarat Energy Development Agency

(J. M. Acharya)
DIRECTOR

Enclosed:- Annexure I Copy of approved micrositing drawing

CERTIFIED TRUE COPY



Gujarat Energy Development Agency

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E-mail : info@geda.org.in Website : www.geda.org.in

Ref No.: GEDA/PWF/SG/WPL-GR&SL/Vanku/ 3190 Date : 14/9/2006

CERTIFICATE OF COMMISSIONING

This is to certify that M/s Gokul Refoils & Solvents Ltd, State Highway no. 41, Near Sujanpur Patia, Sidhpur:-384 151 have commissioned 2.500 MW capacity wind farm on 18/07/2006 and on 07/09/2006 as detailed below at location W-2 & W-3 as shown in micrositting drawing enclosed herewith.

Make of each Wind Turbine Generator (WTG)	: SUZLON
Capacity of each Wind Turbine Generator	: 1.250 MW
No. of Wind Turbine Generator/s	: Two
Total capacity of the Windfarm	: 2.500 MW
Site of installation	: Survey no. 39 & 34/2p Village Vanku, Ta:-Abdasa. Dist: - Kutch
WTG ID number	: SEL/1250/06-07/0156 to 157

This windfarm is connected by 33 kV grid line to 66 kV capacity Vanku site sub-station at Vanku. The Vanku site sub station is connected to GETCO Kothara sub station.

Electricity generation report for the purpose of commissioning of windfarm

Sr. no.	WTG No.	Date	Time (Hrs.) From	To	Meter (kwh) Initial	Final	Difference
1	SEL/1250/05-06/0156	18.07.2006	13.00	14.00	0197	0247	0050
2	SEL/1250/05-06/0157	07.09.2006	19.00	19.50	0078	0078	0060
						Total:→	0110

For Gujarat Energy Development Agency

(B. J. Bhatt)
DIRECTOR

Enclosed:- Annexure I Copy of approved micrositing drawing

CERTIFIED TRUE COPY

Commissioning Certificates

d) Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period>>

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Start date of this Monitoring Period	01/01/2013
Carbon credits (CoUs) claimed up to	31/12/2022
Total ERs generated (tCO_{2eq})	50734 (expressed as CoUs)
Project Emission (tCO_{2eq})	0
Leakage (tCO_{2eq})	0

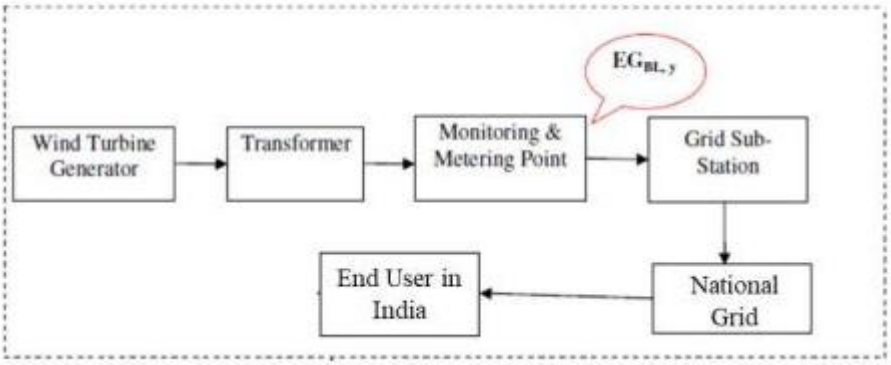
e) Baseline Scenario>>

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

- *Grid-based electricity system*

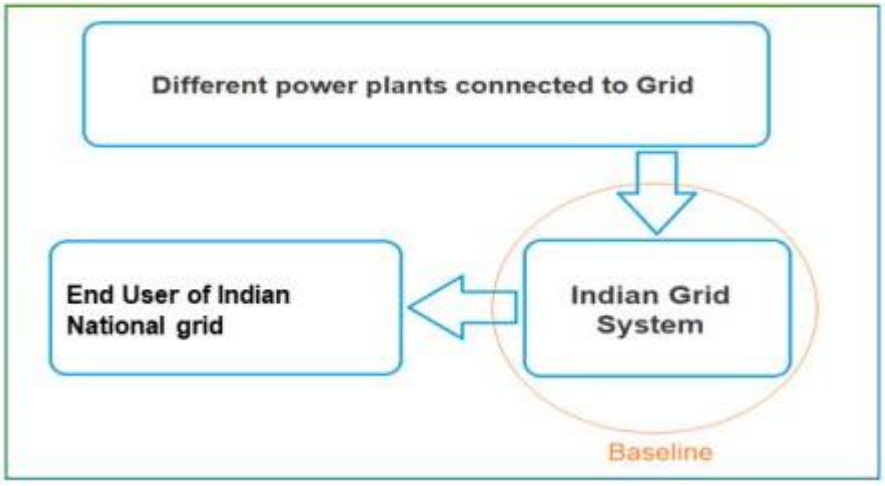
In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline scenario of the project activity is the grid-based electricity system, which is also the pre project scenario.

Project Scenario:



Baseline emissions include only CO2 emissions from electricity generation in 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.

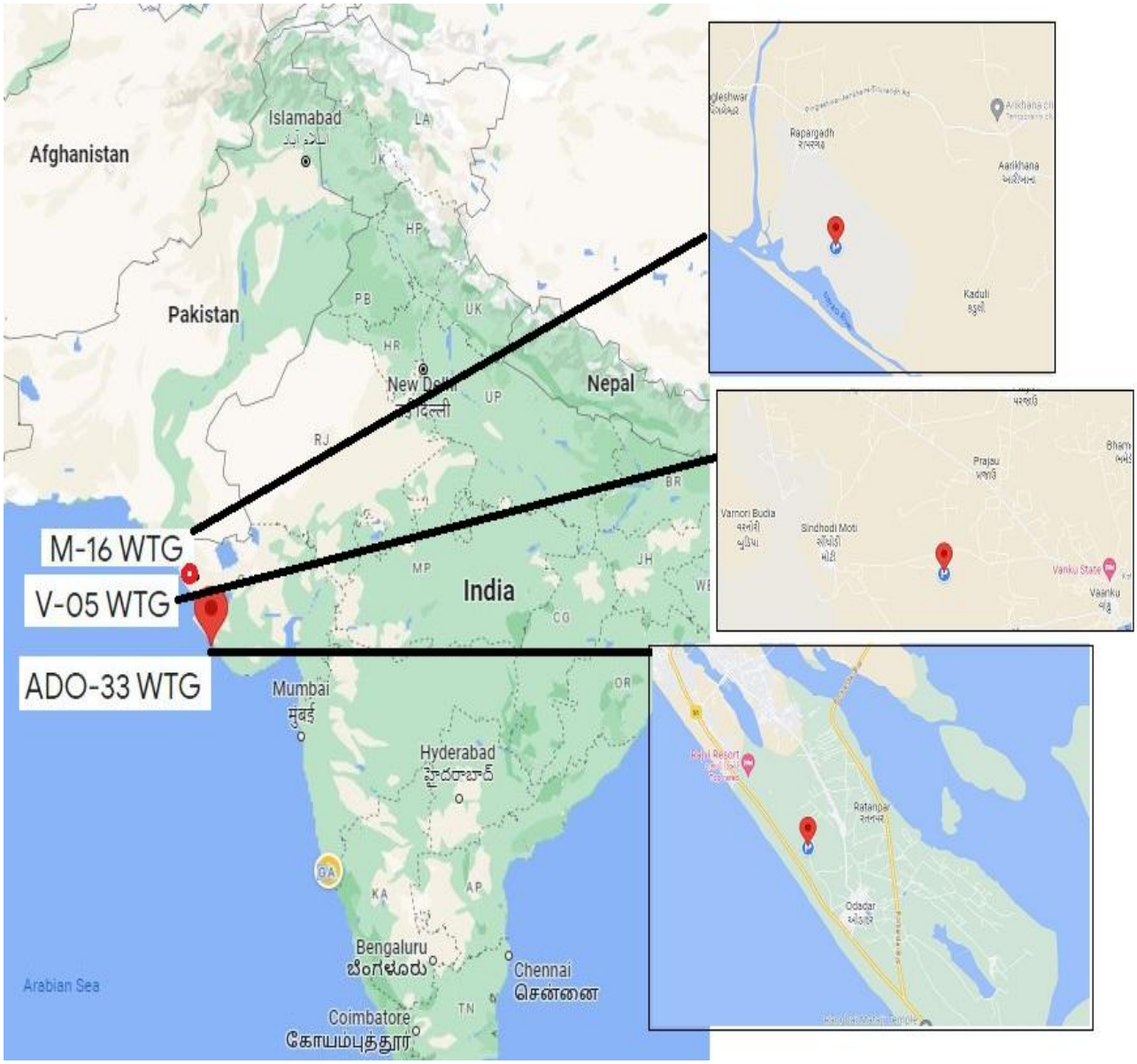
Baseline Scenario:

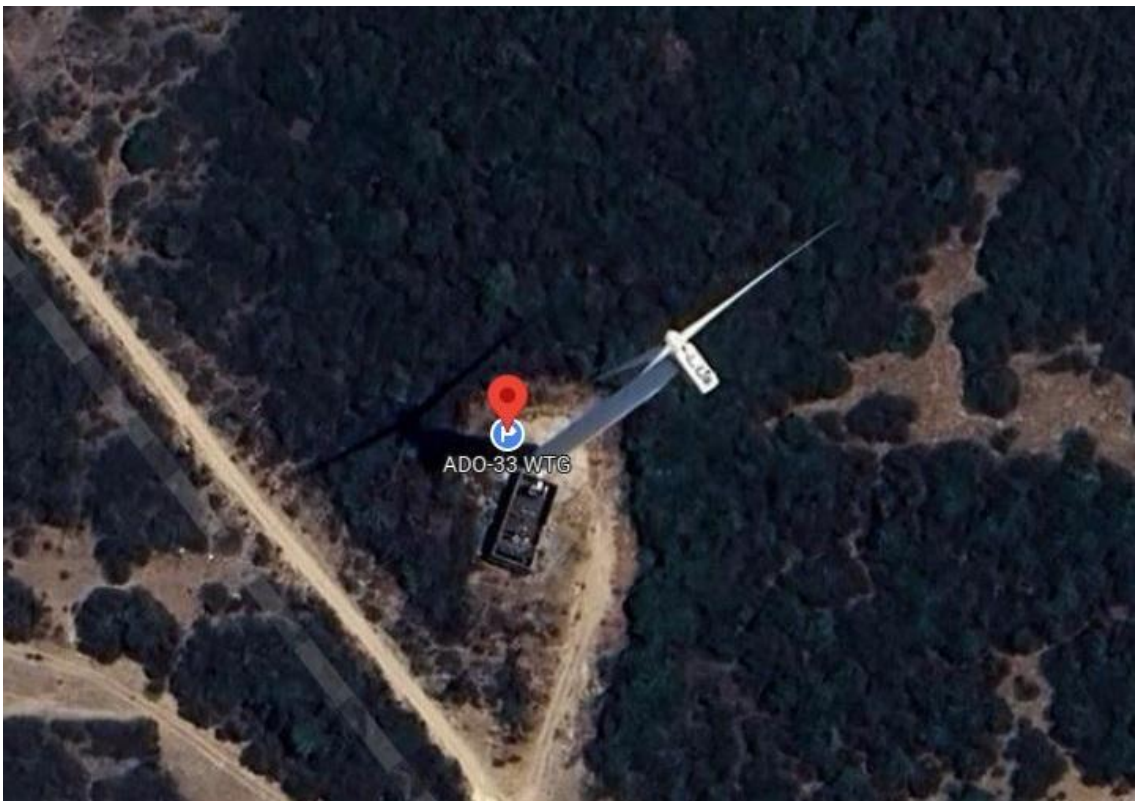


A.2. Location of project activity>>

WTG ID	Survey No	Village	Latitude/Longitude	Taluka/District	State/Country
V05	34/2	Motisindhodi	23°07'42.4"N/ 68°48'42.0"E	Abdasa,/ Kutch	Gujarat/India
M16	114p	Kadoli	23°03'34.5"N/ 68°49'53.1"E		
ADO-33	289/8P/p1	Ratanpar	21°35'29.0"N/ 69°39'27.6"E	Porbandar	

The representative location map is included below:





A.3. Parties and project participants >>

The project activity is deployed taking into consideration all aspects of environmentally safe and sound technology. Moreover there has been no technology transfer involved in the project activity.

Party (Host)	Participants
India	**Project Proponent**: GOKUL AGRO RESOURCES LTD (GARL), Survey No: 76/01/P-1, 80,89 and 91, Village – Meghpar Borichi, Ta – Anjar, Dist: Bhuj Gujarat - 370110 **Contact:** Hemal S. Sonigra, ISO Coordinator, GARL **Email:** iso@gokulagro.com

A.4. References to methodologies and standardized baselines >>

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

TYPE I - Renewable Energy Projects

Table 1 Scope of AMS-I.D., AMS-I.F. and AMS-I.A. based on project types

	Project type	AMS-I.A.	AMS-I.D.	AMS-I.F.
1	Project supplies electricity to a national/regional grid		√	
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			√
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)		√	
4	Project supplies electricity to a mini grid[1] system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			√
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas	√		

Source: UNFCCC CDM

CATEGORY- ***AMS-I.D. – Small-scale Methodology Grid connected renewable electricity generation, Version 18.0***

This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:

(a) Supplying electricity to a national or a regional grid.

Methodology key requirements:

Typical project(s)	Typical project(s) Construction and operation of a new power plant/unit or retrofit, rehabilitation (or refurbishment), replacement or capacity addition of an existing power plant that uses renewable energy sources and supplies electricity to the grid
Type of GHG emissions mitigation action	Renewable energy. Displacement of electricity that would be provided to the grid by more-GHG-intensive means

The UCR positive list comprises of:

(a) generation of grid connected electricity from the construction and operation of a new wind power-based power project for supply to grid.

A.5. Crediting period of project activity >>

Length of the crediting period corresponding to this monitoring period:
10 years 00 months 00 days
Crediting Period Dates: 01/01/2013 to 31/12/2022

A.6. Contact information of responsible persons/entities >>

Contact: Hemal S. Sonigra, ISO Coordinator, GARL
Email: iso@gokulagro.com
UCR ID: 341368293

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity
>> A) Provide information on the implementation status of the project activity during this monitoring period in accordance with UCR PCN>>

a) Description of the installed Technologies, technical processes and equipment: Ref: (Technical information given on Section – A.1.(b))

b) Information on the implementation and the actual operation of the project activity, including relevant dates:

The project activity incorporates installation of three (3) numbers of 1250KW WTGs capacities each of Suzlon Energy Limited.

WTG ID	WTG No	Commissioning Date	Survey No	Village	Taluka/District
V05	SEL/1250/05-06/0156	18/07/2006	34/2	Motisindhodi	Abdasa,/ Kutch
M16	SEL/1250/06-07/0224	22/12/2006	114p	Kadoli	
ADO-33	SEL/1250/11-12/2441	09/08/2012	289/8P/p1	Ratanpar	Porbandar

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

Social well being:

 Social well being is assessed by contribution by the project activity towards improvement in living standards of the local community.

 The project activity has resulted in increased job opportunities for the local population on temporary and permanent basis.

 Manpower was required both during erection and operation of the wind farms. This has resulted in poverty alleviation of the local community and development of basic infrastructure leading to improvement in living standards of the local population.

Economic well being

 The project activity has created direct and indirect job opportunities to the local community during installation and operation of the WTGs.

 The investment for the project activity has increased the economic activity of the local area.

 The project activity also contributes in economic well being of the nation's economy by reducing import of fossil fuel for electricity generation in hard currency.

Environmental well being

 The project utilizes wind 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 wind power 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, using wind energy to generate electricity contributes to resource conservation. Thus, the project activity causes no negative impact on the

surrounding environment.

Technological well being

 There is continuous research and development on the geometry of the wind blades, height of towers, diameters of towers, etc., which augurs well for the technological well being in the development of wind energy to produce clean electricity.

 The generated electricity from the project activity is connected to the grid. The project activity improves the supply of electricity with clean, renewable wind power while contributing to the regional/local economic development.

 Wind energy plants provide local distributed generation, and provide site-specific reliability and transmission and distribution benefits including:

- o improved power quality
- o Reactive power control
- o Mitigation of transmission and distribution congestion

With regards to ESG credentials:

At present specific ESG credentials have not been evaluated, however, the project essentially contributes to various indicators which can be considered under ESG credentials. Some of the examples are as follows:

Under Environment:

The following environmental benefits are derived from the project activity:

- Produces renewable electricity without any GHG emissions.
- Wind power plants have little impact on the surrounding ecology.

For the PPs, energy sale pattern is now based on renewable energy due to the project and it also contributes to GHG emission reduction and conservation of depleting energy sources associated with the project baseline. Hence, project contributes to ESG credentials.

There are social, environmental, economic and technological benefits which contribute to sustainable development. Rational: As per 'Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)', final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (07/03/2016), it has been declared that wind project activity falls under the "White category".

White Category projects/industries do not require any Environmental Clearance such as 'Consent to Operate' from PCB as such project does not lead to any negative environmental impacts. Additionally, as per Indian Regulation, Environmental and Social Impact Assessment is not required for Wind Projects.

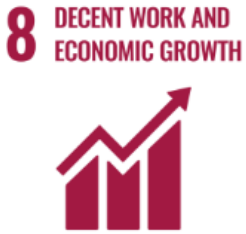
United Nations Sustainable Development Goals:

The project activity generates electrical power using wind energy which is generated from windmills, there by displacing non-renewable fossil resources resulting to sustainable, economic and environmental development. In the absence of the project activity equivalent amount of power generation would have taken place through fossil fuel dominated power generating stations.

Thus, the renewable energy generation from project activity will result in reduction of the greenhouse gas emissions. Positive contribution of the project to the following Sustainable Development Goals:

- SDG13: Climate Action

- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth

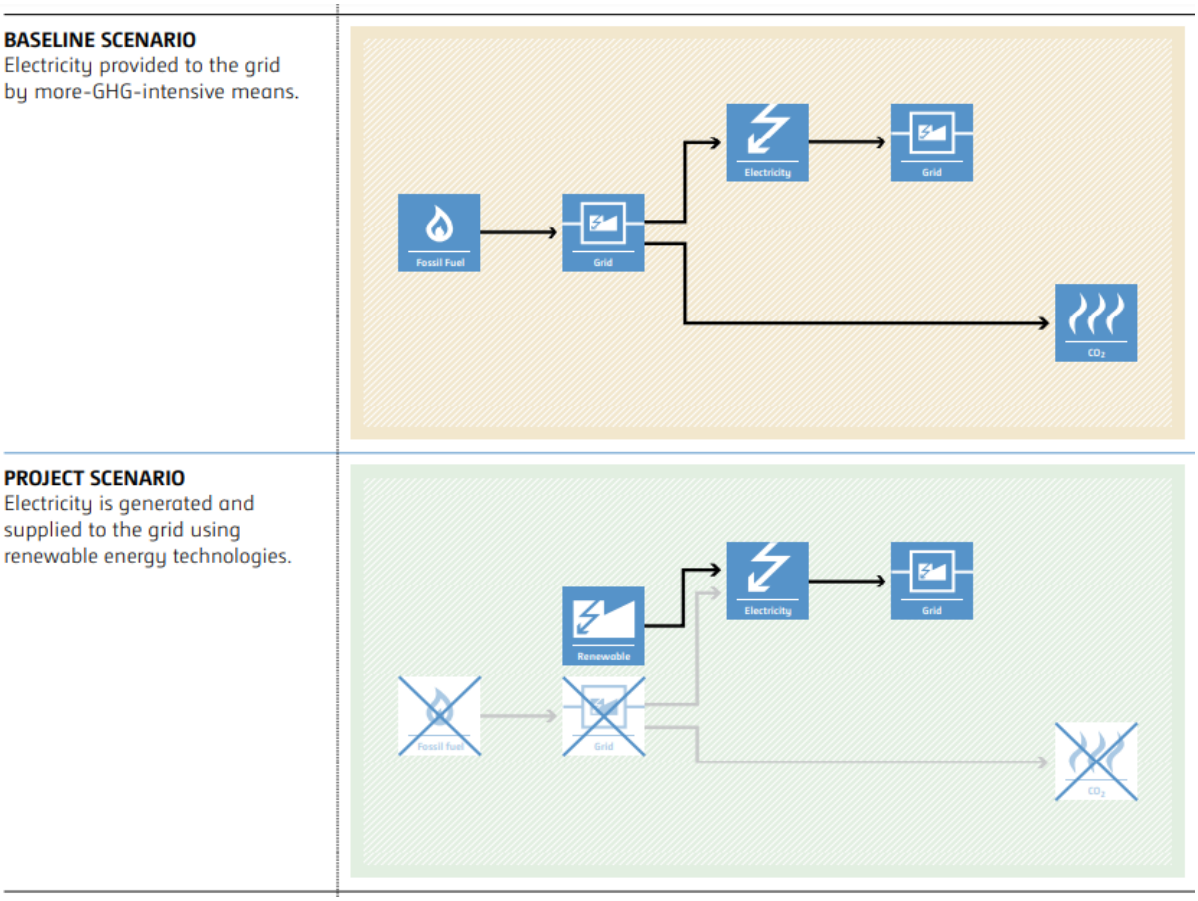
Development Goals	Targeted SDG	Target Indicator (SDG Indicator)
 SDG 13: Climate Action	13.2: Integrate climate change measures into national policies, strategies and planning Target: **50734 tCO_2** avoided during this MR period.	13.2.1: Number of countries that have communicated establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
 SDG 7: Affordable and Clean Energy	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Target: **56377 MWh** supplied during this MR period from wind energy.	7.2.1: Renewable energy share in the total final energy consumption
 SDG 8: Decent Work and Economic Growth	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value Target: Training, O&M staff	8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

B.3. Baseline Emissions>>

The baseline scenario identified at the MR & PCN stages of the project activity are:

1. In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. 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 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.



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 tCO_2/MW_h for the 2013- 2021 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021-22, the combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, **the same UCR emission factor (**0.9 tCO_2/MW_h) has been considered to calculate the emission reduction under conservative approach.

B.4. Debundling>>

This project activity is not a debundled component of a larger project activity. There is no transfer of equipment's from or to the project activity

SECTION C. Application of methodologies and standardized baselines

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

SECTORAL SCOPE - 01 Energy industries (Renewable/Non-renewable sources)
TYPE I - Renewable Energy Projects
CATEGORY- ***AMS-I.D. – Small-scale Methodology Grid connected renewable electricity generation, Version 18.0***
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:

(a) Supplying electricity to a national or a regional grid.

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

This project is included within the UCR Standard Positive List of technologies and are within the small-scale CDM thresholds (e.g. installed capacity up to 15 MW). The positive list comprises of: (a) renewable electricity generation technologies of installed capacity up to 15 MW, (wind power electricity generation);
Project activity involves installation of wind power generation with capacity 3.75 MW which is less than 15MW. The proposed project is a greenfield 3.75 MW wind power project, i.e., the only component is a renewable power project below 15 MW
The project activity involves installation of WTGs, hence, the activity is not a hydro power project or combined heat and power (co-generation) systems.
Project displaces grid electricity consumption (e.g. grid import).
The project activity is a new installation, it does not involve any retrofit measures nor any replacement.
Landfill gas, waste gas, wastewater treatment and agro-industries projects are not relevant to the project activity. No biomass is involved, the project is only a wind power project.
The technology/measure allowed under the grid connected wind power generation systems displace equivalent quantity of electricity from the regional grid in India. The testing/certifications; all the equipment of the wind power project activity will be complying with applicable national/ international standards. The above details may be verified from one or more of the following documents: □ Technology Specification provided by the technology supplier □ Purchase order copies □ EPC contracts □ Power purchase agreement □ Project commissioning certificates
The project activity is a voluntary coordinated action. The project activity is a 3.75 MW Wind Power based renewable electricity generation project. It does not include any non-renewable unit and cofiring system.
As per 'Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)', final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (07/03/2016), it has been declared that a wind project activity falls under the "White category". White Category projects/industries do not require any environmental clearance such as 'Consent to Operate' from PCB as such project does not lead to any negative environmental impacts. Additionally, as per Indian Regulation, Environmental and Social Impact Assessment is not required for wind projects. Additionally, there are social, environmental, economic and technological benefits which contribute to sustainable development.
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). Hence this methodology is applicable and fulfilled for the wind project activity.
The project activity involves installation of new wind power plants at listed sites where there was no renewable energy power plant operating prior to implementation of project.
Project and leakage emissions from biomass are not applicable.

C.3 Applicability of double counting emission reductions >>

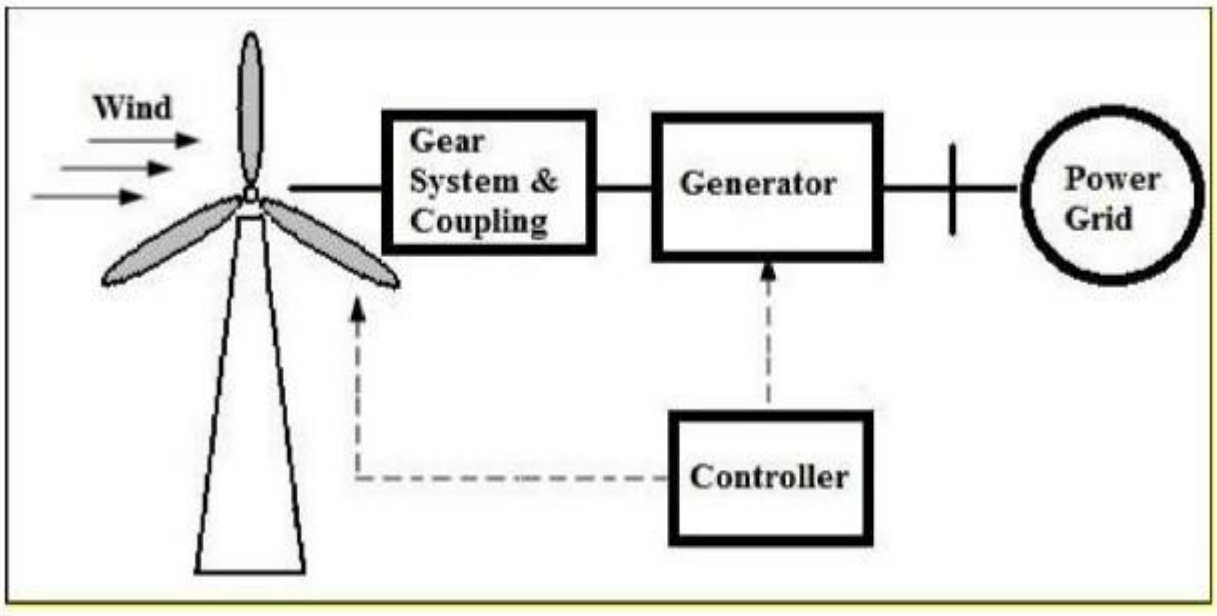
There is no double accounting of emission reductions in the project activity due to the following reasons:

- 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 generation/feeding point with the grid.

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

As per applicable methodology, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the UCR project power plants are connected. The project boundary encompasses the physical, geographical site of the wind energy power plant, the energy metering equipment and the connected regional electricity grid.

	Source	GHG	Included?	Justification/Explanation
Baseline	Grid-connected electricity	CO_2	**Included**	Major source of emission
		CH_4	Excluded	Excluded for simplification. This is conservative
		N_2O	Excluded	Excluded for simplification. This is conservative
Project Activity	Greenfield power project	CO_2	Excluded	Excluded for simplification. This is conservative
		CH_4	Excluded	Excluded for simplification. This is conservative
		N_2O	Excluded	Excluded for simplification. This is conservative



C.5. Establishment and description of baseline scenario (UCR Protocol) >>

Net GHG Emission Reductions and Removals

Thus, ERy = BEy – PEy – LEy

Where:

ERy = Emission reductions in year y (tCO2/y)

BEy = Baseline Emissions in year y (t CO2/y)

PEy = Project emissions in year y (tCO2/y)

LEy = Leakage emissions in year y (tCO2/y)

Baseline Emissions

Baseline emissions include only CO2 emissions from electricity generation in 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:

Total Installed Capacity: 3.75 MW

Estimated Annual Emission Reductions: $BE_y = EG_{BL,yl} \times EF_{,CO2,GRID,y}$

BE_y = Emission reductions in a year y.

where:

$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the UCR project activity in year y (MWh)

$EF_{Grid,CO2,y}$ = CO_2 emission factor of the grid in year y (t CO_2/MWh) as determined by the UCR Standard.

YEAR	TOTAL MWH SUPPLIED	EMISSION REDUCTIONS (tCO2)
2013	5683.20	5114
2014	5983	5385
2015	5885	5296
2016	6159	5542
2017	6280	5652
2018	6228	5605
2019	5783	5204

2020	4017	3615
2021	5707	5136
2022	4651	4185
Total	56377	50734

Rational: This final value is conservative as all annualized ER values are rounded down and final sum is considered for reporting, which gives the most conservative result. The vintage wise break up is given under the ER excel sheet.

C.6. Prior History>>

WTGs V-05 and M-16 have been previously registered under the UNFCCC CDM as:

- Title project activity: **5 MW WIND POWER PROJECT BY GOKUL REFOILS AND SOLVENT LIMITED**
  CDM Registration Date: **07 Feb 2011**
  CDM Reference number: **4062**
  Monitoring Period: **07/02/2011 - 31/01/2012**
  CERs issued: **5956 tCO2 (**Serial Range: Block start: IN-5-175448640-1-1-0-4062 Block end: IN-5-175454595-1-1-0-4062)

WTGs ADO-33 has been previously registered under the UNFCCC CDM as:

- Title project activity: **2.5 MW Wind Project by Gokul Refoils & Solvent Limited**
  CDM Reference number: **9722**
  CDM Registration Date: **26 Aug 2013**
  No CERs have been issued till date

GARL is the de-merged entity of Gokul Refoils & Solvent Limited under which all the above CDM projects had been registered. The project activity has not claimed voluntary/verified carbon credits under any GHG mechanism for the period 2013-2022, hence the project activity will not cause double accounting of carbon offset units or credits (i.e., CoUs) under the UCR CoU Program.

C.7. Monitoring period number and duration>>

Monitoring Period Number: 01
Duration : 01/01/2013 to 31/12/2022 (1**0 years 00 months 00 days)**)

C.8. Changes to start date of crediting period >>

There is no change in the start date of crediting period applicable during this MR submission

C.9. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>

Not applicable

C.10. Monitoring plan>>

Project Emissions
Since the project activity is a wind power project, project emission for renewable energy plant is nil. Thus, PEy =0.

Leakage
In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered as zero. Hence, LEy= 0

The actual emission reductions achieved during the first crediting period is submitted as a part of first monitoring and verification.

Calculated Emission Reductions (ER_y) = **50734** CoUs (**50734** tCO_{2eq})

B.10. Monitoring plan>>

Key Data Monitored: • Quantity of net electricity supplied to the grid

2. **Monitoring Plan Objective and Organization**

Monitoring consisted of metering the net electricity supplied by the project activity to the grid. Measurement results were cross checked with records for the electricity sold. The cycle of hourly measurement and monthly recording was followed.

To ensure that the data is reliable and transparent, the PPs have established Quality Assurance and Quality Control (QA&QC) measures to effectively control and manage data reading, recording, auditing as well as archiving data and all relevant documents. The data is monitored on a daily basis and is submitted to PPs on a daily basis.

PPs have implemented QA&QC measures to calibrate and ensure the accuracy of metering and safety aspects of the project operation. The metering devices are calibrated and inspected properly and periodically, according to state electricity board's specifications and requirements to ensure accuracy in the readings.

2 Data and Parameters monitored

The project activity essentially involves generation of electricity from wind, the employed WEGs can only convert wind energy into electrical energy and cannot use any other input fuel for electricity generation. Thus, no special ways and means are required to monitor leakage from the project activity.

The project activity essentially involved generation of electricity utilizing wind energy. Hence, the monitoring plan involved measurement of electricity generated from the wind turbine based electricity generation unit. The electricity generated from the project was measured by a sealed Gujarat Energy Transmission Corporation Limited (GETCO) meter installed at the WTG site.

The electricity reading from this meter was taken every month by representatives of project proponent through Operation and maintenance contractor namely Suzlon Infrastructure private limited. Set up by Gujarat State government, GETCO is a transmission company with on objective to lay, operate, and manage Power System network and associated Sub- Stations, across the state of Gujarat.

Metering was done at the substation which has a main meter and measures electricity generated by all wind turbines connected to the substation including those of project activity. This meter is tri-vector meter with accuracy of 0.5 s class and is capable of measuring import and export. Monthly reading was taken on the meter at substation by GETCO representatives of project proponent through Operation and maintenance contractor. This reading gave net electricity exported to grid by all WTGs connected to substation. Based on monthly recordings at WTG and substation, Gujarat

Energy Development Agency (GEDA) does the apportioning of electricity and issues a certificate for share of electricity to project proponent. GEDA is the Nodal Agency of the Government of Gujarat for promotion and popularization of Renewable Energy and Energy Conservation in the state of Gujarat, India. GEDA is not involved in manufacturing or marketing of Renewable Energy Devices & Systems. PPs are the project implementers and monitors the electricity delivered to the electricity grid by the project activity. The data is already archived electronically and is stored since **18/07/2006.**

Frequency of meter reading
The meter reading at individual WTG and GETCO substation were recorded on monthly basis.

Data archiving
Data was electronically archived. The data would be archived two years after UCR crediting period or last issuance whichever is later.

Calibration of Meters
The meter located at the WTG and at substation is calibrated. The calibration is done once in a year and the same will follow the procedures of GETCO.

Procedures to deal with uncertainties in monitored data
During the annual calibration of the meter at WTG, if the meter is found to be outside the permissible limit of error then the meter is replaced immediately. The error will be applied to the monitored data from the date of last calibration. During the annual calibration if the meter at substation is found to be outside the permissible limit of error then the meter will be replaced immediately. The error will be applied to the monitored data from the date of last calibration.

Data / Parameter:	***EGy***
Data unit:	MWh
Description:	Quantity of net electricity supplied by the Project Activity to the grid in year y
Source of data:	JMR. Statement of net export of power to the grid issued Monthly by State Electricity Board or any other competent authority as applicable.
Measurement	Total MWh supplied to the grid during this MR =56377 MWh

YEAR	TOTAL MWH SUPPLIED
2013	5683.20
2014	5983
2015	5885
2016	6159
2017	6280
2018	6228
2019	5783
2020	4017
2021	5707
2022	4651
Total	56377

procedures (if any):	
Monitoring frequency:	The net energy exported to the grid is measured every month using calibrated energy meter by the State Electricity Board authorities in the presence of the project implementer or its representatives. The meter/s shall be jointly inspected, and sealed by authorised representatives of the company and the state utility. Measuring procedure: Will be measured by an export-import energy meter. The net electricity exported by the project plant would either be directly sourced as a measured parameter or be calculated by deducting the amount of imported electricity from the total amount of exported electricity. Accuracy class of energy meter: As per relevant National standards amended/modified from time to time. Calibration Frequency: As per the Central Electricity Authority the testing and calibration frequency should be minimum once in five years. However, the calibration will be done following the relevant applicable National Guidelines updated from time to time during the operation of the project activity. Entity responsible: Aggregator
QA/QC procedures:	Monitoring frequency: Continuous Measurement frequency: Hourly Recording frequency: Monthly The electricity meter/s record both export and import of electricity from the solar Power plant and the readings with regard to net electricity generated will be used for calculation of emission reductions. The net electricity supplied to the grid is cross checked with the monthly invoices. The meter/s are checked for accuracy and the meters will be calibrated as per the procedures of State Electricity Board as per the national or international standards.
Purpose of Data	-Calculation of baseline emissions

Today on date 22/10/2016, the calibration of energy meter of Main provided at 66 KV / 33 KV, TR 1 & TR 2 at 66 KV Vanku S/S is carried out by J.E. Lab, PGVCL Nakhatrana Division.

Details of meters:

Transformer 1:

Main meter
Make: Secure Meters Ltd. Sr. No. GJB00591 Type: E3MO51, 3 PHASE, 4 WIRE (MWH, MVARh, MVAh, MVA) 66 KV / /3/110 / /3, 150/ 1 A, 50 HZ, POWER FACTOR -1 TO 1, Ref. Temp. 27 deg centig., 1600 Pulse/ Unit, Ib: 1 A, Imax: 2 A, IEC: 60687, CL: 0.5 S, Year: 2005 Lab No. MDVSTP 0601002

Old Seal Details:

Main Meter
TTB: 1394302-03(KRISHNA) OPTICAL: 1394301(KRISHNA) METER BOX: 1393396-97-98-99(KRISHNA)

New Seal Details:

Main Meter
TTB: 3366707-08(SATYA) OPTICAL: 3366706(SATYA) METER BOX: 3366709-10-11-12(SATYA

TEST RESULT:

Main Meter
KWH % Error = WPL

Kanji Ram,
Manager-SGSL

V.H. Agarwal
J.E. GETCO

Bhavin Bava
J.E. Lab PGVCL, NAKHATRANA

Details of meters:

Transformer 2:

Main meter
Make: Secure Meters Ltd. Sr. No. GJB00592 Type: E3M051, 3 PHASE, 4 WIRE (MWH, MVARh, MVAh, MVA) 66 KV / /3/110 / /3, 150/1 A, 50 HZ, POWER FACTOR -1 TO 1, Ref. Temp. 27 deg centig., 1600 Pulse/ Unit, Ib: 1 A, Imax: 2 A, IEC: 60687, CL: 0.5S, Year: 2005, Lab No. MDVSTP 0601003

Old Seal Details:

Main meter
TTB: 1394305-06(KRISHNA) OPTICAL: 1394304(KRISHNA) METER BOX: 1394307-08-09-10(KRISHNA)

New Seal Details:

Main Meter
TTB: 3366714-15(SATYA) OPTICAL: 3366713(SATYA) METER BOX: 3366716-17-18-19(SATYA)

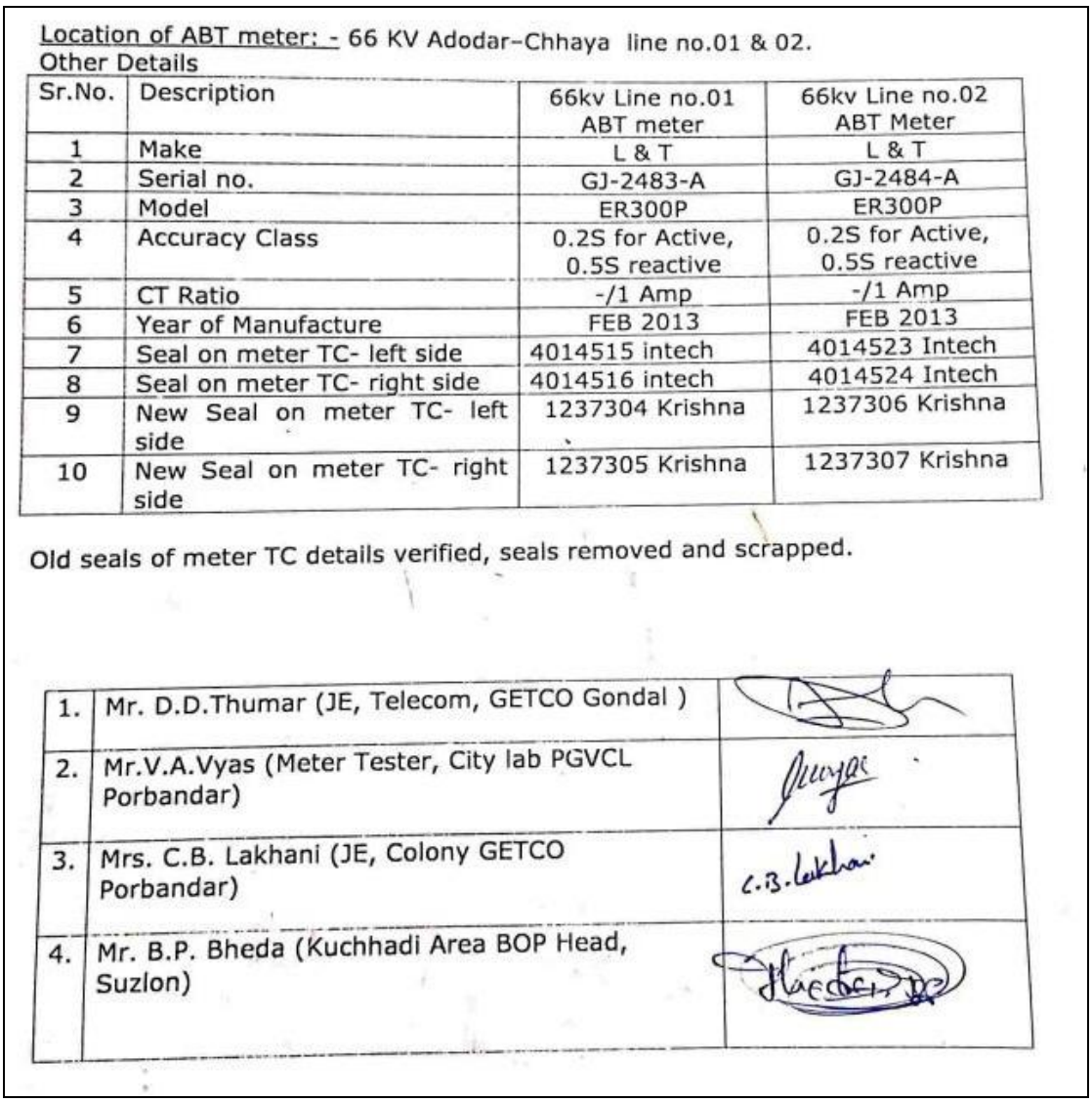
TEST RESULT:

Main Meter
KWH % Error = WPL.

Kanji Ram,
Manager-SGSL

V.H. Agarwal
J.E. GETCO

Bhavin Bava
J.E. Lab PGVCL, NAKHATRANA



Location of ABT meter: - 66 KV Adodar–Chhaya line no.01 & 02.
Other Details

Sr.No.	Description	66kv Line no.01 ABT meter	66kv Line no.02 ABT Meter
1	Make	L & T	L & T
2	Serial no.	GJ-2483-A	GJ-2484-A
3	Model	ER300P	ER300P
4	Accuracy Class	0.2S for Active, 0.5S reactive	0.2S for Active, 0.5S reactive
5	CT Ratio	-/1 Amp	-/1 Amp
6	Year of Manufacture	FEB 2013	FEB 2013
7	Seal on meter TC- left side	4014515 intech	4014523 Intech
8	Seal on meter TC- right side	4014516 intech	4014524 Intech
9	New Seal on meter TC- left side	1237304 Krishna	1237306 Krishna
10	New Seal on meter TC- right side	1237305 Krishna	1237307 Krishna

Old seals of meter TC details verified, seals removed and scrapped.

1.	Mr. D.D.Thumar (JE, Telecom, GETCO Gondal)	
2.	Mr.V.A.Vyas (Meter Tester, City lab PGVCL Porbandar)	
3.	Mrs. C.B. Lakhani (JE, Colony GETCO Porbandar)	C.B. Lakhani
4.	Mr. B.P. Bheda (Kuchhadi Area BOP Head, Suzlon)	

Data/Parameter	$EF_{, CO2, GRID, y}$
Data unit	0.9 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 2013-2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021-22, the combined margin emission factor calculated from CEA database in India results into same emission factors as that of the default value. Hence, the same emission factor has been considered to calculate the emission reduction
of data Value(s) applied	UCR Standard Protocol As per Standard
Measurement methods and procedures	Fixed
Monitoring frequency	NA
Purpose of data	To estimate baseline emissions

SUZLON
Powering A Greener Tomorrow

Monthly Generation Report(Location)

2022-2023

Customer	Gokul Agro Resources Ltd.	**Unit Size of Turbine**	1.250
Location (Site)	Kadoli	**No. of Turbine**	M16
State	GJ - Kutch	**Model No**	S 70 AE 33
Comm.Date	22-Dec-2006	**Install Capacity (MW)**	1.250

Generation Month	Generation At Controller (KWH)	Machine Availability	Grid Availability %	Generation At 100 % Grid	PLF At 100 % Grid
Apr-22	111311	94.82	99.63	111724	12.41
May-22	268169	87.45	100.00	268169	28.84
Jun-22	262109	96.95	97.39	269133	29.9
Jul-22	253466	58.63	97.69	259459	27.9
Aug-22	2858	10.70	99.35	2876	0.31
Sep-22	50600	34.06	99.43	50890	5.65
Oct-22	50451	89.29	100.00	50451	5.42
Nov-22	56511	97.90	99.35	56880	6.32
Dec-22	45694	75.30	96.26	47469	5.1
Jan-23	120554	79.46	94.49	127583	13.72
Feb-23	55147	98.71	99.49	55429	6.6
Mar-23	94982	88.01	98.64	96291	10.35
Total	**1371852**	**75.68**	**98.48**	**1396354**	**12.71**
Yearly PLF (%)	**12.53**			**12.75**	

Sample Monthly Generation Data on File

SUZLON
Powering A Greener Tomorrow

Monthly Generation Report(Location)

2022-2023

Customer	Gokul Agro Resources Ltd.	**Unit Size of Turbine**	1.250
Location (Site)	Vanku	**No. of Turbine**	V05
State	GJ - Kutch	**Model No**	S 64
Comm.Date	18-Jul-2006	**Install Capacity (MW)**	1.250

Generation Month	Generation At Controller (KWH)	Machine Availability	Grid Availability %	Generation At 100 % Grid	PLF At 100 % Grid
Apr-22	53205	59.83	99.76	53333	5.93
May-22	251578	97.11	100.00	251578	27.05
Jun-22	163885	94.60	98.21	166872	18.54
Jul-22	204209	75.34	99.87	204474	21.99
Aug-22	164843	98.74	99.99	164859	17.73
Sep-22	80064	90.04	100.00	80064	8.9
Oct-22	39918	95.84	98.88	40370	4.34
Nov-22	50464	99.96	100.00	50464	5.61
Dec-22	81725	86.37	97.51	83811	9.01
Jan-23	135710	100.00	100.00	135710	14.59
Feb-23	40601	99.07	99.58	40772	4.85
Mar-23	63480	98.14	99.50	63798	6.86
Total	**1329682**	**91.27**	**99.44**	**1336105**	**12.12**
Yearly PLF (%)	**12.14**			**12.2**	

Sample Monthly Generation Data on File

Sample Monthly Generation Data on File

SUZLON
Powering A Greener Tomorrow

Monthly Generation Report(Location)

2022-2023

Customer	Gokul Agro Resources Ltd.	**Unit Size of Turbine**	1.250
Location (Site)	Adodar	**No. of Turbine**	ADO33
State	GJ - Saurashtra	**Model No**	S 66 Mark II
Comm.Date	09-Aug-2012	**Install Capacity (MW)**	1.250

Generation Month	Generation At Controller (KWH)	Machine Availability	Grid Availability %	Generation At 100 % Grid	PLF At 100 % Grid
Apr-22	125376	99.00	99.86	125551	13.95
May-22	248739	90.60	99.83	249162	26.79
Jun-22	194503	99.69	97.58	199326	22.15
Jul-22	367201	86.19	98.10	374312	40.25
Aug-22	279797	98.55	96.25	290698	31.26
Sep-22	100442	99.58	99.75	100693	11.19
Oct-22	65630	94.81	97.62	67230	7.23
Nov-22	67905	95.92	97.78	69446	7.72
Dec-22	115157	99.07	99.77	115422	12.41
Jan-23	157626	98.71	95.87	164416	17.68
Feb-23	110368	85.54	99.69	110711	13.18
Mar-23	123316	99.78	98.10	125704	13.52
Total	**1956060**	**95.65**	**98.35**	**1992671**	**18.11**
Yearly PLF (%)	**17.86**			**18.2**	