



MONITORING REPORT
CARBON OFFSET UNIT (CoU) PROJECT



Title: 4 MW Wind Power Project by M/S Inox Wind Energy Ltd, (IWEL) Noida India
Version 1.0

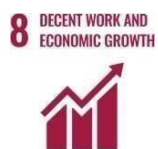
Date of MR: 06th August 2024

UCR ID: 443

1st CoU Issuance Period: 31.10.2015 to 31.12.2022 (07 Years 02 month)

1st Monitoring Period: 31.10.2015 to 31.12.2022 (07 Years 02 month)

1st Crediting Period: 31.10.2015 to 31.12.2022 (07 Years 02 month)





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

Monitoring Report	
Title of the project activity	4 MW Wind Power Project by Inox wind energy limited Noida (IWEL)
UCR Project Registration Number	443
Version	1.0
Completion date of the MR	06/08/2024
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 01 Duration of this monitoring Period: (first and last days included (31/10/2015 to 31/12/2022))
Project participants	Project Proponents: M/s. Inox Wind Energy Limited (IWEL), Noida UCR Aggregator: Inox Green Energy Service Limited UCR ID: 724964927
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I.D: "Grid connected renewable electricity generation", version 18
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Amount of GHG emission reductions for this monitoring period in the registered PCN	2015: 2 CoUs (2 tCO ₂ eq)
	2016: 5,364 CoUs (5,364 tCO ₂ eq)
	2017: 7,285 CoUs (7,285 tCO ₂ eq)
	2018: 7,137 CoUs (7,137 tCO ₂ eq)
	2019: 4,466 CoUs (4,466 tCO ₂ eq)
	2020: 4,705 CoUs (4,705 tCO ₂ eq)
	2021: 3,673 CoUs (3,673 tCO ₂ eq)
	2022: 4,263 CoUs (4,263 tCO ₂ eq)
Total:	36,895 CoUs (36,895 tCO₂eq)

SECTION A. Description of project activity

A) Purpose and general description of project activity>>

The project activity titled **4 MW Wind Power Project by Inox wind energy limited, Noida, India, (IWEL)** is renewable energy projects located at the following locations in Country: India

Sr No	Name of Wind Farm	Capacity(mw)	Village/s	District	State
01	Inox wind energy ltd.	4	Renavi Site- Jadhavwadi	Sangali	Maharashtra

The wind farm is owned by Inox wind energy limited, (IWEL- Project Proponent or PP), which is a subsidiary of Inox Green Energy Service Ltd (IGESL), which is a part of Inox Group. The Group is an Indian conglomerate with a legacy of more than 90 years. The group is a forerunner in diversified business segments comprising Fluor polymers, Specialty Chemicals, Wind Energy, and Renewable in various geographies. The total installed capacity of the Wind Project is 4 MW wind power project in Khanapur district of Maharashtra. The IWEL Wind Projects consists of 2 WTGs of 2.0MW each. The entire wind park is developed by Maruti wind park developer & Operations and Maintenance (O&M) services are provided by Inox Green Energy Service Ltd.

Initially WTG (RVT-04) was commissioned on 31.10.2015 and EPA was executed by MSEDCL (Purchaser) with M/s Shree Sidhivinayaka Cotton Corporation. Further, M/s Shree Sidhivinayaka Cotton Corporation executed Power of attorney on 09.08.2019 to M/s Inox Wind Ltd. for the said project/WTG. Similarly, WTG (RVT-16) was commissioned on 31.10.2015 and EPA was executed by MSEDCL (Purchaser) with M/s Ashwini Traders. Further, M/s Ashwini Traders executed Power of attorney on 09.08.2019 to M/s Inox Wind Ltd. for the said project/WTG. Whereas M/s Inox Renewables Ltd. (Old Owner) has amalgamated the said WTG with M/s Inox Wind Energy Ltd. IWEL (New Owner) in view of Hon'ble National Company Law Tribunal order dated 25.01.2021.

The generated electricity from the WTGs is grid connected wind power project located in Renavi village of Khanapur District in the state of Maharashtra (India). The purpose of this plant installation to supply electricity to regional MSEDCL Grid and M/s IWEL has the full ownership of the project activity. The 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). **The commissioning date of the WTG**

considered as the start date of the project activity and is recorded as (31.10.2015)

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., CO₂) into the atmosphere by displacing an equivalent amount of power at grid.

WHEREAS, it is noted that the Ownership for the said wind project (WTGs) has been changed from M/s Ashwini Traders to M/s Inox Wind Ltd. Further M/s Inox Wind Ltd. has transferred this WTG/Project to M/s Inox Renewables Ltd. (Old Owner) and thereafter the said project/WTG is now transferred to **M/s Inox Wind Energy Ltd. (New Owner)**. All other provisions of the EPA, liabilities of seller are same & unchanged and are now applicable to **M/s Inox Wind Energy Ltd. (New Owner)**.

WHEREAS, the Competent Authority of MSEDCL has accorded approval to incorporate the change in Ownership from and amend the Energy Purchase Agreement dated 29.03.2017 with regard to the change in Ownership from **M/s Inox Renewables Ltd. (Old Owner)** to **M/s Inox Wind Energy Ltd. (New Owner)** with the effect of **31.10.2015** for said Wind Power Project/WTG.

NOW, the Parties hereto, agree and confirm the terms and conditions set out based on the representations, mutual promises and covenants as mentioned herein and the Agreement:

For **INOX WIND ENERGY LIMITED**

Authorized Signatory

4

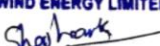
For **MSEDCL**

Director (Commercial)


WHEREAS, it is noted that the Ownership for the said wind project (WTGs) has been changed from M/s Shree Sidhivinayaka Cotton Corporation to M/s Inox Wind Ltd. Further M/s Inox Wind Ltd. has transferred this WTG/Project to M/s Inox Renewables Ltd. (Old Owner) and thereafter the said project/WTG is now transferred to **M/s Inox Wind Energy Ltd. (New Owner)**. All other provisions of the EPA, liabilities of seller are same & unchanged and are now applicable to **M/s Inox Wind Energy Ltd. (New Owner)**.

WHEREAS, the Competent Authority of MSEDCL has accorded approval to incorporate the change in Ownership from and amend the Energy Purchase Agreement dated 29.03.2017 with regard to the change in Ownership from **M/s Inox Renewables Ltd. (Old Owner)** to **M/s Inox Wind Energy Ltd. (New Owner)** with the effect of **31.10.2015** for said Wind Power Project/WTG.

NOW, the Parties hereto, agree and confirm the terms and conditions set out based on the representations, mutual promises and covenants as mentioned herein and the Agreement:

For **INOX WIND ENERGY LIMITED**

Authorized Signatory

4

For **MSEDCL**

Director (Commercial)

The project activity is displacing a net electricity generation i.e., **41,001 MWh** from the Indian grid system, which otherwise would have been generated by the operation of fossil fuel-based grid-connected power plant. The total CO₂e emission reductions by the project activity are **36,895 tCO₂e**.

Since the project activity will generate electricity through wind energy, a clean renewable energy source it does not cause any negative impacts on the environment and thereby contributes to climate change mitigation efforts.

The Owner of the project is M/s Inox wind energy limited. The details along with commissioning period are as follows:

Sr.No	WTG No	COD	Village	Gut Number	Tehsil	District	State
1	RVT-04	31-10-2015	Renavi	58/B	Khanapur	Sangali	Maharashtra
2	RVT-16	31-10-2015	Renavi	831	Khanapur	sangali	Maharashtra

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645
MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO.LTD
CIRCLE OFFICE: SANGLI
Ph No- (0233) 2301744-47 Fax- (0233) 2300223 E-mail -sesangli@mahadiscom.in

Ref.No.SE/SC/Addl.EE/Wind Mill/ **No 1 1 1 2 4** Date: **17 NOV 2015**

To,
M/s. Ashwini Traders,
104, Kaveri Building, Neelkanth Valley, Rajawadi,
Ghatkopar (East), Mumbai - 400077

Subject : - Commissioning of One no of 2000 KW Wind Turbine Generators in r/o M/s. Ashwini Traders, Loc. no. RVT-16, Gut no.831, Village- Renavi, Site - Jadhavwadi, Tal- Khanapur, Dist- Sangli.

Ref: - 1. Dir [O] L.No.DO/MSEDCL/NCE/Wind/4001, Dt. 15.02.2006.
2. Comm./CP/Wind/New Comm./Ashwini/no. 38054, Dt. 30.10.2015.
3. PGN-I/TIC/Ashwini/2.0 MW/2015-16/3745, Dt. 31.10.2015.
4. SE (Elect) charging permission ltr no.497, Dt. 30.03.2015
5. SMWPD/SNG/Comm/Oct-2015/197, Dt. 31.10.2015
6. T.O.L.No. SE/SC/ADDL. EE/Wind Mill/38054, Dt.31.10.2015.
7. EE/VT/AE(T)/5439, Dt.06.11.2015

One no of 2000 KW Wind Turbine Generators in r/o M/s. Ashwini Traders, Loc. no. **RVT-16, Gut no.831, Village- Renavi, Site -Jadhavwadi, Tal- Khanapur, Dist- Sangli**, is commissioned on 31st October 2015 in presence of the Executive Engineer O&M Division, Vita, Executive Engineer Testing Division Sangli, Addl. Executive Engineer [W/M] Circle Office, Sangli and the representative of M/s. Sri Maruti Wind Park Developers, wind machines under inspection started supplying power to MSEDCL Grid at common metering point at 220/33 KV Khanapur S/stn.

The details of 33KV overhead line and the other metering equipment charged is as

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.

(A Govt. of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645
MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO.LTD
CIRCLE OFFICE: SANGLI
Ph No- (0233) 2301744-47 Fax- (0233) 2300223 E-mail -sesangli@mahadiscom.in

Ref.No.SE/SC/Addl. EE/Wind Mill/ **No 1 1 1 2 1** Date: **0 7 NOV 2015**

To,
M/s. Shree Siddhivinayaka Cotton Corporation,
104, Kaveri Building, Neelkanth Valley, Rajawadi,
Ghatkopar (East), Mumbai - 400077

Subject : - Commissioning of One no of 2000 KW Wind Turbine Generators in r/o M/s. Shree Siddhivinayaka Cotton Corporation, Loc. no. RVT-4, Gut no.58/B, Village- Renavi, Site -Jadhavwadi, Tal- Khanapur, Dist- Sangli.

Ref: - 1. Dir [O] L.No.DO/MSEDCL/NCE/Wind/4001, Dt. 15.02.2006.
2. Comm/CP/Wind/New Comm./ Siddhivinayaka /no. 38055, Dt. 30.10.2015.
3. PGN-I/TIC/Shree Siddhivinayaka/2.0 MW/2015-16/3746, Dt. 31.10.2015.
4 SE(Elect) charging permission ltr no.497, Dt. 30.10.2015
5. SMWPD/SNG/Comm/Oct-2015/197, Dt. 31.10.2015
6. T.O.L.No. SE/SC/Addl. EE/Wind Mill/38055, Dt.30.10.2015.
7. EE/VT/AE(T)/5438, Dt.06.11.2015

One no of 2000 KW Wind Turbine Generators in r/o M/s. Shree Siddhivinayaka Cotton Corporation, Loc. no. RVT-4, Gut no.58/B, Village- Renavi, Site -Jadhavwadi, Tal- Khanapur, Dist- Sangli is commissioned on 31st October 2015 in presence of the Executive Engineer O&M Division, Vita, Executive Engineer Testing Division Sangli, Addl. Executive Engineer [W/M] Circle Office, Sangli and the representative of M/s. Sri Maruti Wind Park Developers, wind machines under inspection started supplying power to MSEDCL Grid at common metering point at 220/33 KV Khanapur S/stn.

The details of 33KV overhead line and the other metering equipment charged is as

A1) Brief description of the installed technology and equipment>>

Project Name: - Wind Power Project by Inox wind Energy Limited (IWEL).

Capacity & Units: - 4 MW & 2 No's WTG

All the machines are INOX make and have been developed using state of the art technology. In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind has considerable amount of kinetic energy when blowing at high speeds. This kinetic energy when passes through the blades of the WEG is converted into mechanical energy and rotates the wind blades. When the wind blades rotate, the connected generator also rotates, thereby producing electricity. The technology is a clean technology since there are no GHG emissions associated with the electricity generation.

The important parts of wind mill are:

Main Tower This is a very tall structure with a ladder at the bottom. The ladder is used for operation and maintenance

Blades The WEGs are provided with three blades. The blades are self-supporting in nature made up of Fiber Rein forced Polyester. The blades are mounted on the hub.

Nacelle The Nacelle is the one which contains all the major parts of a WEG. The nacelle is made up of thick rugged steel and mounted on a heavy slewing ring. Under normal operating conditions, the nacelle would be facing the upstream wind direction.

Hub The Hub is an intermediate assembly between the wing and the main shaft of the wind turbine. Inside the hub, a system to actuate the aerodynamic brake is fitted. The hub is covered with nose cone.

Main Shaft The shaft is to connect the gear box and the hub. Solid high carbon steel bars or cylinders are used as main shaft. The shaft is supported by two bearings.

Gear Box, Bearing and Housing The gearbox is used to increase the speed ratio so that the rotor speed is increased to the rated generator speed. Oil cooling is employed to control the heating of the gearbox. Gear boxes are mounted over dampers to minimize vibration. The main bearings are placed inside housing.

Brake Brake is employed in the WEGs to stop the wind turbine mainly for maintenance check. Brakes are also applied during over speed conditions of the wind turbine. The brakes are placed on the high-speed shaft.

Generator The generator uses induction type of generator. The generators are provided with monitoring sensors in each phase winding to prevent damage to the generators.

In the absence of the project activity the equivalent amount of electricity would have otherwise been generated by the operation of fossil fuel-based grid-connected power plants and fed into unified India grid system, hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario as discussed in the previous section.

A2) Relevant dates for the project activity (e.g., construction, commissioning, continued operation periods, etc.

The duration of the crediting period corresponding to the monitoring period is covered in this monitoring report.

UCR Project ID: 443

Start Date of 1st UCR Crediting Period: 31/10/2015

Project 1st Commissioning Date: 31/10/2015

UCR Monitoring Period No: 01

1st UCR Monitoring Period: 31/10/2015 to 31/12/2022

A3) Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period>>

The total GHG emission reductions achieved in this monitoring period is as follows:

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Start date of this Monitoring Period	31/10/2015
Carbon credits claimed up-to	31/12/2022
Total ERs generated (tCO ₂ eq)	36,895 tCO ₂ eq
Leakage	0

A4.) Location of project activity>>

Country: India
State : Maharashtra
District: Sangali

Sr No	Name of Wind Farm	Installed Capacity (MW)	Villages	District	State
01	Inox Wind Energy Limited (IWEL)	4	Raveni	Sangali	Maharashtra

Inox Wind Energy Limited (IWEL)					
Sr.No.	WTG No.	INST_CAPACITY (MW)	WTG_MODEL_NAME	Longitude	Latitude
1	RVT-04	2	INOX/2MW/D/15-16/4184	74.608721	17.283009
2	RVT-16	2	INOX/2MW/D/15-16/4416	74.609983	17.248728

The representative location map is included below:

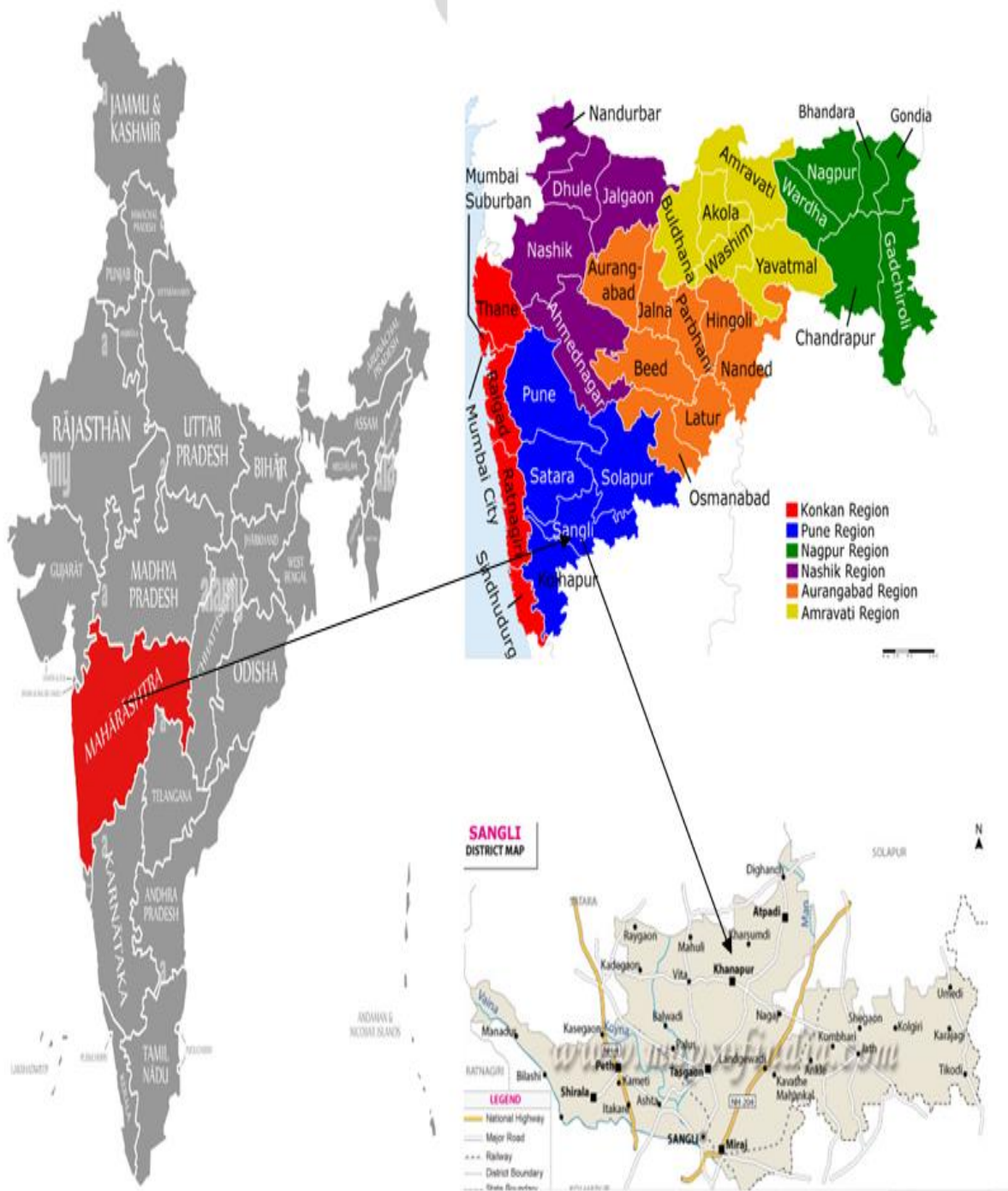


Figure-1-Location of the project activity (courtesy: Google images and www.mapofindia.com)

A.5) Parties and project participants>>

Party (Host)	Participants
India	<p>Project Proponents: M/s. Inox Wind Energy Limited (IWEL) Noida.</p> <p>UCR Aggregator: Inox Green Energy Service Limited UCR ID:724964927)</p> <p>Contact person: Saurabh Tyagi Mobile: +918802088793</p>

A.6) References to methodologies and standardized baselines>>

SECTORAL SCOPE- 01 Energy industries (Renewable/Non-Renewable Sources)

TYPE- Renewable Energy Projects

CATEGORY- AMS-1.D: “Grid connected renewable electricity generation”, version 18

UCR Standardized Baseline Emission Factor Applied for the period 2015-2022

A.7) Crediting period of project activity>>

Start Date of Crediting Period: 31/10/2015

Length of the crediting period corresponding to this monitoring period: 7 Years 02 month i.e., 31/10/2015 to 31/12/2022 (Both the dates are inclusive).

A.8) Contact information of responsible persons/entities>>

Name : Saurabh Tyagi

Contact No : +918802088793

E-Mail : saurabh.tyagi@inoxwind.com

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>>

The main purpose of the project activity is the implementation and operation of 228 MW wind farms to generate electricity in high wind speed areas of Maharashtra. The generated electricity from WEGs is connected to state electric utility and transmitted through state electric grid. The project consists of 2 WTGs with capacity of 2 MW each installed. Wind Turbine which is installed at Renavi site. The project generates clean energy by utilizing the kinetic energy of flowing wind.

- b) For the description of the installed technology, technical process and equipment, include diagrams, where appropriate>>

Technical details of the machines installed are explained below:

Model		
1	Turbine Model	WT 2000DF
Operating Data		
2	Rated power	2000kW
3	Cut in wind speed	3.0m/s
4	Rated wind speed	<=11.5m/s
5	Cut-out Wind speed	20.0m/s
6	Hub Height	80 m
7	Class	IIIB
Rotor		
8	Rotor Diameter	93.3m
9	Rotor Area	6795m ²
10	No of Rotor blade	3
11	Blade length	45.3m
Generator		
12	Type	Doubly fed induction generator(DFIG)
13	Rated power	2000kW
Tower		
14	Type	Conical tubular steel tower
15	Hub height	80m
Braking system		
16	Operational brake	Full span blade pitching
17	Type of construction	gear/servomotor

Wind Turbines are manufactured and supplied by INOX with an aggregate installed capacity of 4

MW. The connectivity of all the WTGs is to a Central Monitoring Station (CMS) through high-speed WLAN modem or fiber optic cable which helps in providing real time status of the turbine at CMS with easy GUI (Graphical User Interface) and ability to monitor the functioning of the turbine from CMS. The life time of the WTG is 20 to 25 years as per manufacturer specifications.



RVT-16



RVT-04



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

Indian economy is highly dependent on “Coal” as fuel to generate energy and for production processes. Thermal power plants are the major consumers of coal in India and yet the basic electricity needs of a large section of population are not being met. This results in excessive demands for electricity and places immense stress on the environment.

Changing coal consumption patterns will require a multi-pronged strategy focusing on demand, reducing wastage of energy and the optimum use of renewable energy (RE) sources. This project is a Greenfield activity where grid power is the baseline. The renewable power generation is gradually contributing to the share of clean & green power in the grid; however, grid emission factor is still on higher side which defines grid as distinct baseline.

The Government of India has stipulated following indicators for sustainable development in the interim approval guide lines for such projects which are contributing to GHG mitigations. The Ministry of Environment, Forests & Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. It has been envisaged that the project shall contribute to sustainable development using the following ways:

Social well-being: The project would help in generating direct and indirect employment benefits accruing out of ancillary units for manufacturing towers for erection of the Wind Turbine Generator and for maintenance during operation of the project activity. It will lead to development of infrastructure around the project area in terms of improved road network etc. and will also directly contribute to the development of renewable infrastructure in the region.

Environmental well-being: The project utilizes Wind energy for generating electricity which is Clean source of energy. The project activity will not generate any air pollution, wind pollution or solid waste to the environment which otherwise would have been generated through fossil fuels. Also, it will contribute to reduction GHG emissions. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

Economic well-being: Being a renewable resource, using Wind energy to generate electricity contributes to conservation precious natural resources. The project contributes to the economic sustainability through promotion of decentralization of economic power, leading to diversification of the national energy supply, which is dominated by conventional fuel based generating units. Locally, improvement in infrastructure will provide new opportunities for industries and economic activities to be setup in the area. Apart from getting better employment opportunities, the local people will get better prices for their land, thereby resulting in overall economic development.

Technological well-being: The project activity leads to the promotion of 2 MW Wind Turbine Generators into the region and will promote practice for small scale industries to reduce the dependence on carbon intensive grid supply to meet the captive requirement of electrical energy and also increasing energy availability and improving quality of power under the service area. Hence, the project leads to technological well-being.

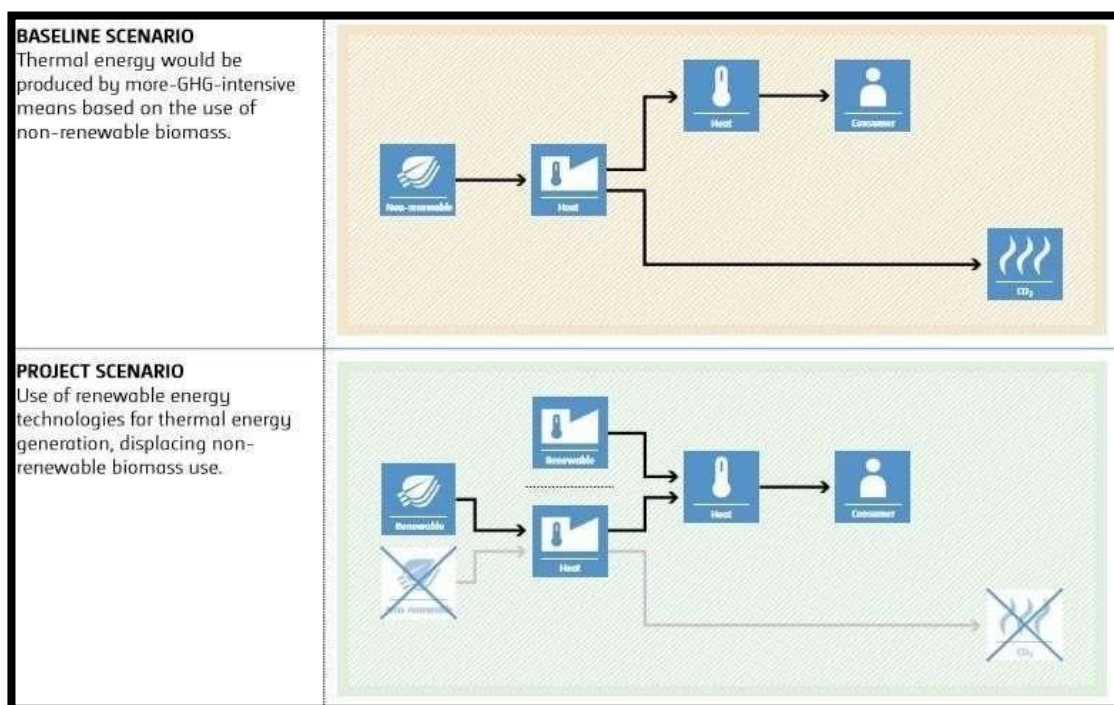
B.3. Baseline Emissions>>

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 Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants.

Baseline Scenario:

Thus, this project activity was a voluntary investment which replaced equivalent amount of electricity from the Indian grid. The project proponent was not bound to incur this investment as It was not mandatory by national and sectoral policies. Thus, the continued operation of the project activity would continue to replace fossil fuel-based power plants and fight against the impacts of climate change.

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 2015- 2021 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2022, 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 tCO₂/MWh) has been considered to calculate the emission reduction under conservative approach.



B.4. Debundling>>

This project activity is not a de-bundled component of a larger 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)

TYPEI– Renewable Energy Projects

Applied Baseline Methodology: AMS-I.D: “Grid connected renewable electricity generation”, version 18

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

The project activity involves generation of grid connected electricity from the construction and operation of a new Wind power-based project.

The project activity has installed 2 WTGs of capacity 2 MW each which will qualify for a small-scale project activity under Type-I of the Small-Scale methodology. The project status is corresponding to the methodology AMS-I.D., version 18 and applicability of methodology is discussed below:

Applicability Criterion	Project Case
1. This methodology comprises renewable energy generation units, such as photovoltaic, Wind, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity involves setting up of a renewable energy (Wind) generation plant that exports electricity to the fossil fuel dominated electricity grid (Indian Grid system). Thus, the project activity meets this applicability conditions.
2. This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in(an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve are habilitation of (an) existing plant(s); or Involve are placement of(an) existing plant(s).	The Project activity involves the installation of new WTGs at a site where there was no renewable energy power plant operating prior to the implementation of the project activity. Thus, Project activity is a Greenfield plant and satisfies this applicability condition (a).

<p>3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <p>(a) The project activity is implemented in existing reservoir, with no change in the volume of the reservoir; or</p> <p>(b) The project activity is implemented in existing reservoir, where the volume of the reservoir(s) Is increased and the power density as per definitions given in the project emissions section, is greater than 4 W/m²</p> <p>(c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, (e)is greater than 4W/m2</p>	<p>As the project activity is a Wind Turbine Generator, this criterion is not relevant for the project activity.</p>
<p>4. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.</p>	<p>The rated capacity of the project activity is 4 MW with no provision of Co-firing fossil fuel. Hence, meeting with this criterion.</p>
<p>5. Combined heat and power (co-generation) systems are not eligible under this category</p>	<p>This is not relevant to the project activity as the project involves only Wind power generating units.</p>
<p>6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</p>	<p>There is no other existing renewable energy power generation facility at the project site. Therefore, this criterion is not applicable.</p>
<p>7. In the case of retrofit or replacement, to qualify as a small- scale project, the total output of the retrofitted or replacement power plant/unit shall not exceed the limit of 15MW.</p>	<p>The project activity is a new installation; it does not involve any retrofit measures nor any replacement and hence is not applicable for the project activity.</p>

8. In the case of landfill gas, waste gas, waste water treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If there covered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as “AMS I. C.: Thermal energy production with or without electricity” shall be explored.	This is not relevant to the project activity as the project involves only Wind power generating units.
9. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.	Not biomass is involved, the project is only a wind power project and thus the criterion is not applicable to this project activity.

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:

- The project activity was applied (Consideration) in CDM on 18 June 14. However said project was not registered or no any CER's have been issued for the same project. The project activity is now seeking CoUs under the UCR CoU Standard/Program for the period 31/10/2015 to 31/12/2022 and hence there is no double counting issue of carbon credits for the said vintage period. Additionally, the same has been stated in the undertaking provided in the Double Counting Avoidance Assurance Document (DAA) by the PP.
- The details of the prior consideration project is as follow,

Project Name	Country	Date
Wind power project in Maharashtra by Shree Siddhivnayaka Cotton Corporation	India	18 June 2014
Wind power project in Maharashtra by Ashwini Traders	India	18 June 2014

(https://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html?s=1580)

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

As per applicable methodology AMS-I.D. Version 18, “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system.” Thus, the project boundary includes the Wind Turbine Generators and the Indian grid system.

Source		Gas	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO ₂	Yes	CO ₂ emissions from electricity generation in fossil fuel fired power plants
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Green-field Wind Power Project Activity	CO ₂	No	No CO ₂ emissions are emitted from the project
		CH ₄	No	Project activity does not emit CH ₄
		N ₂ O	No	Project activity does not emit N ₂ O
		Other	No	No other emissions are emitted from the project

C.4. Establishment and description of baseline scenario (UCR Protocol)>>

As per para 19 of the approved consolidated methodology AMS-I.D. Version 18, 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 in to the grid”.

The project activity involves setting up of a new Wind Turbine Generator to harness the green power from Wind energy and use it for personal requirement (captive consumption). In the absence of the project activity, the equivalent amount of power would have been generated by the operation of grid- connected fossil fuel-based power plants and by the addition of new fossil fuel-based generation sources into the grid. 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.

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 2015-2020 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.

Net GHG Emission Reductions and Removals

$$ER_y = BE_y - PE_y - LE_y$$

Where:

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

BE_y = Baseline Emissions in year y (tCO₂/y)

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

LE_y = 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:

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

Where:

BE_y = Baseline emissions in year y (tCO₂)

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

$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO₂/MWh has been considered, this is conservative as compared to the combined margin grid emission factor which can be derived from Data base of Central Electricity Authority (CEA), India. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, Page 4)

Hence, $BE_y = 41001 * 0.9 = 36,895 \text{ tCO}_2\text{eq}$

Project Emissions

As per paragraph 39 of AMS-I.D. (version 18, dated 28/11/2014), for most renewable energy project activities emission is zero.

Hence,

$$PE_y = 0$$

Leakage Emissions

As per paragraph 42 of AMS-I.D. version-18, all projects other than Biomass projects have zero leakage.

Hence,

$$LE_y = 0$$

Total Emission reduction by the project for the current monitoring period is calculated as below:

Hence,

$$ER_y = 36895 - 0 - 0 = 36,895 \text{ tCO}_2$$

C.6. Prior History>>

The project activity was applied (Consideration) in CDM on 18 June 2014. However said project was not registered or no any CER's have been issued for the same project. The project activity is now seeking CoUs under the UCR CoU Standard/Program for the period 31/10/2015 to 31/12/2022 and hence there is no double counting issue of carbon credits for the said vintage period. Additionally, the same has been stated in the undertaking provided in the Double Counting Avoidance Assurance Document (DAA) by the PP.

C.7. Monitoring period number and duration>>

31/10/2015 to 31/12/2022 (inclusive of both dates)

First Monitoring Period: 7 Years 02 month

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

No change in crediting period. The crediting period start date is **31/10/2015**.

C.9. 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

C.10. Monitoring plan>>

The project activity essentially involves generation of electricity from wind, the employed Wind Turbine Generator can only convert Wind energy into electrical energy and cannot use any other input fuel for electricity generation, and thus no special ways and means are required to monitor leakage from the project activity. The recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility.

PPs are the project implementers and monitor the electricity delivered to the electricity grid by the project activity. The data is already archived electronically and is stored since commissioning. 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.

The recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility. The joint measurement is carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties sign the recorded reading.

Data/Parameter	EF, CO ₂ , GRID, y
Data unit	0.9 tCO ₂ /MWh
Description	A "grid emission factor" refers to a CO ₂ emission factor (tCO ₂ /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 /MWh for the 2015-2020 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 Asper Standard
Measurement methods and procedures	Fixed
Monitoring frequency	NA
Purpose of data	To estimate baseline emissions

Data/Parameter:	<i>ESy</i>						
Data unit:	MWh Quantity of net electricity supplied by the Project Activity to the grid in year y.						
Description:	<table border="1"> <thead> <tr> <th>Year</th><th>MWh Supplied to Grid</th></tr> </thead> <tbody> <tr> <td>2015</td><td>2.94862</td></tr> <tr> <td>2016</td><td>5960.649993</td></tr> </tbody> </table>	Year	MWh Supplied to Grid	2015	2.94862	2016	5960.649993
Year	MWh Supplied to Grid						
2015	2.94862						
2016	5960.649993						

		2017	8095.461937	
		2018	7930.8784	
		2019	4962.995966	
		2020	5228.68745	
		2021	4082.219799	
		2022	4737.756467	
Source of the Data:	JMR. Statement of net export to power to the grid issued Monthly by State Electricity Board or any other competent authority as applicable			
Measurement Procedure (if any):	Total MW supplied to the grid during this MR= 41,001 mw. (Round down)			
Monitoring frequency:	Monitoring frequency: Continuous Measurement frequency: Hourly Recording frequency: Monthly			
QA/QC procedures:	<p>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 shall be jointly inspected, and sealed by authorized Representatives of the company and the state utility.</p> <p>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.</p> <p>Accuracy class of energy meter: As per Wheeling Agreement or relevant National standards amended/modified from time to time.</p> <p>Calibration Frequency: As per the Central Electricity Authority the testing and calibration frequency should be minimum once in a 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.</p> <p>Entity responsible: Aggregator</p> <p>The net energy exported to the grid is measured</p>			

	<p>every month using calibrated energy meter by the State Electricity Board authorities in the presence of the project implementer or its representatives. The meter shall be jointly inspected, and sealed by authorized Representatives of the company and the state utility.</p> <p>The electricity meter/s record both export and import of electricity from the Wind Farm 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 will be cross checked with the monthly settlement invoices. The meter should be checked for accuracy and the meters will be calibrated as per the procedures of State Electricity Board as per the national or international standards. Measurement results shall be cross checked with records for sold electricity (i.e. Invoice). As per the monthly accounting procedure reflected in the monthly statement (e.g., JMR and Settlement Invoices etc.) However, if the monthly statement does not directly provide “net electricity” units, then quantity of net electricity supplied to the grid shall be calculated using the parameters reflected in the monthly document, such as Export units and Import units. Thus, the difference between the measured quantities of the grid export and the import will be considered as net export: $EGPJ_y = EG \text{ Export} - EG \text{ Import}$ (Calculation has been referred in the ER sheet)</p>
Purpose of the Data:	-Calculation of baseline emissions

Meter details:

IWEL Main and Check Meter Details,


Project	Feeder	Main Meter	Check Meter
IWEL 4 MW Wind Power Project	Line-2	01131242	HT01131241



ANNEXURE I (Month Wise Energy Delivered to Grid (kWh)

4 MW IWEL												
Month—Wise Energy Delivered to Grid (kWh)												
Year	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov.	Dec
2015											2948.62	0
2016	30500.60	103592	42037	17922	196908	679273	1082116	1595711	557322	455741.7	615090.28	584436.382
2017	586632.7	549030.15	308697.02	570343.61	711964.64	1668399.78	2127578.4	782680.197	411335.89	5730.272	133460.78	239608.374
2018	310334.1	354879.60	298501.97	392133.36	460850.34	907879.875	1444776.4	1350539.63	402093.29	502009.1	765087.55	741793.059
2019	563935.8	412490.32	419658.82	239339.10	534866.30	205485.54	267243.20	691734.302	810671.92	444351.8	78746.787	294471.939
2020	240515.8	439660.49	283987.62	252529.86	247992.86	806566.437	647632.51	930623.220	234436.46	221242.4	491887.44	431612.181
2021	219238.1	286577.28	327273.48	278930.2	332153.79	664347.465	673111.79	548930.529	156070.20	0	193196.96	402389.868
2022	366521.3	246289.07	330683.05	187931.71	555175.16	529272.508	548040.96	603141.833	503907.81	140245.9	306190.58	420356.438
Total Generation from November 2015 to December 2022 in kWh												

Meter Calibration Certificate:



MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. of Maharashtra Undertaking)
CIN: U40100MH12000990000132649

Maharashtra State Electricity Distribution Co. Ltd.,
Office of Executive Engineer (Testing Division)
1st Floor Administrative Building, MSEDCI Vashrambag, Sangli
Phone: 0233(2303280)
Email: eetsangli@mahadiscom.in
eetsangli@gmail.com

EE/TESTING/SANGLI/T/ A-177 **295** Date **20 FEB 2020**

To,
The Executive Engineer,
MSEDCI O&M Division
Vita

Sub :- Annual / Half-Yearly / Quarterly Meter Testing of HT Consumer
M/S. Maruti wind park developers feeder no.2 at 220/33KV Khanapur EHV S/S.
(Main Meter)
Consumer Number:- WEG

With reference to the above, this office staff has visited HT Consumer on Date 10/02/2020

The details of meter are as below,

Make	Sr. No.	Remark
Wallaby	HT01131234	The errors of meter were found to be within permissible limits

The details of load are as below,

Contract Demand	Connected Load
---	---

Dial & Load test for 1/2 hour was conducted / not conducted and overall M.F. was confirmed / calculated to be **1500 (Fifteen Hundred)** for units & M.D.

The meter readings before testing are as below:

	KWH	KVAH	KVARh		M.D.	Reset Count
			Lag	Lead		
IMP	273.3	362.4	189.8	49.9	0.174	61
EXP	133881.1	135059.6	8008.9	2368.2	8.777	

	Zone M.D.	A	B	C	D
IMP	KVA	0.157	0.174	0.152	0.165
EXP	KVA	8.777	7.089	6.076	6.335

म.रा.विद्युत वितरण कंपनी लि.
विश्रामबाग, सांगली.
आवरण नं. **2435**
दिनांक **25 FEB 2020**
सा.प्र./तांत्रिक/लेखा

DCHT
23/2/2020

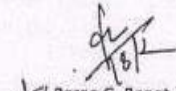
Total Harmonics distortion (Instantaneous) measured on Reference Sub-Standard meter (RSS) during Testing are as below.

	R	Y	B
THD - V %	---	---	---
THD - I %	---	---	---

Remarks :

- 1) ---
- 2) ---

Add. EE - Wind/Scada
Dy. Ex. Engineer
HT Billing T
CCOC T
Q.C. T
S/s T
LCC


(Parag G. Bapat)
Executive Engineer (Testing)
Sangli

Copy S.w.rs.to: The Superintending Engineer, MSEDCI, O & M Circle Sangli.

Copy to: The Sub Division Officer, MSEDCI O&M Sub Division, Khanapur

EE/TESTING/SANGLI/T/ A-177

Date 20 FEB 2020

To,
The Executive Engineer,
MSEDCL O&M Division
Vita

Sub :- Annual / Half Yearly / Quarterly Meter Testing of HT Consumer
M/S. Maruti wind park developers feeder no.2 at 220/33KV Khanapur EHV S/S.
(Check Meter)
Consumer Number:- WEG

With reference to the above, this office staff has visited HT Consumer on Date 10/02/2020

The details of meter are as below,

Make	Sr. No.	Remark
Wallaby	HT01131239	The errors of meter were found to be within permissible limits

The details of load are as below,

Contract Demand	Connected Load
—	—

Dial & Load test for 1/2 hour was conducted / not conducted and overall M.F. was confirmed / calculated to be 1500 (Fifteen Hundred) for units & M.D.

The meter readings before testing are as below:

	KWH	KVAH	KVARh		M.D.	Reset Count
			Lag	Lead		
IMP	273	362	189.9	49.8	0.185	61
EXP	133853.1	135032.8	8033.3	2398.1	8.785	

	Zone M.D.	A	B	C	D
IMP	KVA	0.155	0.185	0.152	0.164
EXP	KVA	8.785	7.049	5.93	6.403

म.रा.विद्युत वितरण कंपनी लि.
विश्रामबाग, सांगली.
आवक नं. 2434
दिनांक 25 FEB 2020
सा.प्र./तांत्रिक/लेखा

DLHT
es
25/2

Total Harmonics distortion (instantaneous) measured on Reference Sub- Standard meter (RSS) during Testing are as below.

	R	Y	B
THD - V %	----	----	----
THD - I %	----	----	----

Remarks :



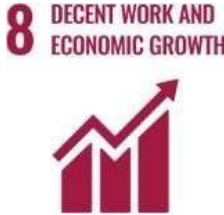
1) —

Add. EE - Wind/Sangli
By. Ex. Engineer
HT Billing : T
CCCC : Infra
Q.C. : R
S/S : G
L.O.

(Parag G. Bapat)
Executive Engineer (Testing)
Sangli

Copy S.w.rs.to: The Superintending Engineer, MSEDC, O & M Circle Sangli.

Copy to: The Sub Division Officer, MSEDC O&M Sub Division, Khanapur

Development Goals	Targeted SDG	Target Indicator (SDG Indicator)
 <p>SDG13: Climate Action</p>	<p>13.2: Integrate climate change measures international policies strategies and planning</p> <p>Target achieved: 36,895 tCo2</p>	<p>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)</p>
 <p>SDG7:Affordable and Clean Energy</p>	<p>7.2:By 2030, Increase substantially the share of renewable energy in the global energy mix</p> <p>Target achieved: 41,001 MWh</p>	<p>7.2.1: Renewable energy share in the total final energy consumption</p>
 <p>SDG8: Decent Work and Economic Growth</p>	<p>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</p>	<p>8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.</p>