

**ORGANISATION**

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## **GREEN ENERGY ACHIEVEMENTS**

### **Southern Railway's 10.5 MW Windmill Project :**

**Name of the Project : Wind farm ( 2.1 MW X 5 nos.) 10.5 Mega Watts  
(MW) for Southern Railway in the state of  
Tamilnadu (India)**

**Project Cost : ` 72 crores**

**Date of Commissioning: 08.01.2019**

### **2.1MW Wind turbine generator at Vellalankottai, kaythar**



### **Salient Features:**

Windmill project with latest S111 technology, which has increased rotor diameter of 111.8 metre and wider swept area of 9500 square metre. This model uses Doubly Fed Induction Generators (DFIG) optimizing output at various wind conditions. Suitable for low wind sites, SB 54 blades to withstand extreme on site conditions.

5 numbers of Windmills of 2.1 MW capacity each with a total capacity of 10.5 MW. Windmills are installed at Savalaperi (2 nos), Vellalankottai and Vadakku Illandaikulam (2 nos.). Power generated from these Windmills is used for captive consumption. Expected annual electrical energy generation from Windmills is 283 lakh units per year. Project serves as a Corporate Social Responsibility towards Green Energy.

Being a Green Energy project, this project helps in reduction of Carbon Emission on account of electricity consumption by Railways. Centralized Control & Monitoring Station established by Suzlon captures data from all five Wind Turbine Generators on real time basis. Daily Generation from Windmills is being monitored by Railways. The wind mill generators are under comprehensive AMC with M/s Suzlon upto year 2029.

The windmill has generated approximately 57.79 Million units from Jan-19 to May-21

### **Technical Details:**

#### **A Windmill mainly consists of :**

1. Generator of 2.1 MW with current capacity of 1810 A,
2. Rotor with 3 blades of 54.6 metre length each,
3. Tubular Tower of 87.268 metre height,
4. Yawing System to rotate the blade to wind direction,
5. Braking System to stop the windmill as and when required,
6. Hub holds the blades and make it possible for them to rotate with respect to the rest of the turbine body.
7. Nacelle housing on top of the tower that accommodates all the components that need to be on a turbine top.

#### **Solar PV panel :**

- Synchronization of 100 kWp solar power to existing supply has been done on 16.12.2018 in roof top of PF no. 2&3 at MDU junction and daily generation is approximately 400units per day. Total generation as on May-21 is 3,21,810 units
- Synchronization of 100 kWp Solar panel on rooftop of Divisional office has been done on 26.02.2019 and daily generation approximately 350 units per day. Total generation as on May-21 is 2,61,339 units
- Synchronization 5 kWp Solar panel on rooftop of Divisional office has been done on 14.10.19 and daily generation approximately 15 units per day. Total generation as on May-21 is 10,480 units

**100 kwp Solar PV panels at MDU PF 2/3**



**105 kWp Solar PV panels at DRM Office**



### ENERGY CONSERVATION MEASURES

- Provisions of 100% LEDs - So far 22,500 LED lamps were provided in station, service building, LC gates and staff quarters. Provision of 100% work completed in Madurai division.
- 272 nos. of BLDC fans were provided in MDU division.
- 60 nos. of LC gates are provided with 640Wp Solar panel with LED fittings at MDU division during 2017-18.