

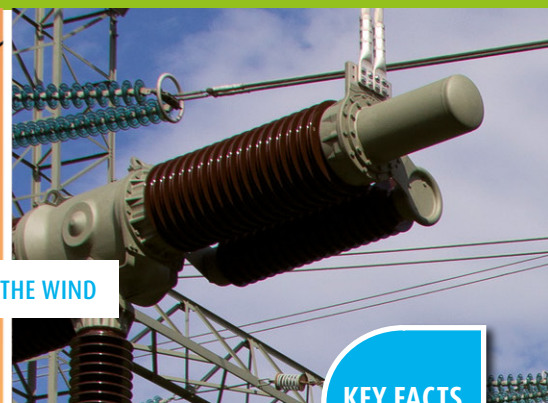


## INDIA: WINDFARM IN KARNATAKA



GENERATING CLEAN ELECTRICITY FROM THE POWER OF THE WIND

IMPROVING SUPPLY IN SOUTH-WEST INDIA



### KEY FACTS

India has experienced tremendous growth in recent decades: The economy and population of the sub-continent have grown more rapidly than almost anywhere else in the world. Yet, development has also led to increased pollution and environmental damage. The energy supply in India is still very much reliant on fossil fuels – especially coal – which is one of the reasons why carbon emissions in India have increased by 900 percent in the past 40 years. At the same time, India is among the countries that are most affected by the impacts of climate change: drought, crop failures, and floods are already problematic and their effects will become more drastic in the future.

### THE PROJECT

This project involves the installation and operation of 86 wind turbines with a capacity of 800 KW each. In total, the turbines generate 160 gigawatt hours of clean energy. Based on the country's average per capita electricity consumption of about 800 kWh per year, the electricity production is sufficient to supply 200.000 people.

The project contributes to local economic development by improving the energy supply to meet the increasing demand in Karnataka and the success of the project shows that renewable energy has the potential to be an important part of Indias power supply. Investing in new, climate-friendly technologies can help to avoid problems linked to fossil fuel based power generation. Yet, without the additional funding from carbon credits sales, the realization of the project would not have been possible.

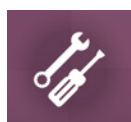
### SUSTAINABILITY BENEFITS



**Environmental Quality:** Apart from reducing greenhouse gas emissions, the project also helps to avoid the combustion of fossil fuels and thereby contributes to reduced emissions of typical air pollutants and soot.



**Health:** By contributing to an improved air quality, the project also helps to reduce respiratory diseases, which are major health issue in India.



**Jobs:** The project activity helps to enhance economic development in the region by creating job opportunities for the local people during construction and operation.

#### Location:

Karnataka state, India

#### Project type:

Renewable energy – Wind

#### Project standard:

Gold Standard & CDM

#### Total emission reductions:

»» 150,000 t CO<sub>2</sub>e p.a. ««

#### Project start date:

October 2008

#### Project partner:

M/s Wind World (India) Limited

#### Validator:

DNV

#### Verifier:

RINA



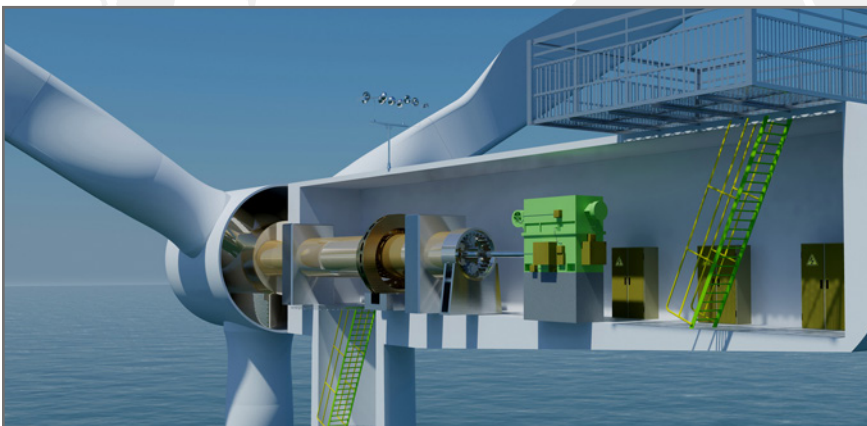


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### TECHNOLOGY BRIEF - HOW IT WORKS

Driven by the kinetic energy of moving air, the mechanical energy created by a rotor is fed into an attached generator to produce electricity. Output can vary depending on wind speed which is ultimately determined by atmospheric conditions, although it is also influenced by ground characteristics.

A rough surface exerts significant friction, effectively consuming energy and thereby slowing down the moving air. Smooth surfaces cause very little friction, the most obvious example being higher wind speeds in coastal areas. It is therefore important to site wind farms carefully to maximize their potential. Over the last two decades wind power technology has rapidly improved. The size of the installations - as well as the amount of power generated - have consistently increased while the cost per electricity unit has fallen significantly.



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