

## India: 21MW Wind Power Project

Wind farm in Karnataka annually produces 48GWh of clean electricity



Certification:  
**Gold Standard**  
Certifies research & sustainability development



### Key Facts

**Location:**  
Karnataka, India

**Project type:**  
Renewable Energy – Wind

**Total emission reductions:**  
»» 45,000t CO<sub>2</sub>e p.a. ««

**Project standard:**  
Gold Standard

**Project start date:**  
November 2017

## Background

India currently has the seventh biggest economy in the world and neither economic nor population growth show any signs of slowing. This rapid growth, however, has brought major challenges to the country. For example, energy demand in India has more than doubled since 2000. Fossil fuels - and coal in particular - have been the main resource for covering this demand.

As a result, India's energy mix is not only very carbon intensive, but also produces many other pollutants. Greenhouse gas emissions from fossil fuel consumption in the country have increased by 900% over the last 40 years. According to the World Health Organization, 11 out of the 20 most polluted cities in the world can be found in India. Harnessing renewable resources would make an important contribution to reducing India's pollution, and the country holds great potential for the utilization of renewables.



## The Project

Located in Karnataka, the project consists in the construction of a 21MW wind farm in the district of Koppal. It is constructed to deliver renewable power to the Indian power grid. A total of 10 turbines are installed, each with an individual capacity of 2,100kW. In total, the wind farm generates around 48,000 MWh of clean electricity every year. Based on average per capita consumption in India, this project produces enough power to sustainably meet the electricity demands of almost 60,000 people every year.

## Sustainable Development

By supporting this project you'll contribute to the following Sustainable Development Goals:



**SUSTAINABLE DEVELOPMENT GOALS**

While focusing on reducing greenhouse gas emissions, all our projects also generate multiple co-benefits. These are supportive of the United Nations Sustainable Development Goals.



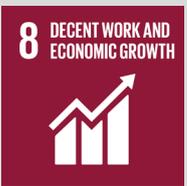
**Good health and well-being**

It is estimated that life expectancy in India is shortened by 23 months purely as a result of poor air quality. The project reduces the carbon intensity of India's power generation and lessens the reliance on fossil fuels to support economic development. As a result, local air quality will be improved.



**Affordable and clean energy**

Wind energy is a zero-emissions source of power. By increasing the share of wind power within India's energy mix, not only is the carbon intensity of the electricity grid lowered, but the gap between demand and supply is also reduced. Consequently, the reliability of power supply in India is generally improved.



**Decent work and economic growth**

The project provides new employment opportunities and workers receive annual training. The improved power supply will benefit local businesses.



**Industry, innovation and infrastructure**

Through the construction of the wind farm, local infrastructure is also improved. In particular, new access roads are built which improves transport routes.



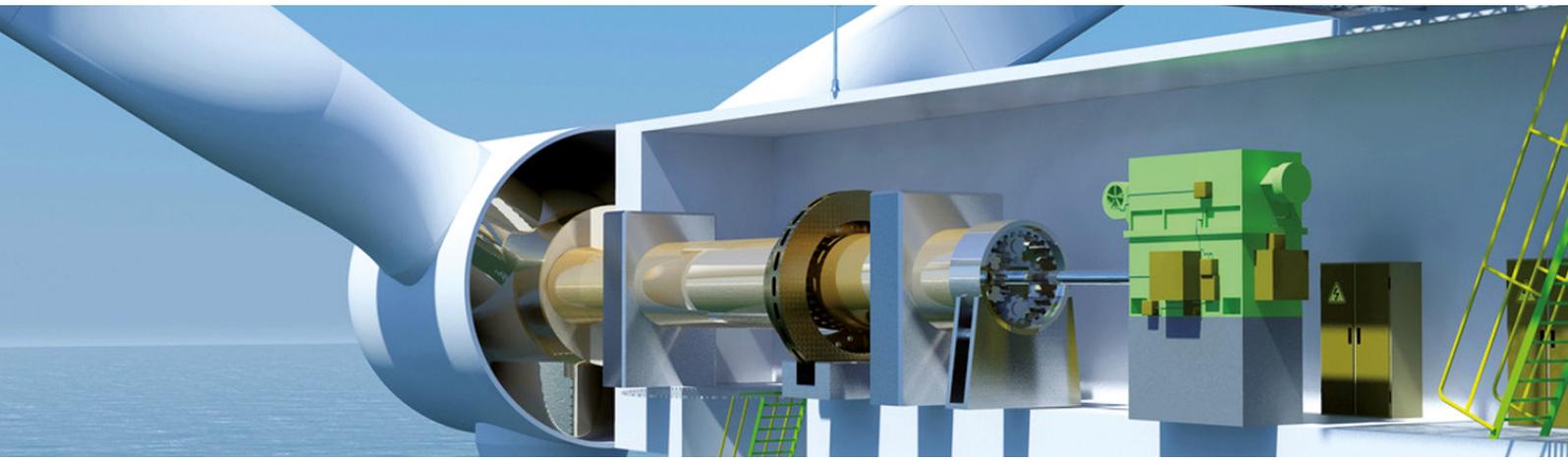
**Climate action**

By reducing the reliance on fossil fuels, the project contributes to the reduction of carbon emissions and the fight against climate change. The total emissions reduction for the projects is around 45,000t of carbon equivalent every year.



**Life on land**

Alongside the reduction of carbon dioxide, the project also avoids other pollution such as sulphur dioxide, nitrogen oxides and particulate matter. As a result, the project reduces the causes of acid rain, which is a widespread problem across India.



## 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 and this 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 maximise their potential. Over the last two decades wind power technology has rapidly improved.



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## Project Standard



The Gold Standard is an award winning certification standard for results based project finance and is recognised internationally as the benchmark for quality and rigour in certifying environmental and socio-economic project outputs. Established in 2003 by the World Wide Fund For Nature (WWF), the Gold Standard today is trusted and endorsed by NGOs, governments and multinationals including United Nations agencies worldwide.

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