

# Carbon Offset Project Profile

## INDIA: CLEAN ENERGY FROM WIND PROJECT

Environmental problems in India are growing rapidly. The increasing economic development and a rapidly growing population that has taken the country from 300 million people in 1947 to more than one billion people today is putting a strain on the environment, infrastructure, and the country's natural resources.

India's air pollution is exacerbated by its heavy reliance on coal for power generation. Coal supplies more than half of the country's energy needs and is used for nearly three-quarters of electricity generation. While India is fortunate to have abundant reserves of coal to power economic development, the burning of this resource, especially given the high ash content of India's coal, has come at a cost in terms of public health risk and environmental degradation.

Investments in clean energy sources, such as wind, are therefore considered to be essential both in the interest of the environment and for public health reasons. Wind projects partially displace electricity currently generated from grid-connected conventional fossil fuel based thermal power plants, while reducing emissions.

Wind Projects reduce the emission of greenhouse gases and limits local air pollution, curtailing its negative health impacts. In addition to its environmental benefits, the implementation of the project creates job opportunities for local workers, contractors and suppliers, while the operation and maintenance of the wind park generates long-term employment positions.



### Key Facts:

Location: India

Project type: Wind Power

Project standard:  
Verified Carbon Standard





## 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 maximise their potential. Over the last two decades wind power technology has rapidly improved. The size and power output have consistently increased while lowering the cost per electricity unit.

## SUSTAINABILITY BENEFITS

Beyond the reduction of greenhouse gas emissions, the project contributes to sustainable development in India by:

- Reducing the emission of harmful pollutants, thereby improving the health of the local population, and therefore reducing the number of air pollution related deaths.
- Improving local environmental conditions.
- Driving India towards a cleaner form of energy mix and meeting its renewable energy targets.
- Stimulating the local economy through large-scale investment
- Generating income for local population by creating employment positions.
- Demonstrating and promoting renewable wind energy technology.



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