

India:
Energy from bagasse
Bagasse from sugar production used as biofuel



Certification:



Key Facts



Background

India has experienced a huge population growth in recent decades, especially in urban areas. This development demanded a rapid industrialization so that the economy could keep up with the growing headcount. However, this has put a tremendous strain on the environment, infrastructure and the country's natural resources.

Energy demand is at an all-time high and is often met with fossil fuels, predominantly coal and oil. These fuels are detrimental to the environment. It is, therefore, no surprise that the WHO listed respiratory illnesses as the 3rd biggest cause of death among children under the age of five. Despite using fossil fuels, India is still unable to meet its growing demand. In many areas, the power supply is unstable which limits industrial production, thus slowing economic development. In light of this, the task of meeting this ever-growing demand for energy poses an enormous political, economic and environmental challenge to the country.



The Project

The project involves the installations of a biomass power plant in the village of Vijayanagar-Makhani in the province of Maharashtra. The aim of the project is to produce climate-friendly power from organic waste. The biomass power plant is an integral part of a newly-built sugar factory. The project will install a new, energy efficient steam boiler system which uses a 30MW turbine to produce energy. The system will be fed with bagasse, a by-product of the sugar production process in the factory.

The capacity of the plant exceeds the internal consumption of the sugar company and so the remaining sustainable energy produced will be fed into the national grid.

Location:
Maharashtra, India

Project type:
Renewable Energy – Bagasse

Total emission reductions:
»» 65,000t CO₂e p.a. ««

Project standard:
Verified Carbon Standard (VCS)

Project start date:
March 2011

Sustainable Development

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



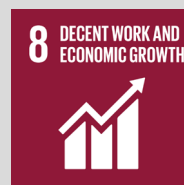
SUSTAINABLE DEVELOPMENT GOALS

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.



Affordable energy

The enables stabilisation of energy supply as well as reducing strain on the national grid. It also provides many families with access to cleaner energy



Decent work and economic growth

The project generates new jobs that provide the locals with a new source of income. Those working in agriculture are able to sell bagasse, which not only provides income but also reduces waste. This gives-bagasse more economic worth, helping to finance farmers.



industry, innovation and infrastructure

The project supports and acts as a model for future developments of similar renewable energy projects. The newly built system within the sugar factory is particularly efficient and boasts a considerably reduced energy demand.



Climate action

The project not only reduces emissions from burning fossil fuels, but it also reduces agricultural waste in rural areas. Waste is often either burnt in the fields or dumped and left to rot, releasing methane, which is 21 times more potent than carbon dioxide. The project will, therefore, solve this issue.



Life on land

Bagasse is normally considered an agricultural waste and often remains unused before eventually being burnt or left to decay. The decay of the bagasse releases emissions such as methane. Hence, using bagasse as a source of power contributes to the displacement of fossil fuels. It thus indirectly reduces carbon emissions.



Technology brief – how it works

Biomass refers to biological material derived from organic matter such as wood and organic wastes, which can be used for heat and energy production. In the case of this project, groundnut shells are used for fuel, which are a by-product of growing groundnuts for agriculture. These would otherwise be left to rot, releasing methane in the process.

As a biomass, the shells only release the amount of CO₂ that they collect during growth as a plant. However, biomass is only considered a renewable fuel source when the source is sustainable; i.e. the use cannot surpass the rate of growth and create a deficit. For this project, the groundnut shells are used in place of coal within a boiler to produce steam. This steam is then used as thermal energy to aid the drying process required in the starch production line. The biomass is received by the plant and then stored for no more than 30 days to minimize CO₂ emissions whilst in storage.



Project Standard



The Verified Carbon Standard (VCS) is a global standard for the validation and verification of voluntary carbon emission reductions. Emissions reductions from VCS projects have to be real, measurable, permanent, additional, unique, transparent, and third-party verified. Assessed against the background of the total volume of emission reductions, VCS is the globally leading standard for voluntary carbon offsets.

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