THE CARBON NEUTRAL COMPANY

Protecting our climate

Methane Capture Project

Fujian Landfill Project

This project captures methane from a landfill and uses it to generate clean electricity in China. The total emissions reductions are estimated to be 60,000 tCO_2 equivalent, verified to the Voluntary Carbon Standard (VCS).

Technology partner

Fujian Tianyi Renewable Energy Technology & Utilisation Co., Ltd.

Country

China

About your project

Located in the Fujian Province in China, the environmental benefits of this project are twofold: it reduces the potent greenhouse gas, methane, from being released into the atmosphere and displaces CO_2 emissions from electricity generated by fossil fuel power stations.

The project involves installing 50 wells in the landfill to collect methane gas through pipes. Processing and combusting the gas converts it into clean electricity which is then sold to the local grid.

In addition to the environmental benefits, the project improves the quality of life for the local population. If landfills are improperly managed they can cause air pollution and explosions from gas pressure, which are hazardous to the surrounding communities.

The project also brings sustainable development benefits to the area by boosting the local economy with the creation of 25 jobs. It is the first landfill gas-to-electricity project in the province and one of the first in China. Using state of the art technology, the project facilitates technology transfer for replication throughout the country.

These images have been provided by individuals working with the project operators

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About landfill gas

A landfill is a site for the disposal of a variety of waste materials including household, commercial, industrial and non-hazardous solid waste. Landfills can range from open dumps to carefully designed, sophisticated structures built into or on top of the ground, in which refuse is isolated from the surrounding environment (groundwater, air, rain) with impermeable bottom liners and a daily covering of soil. In the absence of oxygen, bacteria in the landfill break down the waste to produce landfill gas, consisting of around 50% methane, 50% carbon dioxide and a minute amount of non-methane organic compounds. Methane is a potent greenhouse gas (GHG) which can be extracted from landfill gas for further use, preventing it from being released into the atmosphere. Wells are dug at various intervals at these sites to capture this gas and pipe it for combustion and/or utilisation for power generation. Combustion allows this gas to be converted to carbon dioxide, which has a significantly lower global warming potential than methane. To utilise methane for energy creation, generators are installed, producing power and heat. The capture of this gas not only reduces GHG emissions, but also prevents the release of toxic, volatile organic compounds and odours.

How carbon offsetting helps the project

It is expensive to develop and operate methane capture technologies and that is where carbon finance can play an important role. Landfill projects like this one are not required by law to capture methane and often have to overcome financial and technological barriers to realise implementation. Carbon finance provides an additional revenue stream helping to make these projects an attractive and viable option. In this case, the incentives from carbon finance are enabling the capture and combustion of landfill gas rather than allowing methane to escape into the atmosphere.

The reductions in CO_2 emissions achieved by this project are incremental to 'business as usual' and measured by an independent verifier to internationally recognised standards. These are bought as carbon credits by clients of The CarbonNeutral Company to neutralise their own emissions.

Verification:

This project is being verified to the Voluntary Carbon Standard (VCS). A copy of the documents relating to this project can be found within the project registry of CarbonNeutral.com.

Project area co-ordinates:

The geographical co-ordinates of this project are longitude 19 °18' East and latitude 26° 05' North.