

Renewable Energy Project



Ankara Landfill Gas to Energy project

This project involves the capture and combustion of landfill gas at a landfill site in Ankara, Turkey, and uses it to supply clean electricity to the local grid.

Standard

Gold Standard (GS)

Country

Turkey

About your project

The Ankara landfill gas to energy project, awarded the 'World Bank's Best Environment Project of the Year' in 2009, is an innovative first of its kind application in Turkey. The project owner has an ultimate goal of creating a 'zero-waste' site, of which this project acts as the first step.

Prior to the project, Municipal Solid Waste (MSW) was received at the site from 3.6 million inhabitants in Ankara, the Turkish capital. The uncovered landfill allowed methane gas to vent directly into the atmosphere. Today a landfill gas collection system collects the methane produced by the existing landfill waste and combusts it to generate electricity while the fresh waste is fed directly into a bio-digester, reducing the amount of waste sent to the landfill. A new drainage and collection system has improved local water quality by protecting the nearby Imrahor Creek from the discharge of leachate.

In 2006 approximately 25 million tonnes of waste was deposited in landfill sites across Turkey, very few of which have any measures in place for comprehensive management. Projects like this increase the generation and supply of clean electricity, reducing Turkey's dependence on a fossil fuel dominant energy mix.

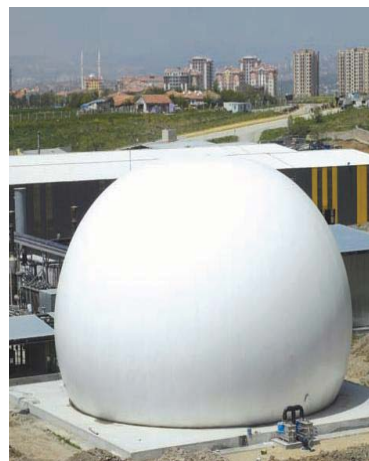
Alongside the emission reduction benefits, the project has contributed to the sustainable development of the region through:

- The creation of more than 200 employment and training opportunities including work for people who were previously dependent on scavenging from the landfill site as a source of income.
- Preventing the release of toxic organic compounds to improve local air quality.
- The planting of 4,500 trees on-site and the construction of a greenhouse producing flowers, fruits and vegetables, which is warmed by using excess heat created by a biodigester.
- The introduction of a sorting and recycling facility and public awareness campaign around waste management and recycling.

More information about the project can be found by visiting:

<http://beta.worldbank.org/climatechange/news/turkey-making-use-trash>

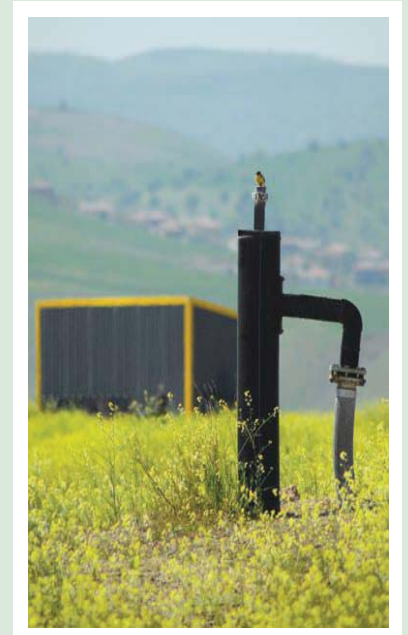
<http://www.worldbank.org/eca/impact/2009/project13/video/index.html>



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

About Landfill Gas to Energy

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.



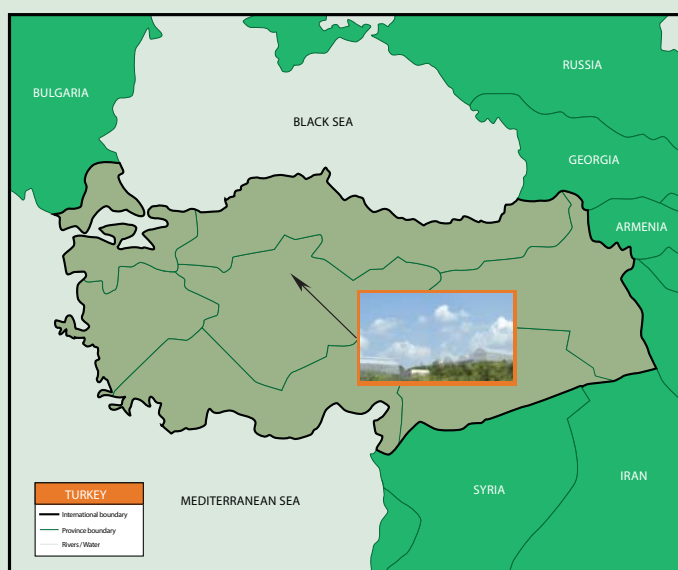
How carbon offsetting helps the project

It is expensive to develop and operate renewable technologies and that is where carbon finance can play an important role. Landfill gas to energy projects like this one are not required by law 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 development of a landfill gas to energy project to generate clean energy.

The reductions in CO₂ 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 verified to the Gold Standard (GS).



Project area co-ordinates:

The project is located between latitude 32°055 '50. 72" North and longitude 39° 052'59.36" East.