

# Methane Capture Project



## La Pradera Landfill Gas Project

This project involves the capture, piping and flaring of landfill gas from two landfill sites in Colombia.

## Standard

Voluntary Carbon Standard (VCS)

## Country

Colombia

## About your project

This project enables efficient landfill gas (LFG) management at two landfill sites which service the metropolitan area of Medellin in Colombia. The first site is located in Curva de Rodas and was closed in 2003 after 19 years of operation in which approximately 8.5 million tonnes of municipal waste were received at the site. The second landfill site is La Pradera which became operational in 2003 and currently receives 2,100 tonnes of waste a day.

When organic material in landfill decomposes it releases substantial quantities of LFG which contains methane – a greenhouse gas which is 21 times more potent than CO<sub>2</sub>. Before this project, the only active treatment of the LFG at these sites was a very basic collection system and irregular manual flaring. These were highly inefficient and consequently the majority of methane was released into the atmosphere. Through this project, a state of the art landfill gas recovery system and an enclosed flare combustion station have been installed at both sites, which will extract and destroy 99.99% of the LFG. When methane is combusted, it converts to CO<sub>2</sub> and water, reducing the global warming potential of the LFG.

The La Pradera project was initiated by the University of Antioquia which is also based in the city of Medellin. A portion of the proceeds from the project will be used to promote research and provide assistance to students from some of the lowest income groups at the university. Students will also benefit from using the project sites as training facilities as they provide examples of good solid waste management practices.

Further project proceeds will be allocated to Empresas Varias de Medellin (EEVVM) - the public utility company that owns and operates both landfill sites – which will be used to improve environmental management in Colombia. Both the University and EEVVM will provide funding for training opportunities in the communities affected by the landfills.



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

## 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 the necessary revenue stream to make this project a viable option. 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<sub>2</sub> 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 registered with the Clean Development Mechanism (CDM) and the emissions generated prior to CDM registration have been delivered to The CarbonNeutral Company, verified to the Voluntary Carbon Standard (VCS).



### Project co-ordinates

The project has geographical co-ordinates of latitude 6° 25'59.28" North and longitude 75° 11'59.77" West.