



Sao Paulo, Brazil

Sao Joao and Bandeirantes Landfills

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Category

Energy and Waste

Population of city

11,000,000 inhabitants

Project start date

Bandeirantes Powerplant:
January 2004.

Sao Joao: January 2008.

Annual CO₂ reduction

Total reduction of 11 million tonnes by 2012

Financial savings

€26,786,490 from public auctions of Carbon Credits (CERs)

Initial investments

It has been calculated that for each Mega-Watt/hour of energy generation capacity of the power plant, an investment of €1.06 million was necessary. The share of biogas energy produced in power plants is sold at regular market price.

Project status

Ongoing

Contact

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Summary

Bandeirantes and Sao Joao landfills were disabled in 2007 and 2009, respectively, and thermoelectric power plants were installed to burn GHG produced by the decaying waste. 11 million tons of CO₂ eq shall be prevented from being thrown in the atmosphere by 2012, generating tradable CERs, part of it sold at two public auctions in the Brazilian Stock Exchange.

What is it

During the past years, 10 million citizens of Sao Paulo have been producing 15,000 tons of waste on a daily basis. While the city's two landfills, Bandeirantes and Sao Joao were reaching their maximum storage capacity, Sao Paulo City Hall had to deal with environmental concerns over the methane produced by waste decaying and social complaints by the surrounding boroughs that wanted the landfills to be closed down.

Through a public bid, Sao Paulo City Hall gave a concession to the holding company Biogas Co. to install thermoelectric power plants to burn biogases emitted by decaying waste from the landfills in order to produce clean energy and prevent GHG to be thrown into the atmosphere.

How does it work?

By capturing and burning the methane gas, the landfills generate the equivalent to 7% of the electricity consumed in the city. Therefore, the produced methane, previously only burned, now generates more than 175,000 MW/h in each power plant, enough to supply a 600,000 population for 10 years.

Following all required procedures to certify the used methodology, it was possible to get United Nations' endorsement, which approved both landfills as Clean Development Mechanism projects and issued tradable CERs. According to the agreement on the concession, 100% of energy and 50% of carbon credits produced by the landfills belong to Biogas Co. to be traded in the market, while Sao Paulo City Hall has the right to sell the other half of carbon credits amount in public auctions.

In September 2007, the City Hall of Sao Paulo held, through the Securities, Commodities and Futures Exchange (BM&F), the first global experience of a CERs Auction. In this occasion, €13 million were collected to public accounts, offering 808.450 credits accumulated from the Bandeirantes Landfill between December 2003 and December 2006. The minimum stipulated price set by the City Hall was of € 12,70 per credit, and the winning enterprise (*Fortis Bank NV/SA*, from the Netherlands) paid € 16,20 per credit.

A second Auction, held in September 25th of 2008, offered 713.000 CERs (454.343 coming from the Bandeirantes Landfill, representing the capture of the period between January 1st 2007 and March 31st 2008 and 258.657 from the Sao Joao Landfill, captured between May 22nd 2007 and 31st March 2008). This Auction collected more than €13 million and the winner was the Suisse enterprise *Mercuria Energy Trading*, paying € 19,20 per credit.

CO₂ reduction

So far, nearly 3 million tons of CO₂ were prevented from being thrown in the atmosphere by the Bandeirantes Landfill. By 2012, it is expected to reach 11 million tons of CO₂ from both landfills.

Next steps

The total amount already collected in the public auctions represents €26,786,490.00. The City Hall expects now to hold at least one CERs Auction each year. Through the fundings collected, it is possible to invest in social projects for the areas surrounding the landfills.

Application

Both projects are among the five largest CDM approved programs on greenhouse gas emission control through waste management. Besides the mitigation of greenhouse gas emission by biogas energy generation, the landfills projects also intend to revitalize the surrounding areas bringing a better quality of life for the local population.

In February 21st of 2009, two leisure squares, Cuitegi and Mogeiro, in the borough of Perus, surrounding Bandeirantes landfill, were inaugurated by Mayor Gilberto Kassab.

The Cuitegi Square has 2,300m² of leisure area, playgrounds, benches, and the Sao Paulo City Hall preserved fruit trees planted by local dwellers. Also, the area connected two streets that had no linkage, facilitating mobility within the local community. The Mogeiro Square has 6,897m² of leisure area and offers a walking path, gym station, playground, benches and a community space.

The facts and figures in this case study have been provided by the highlighted city governments to the C40.