



Manaus Landfill Gas Project, Brazil

This project captures methane emissions from a large municipal landfill site to prevent them from entering the atmosphere and contributing to climate change.

Location



The project is located just outside Manaus, the capital city of the state of Amazonas, in northern Brazil. The city lies in the heart of the Amazon rainforest, where the Negro and Solimões rivers join to form the Amazon River.

Project



The Manaus Landfill Gas Project has been developed at the *Aterro Municipal de Manaus*, the main landfill site for the city. The site has been receiving non-hazardous municipal, industrial, commercial, institutional and agricultural solid waste for approximately 20 years now. Landfill sites generate and emit carbon dioxide and methane through the anaerobic decomposition of organic material, both of which contribute to climate change.



Prior to the installation of the landfill gas collection system, the Manaus site was simply an open landfill with only minimal control of surface water and drainage, and no control of landfill gas (LFG) emissions. The project involved sealing the landfill site and putting gas extraction wells in place to capture the gas, which is then 'flared' i.e. burned in a controlled manner. Flaring converts all the methane into carbon dioxide, greatly reducing its contribution to the greenhouse effect and hence climate change.

The capture and controlled use of the LFG has additional benefits in terms of air, soil and water quality in the vicinity, and the implementation of the project has also improved safety at the site.

The landfill site also has the potential to serve as a source of alternative energy, utilising landfill gas to generate electricity to meet the city's growing power demand. Implementation of this technology is planned for the future in a further development of the project.

Project achievements



Socio-economic impact:

- Prior to the project, solid waste was left untreated and there was no management system to prevent the water draining through the waste (known as leachate) from contaminating the local soil and groundwater. With the implementation of the project the leachate is now captured and treated, preventing further contamination of the water supply and associated health risks.
- Uncontrolled gas emissions from landfill sites give rise to unpleasant odours in the surrounding area. Furthermore, methane can actually be harmful to humans, in some cases causing nausea, drowsiness or irritation of the eyes and nose. The implementation of the project and prevention of gas emissions has therefore greatly improved the local air quality, and the health and wellbeing of workers at the site and people living nearby.
- The project also improves safety at the landfill site and in the surrounding by reducing the risk of fires and explosions due to the high combustibility of methane gas.
- All site employees have health insurance, as well as other benefits provided by the operating company.
- Finally, as part of the agreement between the landfill site operator and the city of Manaus, a share of revenues from sales of the carbon credits generated by the project will be transferred to the municipality and used for the improvement of local infrastructure.

Environmental impact:

- The project significantly improves local air, water and soil conditions, as described above.
- The project and its pioneering holistic approach have served as a model for clean development throughout Latin America.

Checklist Projekt 301 585



✓ Additionality and permanence:	according to the rules of the VCS
✓ 3 rd party validated:	by Det Norske Veritas
✓ Transparency:	provided by the Markit Environmental Registry
✓ Annual CO ₂ reduction:	125,000 tCO ₂ e
✓ Social and environmental benefits:	as documented in our database

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