

## Use of Urban Solid Wastes to Generate Electricity from the Federal University of Rio de Janeiro, Brazil, to Generate Electricity

### The Current Situation



The waste from the city of Rio de Janeiro, has reached crisis levels. Each day 8000 t of waste is generated and dumped in the open air landfill at Gramacho.

### The Project

As a result of the financial support from carbon credits a new thermal technology that utilises waste to generate electricity will be developed on a commercial scale. Ash from the project will be mineralised and used in buildings. The project will result in the reduction of 95% of the waste volume and reduce production of toxic liquids.

The local plant reduces distances travelled by waste collecting vehicles, generates new jobs and improves employment for waste collectors as well as reducing the costs for electricity at the University. (The project contributes approx. 5% of total energy demand).



The project is 100% Brazilian owned and supports a new local innovation that has been patented.

The project reduces greenhouse gases through the reduced use of electricity generated by fossil fuels and the reduction in emissions of biogas which contains methane.

If successful, the project can be replicated in other cities in Brazil.

### Project Data

Greenhouse Gas Reductions		
Years	Financed by myclimate	Predicted (tCO <sub>2</sub> )
2005 – 2007		9.000
2008 – 2012		12.000
After 2012		6.000

General Information
<b>Project Owner</b> USINA VERDE S/A
<b>Location</b> Industrial Area within the Campus of Rio de Janeiro University



CDM Approval Procedure
<b>Project Type</b> Gold Standard CDM Project
<b>Certifier</b> DNV
<b>Approval Agencies:</b> Inter-ministerial Committee, 2003 UNFCCC Executive Board,
<b>Project Documentation</b> PDD, Monitoring Plan

## Technical Details

This project establishes a commercial test pilot of a new technology for the decentralised thermal utilisation of urban solid waste (the waste is produced by approx. 50,000 people). The technology will assist in resolving the urban solid waste problem in Rio de Janeiro.

The project has been built by the USINA VERDE Group with support from the University of Brazil (UFRJ). The plant has developed an innovative waste gas cleaning approach that shall be tested on a commercial basis in this project.

## Project Partners

The project partners include:

- USINA VERDE S/A: is the project owner, and provides the technology, the finance and runs the plant.
- Rio de Janeiro Urban Cleaning Company (Comlurb), <http://www.rio.rj.gov.br/comlurb>: collects the waste.
- International Virtual Institute for Climate Change (IVIG/COPPE/UFRJ) ([www.ivig.coppe.ufrj.br](http://www.ivig.coppe.ufrj.br)): manages the development and implementation of the project under the CDM.

## Legitimacy of Project under CDM Rules

Without the sale of the emission reduction certificates the project would not be viable:

- The Interest rates in Brazil are 17% but the IRR for the project without CERS is 5%, a level which makes the project unviable without the status of the project under the CDM.
- Currently in Brazil it is difficult to get environmental permits. The Usina Verde project managed to secure a permit only after a public consultation meeting held in November, 2003 during which it was made clear the project would be a CDM project.
- The proposed technology is new in Brazil and has not been tried and tested. This is evidenced by the difficulty in securing an operational license from the environmental ministry for the project

## Technical Summary

### Production

Electricity generation and waste reduction.

### Capacity

1 MW electric, 30 t solid waste / day

### Commissioning Year

2003

## Contribution to Sustainable Development

### Environment

- Reduction toxic waste liquids
- Reduction of waste gas (CH<sub>4</sub>)

### Economy

- Local Technology development
- Reduction of electricity costs

### Social

- New jobs created
- Supports innovation & research

## Rights for Emission Trading

Emission reductions from this project are being purchased through 500ppm, myclimate partner.

## About 500ppm

500 PPM promotes global climate protection through international partnerships and by fostering the broad involvement of industry, the public sector and concerned individuals through market-driven means.

## About myclimate

myclimate is an initiative to promote climate protection and sustainable development. myclimate develops new solutions for climate protection. The non-profit organization is based in Zurich, Switzerland.

## Contact

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