



CONTRIBUTE
TO THEIR
EDUCATION

SOCIALLY-PREMIUM CO₂e Reduction Project

WHILE
NEUTRALIZING
YOUR EMISSIONS

PROJECT **IRMÃOS FREDI**

SUSTAINABLE
CARBON
CLIMATE SOLUTIONS

IRMÃOS FREDI Ceramic Fuel Switching Project

This project will reduce 306,421 tons of CO₂ equivalents, during a ten year period.

Description of the Project

Situated in *Presidente Epitácio* municipality, in the state of *São Paulo*, *Irmãos Fredi* ceramic is a small facility that produces red ceramic products such as tiles and structural blocks.

Initially, *Irmãos Fredi* ceramic consumed trees from old growth forest as its power supply for kilns, which destroyed natural eco-systems and consequently increased greenhouse gas emission (GHG). *Irmãos Fredi* ceramic was one of the first in the industry to eliminate the use of old growth forests in the region and have switched to more sustainable forms of energy such as renewable biomass from reforested, eco-friendly wood, such as algaoba wood, grown from sustainable management areas, and residues from cashew trees, bamboo husks, rice husks and/or others.

The *Irmãos Fredi* project started in December 2004 and the crediting period in April 2006. It is estimated that **306,421** tons of CO₂ and its equivalents will be reduced, during a ten years crediting period.



Sugar cane bagasse which is currently being used by the ceramic as fuel



'Round' kiln with a mechanic burner at *Irmãos Fredi*

Project Location

Municipality of *Presidente Epitácio*, state of *São Paulo*, Brazil



Technical Data

This project applied the Small Scale Methodology: AMS- I.E: Switch from Non – Renewable Biomass for Thermal Application by the User – Version 01 from February 01 of 2008, approved by the UNFCCC.

It was validated and verified by TÜVNORD, a DOE accredited by UNFCCC, in accordance with VCS 2007.1 and SOCIALCARBON® Standards.

To ensure reliability and transparency, the issued credits are registered on the Markit SOCIALCARBON® Registry.

For further information, please visit: <http://www.markitenvironmental.com/socialpublic.php>.



SOCIALCARBON® Standard



The SOCIALCARBON® Standard monitors the improvements of a project over time, providing assurance and evidence of its contribution to sustainability. The SOCIALCARBON® application consists of monitoring the project in six crucial areas of sustainability. On the following page, the SOCIALCARBON® Hexagon graphically represents Irmãos Fredi ceramic facility's six sustainability indicators at its baseline scenario (2007), the first verification period (2008) and the latest verification period (2010).

Contribution to Sustainability

- Due to the improved production process, the working conditions are now safer for employees, resulting in a low staff turnover index
- The ceramic held several courses on effective ceramic production procedures for its employees, as well as Health and Safety initiatives such as lectures and workshops
- Implemented a new burning system for its residues that reduces the air pollution and reuses ashes as fertilizers in agriculture
- A quality analysis and monitoring system is in place, assisted by SENAI (National Service on Industrial Learning) to improve the quality of its ceramic products

Irmãos Fredi's SOCIALCARBON® Hexagon

— Point Zero
— Point 01
— Point 02

Carbon Resource

Currently (2010)

- Project validated and verified by a DOE, credited by the UNFCCC
- Stakeholders were informed of the carbon project, and disclosed it to the mass media

Future Improvements

- NA

Social Resource

Currently (2010)

- Good employee benefits such as food staples, health & life insurance, and others
- Entrepreneur involved with the workers union with the union meeting regularly at the ceramic
- Community engagement via donations to churches and philanthropic projects

Future Improvements

- To build new employee facilities such as bathrooms, and leisure areas
- Plans to improve the environmental aspect of the community

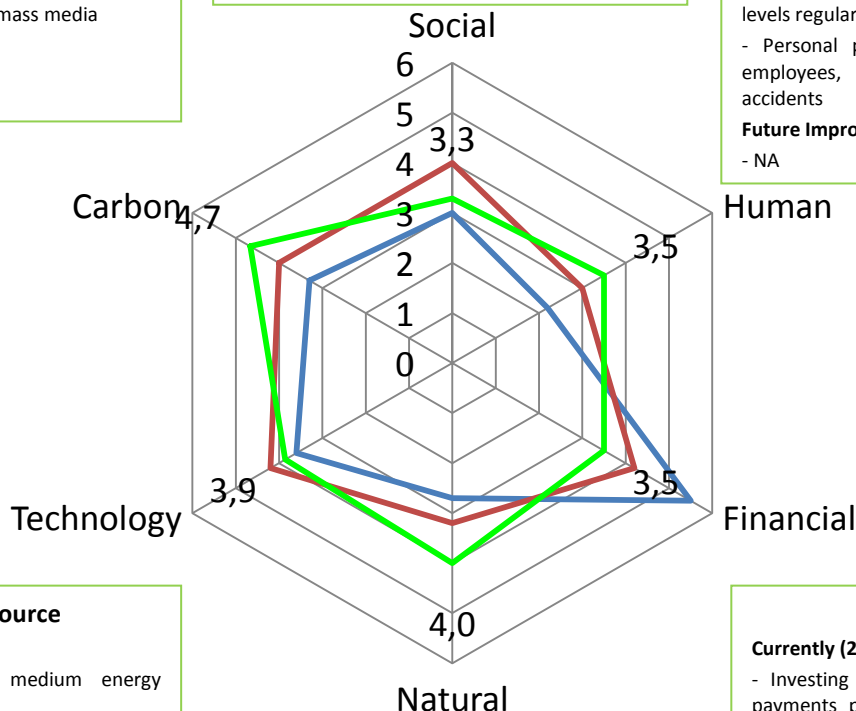
Human Resource

Currently (2010)

- Regularly hold education workshops about the ceramic industry by engaging with SEBRAE
- Records of employee education and training levels regularly maintained
- Personal protective equipment provided to employees, with an internal commission on accidents

Future Improvements

- NA



Technology Resource

Currently (2010)

- Round kilns used, with medium energy efficiency
- Drying facility system is a greenhouse with humidity and temperature control
- Analyzes and monitors the final quality of the products

Future Improvements

- NA

Natural Resource

Currently (2010)

- In accordance with environmental legislation, but no formal environmental policy in place
- The ceramic has an Operational License issued by CETESB, complying with environmental laws
- Restores the areas that the ceramic extracts their clays

Future Improvements

- NA

Financial Resource

Currently (2010)

- Investing heavily in the business, with debt payments paid on time and purchase of new machinery
- Production remained stable in the period

Future Improvements

- Production to increase in the next years due to market demand