

Bom Jesus

Ceramic Facility Fuel Switching Project

This project will reduce 203,580 tons of CO₂ equivalents during a ten year period

Description of the Project

Bom Jesus is a ceramic factory located in a small town in *Paudalho* that manufactures bricks and flagstones widely used by the construction sector in the state of *Pernambuco*, Brazil.

The facility is located in the center of the *Caatinga* biome. The *Caatinga*, a semi-arid forest ecosystem, is an exclusively Brazilian biome that covers an area of 850 square kilometers, or 19% of the national territory. It is rich in natural resources, and it is precisely for that reason that the *Caatinga* is one of the most threatened ecosystems on the planet. For decades, *Bom Jesus* ceramic facility consumed timber derived from virgin forest as fuel to fire the ceramic products it manufactures.

Due to the environmental and social impact of this activity – and to pursue a more sustainable production process – *Bom Jesus* ceramic facility ceased the use of wood from the *Caatinga* and replaced it with renewable biomass, such as sugarcane bagasse “brickets” (residues from the sugarcane industry), sustainably-sourced glycerin and wood residues from the construction industry.

The fuel switching project began in 2006, and the crediting period began in January, 2007. It is estimated that this project will reduce approximately **203,580 tons of CO₂** equivalents during a ten year period.



Packaged sugar cane bagasse “brickets” at the facility, waiting to be used as fuel in the kilns



A worker separating the finished products to be wrapped and sent to market

Project Location

Located in the municipality of *Paudalho*, in *Pernambuco* state, 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 the sustainability baseline scenario (Point Zero, 2009) and how the project has improved over the most recent monitoring period (Point One, 2010)



Contribution to Sustainability

- Commission based on production and overall performance is given to employees
- On-site safety engineers oversees the use of safety equipment and oversees work-hazard issues
- More credits were generated than expected, leading to a 121.7% accuracy in the Project Design Document calculations
- Sanitary conditions have improved since the last report
- Highly-efficient production process reduces energy consumption and increases overall quality of the products produced
- Ash residues from the biomass is used in concrete mix and other applications, reducing waste

Bom Jesus' SOCIALCARBON® Hexagon

Carbon Resource

Current Analysis (June 2010)

- The ceramics presented consistent methods for proving the additionality of the project
- 121.7% accuracy in generating the number of credits expected per the calculations in the PDD – the number of credits exceeded expectations

Future Improvements

- None planned at the moment

Social Resource

Current Analysis (June 2010)

- Workers are very active in the local union, which is supported by the owner of the ceramic factory
- Improvements such as a decrease in worker turnover rate and better communication between factory workers and managerial staff is wanted

Future Improvements

- Invest in more benefits for employees
- Build a school for the children of the workers
- Automate the kiln-feeding process

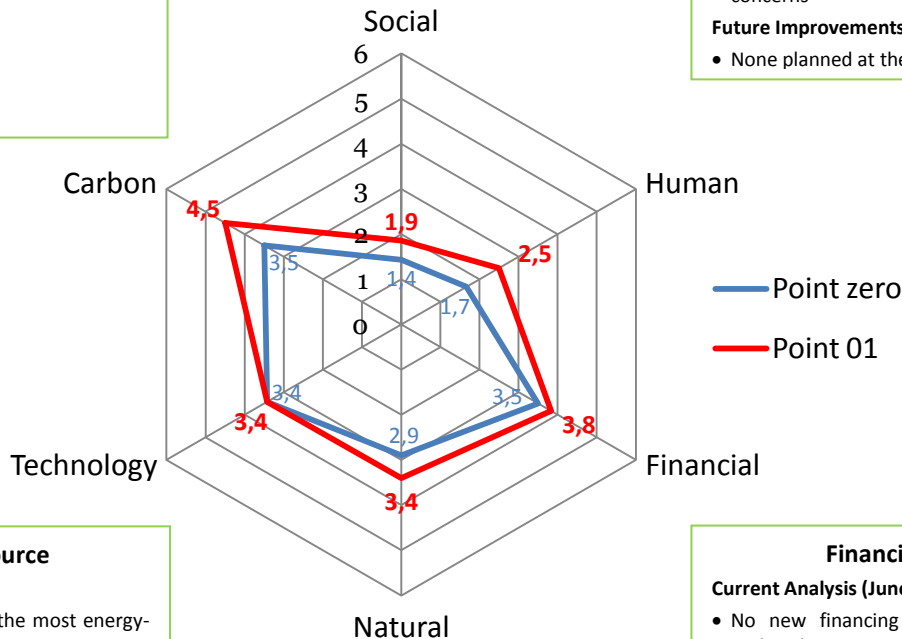
Human Resource

Current Analysis (June 2010)

- The entrepreneur offers lectures on ISO and other quality standard organizations
- Improved sanitary conditions
- A safety engineer is on call to address safety concerns

Future Improvements

- None planned at the moment



Technology Resource

Current Analysis (June 2010)

- Production process is among the most energy-efficient
- The facility is being certified by the Sectorial Quality Program

Future Improvements

- Complete the installation of another Hoffman kiln
- Upgrade machines that feed biomass to make them more automated

Natural Resource

Current Analysis (June 2010)

- Conforms with local environmental legislation
- The owner of the facility is implementing environmental policies prescribed in ISO 14001
- Residues in the production process, such as ashes, are used in cement mix for local use

Future Improvements

- The company is seeking a "green label" to put on its products and increase their market-value

Financial Resource

Current Analysis (June 2010)

- No new financing for equipment has been undertaken
- Production has increased over the past year due to surging demand from the Brazilian construction industry

Future Improvements

- Increase productivity by 35% to keep up with market demand