



# Case Cocal - Narandiba Unit

THIOPAQ® is a high-efficiency solution for the Sugar and Ethanol Industries

## THE CHALLENGE

- With the growing demand for energy today, it is increasingly necessary for new sources of renewable energy to be viable
- Sugar and ethanol plants have been producing bioelectricity for decades
- Through the biodigestion of the waste (vinasse and filter cake) generated in the processing of sugar cane, Cocal implemented a system to generate electricity and biomethane for injection into the grid at its unit in Narandiba/SP.

## THE SOLUTION

- The THIOPAQ® deep desulfurization system is an essential part of the process, removing the H<sub>2</sub>S from the biogas generated, thus enabling its use and making the process viable
- The THIOPAQ® system used at Cocal made it possible to work with a wide range of KgS°/day, as there is a large variation in flow and load during the season and off-season
- The compact THIOPAQ® process features biological alkalinity recovery of the wash solution, bringing a great economic advantage when compared to a conventional biogas scrubber
- Furthermore, the solution includes the separation and concentration of sulfur, which can be used as a constituent part of fertilizers and used in the sugarcane plantations themselves.

## THE BENEFITS

- The use of THIOPAQ® enabled Cocal to start the first independent biomethane distribution grid system in the country
- The project supplies the municipalities of Presidente Prudente, Narandiba and Pirapozinho, in the interior of São Paulo, with renewable biomethane produced by Cocal.



The biogas plant at the Narandiba unit is the first with an independent biomethane gas pipeline in Brazil, built in a joint venture between Cocal and Geo Biogas & Tech.

Cocal - Narandiba unit - has an installed capacity for 5 MW of electrical energy and an additional 25,000 Nm<sup>3</sup>/d of biomethane.

Electrical energy is entirely exported, contributing to the diversification of the Brazilian energy matrix, and biomethane provides industrial customers in the region with renewable energy.



## FATOS E NÚMEROS

### Sulfur Load

- 123 kgS°/d up to 2,125 KgS°/d

### Biogas Flow

- 5.200 Nm<sup>3</sup>/h

### H<sub>2</sub>S:

- Inlet: 12,000 ppmV
- Outlet: < 80 ppmV

## PROCESSO

### THIOPAQ®

Biogas desulfurization

