



RB211 projects in power generation

Fafen Energia, Brazil

energy



Fact Sheet

Project description

The Fafen Energia power station located in the heart of the largest petro-chemical facility in South America is a combined cycle cogeneration power plant powered by Rolls-Royce gas turbines. The plant has been developed by Fafen Energia, a joint venture between Electricidade de Portugal, the national power company of Portugal and Petrobras, the national oil company of Brazil. The plant is situated in the Camaçari petro-chemical complex, around 40km from the City of Salvador in the state of Bahia in Brazil, and supplies power and steam to a Petrobras owned fertiliser plant and excess power is exported to the local electricity grid.

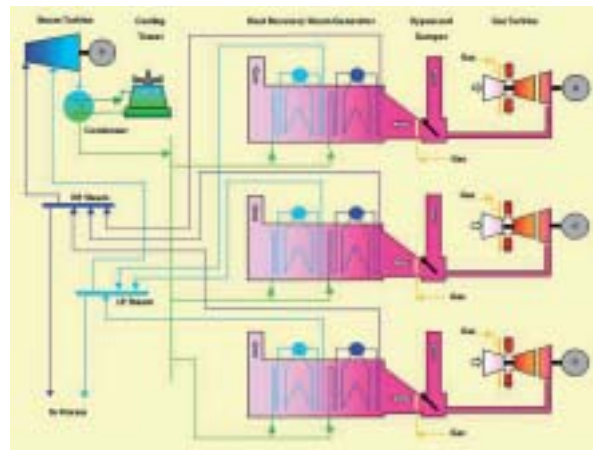


The power plant, including civil works, has been managed, designed, supplied and installed on a turnkey basis by Rolls-Royce, using its global project experience to bring together a range of international and Brazilian suppliers.

The plant primarily consists of three high efficiency RB211 6761 dry low emissions gas turbine packages each supplying 28MWe gross electrical output and exhausting into a supplementary fired heat recovery steam generator. The steam produced in the heat recovery steam generators is used to supply both the fertiliser plant and a 50MWe condensing steam turbine. An auxiliary boiler has also been supplied to give additional back-up steam supply capability.

The plant configuration chosen provides high reliability for the supply of both power and steam to the fertiliser plant, as any single gas turbine/heat recovery steam generator unit can provide the total steam and power requirements of the fertiliser plant.

At full load the plant is capable of producing over 130MWe of electricity and 42 tonnes per hour of process steam, with



an efficiency of 52 per cent. The plant also benefits from the Rolls-Royce dry low emissions combustion system.

Other major plant included in the scope of supply includes, gas compressors, bypass stacks and diverter dampers to allow the gas turbines to run in simple cycle, fin-fan cooling system for the gas turbine related plant and a wet cooling tower for the condenser and steam related plant.

Technical Information

Plant Performance (Combined Cycle without Process Steam Supply)

Electrical Output (Gross)	138.7 MWe	
Electrical Output (Net)	134.5 MWe	
Electrical Heat Rate (Net)	7952 kJ/kWh	
Conditions	Design ambient temperature	25.2°C
	Altitude	Sea Level
	Design humidity	81%

Emissions Guarantee

NOx	less than	150 mg/Nm ³ at 15% O ₂ dry
CO	less than	100 mg/Nm ³ measured

Fuel Specification

Natural Gas	
Design LHV	47,445 kJ/kg
Supply Pressure	18 barg



Americas
10255 Richmond, Suite 101
Houston, Texas 77042, USA
Tel: (713) 273 7700
Fax: (713) 273 7777

Asia Pacific
16 International Business Park
Unit 03-09, Singapore 609929
Tel: (65) 6863 5554
Fax: (65) 6861 6727

Europe/Middle East/Africa
Ansty, Coventry CV7 9JR, England
Tel: +44 (0)24 7662 3518
Fax: +44 (0)24 7662 3271

© 2003 Rolls-Royce plc

The information in the document is the property of Rolls-Royce plc and may not be copied or communicated to a third party, or used, for any purpose other than that for which it is supplied without express written consent of Rolls-Royce plc.

While the information is given in good faith based upon the latest information available to Rolls-Royce plc, no warranty or representation is given concerning such information, which must not be taken as establishing any contractual or other commitment binding upon Rolls-Royce plc or any of its subsidiary or associated companies.