Petrobras produces more than two million barrels per day

On 4 March, Petrobras set yet an other daily oil production record in Brazil: 2,012,654 barrels, a mark that surpasses the previous record, set on 25 December 2007, by 12,420 barrels. This result is mainly the outcome of three new production platforms going on stream in the past few months, in Campos Basin (state of Rio de Janeiro): the P-53 and Cidade de Niterói, in Marlim Leste field; and the P-51, in Marlim Sul. Another factor that contributed to this record was the solid performance achieved by platforms P-52, which reached peak production in the last quarter of 2008, and P-54, which has been increasing its production over the past few months. Both platforms are installed in Roncador field, Campos Basin.

When they reach their peak production, the three new platforms will add 460,000 barrels per day to installed domestic capacity. The Cidade de Niterói vessel platform, which went online last month in Marlim Leste field, will be capable of producing up to 100,000 barrels per day (bpd). Additionally, platforms P-51, which started operating in January, and P-53, in December 2008, will contribute up to 180,000 bpd each when in full production.

Photo: Stéferson Faria, Petrobras


Photo: Petrobras Image Bank

Onshore production also contributed to the new daily record. Average output from onshore fields hovers around 230,000 barrels of oil per day, a volume that has been maintained over the past few years thanks to new technologies Petrobras has been developing to increase the working life of mature fields.

New platforms

The pace at which new production systems go on stream in Brazil will gain momentum in 2009. A consortium led by Petrobras (operator, 65 percent stake) and also featuring Petrogal (10 percent) will put platform vessel BW Cidade de São Vicente into production in May. It will be used for the Long-Duration Test (LDT) for the Tupi desposit, in Santos Basin's pre-salt layer. Production will begin with a well capable of producing 15,000 barrels per day. The Tupi LDT will analyze, among other factors, how the deposit's production reservoirs behave, fluid movement, and submarine outflow.

Furthermore, two new oil platforms and one non-associated gas platform will go online this year. In May, platform vessel Cidade de São Mateus will go on stream. It was designed to produce up to 10 million cubic meters of gas per day, in Camarupim field, in Espírito Santos Basin. In June, a consortium formed of Shell (operator, 50 percent), Petrobras (35 percent), and ONGC (15 percent) will put FPSO Espírito Santo into operation in the Espírito Santo portion of Campos Basin. The platform will be capable of producing up to 100,000 bpd. The following month, a consortium made up of Chevron (operator, 51.7 percent), Petrobras (30 percent), and Impex (18.3 percent) will put FPSO Frade online in Campos Basin (state of Rio de Janeiro). The unit will be able to produce up to 100,000 barrels per day. ■

StatoilHydro: new command in Brazil

FROM 1 AUGUST 2009, **Jorge Camargo** will pass the command of StatoilHydro operations in Brazil to **Kjetil Hove**. Camargo will continue with StatoilHydro as a part-time senior advisor to the new country president.

"I am looking forward to this new cycle in my professional life, in which I intend to continue to contribute to StatoilHydro's success in Brazil while having more time to pursue other personal interests," said Mr. Camargo.

Mr. Camargo joined Statoil in 2003, after 27 years with Petrobras, initially as international business development vice-president in Norway and, since 2005, as country president in Brazil.

Mr. Hove has extensive experience in project management, operations and subsurface issues. He was the project director for the approval phase of Peregrino, playing a key role in the acquisition of this asset.

"I am looking forward to becoming part of StatoilHydro's Brazilian business, which will be an important growth area in StatoilHydro's international strategy," said Mr. Hove.

Established in October 2007, after a merger between Statoil and Hydro's oil and gas activities, StatoilHydro is an integrated technology-based energy company primarily focused on upstream oil and gas operations. Headquartered in Norway, the company has over 30 years of experience from the Norwegian continental shelf, pioneering complex offshore projects under tough conditions.

StatoilHydro is the world's largest operator in waters more than 100 meters deep, and is today present in 40 countries, where it employs over 29,500 people. In Brazil, the company has a diverse exploration portfolio and is currently the single operator of the large Peregrino Field, off the coast of Rio de Janeiro, in Campos Basin. ■

Networking bioenergy know-how in Europe

WITH FOSSIL ENERGY SOURCES diminishing, worldwide attention is being paid to the search for alternative sources of energy. The mounting concerns surrounding continually rising CO_2 emissions help intensify the search. Among current renewable energy sources, bioenergy is the most promising, since the conversion of biomass to heat can for the most part be carried out to match individual needs, making it less dependent on temporary climactic influences. Energy from biomass is of particular interest for Central and Eastern EU member states, since they have the most agricultural and forestry potential in Europe.

This means that the market situation for bioenergy in Central Europe is especially beneficial – and particularly in Hungary. About 70 percent of the land area is used agriculturally, and 19 percent is forested. Forest cover is set to expand to 26 percent by 2040. More than 80 percent of the country's renewable energy reserves are based on biomass. Every year in Hungary, 13,400 TJ of energy is created from biomass, but this is only a fraction of the available potential.

Forest workers and farmers, planners, investors, project developers and interested businesses can inform themselves of the newest applications, financing plans, legal frameworks and economic aspects of bioenergy at the conference "Escape from fossil dependence – Bioenergy" taking place on 16 April 2009.

The first part of the event will give a national as well as an international outlook for the future of biogas. Further presentations will deal with financial planning, latest developments and various aspects of the Hungarian market from its developmental potential to pellet heating and biogas as fuel.

Renowned speakers, associations and ministries will guarantee a high standard for the event. Dr. Imre Németh, chairman of Regionális Fejlesztési Holding, is scheduled to speak, as is Tibor Szárszó from Energiaközpont Kht., László Zsemberi from the Hungarian Bioethanol Association, Levente Deák from the Hungarian Pellet Association and Tamás Bíró from the Hungarian Ministry of Agriculture. The conference will be opened with a speech by Dr. Heiz Kopetz, chairman of the European Bioenergy Association (AEBIOM). ■

PhDsoft

Akpo field goes on stream in Nigeria

AKPO FIELD (block OML 130), Nigeria, in which Petrobras holds a 16 percent stake, came on stream on 9 March. The deepwater field is operated by French oil major Total, and other partners are Nigerian companies NNPC (Nigerian National Petroleum Corporation) and Sapetro (South Atlantic Petroleum), and Chinese company CNOOC Ltd.
Production at Akpo had previously been scheduled to go online in April, but it was possible to accelerate the schedule by one month.

Discovered in 2000, Akpo field is located 200 kilometers off the Nigerian coast, at water depths ranging from 1,200 to 1,400 meters. Reserves are estimated at 620 million barrels of condensed oil (above 50 degree API).

Production will take place using an FPSO-type vessel capable of producing 185,000 barrels of condensate per day and storing up to two million barrels of the product. Production is expected to peak at 175,000 barrels per day in the third quarter of 2009.

A total of 44 wells will be required to develop Akpo (22 producers, 20 water injectors and 2 gas injectors), 22 of which have already been drilled. The well's oil is sent to the vessel through a total of 110 kilometers of pipelines. The extracted oil is then transported in oil tankers.

The Akpo project meets the requirements specified by the Nigerian government's "Flare Out" regulation, which determines that gas must not be burnt during the production process.

Petrobras commenced its activities in Nigeria in 1998, in deep waters off the coast of the Niger River Delta. In addition to its operations in Akpo field, the company holds stakes in another deep water project in the country, Agbami field, in block OML 127. In Agbami, which went on stream in July 2008, Petrobras partners with Chevron (USA – operator), StatoilHydro (Norway), NNPC, and Famfa Oil Limited (both Nigerian). ■

LNG regasification terminal in Rio de Janeiro: unprecedented project


Photo: Stéferson Faria, Petrobras

President Luiz Inácio Lula da Silva visited the Guanabara Bay (Rio de Janeiro) liquefied natural gas (LNG) regasification terminal this Wednesday (18 March). An integral part of the Growth Acceleration Program (PAC), this project is Brazil's second LNG regasification terminal. The first, also belonging to Petrobras, is installed at Pecém Port (state of Ceará). The two terminals mark Petrobras' debut in the international LNG market, ensuring new sources of natural gas supply and consequently greater energy security for Brazil.

Construction and assembly work in Guanabara Bay began in December 2007 and was completed in January 2009. The project is currently in its pre-operating phase. A total of R$819 million has been invested in the project, creating around 1,700 direct jobs.

The Guanabara Bay terminal is capable of regasifying 14 million cubic meters of natural gas per day, nearly the entire average consumption of the Brazilian thermal market in 2008 (14,489 million cubic meters per day). Thermoelectric plants in southeast Brazil are the priority customers for the gas to be regasified in Guanabara Bay. The terminal's gas capacity is able to generate approximately 3,000 MW of electricity.

The decision to deploy LNG terminals in Brazil is a response to Petrobras' need to meet the seasonal demand of thermoelectric plants based on a flexible supply of natural gas. As a complement to hydroelectric generation, the thermal plants generate energy mainly between May and November, when there is less rainfall. Using thermal power stations to generate power saves hydroelectric reservoir water.


Photo: Geraldo Falcão, Petrobras

The project – The Guanabara Bay terminal was built to operate as an LNG regasification unit, unlike the Pecém terminal, where adaptations were made to an existing pier at the port of Pecém. Conceptually, though, the two terminals' designs are identical.

A type of concrete island, measuring 65 meters in length and 60 meters in width, was built near Boqueirão Island in Rio de Janeiro. As in Pecém, six LNG and two CNG "arms" were built in Guanabara Bay. The LNG arms weigh 70 tons each, while the CNG ones weigh 85 tons.

The concrete platform built to house the terminal stands on 266 piles, each measuring 80 centimeters in diameter and driven to a depth of 50 meters into the bottom of the bay.

The natural gas that is regasified in Guanabara Bay will be transported to the thermoelectric plants by means of a 15-km long gas pipeline. Built to connect the terminal to Gasduc II in Duque de Caxias, the gas pipeline has a 10-km long submarine section and a 5-km long onshore section.

Last Wednesday (11 March), the terminal entered the main phase of its commissioning process, which was initiated a few weeks ago, with the arrival of the regasifier and a supplier vessel. The regasifier, called Golar Spirit and chartered by Petrobras, was the first vessel in the world to be converted to store LNG and to transform natural gas from liquid to gaseous state. The vessel is based at the LNG regasification terminal in Pecém, and came from there to carry out this activity. The second ship, the Excellence, is the first LNG supply vessel to deliver a load in Brazil. BG Group supplied the cargo, which was shipped from Trinidad & Tobago.

This stage of commissioning will involve the transfer of LNG from the supply vessel to the regasifier (Golar Spirit) via piping and cryogenic arms installed at the terminal, which are designed to resist temperatures below minus 160 degrees Celcius. The LNG will then be regasified in the Golar Spirit and transferred to an existing network of gas pipelines by means of compressed natural gas (CNG) arms.

In this commissioning phase, the natural gas, in gaseous state, will be sent to the Aureliano Chaves (221 MW) and Governador Leonel Brizola (1,036 MW) plants. During commissioning, the regasification plant, installed on board the Golar Spirit, is expected to operate at different flow levels, as will the plants, which will generate electricity according to the amount of natural gas that is sent by the terminal.

The natural gas derived from the LNG will complement the domestic natural gas supply. Internal demand is currently met by domestic gas, produced by Petrobras, and by gas imported from Bolivia. With the LNG, Petrobras will now import the product from other countries, such as Trinidad & Tobago and Nigeria. ■

Schlumberger expands deep reading portfolio

SCHLUMBERGER HAS ANNOUNCED the expansion of its Deep Reading portfolio with the release of its new electromagnetic DeepLook-EM enhanced crosswell reservoir imaging and monitoring system and the acquisition of crosswell seismic reservoir imaging technology. The services include pre-job planning, modeling, simulation, acquisition, processing and inversion to deliver interwell reservoir images.

"DeepLook-EM and our recently acquired Z-Seis crosswell seismic service bridge the resolution gap between well logs and surface measurements to provide customers with answers at the reservoir scale," said Colin Hulme, technical director for Deep Reading at Schlumberger. "The addition of these technologies provides an opportunity to deliver advanced reservoir monitoring solutions from combined measurements by integrating them with additional data."

The second generation DeepLook-EM system provides detailed resistivity profiles between wells up to 1 km apart using time-proven induction logging principles. Acquisition is performed using a dynamic transmitter in one well and an array of receivers in an offset well. Receivers can be deployed in open or cased wells.

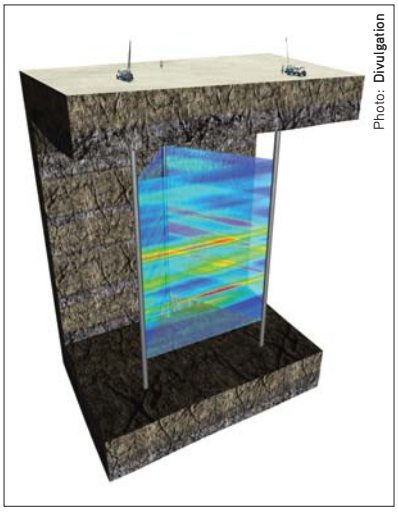

Photo: Divulgation

In development for more than seven years, Schlumberger has successfully completed DeepLook-EM surveys in the United States, Canada, China, Brazil and the Middle East. The crosswell images have provided clients with vital information on the efficiency of water- and steamflood programs, allowing interwell saturation to be estimated and bypassed pay zones to be identified.

Interwell resistivity variations can be caused by changes in saturation during waterflooding, in temperature during steamflooding or porosity reduction if subsidence occurs. With time-lapse monitoring using DeepLook-EM, flood-front movement can be accurately depicted and tracked. All field data are compiled within Petrel seismic-to-simulation software, and are seamlessly integrated to model and interpret the reservoir volume logged.

Interwell seismic imaging can provide seismic velocity profiles and seismic imaging at resolutions and orders of magnitude higher than surface seismic. This detailed information can be used to understand reservoir characterization at the reservoir scale and in a time lapse mode to monitor fluid movements such as in steam injection and CO_2 sequestration. ■

People

João Carlos de Luca re-elected IBP president

REPRESENTATIVES OF MEMBER COMPANIES of the Brazilian Petroleum, Gas and Biofuels Institute (IBP) met yesterday (25 March) in Rio de Janeiro for the institution's 52nd annual general meeting. One of the subjects on the agenda was the election of four members of the board, including the re-election of IBP president, **João Carlos de Luca**, which was approved by acclamation.

Another three directors were re-elected for an additional two years (2009 to 2011): José Luiz Orlandi, of Infinity Bioenergy; William Zattar, of Trim; and Stephen Whyte, of Shell.

At the beginning of the meeting, de Luca spoke about the IBP's main activities in 2008, highlighting the success of Rio Oil & Gas and important achievements for the sector, such as the approval of the Gas Law and discussion about the regulatory framework for pre-salt.

De Luca also thanked professionals in the sector who have dedicated themselves voluntarily to the work of the IBP's technical and sector commissions and provided other support to the institute.

Starfish has new exploration director

ON 25 MARCH, STARFISH OIL & GAS announced the appointment of geologist **Dirceu Abrahão** as its new exploration director. Abrahão worked for many years at Petrobras, where he was general manager for new business in the company's E&P department in Brazil, and afterwards served as general manager for strategy in its international area.

He concluded his career at Petrobras working outside of Brazil, as general manager for Colombia, and later for Ecuador. In February 2009, after 35 years of service, he left the company.

Starfish's new director has a PhD in petroleum geology from the Colorado School of Mines, and has also taken the Advanced Management Programs of Harvard Business School and INSEAD in France.

In an official statement, Starfish announced the departure of current director Kazumi Miura, for personal reasons. Miura will leave his management role at the company, but will remain as a consultant, contributing his extensive experience in exploration and development of oil and gas fields. ■