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DEEPWATER
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Hype builds for West of Shetland gas hub

A decision that would spark the development of a gas gathering hub west of Shetland is due to be made within weeks.

The future of several deepwater projects hangs on detailed discussions that have been underway for months between government representatives and five operators with assets in the harsh environment frontier area in the Atlantic Margin.

The projects include Total's 1 Tcf **Laggan** gas discovery in UK block **206/1a** and Chevron's **Rosebank-Lochnagar** discoveries in block **213/27**.

The joint Government / Industry Task Force Work Group, established last year to determine whether there is a collective solution to the development of the resource base west of Shetland, is made up of representatives from the UK Department of Trade and Industry (DTI) and the five key companies with operator control of assets and acreage in the region (BP, Total, Chevron, ExxonMobil and DONG Energy). The sides have already met half a dozen times and are due to deliver a report for government ministers to consider imminently, *DI* understands.

Two consultants, Genesis Oil & Gas and Decisions Unlimited, have been undertaking technical and economic work for several months, looking at options for developing a gathering hub that would allow gas to be brought to shore.

There are four different generic scenarios under scrutiny as the basis of the technical and economic evaluations:

- Onshore Hub at **Sullom Voe**
- Offshore Deepwater Hub at Laggan
- Offshore Shallow Water Hub close to **Clair**
- Alternative Deepwater Hub at Rosebank-Lochnagar.

Options are also being considered for the building of a new pipeline to transport gas to the UK mainland. Several alternative gas transportation routes are being considered as part of the analysis as well as the option of using existing infrastructure.

One source told DI: "The technical studies and commercial valuations on the deepwater project are still ongoing, and we're not aware of a fixed date yet. It's an extremely complex decision economically and technically.

"We are in discussions with other asset operators in the region, over optimising infrastructure options both for this development and in the longer term. That includes potentially including other fields and infrastructure too."

Operators such as Total and Chevron have for some time been keen to develop the gas resources in the area but the reserves are extremely marginal commercially in isolation. Any likely development seems des- Continued on page 4

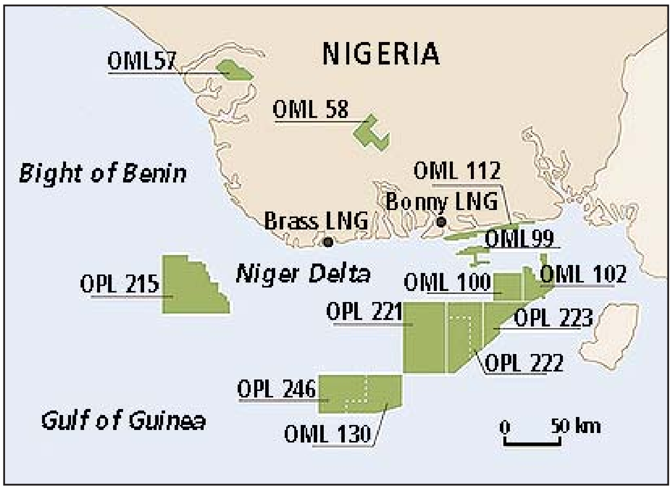
Total lines up new Nigerian FPSO

Total has pencilled in a possible standalone development, expected to be based on a substantial FPSO design, for one of its major discoveries offshore Nigeria after revealing a string of recent successful appraisals.

After yielding several promising discoveries, the **Egina** field on the operator's **OML 130** block – which already of course contains the **Akpo** field – may be suitable for such a development, it said. Alongside the NNPC, Sapetro, Petrobras and CNOOC, Total holds a 24% stake in OML 130.

The presence of a new structure was revealed by the discovery around 20km from Akpo of **Egina-1** in December 2003 and **Egina-2** in October 2004. After reprocessing the existing seismic survey, an appraisal program was launched to size the Egina discovery.

Drilled in a water depth of around 4,921ft (1,500m), the **Egina-3** (September 2006), **Egina-4** (November 2006) and **Egina-5** (January 2007) wells encoun- Continued on page 6



INSIDE THIS WEEK

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News in Brief

● US Gulf minnow Bois d'Arc Energy of Houston has pencilled in a planned expansion into deepwater by participating this year in three as yet unspecified projects. The company has a US $200m budget for 2007 and has flagged up three deepwater wells that it will participate in with small minority stakes. One of the three prospects has gross pre-drill reserve potential put at 67 Bcfe while the other two both have 50 Bcfe potential, with net drilling costs to Bois put at $22m.

● Seadrill has confirmed that the potential sale of the FPSO *Crystal Ocean* to Sea Production Ltd. has now been completed. The total consideration for *Crystal Ocean* was US $90m with an effective date of mid February 2007.

● Petroleum Geo-Services has entered into a 4 year firm Time-Charter with 2 x 1 year options with SeaBird Exploration Ltd. (BVI) for the *Harrier Explorer* as a fully equipped and operated source vessel. PGS has the option to use the vessel as a 2D vessel by covering the cost of additional seismic equipment and additional operating cost. The contract value for the firm period is approximately US $58m and is scheduled for commencement on 1 May, 2007. Chartering the *Harrier Explorer* secures PGS additional vessel capacity for 2D and undershoot work as well as for more advanced seismic solutions like Wide Azimuth.

● Oilexco North Sea Ltd, a Calgary based company with its UK base in Aberdeen, has entered into a letter of intent with Sevan Marine ASA for the use of the *Sevan No. 3* production unit, which is currently under construction at the Yantai Raffles Shipyard. The unit is intended to be installed on the Shelley field in the central UK North Sea in 2008. The fixed term of the contract is 5 years, with extension options for an additional 5 years. The contract value for the fixed term is approximately US $370m. The parties will agree on the final specification of the processing plant, but it is anticipated that plant will have an oil process capacity of 30,000 b/d and a water injection capacity of 20,000 b/d. The *Sevan No.3* is the fourth floating production unit to be contracted, all of which are based on the Sevan 300 design.

● The new deepwater construction vessel *Sapura 3000* being built for Acergy and SapuraCrest Petroleum for work in the Asia-Pacific region will be operational in the third quarter of this year, according to Acergy. The US $220m vessel was supposed to have been delivered in the fourth quarter of last year from Singapore's Sembawang shipyard to be operational early this year. However after suffering relatively minor delays, Acergy said in its latest quarterly update that the vessel was now due to be operation in Q3 2007. Acergy and SapuraCrest will be the 50:50 joint venture owners of the heavy lift and pipelay vessel, which will chase deepwater construction projects mainly in Australia, Malaysia and Indonesia.

AK upbeat over market outlook

Aker Kvaerner is upbeat about the short and medium term prospects for the market, which it describes as "very positive", adding that it is "optimistic" about the opportunities in markets such as India, Malaysia, West Africa and the Caspian Sea.

"We have a special focus on deepwater oil and gas developments. The company is recognised as having a competitive edge in Arctic and deepwater solutions. The long term trend is unchanged and the growth in energy demand is expected to continue, at the same time as the depletion of fields increases.

"The energy gap is expected to keep investments in the oil and gas industry high going forward. New resources continue to move towards more demanding fields and the need for advanced technology is increasing. This trend favours contractors with the technology and experience from the demanding North Sea. We also expect increased investments in tie-backs and extensions of existing fields," it said in a statement.

The company went on to highlight the new opportunities emerging from the buoyant floating production market, adding that there were also still many newbuild rig opportunities in the deepwater drilling market, "and a growing installed base provides huge after-sale potential. This is normally a high margin business," it said.

Aker went on to flag up the strong growth in the FPSO market, as well as the markets for well service activities and marine operations. "A strong newbuild market continues to positively influence the marine installation business. There is a strong market for umbilicals, controls and risers - and subsea boosting is gaining increased acceptance.

"Aker Kvaerner has become a leading supplier of drilling risers in a market enjoying record high volumes. Opportunities for subsea EPC contracts are growing, and Aker Kvaerner has strengthened its position in Brazil and the Asian markets," it concluded.

The company reported estimated earnings (EBITDA) of NKr 786m for the fourth quarter of 2006 and NKr 2,872m for the full year excluding its pulping and power business, up 31% and 58% respectively compared to the previous year's equivalent figures.

FloaTEC's short-term future vision in focus

Floater specialist FloaTEC, the joint venture between J Ray McDermott and Keppel FELS targeting the floating production systems market, says it has accomplished the goals and objectives established when it was launched 15 months ago.

The contractor said it had been successful in attracting an experienced team of core leadership and functional leads, currently employs 24 people and is "well prepared to capitalise on the booming deepwater FPS market opportunities expected in 2007 and beyond".

It highlighted several notable achievements from its initial plan including:

● Preparing and approving a technology development program

● Commissioning sizing tools and procedures for its portfolio of TLP, Spar and Semi hulls

● Successfully executing front end studies totaling more than 40,000 manhours

● Developing Spar delivery models for both Asia and Gulf of Mexico fabrication scenarios

● Filing for three new patents (targeting the dry tree semi market).

It also said it had established solid brand equity and name recognition, signed Master Service Agreements with several targeted key customers, moved into new offices; and created a stand-alone identity, while benefiting from access to its JV parent companies' resources and set-up.

FloaTEC added that its vision for this year would be to act as the primary custodian and repository of J Ray and KFELS' deepwater technology – intellectual property, tools, and expertise; To optimise development scenarios based on fit-for-purpose solutions - Spar, TLP, Semi-submersibles and associated riser and mooring systems; To manage R&D of innovative technologies to enhance and extend the JV Parent companies' effectiveness in the market; and to be the gateway to the combined resources of JRM and KFELS in offering full scope solutions

It concluded by saying that it would further develop its GoM Delivery Model for ETLP and Semi deliveries, in addition to the model developed for Spar deliveries; Establish bridging documents between projects and KFELS and J Ray's tested and proven processes to achieve optimum execution and transition between engineering and fabrication; Define "typical" manning requirements for EPC program management and project interfaces; and establish plans to enable access to detail engineering resources from JV parent's global engineering centres.

Woodside opts for Maersk semi for Oz programme

Maersk Contractors clinched a drilling contract from Woodside Energy for the lease of a deepwater development semisubmersible to operate offshore Australia.

The 3-year contract will start when the rig arrives off Australia in the second quarter of 2009. The unit is the second in a series of three deepwater development semis under construction for Maersk in Singapore.

Although substantially larger and more sophisticated, the design of the rig is based on the experiences gained from Maersk's latest newbuild semi *Maersk Explorer*. With its large capacities and highly efficient drilling equipment the new rig will be capable of drilling 30,000ft (10,000m) beneath the seabed. This makes it particularly well suited to drill deep and technically complicated wells as seen off the northwest coast of Australia.

The rig itself is able to operate in water depths of up to 10,000ft (3,000m) and will be able to maintain its station either in dynamic positioning (DP) mode or with a pre-laid mooring system.

A total of 180 people can be accommodated onboard.

Songa's planets falling into alignment

Songa Offshore reports that its *Songa Venus* rig is now achieving high operating rates after suffering a blip in January due to operational problems.

The rig has been operating offshore Western Australia since mid November, achieving a 95% operational effectiveness in November and December but this fell to 73% in January due to certain operation problems, which Songa said it "considers to be typical, start up problems".

The *Songa Saturn*, meanwhile, left the Tuzla shipyard on 30 December, and had a planned stopover in Algeciras, Spain where equipment was tested. Due mainly to software problems on certain equipment the planned one week stay evolved into a 4-week stay.

The rig has now been accepted by Noble Energy and is currently on its way to Equatorial Guinea and expected to arrive by 21 February. The latest delay has increased estimated capital expenditure by another US $3m to $136m.

The *Songa Mercur* is currently being upgraded at Keppel Benoi Shipyard in Singapore. The recommissioning of this rig has been more extensive than first planned, and has also been delayed by bad weather during the monsoon rainfalls in January.

The rig is expected to leave the yard by the end of this month with incline test and load out to follow before the rig is expected to depart early March. These delays have increased the estimated capex for *Songa Mercur* by $2m to $37m.

Generally Songa says the demand for rigs continues to be strong in all segments. The mid water segment, the category in which all of its rigs belongs to, has shown the strongest improvement in rates in 2006.

The three rigs Songa has had under conversion are now finalised or close to being finalized, it added. "All the rigs have already entered into their first contracts with major operators, and contracts have already been extended, or discussions are currently being conducted for doing so, which we believe documents the confidence these customers have to our company.

"The Board wishes to increase the contract coverage further, and aims to land one or two contracts with 1-3 year terms within the next six months.

"On the *Songa Venus* the operators ENI and Inpex have to declare the first of two 6-month options by mid May. Chevron and Santos will have to do the same for *Songa Mercur* by late September at the latest, assuming *Songa Mercur* leaves Singapore early March. The main efforts will therefore be placed on securing new contracts for *Songa Saturn* and *Songa Trym*. Both these rigs will be marketed worldwide."

● Songa's consolidated after tax profit for the fourth quarter 2006 was $3.7m. Income for the quarter was $41.8m.

Ocean Rig optimistic

Norwegian driller Ocean Rig says its rigs are working under contracts with superior dayrates compared to the rest of its market segment, and that based on an indicated shortage of capacity in the ultra-deep market over the next few years, it expects to enter into new contracts with "an attractive combination of dayrates and duration".

The contractor, which achieved its best ever quarterly figures in the fourth quarter of 2006 with EBITDA of US $41.7m, saw its rigs *Eirik Raude* and *Leiv Eiriksson* operate in the quarter at an average earnings efficiency of 97%.

Concerning the market, it said that several drilling rigs in its segment of the market were fixed for new contracts during the fourth quarter and in January 2007 at dayrates above $500,000.

"The list of uncommitted ultra-deepwater rigs with 7,500+ ft drilling capability available for hire in 2008 has thus been reduced to three newbuilds, as well as Ocean Rig's *Eirik Raude*. In 2009 another 10-11 rigs are expected to be available in the market, of which only three rigs are 'warm', including Ocean Rig's *Leiv Eiriksson*," it stated.

The *Eirik Raude* is expected to complete its first ultra deep well in the Orphan Basin off the east coast of Canada in this quarter and will then move to the US Gulf to drill one or more wells for ExxonMobil, before returning to Canada to complete the remaining 2-year term of the contract in the summer of 2008. The rig will undergo 5-year class work in the second half of 2007 or in the first half of 2008.

The *Leiv Eiriksson* will continue drilling under the 1-year term contract with Total offshore Angola until September 2007. The rig will then relocate to the North Sea, and following a yard stay, will begin operations in the Norwegian, Irish and UK sector under a 2-year term contract with Shell.

The *Leiv Eiriksson* is working for Total at $370,000/d, and then for Shell at $465-500,000/d, while the *Eirik Raude* is working for Exxon at $395-445,000/d.

● On a slightly more downbeat note, Ocean Rig confirmed that the *Eirik Raude* in January and February experienced two unrelated periods of downtime due to damaged equipment. The first was due to a breakage of the top drive main shaft, while the second was due to broken riser tensioner wires. Both repair periods were affected by severe weather conditions. The total combined lost revenue and incremental cost impact from both incidents is estimated to be approximately $14m.

D6 still delivering for Reliance off Indian east coast

Niko Resources has confirmed that the latest probe in the prolific **D6** Block operated by Reliance Industries offshore India has hit a substantial hydrocarbons column.

The Canadian independent said the **MA-2** well encountered the thickest hydrocarbon column discovered to date in the block, with the probe reaching a total depth of 11,749ft (3,581m) and penetrated a gross hydrocarbon column of 636ft (194m) consisting of 558ft (170m) of gas/condensate (53 degrees API) and 79ft (24m) of oil (42-43 degrees API) in the Cretaceous section.

The well is being drilled approximately 2km from the **MA-1** discovery well.

An application was made for the field's commerciality and approval has already been granted by the Indian Government with production approved to start by March 2008.

The full field development plan will be submitted in the near future, says Niko, with the oil development expected to be fast-tracked with initial production targeted in the second quarter of 2008.

The *Deepwater Frontier* rig completed drilling operations on three development wells for the **Dhirubhai** natural gas development project, with better than expected results, and the wells are awaiting final completion. The rig has now started drilling the **Q1** exploratory well, approximately 15km southwest of AA-1 and 8km northwest of the **P1** natural gas discovery.

An addendum to the field development plan for the **Dhirubhai 1** and **3** gas fields has also been approved and provides for the gas production rate to be increased to 2.8 Bcf/d with corresponding Phase-1 field development costs estimated at US $5.2 Bn. Commencement of production is scheduled for mid-2008. Elsewhere off India, in deepwater block **MN-DWN-2003/1 (D4)**, in the Mahanadi basin, in which Niko holds a 15% interest, a 2,365km 2D seismic acquisition program has been completed and the data is being processed. A further 2,000-3,000km 2D seismic program is scheduled for later this year to be followed by a 2,500sq km 3D seismic program. Exploratory drilling will follow.

The estimated cost of the D4 Phase I commitment is $97.6m, which must be spent within four years.

On D6, drilling to evaluate deeper-water prospects identified by the 2004 and 2005 3D seismic will be conducted in conjunction with development drilling utilising the *Deepwater Frontier* rig, as well as the *Transocean D-534* and the *Deepwater Expedition* rigs, which are expected to arrive in July 2007 and March 2008, respectively.

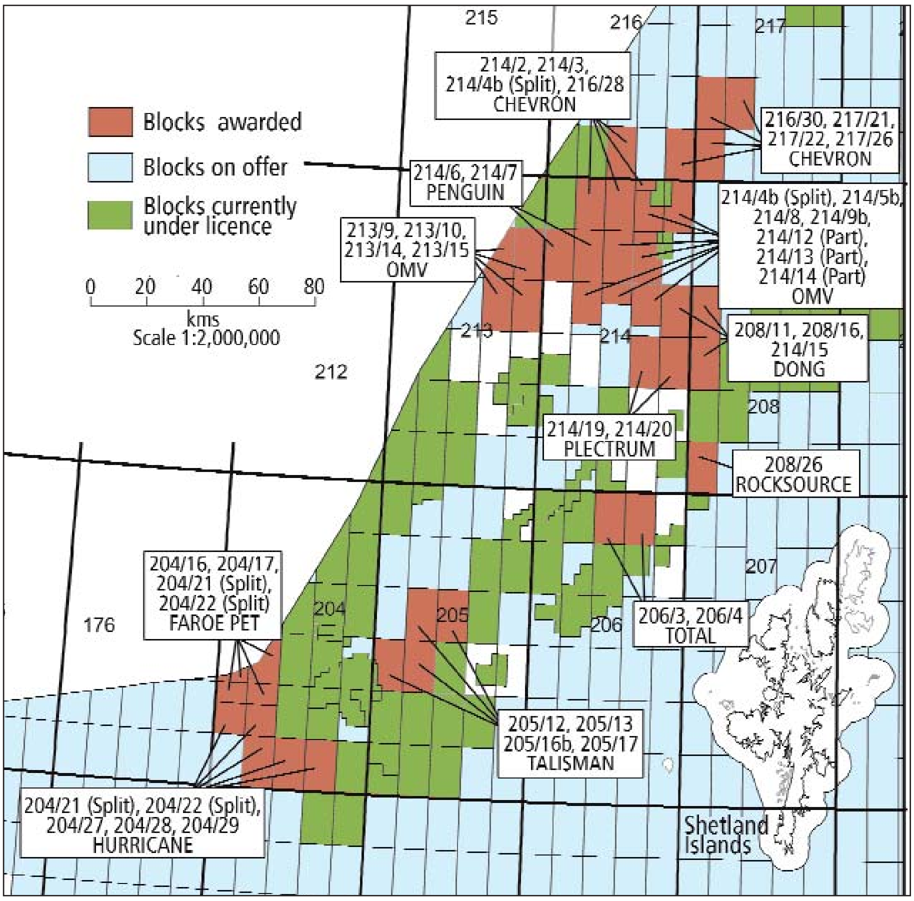
Hype builds for West of Shetland gas hub

Continued from page 1 tined to rely on a joint approach if it is to proceed.

Total has previously indicated its interest in both a Tension Leg Platform (TLP) option for Laggan, as well as a total subsea-to-shore alternative similar to Norway's **Ormen Lange** project (*see DI, 17 April 2006*). Contractors were consulted but the process was put on hold last year as potential TLP costs began rising well over US $500m and the possibility of a co-ordinated area-wide approach emerged. Laggan lies in around 1,968ft (600m) of water.

Other prospects in the area include **Torridon (214/27a)**, **Victory (207/1a)** and **Laxford**.

It's no accident that the area did also get some serious attention from operators during the recent UK licensing round.



Total won a 36% interest in **Blocks 206/3** and **206/4**, which will help it enhance the gas potential of the area near Laggan.

Chevron won eight blocks west of Shetland close to its existing acreage, including 26% equity in the two non-operated blocks in the greater Laggan area awarded to Total above. ENI and DONG also gained 19% each in these two blocks.

Commenting on the awards, Rick Cohagan, president and managing director for Chevron Upstream Europe said: "Chevron is committed to building a focused portfolio of exploration prospects worldwide and further strengthening our position in the UK. We believe this largely undeveloped region holds significant potential and that Chevron is well placed to meet the technical challenges it presents."

Chevron also won the following blocks as operator with 70% equity in the area: **217/21, 217/22, 217/26** and **216/30**. Faroe Petroleum is its partner in these blocks. It won the following with a 55% equity as operator: **214/2, 214/3, 214/4b** and **216/28**, with Talisman (25%) and Maersk Oil (20%) as its partners.

Exxon clinches Libyan fab four

Exploration activity will be kicked off by Exxon Mobil offshore Libya after the US major's subsidiary, ExxonMobil Libya Ltd. signed an Exploration and Production Sharing Agreement (EPSA) with the country's National Oil Corporation (NOC) for the acreage in the Sirte Basin.

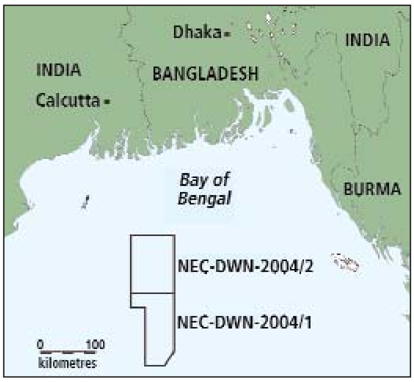
The deal includes four blocks located in **Contract Area 20**, awarded to ExxonMobil in the third EPSA IV licensing round in December. The contract area comprises 2.5m acres and is situated in water depths ranging from approximately 4,000ft (1,219m) to more than 6,500ft (1,981m).

Elsewhere in Libya, ExxonMobil is in the very early stages of an exploration program in **Contract Area 44** in the offshore Cyrenaica Basin, awarded to the company in the second round of EPSA IV licensing in 2005. To date, the company has completed an Environmental Impact Assessment (EIA), met with local stakeholders and is conducting a 2D seismic acquisition program.

Santos snaps up Bengal blocks in Indian NELP VI…

Australia's Santos has as predicted (*see DI, 5 February 2007, page 5*) secured two deepwater exploration licences in the Bay of Bengal, offshore India, with a commitment to an 8-year US $70m work program.

Santos subsidiary, Santos International Operations Pty Ltd, was awarded a 100% working interest and operatorship of blocks **NEC-DWN-2004/1** and **NEC-DWN-2004/2**, covering approximately 16,500sq km in the Northeast Coast Basin, in the Northern Bay of Bengal.



Water depths range from 1,312-7,546ft (400-2,300m).

The work program for Block NEC-DWN-2004/2 includes 2D and 3D seismic surveys and one exploration well. The work program for NEC-DWN-2004/1 consists of 2D and 3D seismic surveys. The exploration period for both blocks is 8 years.

The new blocks are situated within the emerging Tertiary clastic Bengal Fan play that has proved successful in recent gas discoveries in the northern Bay of Bengal.

…while Cairn gathers more deep assets too

Cairn India has secured an interest in two new exploration blocks in India, including the deepwater **KK-DWN-2004/1** block off the sub-continent's west coast.

The blocks were awarded to Cairn in the sixth New Exploration Licensing Policy round (NELP VI). The KK-DWN-2004/1 (Kerala Konkan Basin) consortium is lead by ONGC as operator (45%), with Cairn holding 40% and Tata Petrodyne 15%. The block covers approximately 12,324sq km.

The other block awarded, PR-OSN-2004/1, lies off the east coast in the shallow water Palar Basin, with Cairn Energy India the operator with a 10% stake, with another subsidiary Cairn India holding 25%, ONGC 35% and Tata Petrodyne 30%. The block covers 9,400sq km.

CGG Veritas promoting South African round

Seismic specialist CGG Veritas has joined forces with the Petroleum Agency SA to promote South Africa's 2007 offshore licensing round.

Details of the acreage, opportunities and terms and conditions will be given at launch seminars scheduled for Johannesburg (15 March), London (26 March) and Houston (29 March).

A Data Room is now open at the Petroleum Agency SA offices in Cape Town and further data rooms will be held in London and Houston. The closing date for receipt of bid applications is 31 July.

Jim Gulland, CGG Veritas Business Development Manager, EAME Data Library, described it as a "tremendous opportunity for the exploration community to gain access to such prospective acreage. We are extremely pleased to participate in the promotion of an important yet under-explored region."

The acreage on offer includes areas prospective for gas as well as oil in the shallow water northern Orange Basin, the Proximal Bredasdorp Basin, the deep water and shelf southern Orange Basin and the offshore Algoa Basin.

Access to full details, downloadable maps and roadshow itinerary are available at www.cggveritas.com/default.aspx?cid=15-59-296 and www.petroleumagencysa.com

VESSELS

Consafe's double whammy with Yantai

Sweden's Consafe Invest has signed a letter of intent with the Yantai Raffles Shipyard to build two semisub heavy lift vessels worth a total of US $300m.

The two 30,000 metric tonnes displacement semisub service and crane vessels will be built according to Norwegian Continental Shelf regulations and be specially outfitted for maintenance work and lift operations in offshore fields globally. Each will have 90 x 60sq meters free deck space and be outfitted with two 1,100 metric tonnes revolving cranes over the port side. The accommodation block for 350 persons, mounted cantilever over the starboard side, will be able to provide more free deck space.

The first vessel, *SSCB Safe Lifter*, will be delivered 18 months from the effective date of the contract. She will be outfitted with a conventional 10 point mooring system and prepared for a Dynamic Positioning (DP) system. The second unit, *SSCB Safe Carrier*, will be delivered within 28 months and will be fully outfitted with the DP system.

Total lines up new Nigerian FPSO

Continued from page 1 tered 197-262ft (60-80m) of oil in Miocene sands, confirming the possible commercial viability of a standalone development of the field.

The Egina-5 well in particular was tested to assess its production potential, which could reach around 12,000 b/d.

Field development concepts still remain to be assessed but an FPSO will start out as the obvious concept of choice in this region by Total, signaling the start of another highly competitive bid process for the established FPSO players offshore West Africa.

However, due to the increasing log jam of projects and availability of suitable vessels and contractor resources, the expected FPSO is unlikely to be onstream much before 2012 or 2013, *DI* hears, especially as Total is already undertaking conceptual studies into two large floater projects for its ultra-deep Angolan assets along a similar time scale.

Akpo, discovered in 2000, is due to start producing in late 2008, eventually reaching a planned peak production of 225,000 boe/d, of which nearly 80% will be condensate.

Fresh finds lead to Block 32 studies

Total's West African resource base just keeps on growing, with the French operator kicking off new technical studies after confirming two oil discoveries in fresh areas of ultra-prospective **Block 32** offshore Angola that could open up further hub-style standalone developments in the acreage.

Sonangol and Total confirmed discoveries with their eighth and ninth wells drilled in the block. Drilled in a water depth of 6,487ft (1,977m), the **Manjericão-1** well tested more than 5,000 b/d of oil from Oligocene oil-bearing reservoirs. This discovery is located in the central part of the block, approximately 38km northwest of the **Gengibre-1** discovery made in 2004. It demonstrates, says Total, that there is additional resource potential in the previously unexplored central area of the block.

Drilled in a water depth of 5,489ft (1,673m), the **Caril-1** well also encountered Oligocene oil-bearing reservoirs. The well was tested from a selected interval and produced at a rate of 6,300 b/d of light oil. This discovery is located in the north-eastern part of the block, approximately 18km north-northwest of the **Gindungo-1** find and 7km west-south-west of **Cola-1**, discoveries made respectively in 2003 and 2004.

The operator is now carrying out complementary technical studies to fully evaluate these promising drilling results, and further exploration drilling is underway and planned across the block.

After the discoveries of Gindungo, **Canela,** Cola, Gengibre and **Mostarda**, the positive result from the recently drilled **Salsa** well confirmed the potential of a new production structure in the southeastern area of the block. Conceptual studies are already well underway for a hub development of these discoveries.

Sonangol is the concessionaire of Block 32. Total holds a 30% interest as operator. Other partners in Block 32 are Marathon Oil (30%), Sonangol E.P. (20%), Esso E&P Angola (Overseas) Ltd (15%) and Petrogal (5%).

Husky picks up pace for Liwan off China

Initial development studies are underway on Husky Energy's deepwater gas discovery off China's southern coast, with the Canadian keen to firm up project plans before the end of this year.

The operator's **Liwan 3-1-1** discovery in the Pearl River Delta basin lies in **Block 29/26** and contains reserves estimated at between 4-6 Tcf of gas, making it one of the largest finds ever made offshore China.

A major 3D seismic shoot covering around 4,000sq km will be carried out this year over the block in the South China Sea, as well as a further 500sq km on the operator's adjacent acreage in **Block 29/06**. *DI* hears the program will investigate several structures with characteristics similar to those of Liwan.

Chief executive John Lau commented in a conference call last week that the project will be "based on a spot development basis and try to tie up with an onshore, maybe even go to Hong Kong or to mainland China for the gas".

He went on to admit the development would be a "big challenge for us" and that the expectation generally was that a project like this would take up to 10 years to deliver. "Our target is to have this project up and running by year 2012 to 2013," he said.

Husky has already given Seadrill a 3-year contract worth around US $580m for the drilling rig *West Hercules*, currently under construction, which is scheduled for delivery in the second quarter of 2008.

The rig will drill and test 2 or 3 delineation wells, with first production forecast for between 4 and 5 years after the completion of the delineation programme.

China's CNOOC has an option to participate in up to 51% of any future development that takes place.

Petrobras goes soft over Cottonwood

The first well on the deepwater **Cottonwood** field in the US Gulf is now onstream, according to operator Petrobras, with the second to start flowing later this month.

Initial output is currently 1.1 MMcm/d of gas and 4,000 b/d of light oil (condensate), with a second well due to start production by the end of this month, which is expected to boost gas production to 2 MMcm/d. Together, the two wells will take the field's production to 20,000 boe/d.

Cottonwood will then be the biggest Petrobras America field in production, taking the subsidiary's production to beyond 25,000 boe/d, up from the current 5,500 boe/d. This is the first deepwater field Petrobras has developed and put into production abroad as an operator.

Petrobras flagged up the field's development as an example of the integrated work of specialists from several of its units in Brazil, with the Petrobras America team, integrating the operator's experience and technology with the Gulf of Mexico's market practices. "The outcome of this joint work has brought the project from blueprints into operation a mere 12 months after the company's Executive Board approval," it stated.

The field lies in **Garden Banks Block 244** in a water depth of 2,198ft (670m).

Cottonwood is also the company's first field to use submarine equipment and systems capable of operating under high pressure.

Prosafe flags up new floater projects

Norwegian floater and offshore support specialist Prosafe has revealed its best ever quarterly figures, and has flagged up continued strong growth in the floating production sector for 2007.

The contractor's operating profit for 2006 increased to US $150m, with its floating production segment generating revenues of $92.6m in 2006 and an operating profit of $37.8m. Work continued in the quarter on the conversion of *MT Apollo* for the **Polvo** field off Brazil and *MT Ionikos* for the **Tui** field off New Zealand.

The fourth quarter saw a record high order intake for its floater division, with a letter of intent for an undisclosed client (with *DI* hearing rumours by some that the LoI is from Woodside for its **Azurite** FPDSO project), and the contract for the Petrobras gas FPSO (*see DI, 8 January 2007, page 8*) yielding total revenue including option periods of circa $1.9 Bn. The vessels will be converted during 2007 and 2008, with expected first oil late 2008. The vessel *M/T Navarin* will be used for the Petrobras FPSO, and the *M/T Europe* towards the letter of intent.

It stated: "The general FPSO market has remained strong during the quarter, and indications are that 2007 will be another year with high bidding activity. Prosafe is actively pursuing new opportunities, and is currently working on a FEED study which may lead to a new FPSO conversion project." [again possibly an alternative for the Woodside Azurite job]. Prosafe added that the *MT Kudam* would be a suitable candidate for this new FEED study project.

Prosafe is also currently launching a disconnectable turret solution for harsh environments, positioning it for the upcoming FPSO market in the US Gulf.

It added that engineering and project capacity is available if the company should win another FPSO conversion contract in the near future. In the second half of the year, further engineering resources will be freed up from existing projects. As such, the company has the capacity to take on a fourth project in the second half of 2007, it said.

First blood for Ramboll with Nexus FPSO

Denmark's Ramboll Oil & Gas has carved itself a useful niche in the hyperactive FPSO market, having won a contract to carry out detailed engineering and design on the US $620m NEXUS FPSO.

The scope of work includes layout assessment and detailed design of the processing facilities on the deck. The unit has a liquid production capacity of 80,000 b/d, with maximum oil production put at 60,000 bbl and gas production at 1.5 MMcm/d.

The design is generic, says Ramboll, and suited both for potential projects in the North Sea and thereby for operation in any international waters.

The extent of the project, mediated in co-operation with NEXUS Floating Production Ltd and Samsung Heavy Industries, is unprecedented in the Ramboll Group, it said, and would be executed and managed from its Norwegian office in Sandefjord. Ramboll Oil & Gas in Denmark will be responsible for part of the workscope.

NEXUS Floating Production Ltd was established by APL in Arendal, Norway, with NEXUS to own and operate the vessel for an as yet undefined owner.

The workload at Ramboll will peak later this year where a staff of 140 engineers and technicians is expected to work on the project, ending in March 2008.

"We are proud to win this prestigious project, which will establish Ramboll Oil & Gas as a competitive player in the offshore premier league", said Dan Madsen of Ramboll Oil & Gas' head office in Esbjerg, Denmark. "From the outset of the Danish offshore industry we have been a well-reputed engineering partner for the oil companies operating in the North Sea, but with our recent orders our international profile has definitely been strengthened."

"This is an important contract won by Ramboll Oil & Gas, and a strong signal to the market that we have the performance capability in the group and specifically out of our new engineering branch in Norway," added Andreas Hatlo Managing Director of Ramboll Oil & Gas in Norway. "We are strategically situated in the main market for FPSOs. More than 10 FPSO owners are located in Norway and Denmark. Ramboll Oil & Gas is already a strong player in this market and will grow further to win new FPSO contracts."

Samsung clinches Skarv FPSO

Samsung Heavy Industries of South Korea has won a US $403.4m order to build the *Skarv* FPSO destined for offshore Norway. The 1m bbl FPSO will take 36 months to build before being installed on the oil field by January 2010. The vessel will produce 90,000 b/d of oil and 19 MMcm/d of gas for a planned 25 years. Samsung has received orders for 14 out of a total of 55 FPSOs awarded globally so far, claiming the world's top market share of 25%.

SUBSEA

Subsea systems surge boosts FMC figures

FMC Technologies saw its fourth quarter and full year results boosted largely by the dynamic global subsea market, with revenue for the quarter at US $1.1 Bn, up 15% over the equivalent period in 2005.

Income from continuing operations was $65.2m, up 176% from $23.8m in the prior-year quarter. Inbound orders totaled $1.6 Bn in the quarter largely on increased requirements for subsea systems. Backlog reached a record $2.7 Bn, with the company's subsea backlog at a record level of $1.8 Bn.

Net income in the quarter was $102.8m.

In the fourth quarter, FMC also sold its SOFEC business, which was previously included in the Energy Production segment, for $54.4m resulting in an after-tax gain of $34.8m which was recorded in discontinued operations. Full year 2006 revenue of $3.8 Bn increased 21% from $3.1 Bn in 2005.

Revenue specifically for subsea systems in the fourth quarter was $508m, up 19% from the prior-year quarter and up 14% sequentially. Surface wellhead revenue improved over 25% from the prior-year quarter and 8% sequentially. Subsea systems inbound orders were $951m in the quarter.

Calendar 2007

MARCH

20-22
Offshore West Africa Conference & Exhibition
Abuja, Nigeria
www.offshorewestafrica.com

APRIL

23-26
Reliability and Integrity for Subsea Systems
The Marcliffe Hotel, Aberdeen, Scotland
Phone: +44 (0)207 368 9300
www.iqpc.com/uk/subsea/inf

30-3 May
OTC
Reliant Center, Houston, USA
www.otcnet.org/2007/

SEPTEMBER

4-7
OFFSHORE EUROPE Rediscovering The Future
AECC, Aberdeen, Scotland
www.offshore-europe.co.uk

18-20
Brasil Subsea Conference & Exhbition
Rio de Janeiro, Brazil
www.pennwellpetroleum-group.com/events/

NOVEMBER

28-29
Deepwater International IV New Frontiers, New Challenges
The Dorchester Hotel, London, UK
Email: conferences@thomasenergypub.com

SUBSEA

Odim on the up

Odim ASA has won subsea contracts worth about US $5m from Olympic Holding, Norway and Bourbon Gaia, France.

The systems are due to be delivered between 2008 and the first quarter of 2009.

One of the contracts is for delivery of 2 ODIM LARS for Olympic Holding. The Odim LARS is an automated launch and recovery system for remotely operated vehicles (ROV). The system is designed to handle ROVs in water depths of up to 13,124ft (4,000m).

The other contract is for delivery of a module handling system for Bourbon Gaia, which can handle subsea modules in water depths of up to 4,921ft (1,500m). All systems are active heave-compensated.

Odim has also completed the first sale of its new fibre rope deployment system to Subsea 7. The deal, valued at around $3m, includes previous rental income, servicing and after sales. Subsea 7 took up its purchase option after using the system on its *Toisa Perseus* construction vessel last September. The vessel will use the system for installation and construction work on the ultra-deep **Inde Hub** project in the US Gulf.

ASSET MARKET

Eni deep deals with ONGC for Indian foothold

Eni has signed off on its agreement with India's ONGC for a swap of interests in exploration blocks off India and West Africa's Congo-Brazzaville, giving the Italian major a solid foothold in India likely to pay it dividends in the long-term.

Eni has bought a 34% interest in the **MN-DWN-2002/1** block off eastern India, with an acreage of approximately 10,000sq km and featuring water depths ranging up to more than 6,562ft (2,000m). The Mahanadi basin block lies in an area with high exploration potential where significant oil and gas discoveries have already been made.

The Italian will also contribute in this new partnership with its exploration experience and technology developed through its international deepwater operations.

In return, ONGC Videsh acquired from Eni a 20% interest in the producing **Mer Tres Profonde Nord** (**MTPN)** deepwater exploration block, operated by Eni off the coast of Congo-Brazzaville. ExxonMobil holds the remaining 40%.

Eni has had a presence in India since 2005, and is the operator of two exploration blocks including one off the coast of the Andamane Islands (**AN-DWN-2003/2**) in which Eni India holds 40% as operator, ONGC 45% and Gail 15%. That block is currently in the exploration phase with a seismic acquisition campaign underway.

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