

# HART ENERGY

vol. 31 - no. 9 24 July 2014



## SUBSEA ENGINEERING NEWS

### THE DRIVE TO 20K PRODUCTION ACCELERATES

The drive towards 20K subsea production picked up speed this week as Anadarko and ConocoPhillips joined the known players - BP and Shell - in a new technology development joint industry project with FMC focussed on subsea hardware for high pressure - and temperature - production.

Add the 177°C (350°F) temperature to the high pressure and the challenge multiplies. It may be that the work done under this jip is more about setting benchmarks, ie standards, than it is about developing equipment.

#### No specs yet

Part of the issue is that API has yet to set down specifications for 20K hardware which is why a number of specialists have suggested to SEN that the move from 15K to 20K will be much more challenging than going from 5K to 15K. The work that FMC has done over the last year or so with BP has focussed on seals and materials, but also on system specifications to fill in the missing gaps.

While BP has spoken extensively about its 10bnbbbls plus of hp/ht reserves in the Gulf of Mexico - and at the moment this work is targeted at developments in US waters - and Shell talked about its hp/ht reserves at OTC this year (SEN, 31/4), Anadarko and COP are new to this enterprise, although info about their finds is in the public domain.

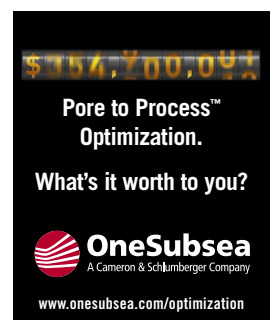
COP partners BP at *Gila* (30/19) which is part of the latter's big hp/ht trio including *Kaskida* (28/15) and *Tiber* (28/17). Anadarko has made finds at *Phobos* (30/14) in the Sigsbee Escarpment and at *Raptor* (30/10) in the Norphlet Trend and *Shenandoah* (30/1) in Walker Ridge. Some of these deepwater finds fall into one or the other extreme environment categories.

What is interesting is that these new standards do not cover the extreme conditions that Shell has talked about including 204°C (400°C) at *Appomattox* (30/17) and pressures elsewhere that have been recorded at 23K.



**WHAT'S INSIDE**

- New player, 3
- More Norphlet oil, 3
- *Njord* returns - for now, 8
- UK govt backdown, 12



Although this programme gets tagged as 20K which presumes that high pressure is the most significant challenge, Brad Beitler, FMC vice-president for technology, told SEN this week that 'temperature is probably the most critical' issue.

His company will have to undertake extensive qualification work on elastomers for seals and study the long-term effect of ht production on structural material as well as the impact on insulation and control systems.

The drive to advance technology is admirable, but as the football player in the film *Jerry McGuire* said, 'Show me the money!'. At the moment, FMC is out there alone doing this 20K work, because, as far as SEN knows,

others have balked at spending on a so far non-existent market.

All of the hardware companies jumped into qualifying for the 15K market at the end of the 1990's, but the numbers have never justified the investment. Beitler admitted to SEN that 'the volume of these systems will not be huge' and the qualification can only be justified with four companies involved.

'Developing a standard that is repeatable across multiple operators and fields makes sense,' Beitler told SEN by email, 'to capture learnings and enhance reliability, share tools and very expensive installation equipment and reduce lead times through stocking of common raw materials.'

## PROJECT UPDATES

### ENCANA HEMS AND HAWS OVER *DEEP PANUKE* FUTURE

*From Houston (BN):* While Encana has hinted it might sell its *Deep Panuke* (SEN, 30/19) gas development, offshore of Nova Scotia, to concentrate on producing liquids, there has also been speculation that the Calgary-based company might keep the Scotian Shelf asset, located 250km southeast of Halifax - at least a while longer.

When first broached, the idea of selling *Deep Panuke* made complete sense, given the fact that liquids are generally more valuable than gas and US shale gas continues to weigh heavily on North American gas prices. Then came last winter.

Exceptionally cold weather in New England drove *Deep Panuke's* gas price way up, turning this sow's ear of a project into a silk purse. The gas sold for an average \$19.14/mcf in the first quarter and output averaged 253mmcf/d, near capacity of 300mmcf/d, generating \$395mn in cashflow.

Even with gas prices back down around \$4/mcf now, there could be other factors improving the outlook for *Deep Panuke*.

There's a proposal to build an LNG export facility in Nova Scotia, which could lead to *Deep Panuke* gas selling in overseas markets at higher world prices.

Still, that might only increase the price Encana can get for the troubled billion-dollar project, which looked good when it was planned. But it came online (August 2013) in a depressed North American gas market and it was three years late due to construction problems.

*Deep Panuke* 'doesn't really fit our portfolio. It is nice to have that opportunity for cashflow through the cold months here...but it isn't really sort of our main strategy to keep *Panuke* around,' CFO Sherri Brillon told investors in January.

The following month, CEO Doug Suttles, who took over as CEO in June 2013 and decreed a 'less gas, more oil' strategy last November, appeared to backtrack a tad.

'We're not actually actively working to sell that asset right now. We just got it up on full



**Delivering Subsea Solutions**

Email: [subsea@mcdermott.com](mailto:subsea@mcdermott.com) | <http://www.mcdermott.com/Solutions/Pages/Subsea.aspx>

© 2014 McDermott International, Inc. All rights reserved

production. It's performing quite well and currently it's performing quite well at the exact right time,' Suttles told a 4Q 2013 earnings call.

'But as we've talked about strategically, we are long on gas assets, and we will look at that and, of course, our view of where the markets are and where they're headed will affect that. But literally, as we sit here today were not actively marketing *Deep Panuke*,' Suttles said.

In May, Suttles bragged about *Deep Panuke* performance in an address to shareholders, but that was the same month Encana paid \$3bn for Freeport-McMoRan's oil-rich Eagle Ford shale properties in south Texas, reaffirming its commitment to increase its liquids production.

Spokesmen for the company have declined to elaborate on *Deep Panuke*'s future, explaining that Encana doesn't disclose sales of assets until actual deals are made.

## NEW RLWI PLAYER BRINGS NEWBUILD UNIT TO THE MARKET

The latest player in subsea well intervention brings along with it a newbuild mini-drillship with promises of more units to come.

The Norwegian Norshore group has just carried out a riserless intervention in Indonesia on the *Langsa* field for operator Blue Sky using *Norshore Atlantic* which was only delivered in March.

This unit, capable of more than just intervention, was built at the Batamec yard in Indonesia based on a Marin Teknikk MT6022-XL design. It is only 115m by 28m, but is fitted with an NOV derrick and top drive rated for 450mt, but with an option to take it to 585mt. It also has an NOV HydraTong roughneck, Cameron 18.75in 10K bop and a 140t knuckleboom crane.

*N/Antlantic* is now due to go work for Shell on its upcoming *Malikai* (SEN, 30/24) project in Malaysia where it will undertake tophole drilling an activity that this vessel was specially designed to carry out.

Due to come out China's Yantai CIMC Raffles shipyard in late 2016 is *Norshore Pacific*, a much bigger beast of a vessel. It is 156m by 28m based on an MT6028 design and will be equipped with a riserless mud recovery system and capable of all of the tasks its younger brother can do, but also expected to be a player in the P&A market.

Norshore which itself is a relative newcomer - it was only established seven years ago - has options with the YCR yard for three more similar units to *N/Pacific*.

## SHELL BAGS 3<sup>RD</sup> NORPHLET FIND

*From Houston (BN):* Shell has made a third major discovery in the Norphlet play at its *Rydberg* prospect in the Gulf of Mexico.

This find firms up the likelihood of a hub development tying together finds at *Appomattox* (SEN, 30/17), *Vicksburg* (30/8) and perhaps other yet-to-be-made discoveries in the vicinity.

*Rydberg* is located in 2,280m in Mississippi Canyon 525, about 192km southeast of New Orleans and 16km south of *Appomattox*, which is in 2,195m in MC348-391-392.

Exploration is about to get underway at nearby *Gettysburg*, another Shell Norphlet prospect with a Civil War-themed name, in

Desoto Canyon 398 about 19km northeast of *Rydberg*, in 2,310m. The drillship *Noble Globetrotter* currently is on location and making preparations.

*Appomattox*, a 2010 find with estimated reserves of 500mboe, is Shell's Norphlet anchor discovery so far. *Rydberg* and *Vicksburg*, discovered last year, are estimated to hold 100mboe each. Non-commercial finds were made in the same area at two other prospects, dubbed *Shiloh* (2003) and *Antietam* (2009).

At *Appomattox*, Shell has indicated that it is 'moving forward with engineering design' for a semi-based floater, subsea infrastructure and development wells.

A Shell map giving an overview of Norphlet activity locates a 'planned *Appomattox* host' south of *Vicksburg* near the center of the play, with *Appomattox* to the northwest, *Vicksburg* to the north, *Rydberg* to the south and *Gettysburg* to the east.

A Shell spokeswoman said the map is merely representative and should not be understood literally because *Appomattox* still awaits sanction and development details are not being made public.

Shell said the *Rydberg* discovery - 122m net oil pay at total depth of 8,038m - further defines Norphlet's Jurassic trend. But

development offers challenges because the trend, while featuring high quality sandstone reservoirs and good quality oil, is defined as high temperature and pressure.

(From the editor: With all of the American Civil War references with these finds, the question is who or what is *Rydberg*? We checked Wikipedia, Google and our Alabama-born Houston correspondent, but came up with a big blank.

The only reference is to a 19<sup>th</sup> century Swedish physicist and the Rydberg formula and Rydberg constant. Why Shell would name a field after him is a mystery.)

## NORWEGIAN EXPLORERS FACE UPS AND DOWNS

*From the North Sea (NT):* Lundin has successfully completed appraisal well 7120/1-4S on the *Gohta* (SEN, 30/14) discovery in the Barents Sea, although its reserves estimates for the time being remain unchanged at 63-145mmbbls and 8-15bcm.

The well, drilled by the semi *Island Innovator* in 332m 5km northwest of the discovery well, found a 10m gas/condensate interval which in a drillstem test flowed 0.7mcm/d and 880b/d.

The interval showed good production properties. However, the test of an interval with oil traces was inconclusive.

What the next step is for Lundin and partners Det norske oljeselskap and Noreco is not revealed. *Gohta* lies 35km northwest of *Snøhvit* and, more to the point, 60km south of *Johan Castberg* (31/8). If Statoil opts to install an oil pipeline to shore, *Gohta* could tie into it.

Statoil has given notice of two more wildcats - *Pingvin* and *Isfjell* - which it is planning to drill in the *Castberg* area this autumn looking for additional reserves.

Still in the Barents, Statoil has had a second disappointing result in the Hoop High area, where the *Atlantis* wildcat (7325/1-1) found only a small volume of gas. Preliminary analysis indicates that the find is not commercial, the NPD comments.

Drilled in 447m by the semi *Transocean Spitsbergen*, *Atlantis* is the most northerly

well yet drilled on the Norwegian continental shelf. ÖMV's *Wisting Central* (30/16) remains the only substantial discovery so far in the Hoop High area, where its recent *Hanssen* well made a modest oil find and Statoil's *Apollo* well was dry (31/8).

### More for Njord

Meanwhile VNG has found additional reserves in its exploration campaign in the *Njord* area of the Norwegian Sea.

Sidetrack appraisal well 6406/12-3B on the *Pil* (31/5) discovery intersected an 82m oil column with good reservoir characteristics. Reserves are now estimated at 55-133mmbbl of oil and condensate plus 2.7-6.1bcm.

That's equivalent to an increase of some 20mboe in the lower end of the range given after discovery, while the top is virtually unchanged at about 170mboe.

However, VNG then made a modest discovery with the *Bue* exploration sidetrack (6406/12-3A), which found an 18m oil column with good to very good reservoir properties. *Bue* is estimated to hold 6-25mmbbl. Both these wells were drilled by the semi *Transocean Arctic* in 324m.

*Pil* and *Bue* lie some 35km southwest of *Njord*. Two follow-up wells are planned for H1 2015, according to partner Faroe. If they yield sufficient additional reserves, a stand-alone development may be justified. Otherwise the fields are likely to be tied back to *Njord*.

## ENTHUSIASM IS MUTED TO EAST COAST SEISMIC GO-AHEAD

*From Houston (BN):* The US Bureau of Ocean Energy Management has given general approval to seismic surveys along the mid-Atlantic and south Atlantic coasts.

While giving the okay, the 'record of decision' imposes stringent rules aimed at protecting marine wildlife. Individual survey permits must still be obtained before any seismic work can begin.

Although the oil industry and several Atlantic coast states have been pushing to open the area to oil and gas exploration, not everyone is pleased. The International Association of Geophysical Contractors (IAGC) issued a statement warning that excessive environmental restrictions threaten to reduce the quality of seismic surveys and actually may keep them from happening at all.

IAGC chairman Robert Hobbs' statement criticized BOEM's 'unrealistic' assessment of

possible worst-case effects on marine wildlife and the agency's requirement of 'unrealistic' mitigation measures.

In other news, BOEM has scheduled a Western Gulf of Mexico lease sale for 20 August.

Sale 238 will include 4,026 blocks located 15km to 400km offshore in waters of 25m to 3,350m deep. BOEM estimates the sale could lead to new production of up to 200mmbbls and 27bcm.

Included in the sale will be blocks located or partially located within the 4.8km-wide US-Mexico boundary area as well as blocks within the former 'western gap', ie within 2.4km north of the agreed boundary under the US-Mexico Transboundary Hydrocarbon Agreement. The latter likely will attract more interest due to Mexico's energy reform aimed at attracting more international investment.

### PROJECT BRIEFS

There were a few unanswered questions following Total's announcement about the **EDRADOUR** (SEN, 31/8) deepwater gas subsea development a fortnight ago.

Total will link the new pipeline into the *Laggan-Tormore* export system at one of six tees - there are three on each of the 18in export lines - installed during the original pipelay programme. As for whether the new pipeline line will be big enough to handle *Edradour* and *Glenlivet* production at the same time has not been decided.

Despite this being a UK sector job, Technip is to run the work out of Norway. The UK and Norway are both part North Sea/Canada region in Technip-world and it does seem a bit unusual, but then it would require looking at the UK workload to understand it.

An interesting sidelight is the question of who is supplying the steel tubes to Technip for the umbilical - market leader Sandvik or newcomer French supplier Vallourec. Total said ask Technip and Technip is not saying or as it told SEN, 'we are not in a position to share this information, so far.' So there.

As for *Laggan-Tormore*, this new development is due onstream in Q4 this year.

*From Houston (BN):* Mexico's Senate voted 90-28 to approve the general outline of the **HYDROCARBONS REFORM LAW**, but reserved a number of details for further debate as secondary legislation supporting energy reform moves forward.

The bill calls for local content of 25% by 2015 and 35% by 2025. By contrast, Brazil's local content rules reach as high as 55%. Mexico's lower House takes up the legislation next.

*From Australia (RW):* The Premier Oil-led group which includes Santos has brought its **DUA** oil field onstream, offshore Vietnam.

### Excellence in Valve Engineering

#### We always operate

- In hostile environments
- At extreme pressures
- At extreme temperatures
- At extreme depths



[www.belvalves.com](http://www.belvalves.com) +44 (0) 191 265 9091

*Dua* is a three-well subsea development tied back to the nearby *Chim Sáo* facilities in Block 12W of the Nam Con Son Basin.

Gross production from the three wells is expected to be 8,000b/d for the first year of production. The oil will be processed through the fposo stationed at *Chim Sáo* which has sufficient capacity to handle the output from both fields.

*Dua* was discovered and appraised in 2006. Government approval for development was received in December 2012 and the final investment decision was made in August 2012. Subsea wells were completed in 2013 and the flowlines, umbilicals and hook-ups to the floater finished during the first six months of 2014.

Premier operates (53.12%) for Santos (31.88%) and PetroVietnam (15%).

*From the North Sea (NT):* Statoil has received the go-ahead from the Petroleum Safety Authority Norway to continue production on the **STATFJORD C** platform and its subsea satellites until the mid 2020s.

The approval confirms the company's success in prolonging production from the *Statfjord* complex well beyond the 2020 limit previously envisaged and planned for.

*Statfjord C* and the *Statfjord North* satellite field are now cleared to continue operations until August 2026 and the *Statfjord East* and *Sygna* satellites until March 2024. The C platform came onstream in 1985, *Statfjord East* in 1994, *Statfjord North* in 1995 and *Sygna* in 2000.

In 2010 Statoil launched a decommissioning project for *Statfjord A*, which was expected to cease production in 2016. The project now appears to have been put on ice as the platform is expected to remain in operation until 2020.

*Statfjord A* came onstream in 1979. Production from the *Statfjord* complex actually increased slightly last year, to 27,500b/d and 4mcm/d.

Partners in the deepwater **TAMAR** (30/23) gas field, offshore Israel, have filed suit in the country's high court seeking an reversal of the refusal by the authorities to approve the use

of the existing facilities to develop the *Tamar SW* field.

The licence group is seeking an explanation of the denied application, although it is believed that it may be due to the fact that the new reservoir crosses into another licence (*Eran*) where the group had a position which was denied renewal when it expired.

*From Houston (BN):* The new drillship *Maersk Viking* has begun work at ExxonMobil's **JULIA** (30/9) field in the Gulf of Mexico.

*Julia*, in 2,173m in Walker Ridge 584 425km southwest of New Orleans, is targeted for startup in 2016 as a subsea tieback to Chevron's *Jack-St Malo* (31/2) fps, sited about 25km to the southeast.

Plans call for initial production of 34,000b/d from a zone more than 9,150m deep. *Julia* is estimated to have 6bnbbbls in place. The lease is owned 50-50 by ExMob and Statoil.

IRM specialist Harkand has picked up an **ROV INSPECTION SERVICES** contract covering UK assets of Nexen using the rovs *Surf Ranger*...TIW Corp is to supply two large diameter **BALL SAFETY VALVES** to the Marine Well Containment Co for its oil recovery system in US waters...Trelleborg is to supply a foam buoyancy package for the flowline system for BP's **SHAH DENIZ 2** (31/6) development, offshore Caspian Sea.

*From the North Sea (NT):* Shell is applying for permission to drill a new appraisal well on the giant **ORMEN LANGE** (31/4) gas field in the Norwegian Sea.

This will be the *D-Far South* well (6305/8-2), which it plans to drill with the semi *Transocean Barents* in September when the rig has completed its current yard visit. The estimated duration is 81 days. No testing or geological sidetrack is planned.

The well will be located in a water depth of 615m in the southern tip of the field, 6.7 km southeast of the *O/L D* template.

SEN was unable to get feedback from Shell on the purpose of the well, but it looks as if this part of the reservoir is untapped by wells drilled through the *D* template and a further phase of development may be looming if the appraisal indicates sufficient reserves.

So far 17 subsea producers housed on four templates have been drilled on the field, according to Shell.

*From Australia (RW):* The ConocoPhillips-Karoon Gas partnership has found gas at **PHAROS-1** (30/17), its latest Browse basin wildcat in off Western Australia.

The group reported the presence of moveable hydrocarbons indicated by petrophysical log interpretation, formation pressure gradients and downhole gas sampling.

Karoon's reservoir assessment shows a 53m gross gas interval with 34m of net pay in the well which was drilled to a total depth of 5,220m. Wireline logging operations are still underway and they will be followed by a full production test.

*Pharos-1* is the sixth and final well in phase two of the group's Browse drilling campaign to evaluate the *Greater Poseidon* area.

*Pharos* is 9km northeast of *Proteus-1* and was drilled as a further evaluation of the *Proteus-Crown* trend. The well targeted an extension of the discovery which established good reservoir quality and condensate-bearing gas in the Montara Formation.

Operator COP (60%) used the semi *Transocean Legend* for the *Pharos* well. Karoon holds the remaining 40%.

*From Houston (BN):* News reports indicate Russian President Vladimir Putin has promised to help **CUBA** explore for oil off its northern coast. The commitment came during Putin's stop in Havana to kick off a six-day Latin American tour.

Igor Sechin, chairman of state oil company Rosneft, accompanied Putin. Exploration offshore of Cuba has been limited and so far has found no oil. Cuba produces about 55,000b/d from onshore wells and imports about 110,000b/d from Venezuela.

*From Houston (BN):* Karoon has signed OGOG Constellation's Olinda Star semi-sub rig to drill up to four wells in Brazil's **SANTOS BASIN**. Karoon operates S-M1037-1101-1102-1165 and 1166. The deal calls for two firm wells - *Kangaroo-2* appraiser and *W Kangaroo* wildcat - and two option wells. Drilling is expected to begin in September.

*From Australia (RW):* The rig operated by China National Petroleum Corp in disputed South China Sea waters has found signs of oil and gas.

China's official newsagency Xinhua said the find was made with the second well in the area referred to as **ZHONGJIANNAN** project.

The programme has created tension between China and Vietnam with Hanoi claiming the region is within its 200-nautical mile exclusive economic zone and on its continental shelf. China has claimed the area near the Paracel Islands is undisputedly Chinese waters.

The deepwater rig is now reportedly moving towards China's island province of Hainan, a move that should ease the crisis.

*From Houston (BN):* Statoil is participating in its first license in the relatively unexplored waters offshore of **COLOMBIA**.

Subject to Colombian hydrocarbons commission approval, the award of block COL4, northwest of Cartagena, goes to a partnership of Repsol, Statoil and Exxon Mobil. Repsol will own 33.34% and act as operator. Statoil and ExMob will share the remaining stake.

The award comes in Colombia's 2014 Licensing Round. Initial work commitments offered to obtain the lease include 2D and 3D seismic, but no drilling of wells.

Eni has strengthened its deepwater holdings, offshore **THE CONGO** by securing extensions on its *Madingo* and *Marine VI & VII* permits which were originally granted last year.

## Subsea Production Systems Engineering COURSE

### Upcoming dates

14 - 17 October 2014 - Aberdeen

11 - 14 November 2014 - Houston

Organised by:



contact [www.clarion.org](http://www.clarion.org) or SEN for details

## FLOATER NEWS

### ***NJORD: THE PRESENT AND THE FUTURE***

*From the North Sea (NT):* Statoil has brought the *Njord* (SEN, 30/17) field in the Norwegian Sea back into production, but already has plans for a further shutdown to secure its longer term future.

The *Njord A* fpu ceased operations last summer to allow the deck support to be strengthened. The work mainly consisted of bracing the primary beams and struts and increasing the length of the secondary beams beneath the platform.

Extensive modifications have been carried out on the platform in recent years – and extra loads added – related to the tieback of the *Hyme* field which came onstream last year and the switch to low-pressure production.

#### **Drilling halted**

In 2012, Statoil began and then halted the drilling of two wells into the *Njord Northwest* reservoir. It cannot resume this programme as the platform is not yet robust enough for drilling operations.

In summer 2016, production will be shut-in for a further two years and the platform brought to shore for further upgrades to make drilling possible again. According to partner Faroe, the hull is also a cause for concern. It will either require repair or replacement.

Various scenarios are being evaluated to ensure the long-term continuation of production with FEED the next step and concept selection in 2015.

The fate of *Njord B*, the fso owned by Teekay, also has to be decided under the *Njord Future* project. The unit was due to spend four or five months being upgraded at the Rosenberg WorleyParsons yard in Stavanger this year.

Last October it was decided to cancel the contract and halt study work after it became clear that the modifications would be more complex, extensive and costly than previously envisaged, Statoil says.

A dedicated project group has been set up to consider options ranging from in-situ upgrading to alternative storage solutions, suggesting that *Njord B* might be replaced.

*Njord A*, which came onstream in 1997 with a design life of 16 years, is currently approved for operations until 2022. But Statoil sees production continuing much longer than that.

In addition to infill drilling on the main field, there are substantial discovered resources in the area which can be developed through the *Njord* facilities. These include *Snilehorn* (30/17) with close to 60mmbbls and possibly ÖMV's recent *Pil/Bue* (31/8) discoveries.

## FLOATER BRIEFS

Premier Oil is still looking to establish itself as a serious North Sea operator - although with *Solan* (SEN, 31/3) plus fpos projects *Catcher* (31/6) in the UK and *Bream* (31/8) in Norway underway it is only a matter of time.

It began its North Sea operations when it took over Oilexco's assets at the beginning of the recession and inherited the venerable semi floater at **BALMORAL**.

The unit was in serious need of maintenance and in 2011 Premier implemented a three-year \$40mn improvement plan aimed

primarily at raising the integrity of the facility and production uptime.

Production throughput is now up at the floater primarily due to the *D3* well at the satellite *Brenda* field coming back onstream at 2,500boe/d. This is a good result and an example of what the new generation of North Sea operators can do with an ageing facility if they chose to devote time and money.

While on Premier, it has handed AMEC the FEED work for the **SEA LION** (31/2) tlp development, offshore the Falkland Islands.



This first ever development in such a southerly location (200km north of the islands) remote from industry support will be based around a tension leg platform in 450m with a 30,000t topside and an fso.

AMEC's contract is EPC plus interface management. It is being supported by drilling specialist KCA Deutag and Houston Offshore Engineering which has significant experience with tlps.

Eni continues to move on its **15/06 WEST HUB** (31/8) fpso development, offshore Angola. The SBM offshore fpso *N'Goma* is now ready to taken on location for hookup and final commissioning.

This development covers the *Sangos-Cinguvu-Mpungi* fields with 21 subsea wells - 12 producers, five water injectors and four WAG (water alternating gas) injectors in water from 1,000-1,500m.

Saipem has picked up two fpso-related contracts - with a total value of \$450mn - on opposite sides of the south Atlantic.

In Brazil, the Italian contractor has received a four-year extension of Petrobras' charter for *Cidade de Vitoria* which operates on the **GOLFINHO** field. The unit will be upgraded with enhanced water treatment facilities and

preparation for the tie-in of two high-liquid content gas-condensate wells in early 2016.

Across the Atlantic in Angola, the **GIMBOA** field fpso gets a two year extension. The unit has been in operation since 2006.

DNV GL has put out a new document to aid companies meet compliance requirements to use **FLOATERS** in American waters. This 'roadmap' provides all requirements for an fpso, an fso and what it calls an foi - or floating installation - to operate in the US Gulf of Mexico

MacGregor is to provide a Pusnes offloading system to Bumi Armada for the converted fpso **ARMADA KRAKEN** which will operate in UK waters on the eponymous field...Wison Offshore and WorleyParsons have signed an MOU to work together on **FLOATING LNG** projects in Australasia...Conversion of two vlcc's to fpso's for Total's **KAOMBO** (31/6) field, offshore Angola, will be carried out at SembCorp's Sembawang Shipyard in Singapore. The each unit will be able to process 200,000b/d and 3mcm/d with storage of 1.7mmbbls...**BW OFFSHORE** has now agreed to take full control of the fpso *Petroleo Nautipa* (31/8) from partner Tinworth in a deal valued at around \$60mn. The unit is under contract to Vaalco in Gabon through 2020 plus options.

## TECHNOLOGY BRIEFS

*From the North Sea (NT):* Norway's Oil & Energy Minister Tord Lien recently opened Statoil's NOK240mn (\$39mn) **IOR RESEARCH CENTRE** in Trondheim.

The initiative is part of the company's goal of lifting overall recovery to 60%. This would represent the additional production of some 4bnbbl over the 50% recovery which it reckons will be achieved through measures already being implemented.

Facilities include a drilling laboratory and a state-of-the-art scanner which allows the movement of oil through reservoir rocks to be followed at pore level.

The UK government has launched a consultation on how it might better encourage the development of **ULTRA-HPHT** reserves in

the North Sea. It has proposed a new cluster area allowance that will reduce the tax take from 62% to 30%.

The proposed tax change would allow drilling and development capex - but not decommissioning cost - to be included as a deduction from profits under the current supplementary corporation tax. This means that a £100mn expenditure would allow £62.5mn to be exempt from SCT.

## SUBSEA ENGINEERING & SPECIAL MATERIALS

1-2 October 2014 • REDDITCH, WORCS  
ENQUIRIES TO [KEL@KELTD.CO.UK](mailto:KEL@KELTD.CO.UK)

A KEL/Lloyd-Thomas Consultancy event

What is a bit strange is how an ultra-hpht field cluster would be defined. To qualify, a cluster would have to have 'some element of ultra-hpht potential' whether or not the field, prospect or find is known or expected to be of an ultra-hpht nature. We hope operators are smarter than we are.

The UK's PERA Technology has set up a competition for engineering and manufacturing **SME'S** to win up to £2m in R&D funding to help assist in the development of innovative new products.

Ten companies will be given a fully-funded application to the EU Horizon 2020 fund which provides grants of £400K to £2m to turn ideas into commercial prototypes.

The Southwest Research Institute, based in Austin TX, has begun the **STAR** programme, a multi-million dollar JIP to improve understanding of oil and gas separation technology...Pulse Structural Monitoring is supplying Hurricane Energy with a real-time **WELLHEAD FATIGUE MONITORING** system for operations on its *Lancaster* prospect.

## POLICY

### UK TAX REVIEW ANNOUNCED AS DRILLING DECLINES

*From Aberdeen (IF):* The UK government wants to hear the oil and gas industry view on the future of North Sea oil and gas taxation.

Danny Alexander, Chief Secretary to the Treasury, said the review offers the opportunity to put the fiscal regime on the best footing so the economic potential of the UK Continental Shelf can be maximised.

Oilfield tax specialist Tom Cartwright welcomed the study, but he was sceptical it would lead to new legislation before next year's national election.

'This is a result of recommendations in the Wood report (SEN, 30/23). It is a welcome step in the right direction, but I have serious doubts, with a general election looming in 2015, that we should expect any radical new measures before then,' Cartwright told SEN. 'The best we can hope for is some kind of road map setting out the general direction the government will be looking to take, perhaps with some specific proposals in addition.'

A spokeswoman for Shell told SEN the study, along with the recommendations from the Wood report, were an important basis for government and industry to work together to maximise recovery from the North Sea.

When asked whether the Treasury review could have a positive impact on future development of its *Fram* (29/23) field, the spokeswoman said Shell awaits the outcome of the study to fully understand the potential impacts on its portfolio.

At the start of last year, Shell announced it had decided to reassess the development plan for *Fram* due to unexpected initial drilling results. The spokeswoman told SEN this reassessment continues and the company is evaluating field development options.

#### Uncertainty

Industry body Oil & Gas UK (OGUK) has welcomed the review, as it says the sector faces an uncertain future.

Michael Tholen, OGUK economics director, said the current fiscal regime has become increasingly complicated and unpredictable, with high tax rates combined with a multiplicity of allowances.

He said targeted allowances had successfully encouraged a wave of activity in recent years, but their impact was diminishing in an ever more expensive business climate.

OGUK chief executive Malcolm Webb added, 'The Wood report calls for a tripartite approach to the UKCS between HM Treasury,



the new regulator (Oil & Gas Authority) and industry to maximise economic recovery. The current fiscal regime is becoming a barrier to investment, both in new fields and in the many mature opportunities. This will be the first instance of MER in action and we have high expectations for what the consultation will deliver.'

Meanwhile, there has been more bad news on the number of exploration and appraisal (E&A) wells being drilled in UK waters.

Business advisory firm Deloitte reports only seven E&A wells in the second quarter of this year - significantly lower than the 12 wells drilled in the previous quarter and the 17 drilled in the same period a year ago.

Deloitte says this drop may be down to companies controlling high costs and awaiting potential changes to the industry resulting from the Wood report and the review of the North Sea fiscal regime.

**ALL CHANGE:** The UK has yet another new energy minister – its 15th in just 17 years. Matt Hancock is now the fourth energy minister in the four years of the current coalition government.

The latest Westminster reshuffle sees Michael Fallon promoted to defence secretary after less than 16 months with the energy portfolio. Opposition politicians have described the continual changing of energy ministers as an absolute farce.

## AUSTRALIA REPEALS CO<sub>2</sub> EMISSIONS TAX

*From Australia (RW):* The Australian Parliament has repealed the 2014 carbon tax legislation on CO<sub>2</sub> emissions.

The legislation, which imposed a tax of A\$24.15/t, was passed into law by the previous Labor government in 2011. When in opposition, the Conservative coalition - of the Liberal and National parties led by now Prime Minister Tony Abbot - vowed to repeal the tax if elected. This pledge was a major plank in his election manifesto.

The repeal legislation easily passed the House of Representatives where the government has a majority, but it took several attempts to pass the Senate where mining maverick-turned politician Clive Palmer's Palmer United Party senators hold the balance of power.

### Long debate

After some 40 hours of debate and an amendment imposed by PUP, the repeal legislation finally passed through the Senate early last Thursday morning on a vote of 39 to 32. The amendment stipulates that companies pass on all savings to consumers by July 2015 or face a fine equivalent to 250% of what they have saved.

Prime Minister Abbott labelled the tax 'a useless, destructive tax which damaged jobs, which hurt families' cost of living and which didn't actually help the environment.'

Abbott added that his government planned to replace the tax with a taxpayer-financed A\$2.55bn fund to pay industry incentives to use cleaner energy.

The Australian Petroleum Production & Exploration Association chief executive David Byers said the repeal of the carbon pricing mechanism was significant as it removed a cost facing Australian LNG exporters competing in global markets. He said it was a cost that did not exist for Australia's international competitors.

The tax has been controversial from its inception. The original carbon tax, brought in by Prime Minister Julia Gillard in 2011 under pressure from the Greens - after she initially vowed not to - required Australia's top 500 polluting companies to pay a price on carbon emissions from July 2012.

It formed a central plank of the Gillard government's environmental commitment to cut carbon emissions by 5% of the 2000 levels by 2020.

The regime began with a fixed price of A\$23/t on carbon imposed from 1 July 2012, set to rise 2.5% a year in real terms for three years. It was planned to transform the tax into an emissions trading scheme with a floating price in mid-2015 with a floor of A\$15 and a ceiling of A\$20 above the expected national price to prevent volatility.

## UK GOVT BACKS DOWN OVER NEW AGENCY FUNDING

*From Aberdeen (IF):* The UK government has backed down on its plans to make the North Sea oil and gas industry foot the bill for the new regulatory agency.

It has now announced it will provide funding of £15mn over five years to help kick-start the establishment of the Oil & Gas Authority (OGA), but reconfirmed that, in the long term, OGA would still be 100% funded by industry.

It said that the contribution of £3mn per annum for five years from 2016-17 was to demonstrate commitment to the Aberdeen-based agency and make sure it was established as quickly as possible.

Sir Ian Wood's recent report into maximising recovery from British waters made a number of recommendations, including creation of the new arm's-length regulatory body.

Malcolm Webb, chief executive of industry body Oil & Gas UK, said last month it would show good governance, transparency and fairness that at least a part of the cost of the new regulator should be borne by the Department of Energy & Climate Change.

Webb said after last week's funding news that a well-resourced independent regulator was needed to put the principles of the Wood review into practice.

'We are delighted to see Government commitment to providing a share of the future funding of OGA,' Webb said.

A DECC spokesman told SEN this week that funding for the current regulatory process in 2013-14 was around £5.5mn in administration and research costs. At least 20% of the expenditure by the current regulator are estimated to be recovered through fees charged to industry for processing applications and other petroleum activity consents.

When asked how much a year was expected to be spent on OGA, the spokesman said the total size and cost of the OGA would be a matter for its CEO once appointed.

An additional £7mn was made available in this year's budget to allow for the recruitment of key leadership and specialist staff for OGA in 2014-15 and 2015-16.

### BUSINESS BRIEFS

Wood Group has boosted its workforce through the acquisition of Norwegian engineering house **AGILITY PROJECTS** from Agility Group in a deal valued at NOK1bn (~\$164mn). The parent is owned by Hitec Vision, Norway's biggest private equity group.

Agility Projects, based near Oslo, but with offices across Norway, has a team of 650 and an engineering operation in China. The Agility team will become part of Wood Group Mustang's offshore division. WG Mustang is best known for topside engineering.

While on Wood Group it has formed a link with **HYDRA OFFSHORE** of Ghana under a two-year support contract while WG Kenny executes the subsea engineering contract on Tullow Oil's *TEN* development (SEN, 31/8).

**AGR HOLDINGS**, said to be the industry's largest independent well management group, has been acquired from AGR Group by private

equity specialist Silverfleet Capital for NOK1.64bn (€195mn). The company which has reported growth of 13% annually over the last five years has offices in Norway, the UK, the US, Australia et al.

*From Australia (RW):* The largest shareholder in **ROC OIL** has failed in its challenge to the proposed merger with Horizon Oil (31/4).

Fund company Allan Gray, which owns 19.9% of Roc, called an extraordinary meeting two weeks ago to protest a loophole in the Australian Stock Exchange rules that allow one company to buy another with shares without obtaining approval from its shareholders. The fund manager wanted to change Roc's constitution to allow investors to vote on the Horizon transaction.

The resolution required the support of 75% of Roc's register, but only 46% of proxy votes backed the proposed change while 53% of

votes against any constitutional change. A meeting at which Horizon shareholders will be asked to vote on the deal is to be held in Sydney on 7 August.

In advance of the proposed demerger of parts of the **AKER SOLUTIONS** (31/4) group, due to be proposed to an EGM on 12 August and to take effect by the end of September, the AkerSol board has said it will writedown some of the assets of Aker Oilfield Services and the AOS/Marine Assets business area.

This is partly the result of the cancelled contract for *Aker Skandi* with Total (31/7) and a generally weaker market. The writedown is NOK1.3bn including an impairment charge on what has been called 'an onerous lease' on the vessel *Aker Wayfarer*.

When the demerger takes place, the 'new' Aker Solutions - which will include the subsea, umbilicals and MMO divisions - will represent just under 65% of the current business, while the 'old AkerSol', to be renamed Akastor, will have just over 35%.

The Q2 results of the group, divided in a pro forma ratio, were good in advance of the merger. New AkerSol reported revenue up 8% to NOK8.1bn off the back of a 13% rise in subsea sales and new orders up NOK15bn mostly from the subsea hardware contract for *Kaombo*. Akastor had revenue up 25% to NOK6bn.

In other results reporting, **TECHNIP** reported revenue up for both Q2 and H1, but a decline in EBTIDA for H1, partially the result of 'clients...slower to clear changes on...projects, reducing progress.' Subsea continues to provide margins of 15%.

**FMC** said its Subsea Technologies sector reported margin of nearly 15%, while total revenue was up 16% to \$2bn in Q2.

**OCEANEERING** had another record quarter with revenue of \$927mn, up up 13% and 10% from the previous year and quarter. But there is always a cloud and rov earnings for the period were flat.

...and finally **HELIX ENERGY SOLUTIONS** had a cracking quarter with revenue up 20% from Q1 and profit up 45% to \$109mn, mostly off the back of well intervention (up 14%) and robotics (up37%) work.

Ezra Holdings is consolidating its EMAS Marine subsidiary with **EOC** to create what it calls one of the largest offshore service support fleets....TE Connectivity has completed the acquisition of connector specialist **SEACON** (31/2). For those still wondering who TE is think Tyco Electronics.

**Wayne Jackson**, long time hand with Lake District connector specialist Tronic-cum-Expro-cum-Siemens Subsea, is moving on after more than 15 years. He is joining Aberdeen-based CR Encapsulation (CRE), which makes connectors and harness assemblies for rovs, as business development manager. CRE is majority owned by Front Row Energy Partners which is chaired by former Expro chief executive Graeme Coutts...**Denise Smiles** has taken over as ceo of pipe measurement specialist OMS...Petrobras ceo **Graça Foster** is the first Brazilian female engineer to be honoured with a distinguished lifetime achievement award by the SPE...**John Wishart**, group director at Lloyd's Register Energy, has been named chairman of technology organisation ITF.

	<b>WOOD GROUP KENNY</b>	<b>Over 35 years of offshore and subsea design and management experience</b> Experience that Delivers	
---	-----------------------------	--	---

*Editor:* Steve Sasanow. *Correspondents:* Ian Forsyth (Aberdeen); Rick Wilkinson (Australia); Bruce Nichols (Houston); Nick Terdre, John Sheehan (UK).

SUBSEA ENGINEERING NEWS (ISSN 0266-2205) is published twice monthly by Hart Energy Publishing LLP, Houston TX, USA. Editorial office: Knighton Enterprises Ltd, PO Box 27, Cheltenham GL53 0YH, UK; telephone: +44 (0)1242 - 574027; fax: +44 (0)1242 - 574102; e-mail: sen@btinternet.com; web-site: [www.subsea-news.co.uk](http://www.subsea-news.co.uk).

**2014 annual subscription: £425 + VAT (where applicable), \$675 USA. For multi-user subscriptions, contact us or check the website. Credit cards accepted subject to charges.**

© Hart Energy Publishing LLP. Material may not be reproduced in any form, photocopied or forwarded electronically without written permission of the publisher.



PDF Production by Monbro Ltd - [www.monbro.com](http://www.monbro.com)

Follow us on  @SubseaEngNews