



NORWAY: THE WAY FORWARD IS DOWN

Norway's love affair with upstream technology could be curtailed as there could be a major shift towards support for its downstream gas sector.

A consortium of oil companies, downstream operators and research institutes - Norsk Hydro, Statoil, Norske Shell, Statkraft, Borealis plus NTNU and Sintef - are supporting a long-term initiative to accelerate the development of technologies that will provide 'value-added' to Norway's significant gas reserves.

This group which has written to the Ministry of Petroleum & Energy is seeking NOK250-300mn (£20-25mn) per annum for at least ten years to support this proposal. This is ten times the funding level that the Norwegian government provides to *Demo 2000*, the upstream technology demonstration programme which has been running for five years.

While the initial funding period is ten years, SEN has been told that the development period for the technologies would be at least that long and could require up to 30 years to complete. Much of what is on the shopping list for the group could be described as 'clean' or environmentally friendly, but has also been called both 'high risk' and 'high cost'.

That is why so much government funding is being sought.

Much of the technology to be considered is based on converting natural gas to other energy forms which would be dependent on the sequestration of the carbon dioxide (CO₂) produced during the processes. Likely to be included in this proposal are cleaner ways of generating electricity which could then be exported to the continent, Scandinavia or the UK. There is also expected to be work on the production of hydrogen from natural gas which would be dependent on the development of a marketplace for hydrogen.

The companies involved are keenly aware of European Union competition rules governing governmental support for commercial activities. The group seems to be sure that this proposed funding would fall under provisions which allow up to 50% support for 'environmentally friendly' R&D activity.

Already underway is the formation of a gas innovation network known as Gass Tek which was established to bring together Norwegian technology companies operating in the Grenland, Kongsberg and Vestfold areas.

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PROJECT UPDATES

VENTURE MOVES ON KITTIWAKE SATELLITES

From the UK (NT): Having completed its takeover of the greater *Kittiwake* area assets from Shell and Esso late last year, Venture Production plans to bring *Gadwall* onstream this year, and to drill a water injector on the producing *Mallard* field.

Gadwall is the easiest of the satellites to develop. The 1996 discovery well will be re-entered and re-completed as a producer and tied into the *Mallard* pipeline back to *Kittiwake*, which passes by just 50m away. At a later stage *Goosander* and *Grouse* will be added in. *Venture* has ditched plans to run a new 3-D seismic survey over the area as the existing data is of good quality.

Meanwhile the company is still only in the early stages of deciding how to bring *Chestnut* (22/2) into permanent production. Having initially

announced that it would go subsea - the *Alba*, *Britannia* and *Andrew* platforms are all within roughly 20 km - *Venture* now says that a standalone option is also under consideration.

This was the solution mooted when the field was put on an extended test in 2001 using the Brøvig fpo *Crystal Ocean*. Brøvig's involvement contributed to its subsequent economic woes. This time the standalone solution may primarily be intended to boost *Venture's* bargaining power as of the three potential platform hosts, neither *Alba* nor *Britannia* appears to have much capacity at the moment. Not a new play.

(Also from the UK: Rumours abound that *Venture* and its *Kittiwake* area partner *Dana Petroleum* are in merger talks.)

WHERE HAVE ALL THE MAJORS GONE?

INDIES GO FRONT AND CENTRE IN GAS PROVINCE

From LOGIC Share Fair, Norwich: It is a brave new world in the Southern Basin of the UK sector where independents and mini-majors take the stage in competition with the international giants.

So companies like *Tullow Oil* and *Centrica* got to show their faces at this event which is meant to be a showcase for operators to tell the supply industry what they need and want. From this point of view, the supply side must have been disappointed by the turnout.

Shell was here, albeit represented by a UK novice who did not seem to know much about the operations in this part of the world, as were *Tullow*, *Centrica* and *GdF*, although only with a few personnel, not a presentation stand. But who was not here - giants like *BP*, *ExxonMobil*, *ConocoPhillips*, and *Total* along with the indies, eg *Perenco*, *Venture Production* and *ATP*, who are players in the Southern Basin.

Last year this event was marked by *Shell's* announcement of the merger of its UK/Dutch operations into a single entity, *ONEgas*. This year, the 'big news' is a move by the UK authorities into more digital 'okays' for offshore

activities. Not unimportant, but hardly earth-shattering. The fact is that no one had much notable to say about anything.

Fred and Ginger

For example, *Centrica* made a big song-and-dance about its *Rose* subsea project (SEN, 20/20). *Centrica's* *Tony Henshaw* wanted everyone to know that his company is NOT an independent minnow of the type of *Tullow* and *GdF*, but it did take a year to develop this single well field and put a hold on all other development work. This took place at a time when, by all accounts, there is a limited window - two to four years according to *John Lander* of *Tullow* - available to get new fields into production before some of the existing infrastructure is due for decommissioning.

Taking a year to do a one-well field like *Rose* is not really too long, especially as there were a number of decisions to be taken - tie-in directly to *Amethyst* or loop via *ATP's Hellvellyn* field and once the decision to take the direct route was made, do they lay the pipeline into the *Silverpit Trough* or go around it. These are serious decisions, but it may be that *Centrica* needs to

hire a few more hands so that they can do more than one job at a time.

This is in contrast to Tullow which is trying to juggle at least several balls at once to make the best use of its *Hewett* and *Thames* infrastructure. According to Lander, it is trying to 'fast-track' *Wren* (SEN, 20/xx) with Shell while also planning to drill *Monroe* (44/17b) with GdF and *Blythe* while looking at its 'fizzy' (high CO₂) finds around *Thames*..

And to Shell. John Lickvar, an amiable American who came to the UK last autumn to become head of supply chain management, tried to reassure the audience that northwest Europe is still important to the Anglo-Dutch major. His example of this is by selling its *Kittiwake/Mallard* assets to Venture and Dana!

A figure of \$1bn was thrown about relating to development spending for Shell EP Europe, but no specific major offshore projects were cited. There is the *Pierce* water injection project (SEN, 20/12), development of *Howe* (SEN, 20/20), *Penguins II* which includes gas lift and decommissioning work around *Brent*. Oh yes and there is that

'little' Norwegian gas project *Ormen Lange* (SEN, 20/18). There was also passing mention of the 'Atlantic Margin', but Lickvar was not clear exactly where that is.

More details on Shell's plans will come to light when the group completes its global capex review at the end of the first quarter.

SHAREFAIR SHORTS: With reduced activity in the offshore sector, the DTI is trying to nudge companies to diversify, into both the renewables and nuclear decommissioning markets. It hasn't given up on the oil and gas sector yet, though, with plans to assist with marketing into the West African, South American and Caspian Sea arenas.

Camcon which is hoping to break into the valve market with its rolling swing valve concept (SEN, 20/12) won the the East of England Energy Group's Innovation Award.

Everyone hopes to reduce costs, but few voice their targets. Step up **SHELL** with cost reduction plans equalling 3% per annum. Meanwhile it is making hopeful sounds that **CORRIB** can be kick-started again in the near future.

SUBSEA UK HEATS UP DESPITE BLIZZARD

From Aberdeen (BG): Get off your bums and get going was the message at *Subsea UK's* first showcase exhibition and conference last week.

More than 300 delegates fought through blizzards and blocked roads - twice that number were registered to attend - to get to this event and by the end of the day, most seemed to think it had all been worthwhile and that a whole new world is about to open up.

There are big prizes to be won in the subsea world, but they are being missed by British industry. This despite the fact the UK sector has all the necessary know-how. It's a matter of getting your act together, delegates were told, and collaborate to compete. UK companies need to set up a cohesive programme of work in order to compete on the global stage.

Hope ahead

With operators, big contractors, small companies (SME), the Department of Trade & Industry (DTI) and Scottish Enterprise all now in on the act, it looks like there is light at the end of the tunnel.

The UK subsea sector looks healthy enough with a survey showing the sector being worth £8.5bn a year with more than 40% (£3.6bn) being earned overseas. There is more to be won, though, from an offshore market which, it is estimated, will be valued at £10-17bn by 2005.

Jonathan Elliot-Jones, DTI energy group deputy director, opened the event by saying that the survey 'demonstrates the value of the sector to our overall economy'. This, he said, underlines the need for a body which will coordinate the efforts of individual companies to raise the profile of the sector and harness the expertise to unlock more overseas potential. This would have a positive impact on jobs and the economy.

'We have seen from other industry sectors - such as the motor sport and aerospace industries - just how much can be achieved by demonstrating the value of a sector in terms of profile raising and accessing funding,' Elliot-Jones pointed out. The success of this event was just the beginning. 'We will also work to improve the sector's performance in converting new technology into commercial products and taking that technology

into other sectors which offer growth potential,' he said.

The big need now is to speed up the introduction of new technology. It is the smaller companies who come up with the ideas, but getting them funded and accepted is not easy. Every speaker at conference confirmed this problem, but some pointed the way forward.

Technip Offshore's Brian Ross showed one way. Technip is the largest engineering/construction company in Europe, ranking fourth in the world. Ross said the group is looking for safe and successful suppliers, better communication and collaboration and a more efficient and competitive supply chain. He told delegates that to secure contracts, there is a need to register with Technip on www.epc-business.com and undergo an audit. It costs nothing to register and, given Technip's worldwide activity, it could open the way to a global market.

Some of Technip's requirements include improved speed and efficiency in welding equipment and deepwater deployment systems. The latter involves the use of synthetic fibre ropes, recognised as a major requirement. Ross said, 'One of the challenges I've been given is to develop our strategy towards the SMEs...There is a need to engage the supply chain and the SMEs

in some of the issues that we have coming up.'

John Mair, Subsea 7's global technology manager, put across a similar message saying, 'Make yourself known to us!,' He added that it is also important that SMEs are known to the international operators and government bodies abroad. This makes it easier for Subsea 7 to take in SMEs as subcontractors in the supply chain.

Structural support

Also from the UK (SS): David Appleford of Alpha Thames Engineering has called for more government support to develop a technology demonstration structure in the UK. ATE is the developer of the *AlphaPrime* modular seabed processing system which is currently being supported by Shell.

Appleford told SEN that given the opportunity to deploy his company's technology on a live field, he would be able to encourage other UK companies with complementary technologies to participate in such a demonstration. Already BEL Valves and AEI Cables have been working within ATE's qualification programme to make the *AlphaPrime* system 'catalogue ready' in Shell's technology jargon.

MMS TO BOOST 'DEEP-GAS' ACTIVITY

From Houston (RV): The Minerals Management Service (MMS) is hoping to provide a boost to shallow water Gulf of Mexico development activity as well as the US economy by granting long-awaited royalty relief for 'deep-gas' production on the continental shelf.

The new rule, filed with the Federal Register and effective as of 1 March, updates legislation laid down in February 2001 to provide royalty relief to all leases acquired before 2001.

According to the new rule, royalties will be suspended on the first 15bcf (420mcm) of gas produced from depths greater than 4,500m and less than 5,500m submdline or the first 25bcf (700mcm) produced beyond 5,500m on leases acquired before 2001.

Other provisos of the new rule include: a royalty suspension supplement of 5cf (140mcm) will be applied to future lease production for drilling a qualifying dry hole; eligibility of sidetrack wells to earn royalty suspensions based on drilling depth and

sidetrack length; and a set price threshold of \$9.34/mmbtu to discontinue royalty relief.

The previous legislation granted royalty relief only for deep gas production on leases issued after 26 March 2001. For the past two years, industry had clamoured to amend this rule to include all shallow water acreage as the relief only applied to a fraction of the acreage in the GoM.

US Interior Secretary Gale Norton estimated that this new rule will save American consumers \$570m per year and help ensure national energy security by boosting domestic production. Norton



added that the drilling and platform upgrades associated with the extra deep gas production could generate as many as 26,000 new jobs that could be sustained for at least the next six years.

Just as the new rule was announced, rumours began circling that Shell E&P Co may have made an ultra-deep gas discovery on its *Shark* prospect on South Timbalier 174. Reports surfaced that the company had discovered more than 2tcf (56bcm) of gas in a well drilled below the 7,600m mark

and had placed an order for an exceptionally high-pressure wellhead.

While Shell declined to comment on the status of the well, project partner Nexen received a strong boost in its stock price based on the rumour. The company even went so far as to issue a news release stating the well is currently drilling and that the company has no information regarding this well which would account for the increase in the share price.

PROJECT BRIEFS

From Houston (RV): Amerada Hess has ordered a new 5x2 10Ksi side-valve (horizontal) tree and control system from Kvaerner Oilfield Products for an upcoming 600m tieback job in the Gulf of Mexico. The new tree will be deployed on Hess's **NORTHWESTERN** field in Garden Banks 200 as a replacement for a tree which had been removed from the field.

Hess recently completed the tie-in of its third well on the nearby *Penn State* field in GB216 and to achieve early production had taken an existing tree from *Northwestern* off a depleted well rather than wait for a new unit to be delivered.

As a condition of this swap, the *Northwestern* partnership dictated that the tree would be replaced if it were used. Hess said it is formulating plans to drill another well on *Northwestern* later this year for the tree and that the new system will be similar to one installed by KOP on the field last year.

The order will be the first to use KOP's new supply chain model the company instigated in December in an attempt to shorten the delivery lead time and offer more competitive pricing. As per this model, the tree will be manufactured in Tranby, Norway, control systems in Aberdeen and SIT testing performed at the company's new complex in Mobile, Alabama.

Speaking of KOP, it has picked up the valuable umbilical contract for BP's **RHUM** field in the UK sector (SEN, 20/12). This is a 44km tieback to the *Bruce* complex.

From the UK (NT): CNR is still pondering whether to take the big step of installing a subsea raw seawater injection system on the **COLUMBA E** terrace (SEN 20/16) as it awaits DTI approval for

its plan to drill two new producers and two new injectors on the field.

The producers are scheduled to be drilled this year and, like all the previous wells on the field, will be drilled from the *Ninian Southern* platform. The injectors, scheduled for 2005, will be subsea wells and later this year, a decision will have to be taken either to pump in raw seawater at the site or supply injection water by a 7km 8in pipeline from the platform.

The environmental statement suggested that the former solution would be economically advantageous. In addition to avoiding the need for a pipeline, it would deliver higher pressure water into the reservoir, thus boosting recovery. This would be a first, hence the caution.

Elsewhere BP has contracted Stolt Offshore to lay the 10km 6in **CLAIR** gas export pipeline. It will tie into the West of Shetlands gas export line to Sullom Voe. The work is expected to be carried out by layship *Seaway Falcon* this season with *Clair* is due onstream in September.

One subsea project not likely to go ahead in 2004 is **NOA**. This will be a satellite tieback to Noble Energy's *Mari-B* gas development, offshore Israel, which only just came onstream. A quick look at Noble's capex budget for 2004 revealed that it has not allocated any funds for this field, so it won't be ready at least until 2005.

From Houston (RV): Word on the street here suggests that Total has signed up Saipem and FMC for the main contracts for its **ROSA/LIRIO** development, offshore Angola (SEN, 19/21). Reports have it that Saipem will handle the riser, flow line and umbilical portion of the job and FMC will supply the subsea production hardware.

Total has confirmed that pre-engineering contracts have been signed for these subsea projects, but could not reveal any specifics as it is waiting for project sanction from the Angolan state oil company Sonangol.

Rosa/Lirio will be developed as tiebacks to the *Girassol* fpso as part of Total's plan to expand the plateau production. The fields will produce from multiple wells to eight four-slot production manifolds - each expandable to six slots - with direct water injection from a teed flow line, similar to the *Girassol* configuration.

In December, the operator tied back its first satellite field to the vessel with eight wells from the *Jasmim* field. With *Jasmim*, production to the floater should exceed 230,000b/d.

From Melbourne (TR): Almost A\$70mn of new petroleum exploration activity will be triggered off by the recent announcement of five new **OFFSHORE EXPLORATION PERMITS** in federal waters off Tasmania, Western Australia and South Australia. The new permits will be jointly administered with state governments. Two of the permits are close to recently discovered gas accumulations and have significant potential.

In Western Australia's commercially proven Carnarvon Basin, permit WA-350-P was awarded to Woodside Energy and permit WA-351-P awarded to BHPBilliton Petroleum. T/36P, awarded to Santos Offshore and Unocal South Australia, is located in the Sorell Basin off the west coast of Tasmania in a lightly explored area with intriguing signs of oil and large structures capable of trapping hydrocarbons.

FLOATER BRIEFS

From Houston (RV): The 47m long, 39m dia hull for BP's **MAD DOG** truss spar has arrived in the Gulf of Mexico. The hull completed the three-week cruise from the Technip's Mantyluoto yard in Pori, Finland, to Pascagoula, Mississippi, in late January. It is expected to depart again around mid-year for installation in 1,350m on Green Canyon 826.

The topsides for the floater is under construction at McDermott's Morgan City, Louisiana, yard and is approximately 80% complete. Once installed, the spar will have 16 well slots, 13 slated for producers with room for three-to-four subsea

EPP 33 in the Otway Basin off South Australia has gone to Kerr-McGee. It covers under-explored deepwater areas. WA-349-P went to Chimelle Petroleum. This permit, in the Perth Basin, is close to recent oil finds and gas pipelines.

From the UK (NT): Having brought *Clapham* onstream in November (SEN, 20/20), Petro-Canada is now moving on to **PICT**, the next stage of subsea development using the *Triton* fpso and infrastructure in the *Guillemot West* area. *Pict*, formerly called *Grebe* when it was a Shell prospect, lies some 30km from the fpso and will have three producers tied in to an existing manifold. The FEED is being carried out by Pegasus. Petro-Canada aims to get internal approval in April and achieve start-up in the second quarter of next year.

Shell E&P Co has decided to trench and backfill the 9.7km 6.625in flowline - for flow assurance benefits - for the upcoming **GLIDER** tieback in Green Canyon 248 to its *Brutus* tension leg platform. At just over 1,000m water depth, this is believed to be the deepest buried flowline anywhere. Canyon Offshore will carry out the work using its T-750 trencher, built by Perry Slingsby Systems working off *Northern Canyon*.

Water production has cut back production by 20% at Ramco's **SEVEN HEADS** subsea gas field, offshore Eire...Energy analysts at Ernst & Young are suggesting that **NORWAY** could be hit by the same type of 'oil major flight' as has affected the UK. As one would expect from a company with origins as accountants, they are looking for tax reduction to improve the prospects of foreign investment.

tiebacks. BP's latest spar will have a processing capacity of 80,000b/d, 1.1mcm/d and 50,000bw/d. The unit will be equipped with a 4,800t completion rig supplied by Pride.

Mad Dog will also be noteworthy as the first permanent production facility held on location using polyester moorings, supplied by Marlow Ropes. First oil is expected by year-end with peak rates reached within 12 months.

Statoil expects to keep the PGS production ship *Petrojarl 1* on charter for several more years having just upgraded the reserves on the **GLITNE**

field in Norway. The licence partners will now drill a sixth producer, double the original number. Reserves are now put at 50mmbbls.

From Houston (RV): Installation of the first piece of ExxonMobil's **KIZOMBA** puzzle is in place. The *Kizomba A* tension leg platform, the drilling and wellhead platform for the massive \$3.4bn plan to produce the *Hungo* and *Chocalho* fields, in Block 15 off Angola, has been installed and drilling has begun on the development's 33 production and 26 injection wells.

The tlp, designed by ABB Lummus Global and built by Daewoo, is moored in 1,173m and will drill using a rig supplied by Pride. It was installed by Heerema's crane-vessel *Thialf*. The wells will produce to the tlp and a 250,000b/d fpso - storage capacity of 2.2mmbbl - will handle the processing and export to an offloading buoy. Cameron supplies subsea injection trees and Saibos installs risers, umbilicals and flow lines.

The fpso for the field, designed by the Fluor Daniel-AMEC alliance, is nearing completion at the

Hyundai yard in South Korea and is expected to be installed in the second or third quarter with first oil before the end of the year.

The company will follow this project with *Kizomba B*, using a similar tlp-to-fpsos plan to produce one billion barrels from the *Kissanje* and *Dikanza* fields in slightly shallower (1,036m) waters. The same players are involved - Daewoo and ABB Lummus on the tlp and Hyundai/Fluor- Amec handling an Identikit fpso. Other contracts include Pride for the tlp rig, Cameron for the trees, Saibos for SURF work and FMC Sofec for the spread mooring system. *Kizomba B* will be installed in June 2005 with first oil in 2006.

IHC Caland, parent of floating production contractor **SBM**, had a tough 2003 with booked orders down 25% and a backlog down 6%. Its outlook for new business this year is optimistic, but it will add only one new unit to its fleet in 2004 - fpso *Marlim Sul* for Petrobras - bringing its total fleet to 14 - 11 fpsos and three fso. Due to uncertainties in the marketplace, it has declined to make a profit forecast for 2004.

TECHNOLOGY

CLEARWELL LOOKS TO EXPAND HOT TAP DEAL

ClearWell Subsea, an Aberdeen engineering consultancy which recently won a UK 'Smart' award for innovation, is negotiating a major licencing deal with a subsidiary of Statoil to take its technology into the international market.

ClearWell which has been in business for seven years has developed a new 'hot tap' method capable of operating at higher temperatures (250bar) than conventional equipment. The concept on which the system, dubbed SeaTap, is based was first conceived for use on a subsea xmas tree which had a frozen lower master valve. The tree was tapped and flushed with acid to dissolve a major scaling problem.

The initial design for the pipeline application was carried out three years ago under a contract with Stolt Offshore which was looking for a tapping system capable of working at high temperatures. This was required for the *Ross* field gas export pipeline which linked into the *Frigg* system. The original design for Stolt was for an 8in pipeline, while current work on a 16in version is expected to be qualified later this year.

Unfortunately this was not quite quick enough to allow SeaTap to be used this summer on BP's *Forties Pipeline System*. This job will see the first 'hot tap' of an oil pipeline to install a new tee as part of the tie-in work for the export system for EnCana's *Buzzard* development (SEN, 20/20).

This delay has not deterred PipeCare. This Statoil subsidiary already has a licence to use the system in Norway, notably on the *Åsgard* field where Statoil expects to need a number of new pipeline tie-in points for new satellite fields. The plan is to deploy SeaTap as part of the PRS (pipeline repair system) which Statoil has on-call for pipeline ties and emergency repairs.

PipeCare has more ambitious plans for SeaTap. It wants to market the system in the international arena. Negotiations are already underway with ClearWell to extend its licencing agreement. The Aberdeen company is a pure engineering and design house and would never have had the opportunity to deploy SeaTap itself. This deal would secure ongoing income for what is a relatively 'bijou' company.

BUSINESS BRIEFS

Specialist umbilical manufacturer **CORTLAND FIBRON BX** has just moved into a new manufacturing facility north of London as part of a multi-million pound investment plan. The new site will enable CFBX to boost its manufacturing capacity while increasing the length and weight of umbilicals it can produce.

CFBX already is a player in the diving umbilical market, but it is branching out. It recently supplied the umbilical for DeBeers seabed mining crawler plus the umbilical - 1,800m and 2,000t - for the first Perry Slingsby Systems' T-750 trencher, working for Canyon Offshore.

It is now due to begin work on the order from Kvaerner Oilfield Products for a pair of workover umbilicals for Total's deepwater *Dalia* project, offshore Angola. The initial order is for two 1,700m umbilicals with the prospect of an order for a third later this year.

Speaking of **KOP**, it has brought 10 Angolans to its Aberdeen controls centre for a two-year training programme in advance of supplying the *Dalia* hardware. All the Angolans are university educated and recently spent time in Cuba finishing their studies. Born in West Africa and educated in Cuba, this group will have to be hardy to survive the rigours of the Aberdonian winter.

From the UK (NT): **RAMNÄS**, the Swedish anchor chain manufacturer, has been saved from bankruptcy and will start a new life in March under new owners and a new name - Ramnäs Chain - but with half the 65 workforce shed.

As Scana Ramnäs, the company was placed in receivership last August as orders dried up. Now it has been acquired by SRK, a partly state-owned investment company set up to rescue ailing enterprises, and Arvid Svensson, a private investor. The partners - SRK will own 60% and AS 40% - reportedly paid close to SEK10mn. The acquisition was no doubt facilitated by the award of a SEK20mn order for 1,650t of anchor chain from Norway. Managing director Carina Andersson will stay in her post.

Meanwhile three former marketing men from Scana Ramnäs, including ex-marketing manager Håkan Petterson, have set up UK-based Sanmar which will represent the Zhenjiang Anchor Chain Factory of China in Europe.

Tom Ehret continues to fill management slots in Stolt Offshore with his former team from the Coflexip Stena Offshore days. The most recent addition is **MARK PREECE** who takes on the new role of corporate veep for business development. Preece had been managing director of Bibby Line. Other former CSO appointments include **ALAN LEATT**, chief technology officer and Jean-Luc Laloë, corporate veep for strategic planning...**CHRIS BIRD**, formerly with Kvaerner Oil & Gas, has been named business manager for subsea well intervention with UWG...SEN understands that **COLIN SWANN**, formerly with ABB Vetco Gray in Aberdeen, has joined the FMC sales team in Singapore and has found rich pickings for subsea xmas tree orders in SE Asia.

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