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### ABBREVIATIONS

The following are used throughout Petroleum Review: kW = kilowatts (103)

- $mn = million (10^6)$
- bn = billion  $(10^9)$
- tn = trillion (1012)
- cf = cubic feet
- cm = cubic metres boe = barrels of oil
- equivalent
- t/v = tonnes/vear

t/d = tonnes/day

MW = megawatts (106)

GW = gigawatts (109)

sq km = square kilometres

kWh = kilowatt hour

km = kilometre

b/d = barrels/day

No single letter abbreviations are used. Abbreviations go together eg. 100mn cf/y = 100 million cubic feet per year.

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Front cover: Load out of the Cakerawala living guarter module for Samsung Heavy Industries/CTOC. Photo courtesy: Emtunga

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The Institute of Petroleum as a body is not responsible either for the statements made or opinions expressed in these pages. Those readers wishing to attend future events advertised are advised to check with the contacts in the organisation listed, closer to the date, in case of late changes or cancellations.





# **ROUNFrom the Editor**

### Strange times

When the world's top oil and gas executives meet at this year's IP Week (18–21 February) they will have much to talk about. In addition to their reaction to the excellent programme, they, like everyone else, will be trying to gauge the outlook for oil and gas prices in 2002.

They will have to find satisfactory answers to a number of questions that have become so convoluted that they resemble riddles, and they will also have to gauge the likely impact – if any – of several truly wild cards in the pack.

The IEA (International Energy Agency) assesses 2001 oil demand growth at just 100,000 b/d, the lowest since 1985. Demand growth for 2002 is currently projected at just 550,000 b/d. Is this realistic? The IEA anticipates a mid-year recovery in the US and expects North America (+210,000 b/d) and China (+160,000 b/d) to account for nearly 70% of demand growth in 2002. Europe, Latin America, OECD Pacific and Africa are seen as virtually growth-free zones in 2002. What does this mean for the companies?

The IEA projects non-Opec production growth in 2002 at 810,000 b/d, revised down by 110,000 b/d to take account of announced export cuts. The main incremental supply is to come from Russia (440,000 b/d), Canada (240,000 b/d) and Brazil (120,000 b/d).

Now, 810,000 b/d of incremental non-Opec production and only 550,000 b/d of incremental demand is a mismatch – but not very severe. So the key question becomes: Will the announced and agreed production cutbacks be adhered to or, more realistically, how large will be the quota 'cheating'?

Russia has announced a cutback of 150,000 b/d, which is exactly the normal average reduction in exports in the first quarter as a result of bad weather delays at the Russian loading ports. The government has reduced duties on the export of oil products. Export capacity has effectively increased with the opening of the CPC pipeline (see p21) and at least three Russian companies have plans to increase oil production by over 20% in 2002.

Norway has announced a 150,000 b/d cut in production. Mexico has announced an export reduction of 100,000 b/d. However, the reduction is to the level it was exporting in November 2001. Angola has pledged a 22,500 b/d cut – too small to be readily noticed. Oman has pledged a 40,000 b/d cutback from the 950,000 b/d it produces.

For Opec, 2002 looks extraordinarily tough. Prices of the Opec basket are currently around \$18; many of the governments, still overwhelmingly dependent on hydrocarbons income, require \$22–25 to even hope to get their budgets to balance. For the Opec 10 (excluding Iraq), their December 2001 output, at 23.65mn b/d, was close to their September 2001 quota of 23.201mn b/d. However, Iraq is outside the quota and produced 2mn b/d in December, down from its usual 2.8mn b/d.

From January 2002 the new quota is 21.701mn b/d which, for a group that has a sustainable capacity rated at 29.35mn b/d, means they will have 7.649mn b/d of unused capacity. Now, as far as can be determined, Opec has never held together at this level of spare capacity. It approached this level in 1985, but all the pain was borne by Saudi Arabia which then vowed never to repeat the process, dropped the price and expanded its output.

However, this year there are a series of wild cards which, by their very nature, may be key influences or no influence at all.

The first is Saudi Arabia. Over the last decade economic growth has been 1%/y, demographic growth has been 3.5%/y and the increase in the workforce 4.5%/y. As a result, the country has between 15% and 18% unemployment, debt of 120% of GNP to its banks and nationals. This, in turn, has led to the often repeated statement that the country needs an oil price of between \$22 and \$25/b and production of 8mn b/d to be solvent. Its quota from 1 January 2002 is 7.053mn b/d.

The second the collapse of Enron and the collateral damage to its auditors – Andersen. Strangely most company executives will be hoping that the troubles can be traced to a few rogue individuals behaving badly or illegally. The reason being that otherwise we are looking at a systemic failure – auditors failing to audit, stock analysts failing to analyse, regulators failing to

### au oirio

### IP website relaunch

The Institute of Petroleum is pleased to announce the re-launch of its website **www.petroleum.co.uk** to coincide with one of the industry's most prestigious events, IP Week 2002 (18–21 February 2002; see p31).

Having gone through extensive redevelopment in 2001, the new website aims to give IP Members and nonmembers an exclusive close-up of what's happening in the industry and at the Institute.

From the latest training courses, conferences and events to the progress of ongoing projects, www.petroleum.co.uk also provides a news information service, bringing the week's top news stories, and featuring a daily news summary.

With reporting from some of the IP's key events, such as the IP Awards and IP Week, Members can gain access to in-depth interviews with some of the industry's leading figureheads. Also new to the site is a 'Hot Topics' section, featuring the industry's current and most talked about issues.

regulate, and bankers failing to protect stockholders' money by monitoring their loans. In an important sense Enron's political contributions are diverting, but not necessarily relevant. Already there is a mounting clamour for new regulation, new controls.

There will be much for the oil industry's executives to talk about at this year's IP Week.

### Christmas quiz

Congratulations to our Christmas quiz winners: A K Woodward, and runner up Ian Byrne, who has chosen to attend the IP Week Dinner. The answers are posted on the IP website (www.petroleum.co.uk).

### **Technology reach**

TotalFinaElf can now claim the longest producing North Sea tie-back with the 54-km Nuggets 1 tie-back to Alwyn North. When Shell brings onstream its 65-km Penguins tie-back in 2002/3 it will then take the record.

Chris Skrebowski

### IT'S NOT TOO LATE...

Hurry if you want to attend IP Week events on 18–21 February 2002. For more information, visit the IP website @ www.petroleum.co.uk or see the advert on p31.

### In Brief

# **NEW**<sub>pstream</sub>

### UK

**BP is reported to be considering plans** for a second platform for its Clair field, west of Shetlands.

Roots Gas, a subsidiary of Aberdeenbased First Oil, is understood to have acquired a 39.32% stake in the southern North Sea Audrey field from Centrica Resources and BG, as well as 15% interests in the nearby Ann and Alison fields from Agip, for an undisclosed sum.

UK Energy Minister Brian Wilson has approved the subsea development of the North Sea Madoes, Mirren and Maclure fields. The three projects are expected to cost over £200mn to develop and will produce 60,000 b/d of oil and nearly 100bn cf/d of gas.

The UK Government has announced that PanCanadian Energy's Buzzard field in the northern sector of the North Sea is the largest made in more than a decade. The company recently announced that recoverable reserves are larger than previously thought and could be as much as 400mn barrels of oil.

The UK Government has authorised US company ATP and CalEnergy to start work on the 43/21a gas discovery in the North Sea which has been lying fallow for the past 10 years.

The UK Government has awarded licences to newcomers Tuscan and Acorn so that they can restart production from the UK's oldest offshore oil field – Argyll, in North Sea block 30/24. It is expected that they may also reopen the old Duncan and Innes fields, abandoned at the same time as Argyll.

Venture Production is reported to be seeking UK Government approval for development of the Sycamore field in central North Sea block 16/12a. The phased development plan proposes a total of seven subsea wells, with the first to be brought onstream in May 2002.

Pegasus International is reported to have secured a contract for the detailed design engineering on Talisman Energy's Kildrummy field in the North Sea which is to be developed as a subsea tie-back to the Piper Bravo platform.

**Europe** Aker Stord has been awarded a NKr5bn contract to fabricate a floating

### Sincor project on schedule

Construction work on the Sincor project in Venezuela completed on schedule at the end of 2001 and start-up is now underway reports TotalFinaElf, the main shareholder in the project (47%). Partners are PdVSA (38%) and Statoil (15%).

At production plateau, the project will produce 200,000 b/d of 8° to 8.5° API extra-heavy crude oil in the Zuata region of the Orinoco Belt. This crude oil will be diluted and piped to the Jose facility on the Caribbean coast, where it will be upgraded into 180,000 b/d of high-quality 32° API syncrude with a very low sulfur content, known as Zuata Sweet.

Since initial production began in December 2000, over 15mn barrels of extra-heavy crude oil have been produced and blended with lighter crude to obtain a 16° API oil for export. With the completion of the Jose upgrader, the entire integrated chain will now be gradually started up, according to TotalFinaElf. Initial syncrude production is slated for February 2002.

Overall investment in the Sincor project totals \$4.2bn, reported to be the largest industrial development in Venezuela to date.

### Eastern GoM licensing round

The US Minerals Management Service (MMS) finally held its long-disputed auction in December 2001, offering leases on offshore blocks in the eastern Gulf of Mexico, a region that includes 76mn acres off the southwestern and western Florida coasts, writes *Judith Gurney*. Fears of environmental damage to the Florida coastline as a result of oil and gas production have not only prevented the auction of offshore leases here since 1988, but also work on leases granted in auctions held prior to that date.

The auction was originally intended to include 5.9mn acres, but its coverage was reduced to 1.5mn acres following protests from environmentalists and from Florida Governor Jeb Bush, the President's brother. Blocks considered too close to the Florida shore were excluded, despite their promise of natural gas reserves. These were located close to Chevron's Destin Dome project covering 11 blocks leased in the mid-1980s. Although Destin Dome is believed to hold between 1.3tn and 2tn cf of gas reserves in an extension of the gas-rich coastal Norphlet formation, Chevron has yet to receive government permission to proceed with its development despite a favourable 1999 environmental impact statement.

A total of 17 companies bid \$458.9mn for 95 of the 233 blocks offered. All of these were located more than 100 miles from the Florida coast and none extended more than 24 miles into the eastern region. All were in water depths of 1,600 metres or deeper, and most were located in the DeSoto Canyon and ultra-deep Lloyd Ridge areas. Shell Offshore was the most active bidder, with 28 apparent high bids, followed by Anadarko with 25 high bids. These two companies, along with Kerr-McGee, accounted for 70% of the auction's high bids. Spinnaker, Dominion, Chevron and Petrobras were also active bidders, but neither ExxonMobil nor BP participated in the auction.

Unless the climate in Congress, Florida and the country as a whole changes, it is unlikely that there will be further auctions of blocks in the eastern region of the Gulf until 2008 at the earliest.

### Work due to begin on Blue Atlantic pipeline

El Paso Corporation of Texas, US, is making preparations to begin work on the Blue Atlantic Transmission System, a pipeline project designed to transport new natural gas supplies off the coast of Canada's Nova Scotia to the east and northeast regions of the US, writes *Monica Dobie*.

Technical experts from Canada and the US are examining the design and technology issues involved in the construction of the project – a 750-mile, 36inch offshore pipeline designed to carry up to 1bn cf/d of gas.

El Paso still needs approval for installation by both countries' governments, but anticipates that the project will be in service by the end of 2005.

The pipeline would follow a subsea route from Sable Island to the southern coast of Nova Scotia, continuing subsea to landing points in New York and New Jersey. The estimated cost of the project is \$1.6bn.

# **NEW**<sub>pstream</sub>

### **Oil-for-food**

Iraq's petroleum revenues are surging again through the UN's food-for-oil programme, six months after a row over the future of the scheme had led to exports being suspended, writes *Keith Nuthall*. As the scheme's 11th phase started in December 2001, during the week ending 7 December Baghdad earned an estimated euro 110mn in revenue; the previous week Iraq had earned euro 334mn. According to the UN, Iraqi petroleum exports in the previous phase 10 of the programme reached just over 300mn barrels. Nearly 70% of that oil went to the US market, with 27.5% destined for Europe and 3.1% for Asia.

Meanwhile, the value of contracts frozen by the Security Council because of concerns about the use of their revenues continued to rise, reaching \$4.51bn.

### **Oil sands investment**

PetroCanada, Canada's third largest oil producer, has proposed to spend up to C\$5.8bn on new oil sands projects in northern Alberta, reports *Monica Dobie*. The company has applied to regulators to develop its Meadow Creek lease, about 45 km south of Fort McMurray, Alberta, at a cost of between \$700mn and \$800mn. The project is expected to produce up to 80,000 b/d of tar-like bitumen, with start-up in 2007.

PetroCanada has also applied to convert its Strathcona refinery, east of Edmonton, into an upgrader to process bitumen, at a cost of up to C\$5bn over the next 10 years.

The conversion would allow the refinery to produce low-sulfur gasoline and replace existing light crude feed-stock.

### First crude shipment from QHD field

ChevronTexaco has shipped its first cargo of crude oil from the QHD 32-6 field in China's Bohai Bay. Some 500,000 barrels of 16.9° API crude were offloaded from the 1mn-barrel capacity *Bohai Shiji* FPSO for tanker transport to international markets. The QHD crude is very low in sulfur and is the newest crude oil on the Asian market. 'We anticipate significant growth of production volumes of this type of crude from the Bohai Gulf area within the next five years, making this oil an important new energy source for Asia,' commented Sam Snyder, Managing Director of ChevronTexaco's China Strategic Business Unit.

Current development of the QHD 32-6 field comprises 46 production wells from two wellhead platforms, with production transported to an FPSO through a single-point mooring system. The field is currently producing 29,000 b/d of oil. Full field development, with average production of 65,000 b/d, is expected in October 2002 from up to 160 wells from six platform structures.

Field partners are CNOOC (51%), ChevronTexaco (24.5%) and BP (24.5%).

### UK licensing round

UK Energy Minister Brian Wilson has launched the UK's 20th offshore licensing round, opening up nearly 300 blocks in the North Sea for competitive licence bids. The closing date for applications is 16 April 2002. After four years, companies will have to elect half of the licence to give back to the government. Anything remaining that they do not have a clear development plan for within another four years will also have to be returned. Fields that are developed under the 20th round will have a licence period of 26 years.

A comprehensive strategic environmental assessment was carried out in preparation for the round; full details can be viewed at www.habitatsdirective.org/sea2 It discovered some large depressions on the seabed that could be of particular biological interest. Portions of four blocks have thus been excluded from licensing until further information is available. Skene onstream

ExxonMobil subsidiary Mobil North Sea Ltd (MNSL) has brought onstream its £250mn Skene field in block 9/19 in the northern sector of the North Sea.

The field is expected to produce 180mn cf/d of gas plus associated liquids via five subsea wells tied back to the Beryl Alpha production facilities.

Provisions have also been made for three additional wells in the future. Recoverable field reserves are put at 95mn boe.

Gas is exported from Beryl via the Scottish Area Gas Evacuation (SAGE) pipeline to the MNSL-operated gas processing plant at St Fergus. The oil and condensate will be combined with Beryl crude and exported by tanker to a number of oil terminals onshore the UK.

Project partners are: MNSL (38.21%), Kerr-McGee (33.33%), Enterprise Oil (15.89%), Amerada Hess (9.07%) and OMV (3.5%).

### In Brief

production platform for Statoil's NKr17bn Kristin field in the North Sea. Field reserves are put at 220mn barrels of condensate and 8.5mn tonnes of gas liquids. Kristin is due onstream in October 2005.

Statoil is understood to have acquired a 20% stake in and taken over the operatorship of ExxonMobil's Fprospect on the Norwegian Continental Shelf, as well as taking an 11% stake in the Tampen area of the North Sea.

Norsk Hydro reports that it plans to invest some NKr2.4bn on oil and gas exploration in 2002, of which some NKr1.8bn will relate to exploration outside of the Norwegian Continental Shelf. The total exploration budget is some 20% higher than that for 2001.

Australian independent Amity Oil's Gocerler-2 appraisal well in Turkey is reported to have tested 5.4mn cfld of gas.

Norsk Hydro reports that the development plan for the Ormen Lange field is still expected to be completed in 2003.

The Norwegian Ministry of Petroleum and Energy has announced that 32 blocks and part blocks are to be offered in its 17th licensing round on the Norwegian Continental Shelf. The closing date for submissions is 18 March 2002. Licences will be awarded in 2Q2002.

Statoil is reported to be planning to build a new natural gas liquids plant at Kollsnes to process gas from the North Sea Kvitebjorn field. The NKr3bn facility is due to be commissioned in October 2004.

Shell is reported to be planning to bring onstream its Rogn South field in the Norwegian sector of the North Sea by end-2002 via a subsea tie-back to the Draugen platform.

Dong of Denmark is reported to be buying Norwegian oil and gas company Pelican for \$46.6mn. Pelican owns equity in the North Sea Ula (4%), Gyda (5%), Tambar (15%) and Glitne (9.3%) fields.

**BP is reported to be planning to sell** the Libyan, Egyptian and Syrian upstream assets of Veba Oil & Gas which its acquired as part of its purchase of a 51% stake in Veba Oel from E.On of Germany in mid-2001.



Phillips Petroleum is understood to be planning to invest between NKr15bn and NKr20bn at its Ekofisk oil field in the North Sea by 2010. The company is also reported to be planning to boost production by 25,000 bld to 425,000 bld.

#### Eastern Europe

Carpathian Resources reports that its Postorna 1 well in the Czech part of the Vienna Basin has tested at 16.8 cm/d of oil. The 'significant' discovery is located close to existing infrastructure.

### North America

The Petroleum Services Association of Canada is reported to have forecast that the Canadian oil and gas industry will drill 13,386 wells in 2002, down from a record 18,024 wells drilled in 2001.

**BP is reported to be planning to cut** 120 of its 600-strong Anchorage, Alaska-based workforce and to abandon its \$600mn Liberty frontier development in favour of enhancing production at its existing North Slope fields at Prudhoe Bay, Kuparuk and Milne Point which hold some 7bn boe of reserves.

Canadian independent Husky Oil is reported to have secured approval for the C\$2.3bn FPSO development of the 230mn barrel White Rose field offshore Newfoundland.

The US Minerals Management Service (MMS) is reported to have approved the use of FPSOs in the Gulf of Mexico.

**Conoco (operator, 75%) reports that it** is to jointly develop the 150mn boe Gulf of Mexico Magnolia field with Ocean Energy (25%), investing some \$600mn on the project. The field, located in Garden Bank blocks 783 and 784, is due onstream in 4Q2004.

Noble Affiliates is to acquire the producing and other assets of Denverbased Aspect Energy for \$125mn.

#### Middle East

Statoil is reported to have joined the National Iranian Oil Company in a study aimed at establishing the potential to boost output from the Ahwaz, Maroun and Bibi Hakimeh fields in Iran which are currently producing 1.5mn b/d.

# **NEW**<sub>Stream</sub>

### **Rise recorded in UK oil production**

UK oil production rose to 2.17mn b/d in October 2001 according to the Royal Bank of Scotland's December Oil and Gas Index. The international oil price had continued to weaken following the 11 September terrorist attacks in the US, reducing UK oil revenues in spite of efforts by Opec to control production, stated the report. This meant that combined oil and gas revenues were down on both the month and the year.

Tony Wood, Senior Economist at the Royal Bank, said: 'Prospects for oil prices are finely balanced, with Opec set to review its position at a meeting in Cairo later this month [December 2001]. Its proposed output cut will be dependent on cuts in non-Opec exports. While Russia, the largest non-Opec exporter, has committed to cut some output, markets remain concerned about what the actual impact of this will be.'

UK oil output in October 2001 rose by 9.3% to 2.17mn b/d. This was 3.5% lower than in October 2000. October 2001 gas output fell both on September 2001 and the previous year. Combined oil and gas revenues, at £47.08mn/d were 8.9% lower than in September 2001 and 32.2% down on the year.

Year Month	Oil production (av. b/d)	Gas production (av. mn cf/d)	Av. oil price (\$/b)
Oct 2000	2,247,307	10,172	30.90
Nov	2,322,296	11,621	32.80
Dec	2,399,038	11,439	26.30
Jan 2001	2,274,671	13,061	25.80
Feb	2,206,542	12,293	27.50
Mar	2,301,409	12,465	24.50
Apr	2,223,924	11,918	26.00
May	2,170,520	9,155	28.30
Jun	1,993,483	8,639	27.60
Jul	2,033,323	8,841	24.70
Aug	2,018,982	8,815	25.60
Sep	1,984,388	9,091	25.90
Oct	2,169,226	8,909	20.60

Source: The Royal Bank of Scotland Oil and Gas Index

North Sea oil and gas production

### Middle East developments upstream

*Stella Zenkovich* rounds up some of the latest upstream developments in the Middle East.

- The second and third stages of Iran's South Pars gas field project are scheduled to come onstream from February 2002 according to Pars Oil & Gas Managing Director Asadollah Salehiforuz, adding a further 500mn cf/d of gas production.
- Iranian Offshore Oil Company, the offshore oil exploration and production arm of the National Iranian Oil Company, has awarded Fugro-Geoteam of Norway a \$17mn 3D seismic contract for reservoir delineation and the definition of five existing oil fields in Iran.
- Marking the start of Turkish–Iraqi cooperation in the oil sector, staterun Turkish International Petroleum

Corporation has won a UN-approved contract to drill for oil in northern Iraq, with local backing. It is to drill 20 wells in the Khurmala oil field in conjuction with local company North Oil.

- Russo-Belarus joint venture Slavneft has signed a contract to develop the Luhais oil field in southern Iraq, drilling 25 wells, and is to drill 3,000metre deep wells in the Nakh Umr and Zubair oil fields. Production is to be exported via the Gulf ports of Fao and Khor al-Amaya. The UN embargo still stands on new oilrelated developments in Iraq.
- Yemeni oil production is expected to rise to 200,000 b/d in 2002 when the number of oil companies operating in the country reaches seven, according to Oil & Mines Minister Rashid Barbaa.



### Courts uphold finding against fishermen

In a significant judgement for the offshore oil and gas, seismic and support boat industries, the UK Court of Appeal recently affirmed that the National Federation of Fishermen's Organisations (NFFO) pay damages and costs well in excess of £150,000 for tortious interference with the business of a support boat operator.

The Court upheld the finding that NFFO Services had used threats that the fishermen intended to take action which would breach the Collision Regulations and the Duty of Good Seamanship by ignoring radio signals and 'playing chicken' with the survey vessels.

The Court upheld the initial judgement in a case bought by Inshore Services (International) of Lowestoft against NFFO Services for tortious interference with Inshore's business. Arco had contracted Horizon Exploration who subsequently retained Inshore to provide the support boat to assist with the seismic survey in the Morecambe Bay Area in early 1997.

The local Fleetwood fishermen strongly objected to the work going to external contractors. NFFO Services pressurised Horizon who transferred the work from Inshore to a local fishing fleet boat.

In the first instance, the Judge held that NFFO Services had used threats with the intention of harming Inshore's business (a finding not contested on appeal). The real issue on the appeal was whether NFFO's intimidation contained threats to use unlawful means. The Court of Appeal found that this was indeed the case.

Partner Tony Rooth at law firm Watson, Farley & Williams who acted for Inshore commented: 'This judgement indicates that the Courts will not tolerate intimidation and unlawful interference with the operations of seismic contractors and offshore operators where breach by fishermen of good seamanship and the Collision Regulations might lead to loss or damage to vessels and loss or injury to those at sea.'

'The result vindicates the investment by Inshore and other professional support boat operators in bringing their craft up to a high level. However, all parties should be aware of the need to properly document their contracts at the time since, if that had been done, Inshore would also have been able to claim for unlawful interference with contract.'

Richard Harris of Inshore Services added: 'Oil companies and their contractors are now free to outsource to the open market for support vessel services and be able to award contracts based on market forces, suitability and, most importantly, recognised industry standards without fear of intimidation.'

'Their right to make commercially and practically sound decisions has been reaffirmed by the Courts,' Harris stated.

### **Russia & C.Asia developments**

Stella Zenkovich rounds up some of the latest upstream developments in the Russia & Central Asia region

- Drilling company and rig operator Uztel Ploesti – which is 76.88% owned by Romanian state property agency APAS – is planning to set up a joint venture with Russia-based Lukoil Neftegazmas and Austria's Dr Gerhard H Schild.
- Orenburggeolgiya of Russia produced some 560,000 tonnes of oil in 2001, up from 532,000 tonnes in 2000, and is targeting output of 650,000 tonnes in 2002. The company is majority owned by Tyumen Oil Company (TNK) and is managed on its behalf by Onako.
- Kazakh Prime Minister Kasymzhomart Tokayev recently met with representatives from Italian company Eni to dis-

cuss implementing a production sharing agreement in the northern Caspian under which it is planned to bring the Kashagan oil field onstream by the end of 2003.

Bourgas-Alexandropolis oil The pipeline project is firming up with the four project partners - Lukoil Neftochim (67%), Bourgas port, Glavbolgarstroy and Glavstroy (11% each) - recently meeting with backers in Bulgaria to discuss the appointment of German consultancy ILF to undertake a design study. An official project representation meeting was planned in London in January 2002, at which it was hoped to secure funding for the \$700mn project. The partners are also hoping to secure a \$200mn contribution from the European Union.

### In Brief

The Qatari authorities have finally signed a delayed production sharing agreement with TotalFinaElf and United Arab Emirates Offsets Group (UOG) under which Qatari gas will be transported to the United Arab Emirates as part of the \$3.5bn Dolphin project. Project partners TotalFinaElf (24.5%) and UOG (75.5%) – grouped together as Dolphin Energy Ltd (DEL) – are planning to produce up to 2.5bn cfld of gas from Qatar's North field. First deliveries are slated for 2005.

Saudi Aramco is reported to have discovered gas with its Al-Ghazal 4 well in Saudi Arabia, which tested at 21.9mn cf/d of gas and 3,470 b/d of condensate.



Gazprom is reported to be targeting the Yamal Peninsula as its main gas source by 2010. It is planning to develop five new gas fields in the region and to boost annual production from its Zapolyarnoye field to 100bn cm/y from the current 35bn cm/y.

Kazakhstan is reported to be planning to increase oil and condensate production by 15% in 2002 to 46mn tonnes.

Yukos has announced a new production target for 2002 of 71.5mn tonnes (1.4mn b/d), which is 23% higher than UFG's 2001 production estimate of 58.2mn tonnes.

Sibneft reports that it achieved the fastest rate of growth of any major Russian oil company in 2001. The company's output rose by 20.2% to 408,000 bld from 338,000 bld the previous year. Sibneft plans to increase production at an even greater rate in 2002, with an output target of 526,000 bld, an increase of 26.7% on 2001 production.

Turkmenistan is reported to be planning to export more than 56.5bn cm of gas in 2002, up from 37bn cm in 2001.

Bouyges Offshore of France is reported to have secured a \$163mn contract to fabricate two jackets and associated piles for the Phase 1 development of the Azeri-Chirag-Gunashli fields in Azerbaijan. The units are to be built at the SPS yard in Baku.

McDermott International's Caspian business unit is reported to have



secured \$320mn worth of contracts from AIOC for the fabrication of platform topsides and the installation of offshore pipelines in the Phase 1 development of the Azeri-Chirag-Gunashli fields in the Azeri sector of the Caspian Sea.



**Repsol YPF is to sell its stakes in the** South East Sumatra, Offshore North West Java, Poleng, Offshore West Madura and Blora blocks in Indonesia to CNOOC for \$585mn.

**PetroChina is reported to have** announced that 2001 natural gas production increased by 12.6% while its crude oil output fell by 0.2%.

Shell is understood to have signed an agreement with China National Offshore Oil Corporation (CNOOC) covering exploration in block 11/26 in the Bonan region of Bohai Bay.

GAT Bangkudulis Petroleum, the Indonesian subsidiary of Canadian Continental Energy Corporation, is to develop the Bangkudulis field onshore East Kalimantan, Indonesia. The field is due onstream by mid-2002.

Unocal of the US is reported to be planning to double its crude oil production in the Gulf of Thailand to 18,000 b/d if the Thai authorities approve plans for its development of the Yala field.

**OMV is reported to have commenced** production from the Miano gas field in block 20 in Pakistan. Gas sales deliveries are expected to have reached 100mn cf/d by the end of January 2002, meeting some 5% of Pakistan's gas demand.

The Echo-Yodel gas and condensate field offshore northwest Australia is reported to have come onstream three months ahead of schedule and within its \$205mn budget. The field comprises two subsea wells tied back to the Goodwyn A platform.

Apache is reported to have brought onstream the Simpson field in the Carnarvon Basin offshore Western Australia at an initial rate of 21,000 b/d of oil from three wells.

The Indonesian Government is understood to be planning to take just 65% of the revenue from the 17

# **NEW**<sub>Stream</sub>

blocks it is to offer in its 2002 licensing round, giving 35% to the operators. Traditionally, the government has taken 85%, leaving just 15% to the operators.

State-owned ONGC of India is reported to have made a 'significant' oil and gas discovery offshore western India, located 6 km east of the Bassein (Vasai) gas field. The find is estimated to hold in-place reserves in excess of 65mn toe.

**BP is reported to be planning to sell its** 25% stake in block A-18 of the Malaysian–Thai Joint Development Area (JDA).

US company Swift Energy is to pay Shell \$133mn for a package of oil and gas fields in Taranaki, New Zealand.

### Latin America

**Repsol-YPF has completed the final** phase of development of the Quiriquire gas field in eastern Venezuela, increasing production to 7mn cm/d.

Mexico is reported to have reaffirmed that it will reduce its oil production by 100,000 b/d in 1H2002 in a bid to help Opec bolster oil prices. The Energy Ministry said that the new export cap would be 1.66mn b/d, roughly in line with November 2001 average exports.

**Transredes, a Shell/Enron consortium,** is understood to have with withdrawn its objections to the \$300mn, 431-km Bolivia–Brazil gas pipeline proposed by Petrobras, Repsol YPF and TotalFinaElf. Construction was planned to commence in January 2002.

Pacific LNG (PLNG) – a consortium of Repsol YPF (37.5%), BG (37.5%) and Pan American Energy (25%) – have signed a Memorandum of Understanding with Sempra Energy to enter into negotiations for the supply of LNG from the Margarita gas field in Bolivia to the rapidly growing markets of northwestern Mexico and southern California.

### Africa

Anadarko reports that the Hassi Berkine (HBN) oil field in blocks 403 and 404 in Algeria's Sahara Desert has come onstream nearly two months ahead of schedule. Some 75,000 bld of production is to be processed through the third train at the nearby Hassi Berkine South (HBNS) central processing facility. Field partners are state oil company Sonatrach, Anadarko, Agip (Algeria) and Maersk Olie Algeriet. A fourth 75,000 b/d train is currently under construction at the HBNS complex and is to be commissioned in August 2002. It will process production from the block 404 satellite fields HBNSE, BKNE, RBK, QBN and BKE, increasing total oil production capacity through the facility from 210,000 b/d to more than 285,000 b/d.

Stolt Offshore and Nigerian company Suffolk have secured a \$245mn contract from Shell in Nigeria for the Forcados Yokri offshore development in the Niger Delta.

Nigeria LNG, a joint venture between the Nigerian National Petroleum Corporation, Shell, TotalFinaElf and Agip, is understood to have awarded a \$680mn contract to shipbuilder Hyundai Heavy Industries to build four LNG vessels for delivery between November 2004 and March 2006.

Apache reports that its Ozoris-1X wildcat well in the Khalda concession in Egypt's Western Desert has flowed 2,504 b/d of oil.

**Prosafe of Norway is reported to have** signed a contract to convert its Suezmax tanker Grey Warrior into an FPSO destined for the Agip-operated Abo field offshore Nigeria. Prosafe will also be responsible for the operation of the vessel.

Sudanese oil production is set to rise from the current 220,000 b/d to 500,000 b/d in 2002 according to Energy & Mining Minister Awad Ahmed al-Jaz.

Shell has farmed out 12% of its 75% stake in the North East Mediterranean Deepwater (Nemed) oil and gas block offshore Egypt to Petronas of Malaysia. Plans are to drill three wells by the end of 2003 despite the fact that the two wells drilled to date have produced no results, writes Stella Zenkovich.

**Respol YPF, OMV, TotalFinaElf and** Norsk Hydro have made an oil discovery in the D1 well in exploration block NC-186 in the Murzuq Basin, Sahara Desert, Libya. The well tested at 2,286 b/d of 41° API oil.



# Shell outlines new plans and targets

Shell recently outlined new plans and targets for the Group at a London meeting of fund managers and analysts. The company reported that it was 'well positioned to deliver good returns even in a continuing recession' as a result of a strong balance sheet, balanced set of businesses and low cost structure, and that all targets set in 1998 – including \$5bn cost improvements and a 14% return on average capital employed (ROACE) – are expected to be exceeded in 2001. Highlights of the presentation include:

- Reference conditions, the baseline for tracking performance, remain conservative. The main changes are lower marketing margins reflecting continual competitive pressure, and higher Brent oil prices – premised at \$16/b.
- ROACE for the Group as a whole of between 13% and 15% is targeted at reference conditions.
- Established businesses exploration and production, oil products and

chemicals – will be capable of delivering 15% ROACE at reference conditions. For the next two years, exploration and production is expected to deliver around 18% at reference conditions.

- Established businesses are expected to deliver unit operating costs reductions of 3%/y in each of the next two years, contributing to a total pre-tax benefit from operating cost improvements of some \$500mn/y.
- Capital investment plans for the next two years remain around \$12bn/y. In the longer term, growth in capital employed of some 5%/y is expected, with the highest growth in exploration and production, and gas and power.
- Upstream volume growth averaging 3%/y is expected to 2005, while contracted sales volumes of LNG are projected to grow at 6%/y.

Full details of the presentation can be found at www.shell.com/investor

### Gazprom to repurchase stake in Purgaz

The Gazprom Board has endorsed management's proposal to repurchase a 32% stake in Purgaz, a major gas producer, from Itera in exchange for the repayment of \$190mn in Purgaz's liabilities to Itera and a nominal payment of \$1,000 for the equity stake. In effect, Gazprom is reacquiring developed reserves at \$0.08/boe – a discount to Gazprom's own depressed valuation – and is increasing production and reserves by 3% and 1.5% respectively.

Equally important, according to UFG,

the decision puts an end to one of the most outrageous corporate governance abuses at Gazprom and instils significant investor confidence in Gazprom's new CEO and the Putin Administration's commitment to reforming Gazprom.

The Board also accepted the resignation of Pyotr Rodionov, former First Deputy CEO, and replaced him with Alexander Ananenkov, currently Head of Yamburggazdobycha, one of Gazprom's key upstream units.

### The euro – a new petro-currency?

European Commission officials believe that rapidly growing oil and gas shipments from Russia to the EU could, in time, pave the way for the adoption of the euro as a petro-currency, writes *Alan Osborn*. Gerassimo Thomas, spokesman for the Commissioner in charge of the euro, Pedro Solbes, said that the Commission had considered pushing for the euro to be used globally to denominate the price of oil but 'we can't tell the market how to behave.' However, the massive oil and trade deal at present under negotiation between the EU and Russia will be valued in euros and this could mean a de facto recognition of the currency for a large share of world trade in oil.

Exports of oil and gas from Russia to the EU in 2000 were valued at euros 22.5bn, about 5.8% of the EU's total oil imports. Unofficially it has been suggested they could rise 'three or four times' the 2000 figure.

Visit the IP website @ www.petroleum.co.uk

In Brief

**ChevronTexaco is reported to have** awarded a \$2bn, 10-year 'preferred supplier' contract to UK-based catering group Compass.

The management and employees of Edinburgh-based consultancy Wood Mackenzie are rumoured to be lining up a £25mn buyout bid from parent company Deutsche Bank.

The UK Department for Education and Skills has granted 'Trailblazer' status to a petroleum industry and chemicals manufacturing Sector Skills Council (SSC) to be created from the merger between the Petroleum Industry National Training Organisation (Pinto), the Oil and Gas Extraction NTO (Opito) and the Chemicals Manufacturing and Processing NTO (CMPNTO).

North America

ASTM has announced that it is to change its name to ASTM International.

**Board approval was given on 31** December 2001 for the separation of the former USX Corporation into Marathon Oil and the United States Steel Corporation.

TransCanada Pipeline and AltaGas Services are understood to have teamed up to acquire Enron Canada Power's Sundance power purchase arrangement (PPA) for C\$220mn.



**Iraq's oil exports are reported to have** plunged to 3mn barrels in the week ending 11 January 2002, down from the previous weeks' high of 15.5mn barrels. No reasons have been given for the steep drop.



The Russian Government has approved in principle the schedule for domestic gas tariff increases in 2002, reports UFG. The tariffs will increase by 25% in February 2002 and by a further 20% in July, averaging 35% more than in 2001 over the year and eventually translating into a 50% increase January to December (in rouble terms), comments the analyst.

### In Brief

Lukoil is reported to be planning to invest between \$50mn and \$70mn in its Ukraine operations during 2002.

Rosneft is reported to be acquiring a 51% stake in Kamchatgazprom.

A 36% stake in Russia's Eastern Oil Company is reported to have been put up for sale by the Russian Federal Property Fund. The starting price is \$225mn.

UFG reports that Yukos has acquired 28% stakes in two subsidiaries of Sakhaneftegaz – Lenaneftegaz and Yakutgazprom – for an undisclosed sum.

Asia-Pacific

**Conoco is reported to have acquired** for an undisclosed sum Statoil Vietnam which owns a 16.33% stake in the Nam Con Son gas pipeline.

Chinese Petroleum is reported to be planning to sell at least 51% of its equity in a bid to encourage foreign competition and relax government control over the state-owned company. The stake has been valued at more than \$3.5bn.

ExxonMobil is understood to have brought onstream the first of six satellite fields in the Terengganu area, Malaysia, via a remotely controlled wellhead platform.The \$237mn development project comprises four further wellhead platforms and a subsea development, and is expected to produce 40,000 bld of oil and 50mn cfld of gas once fully onstream.

### Latin America

**Repsol-YPF and Petrobras are** reported to have completed an asset swap under with Respol-YPF has taken a 30% stake in the 180,000 b/d Refap refinery in southern Brazil, acquired 240 service stations, and a 10% interest in the 1.3bn boe Albacora Leste oil field. In exchange, Petrobras receives 700 fuel retail outlets in Argentina and control of the 30,500 b/d Bahia Blanca refinery.

Venezuela's National Assembly is reported to have approved PdVSA's proposed \$330mn Orimulsion fuel joint venture with China National Petroleum Corporation (CNPC). CNPC is to take a 70% stake in Orimulsion, with Bitor [PdVSA's Orimulsion fuel trading division] holding the remaining 30%.

# **NEW**<sub>industry</sub>

### Canadian worries over Kyoto impact

Canada's plans to make drastic cuts to greenhouse gas emissions as part of the Kyoto Protocol is worrying the country's energy sector, particularly companies in oil-rich Alberta who claim they have been left in the dark by the federal government, writes Monica Dobie. Pierre Alvarez, President of the Canadian Petroleum Products Institute that represents 97% of the oil refineries in Canada, said the industry is frustrated with Ottawa's unwillingness to give any information on what actions need to be taken and how much it will cost. He said: 'This could potentially devastate the oil industry in Canada and yet we have no answers from the government. Not knowing breeds confusion."

However, Pat Breton, spokesperson for the Canadian Government's Department of Energy, said: 'We need more time to iron out the details of the agreement and we understand the frustration some people in the industry may have but it will come. We need to know how Canadians outside the oil industry feel about it as well.'

Ottawa recently announced that it

### **New Year Honours**

Petroleum Review is proud to announce that Anne Poynter of the Institute of Petroleum's Accounts Department was awarded an MBE for her services over 15 years to the Institute in the New Year's Honours List (see p45).

David Dando was also awarded an MBE for services to the Petroleum Industry Association, and Paul Dymond for services to BP and the oil and gas industry. Michael Parker was awarded an OBE for his services to the Energy Advisory Panel, while Malcolm Brinded was awarded a CBE for services to Shell and the international oil and gas industry. will spend C\$425mn on programmes to encourage energy efficiency in Canada and to develop new ways of reducing greenhouse gases; although only C\$19mn has been put aside to develop new technologies mitigating greenhouse gas production which has added fuel to Alberta's power producers' fire. Roger Soucy, President of the Petroleum Services Association of Canada, said: 'That money will not even make a dent in the costs the industry will have to pay for research and investment in new technology. This is like a torpedo aimed at Canada's competitiveness. We're like a bunch of boy scouts going out to do the right thing when we're not the ones that need to.'

Under the multinational Kyoto agreement, which was signed in 1997 but is not yet ratified, Canada must reduce annual emissions by 6% below 1990 levels by 2012.

Breton said: 'We're on different sides. They think that change will hurt their competitiveness and we think that Canada will be a leader in developing cutting edge technology.'

### Dutch wind farm

BP and ChevronTexaco are to build and operate a 22.5-MW wind farm at their jointly-owned Nerefco oil refinery near Rotterdam in the Netherlands.

The \$23mn scheme is due to begin operations in 2H2002 and is claimed to be the first substantial use of wind turbine technology for both companies. It will generate electricity equivalent to the consumption of 20,000 households, displacing 20,000 t/y of carbon dioxide.

The electricity will be sold locally and support the Dutch national target of 5% of electricity to be generated from renewables by 2005.

### 2002 - the 'year of renewables'

UK Energy Minister Brian Wilson has predicted that 2002 will be 'the year of renewables' in which the potential contribution of power generated from clean sources 'will finally be recognised in the UK.' He said that the government's Renewables Obligation, which comes into effect on 1 April 2002, will 'transform the market for alternative generation'. The Obligation will require the electricity companies to purchase a proportion of power from renewable sources at a premium price.

At present, less than 3% of electricity in the UK comes from renewables. The government is committed to a 10% target by 2010.

Wilson stated that the government is investing £260mn in the development of renewable technologies over the next three years. A substantial part of the funding earmarked by government will be dedicated in the year ahead to the deployment of the first generation of the UK's offshore wind farms and energy crops power plants. In addition, the Renewables Obligation is expected to guarantee at least a £750mn market for electricity generated from renewable sources by 2010.

# **NEV/Swnstream**

### Shell secures Elba Island LNG capacity rights

Shell Gas & Power is to acquire all of the additional capacity offered by Southern LNG, a FERC-regulated subsidiary of El Paso Corporation, in its recently concluded 'open season' to expand its Elba Island LNG facility near Savannah, Georgia. Shell beat three rival bidders to secure the 3.3bn cf of storage with a design send-out rate of 360mn cf/d, or approximately 2.5mn t/y of LNG, for a 30-year term. The planned in-service date for the expansion is June 2005, subject to receipt of the necessary regulatory approvals.

Expansion of the Elba Island facility will increase its storage volume by 80%

to 7.3bn cf and the design send-out rate to 800mn cf/d. The expansion is projected to cost \$145mn.

Jon Chadwick, Director of Shell Gas & Power, stated that the planned expansion capacity 'will enable gas supply to key markets in Georgia, Florida and South Carolina' and that the company is 'keen to secure greater LNG access to the US market where we anticipate strong demand growth in the coming years. Access to this capacity will provide an outlet for LNG projects and prospects in which Shell has an interest in the Atlantic Basin, such as West Africa and South America.'

### Mandatory introduction of sulfur-free fuel

The European Union Council of Ministers (Environment) has agreed in principle that sulfur-free petrol and diesel should be introduced in every Member State from 1 January 2005, making the use of cleaner petrol mandatory from 1 January 2009, reports *Keith Nuthall*. Ministers also agreed that sulfur-free diesel fuel should become mandatory from that date as well, although this will be confirmed by a Commission review that will be completed no later than 31 December 2005.

Meanwhile, legal proceedings have been launched by the European Commission against Austria, Greece, Finland, Spain, Denmark, Belgium, Italy, Ireland, Luxembourg, Portugal and Sweden for failing to comply with a commitment under EU law to monitor average emissions of carbon dioxide from new passenger cars. Brussels says that it considers this work to be essential if fuel quality and engine emission limits established under legislation such as the Auto-Oil Directive are to be complied with. The deadline for setting up information gathering systems and alerting the Commission was 28 February 2001.

Also, the Council of Ministers has exempted the Republic of Ireland from the EU's minimum rates of excise duty for diesel oil with low sulfur content sold on its territory.

### German approval for Shell & DEA Oil

Shell and RWE DEA have secured agreement from the German Cartel Office for the oil products part of their proposed joint venture. The agreement means that the new company Shell & DEA Oil will retain its refinery portfolio and have 20% of the German retail market, making the joint venture a leader in the world's third largest oil products market.

Conditions of the approval of the deal include the divestment of some 5% of retail market share and the provision of long-term supply agreements for independent operators acquiring sites from the joint venture. The joint venture will also make available supplies from depots along the Rhine-Main pipeline.

In light of the planned Shell/RWE DEA merger, Fuchs Petrolub has agreed with DEA to terminate their Fuchs DEA Schmierstoffe joint venture. Fuchs Petrolub will run the former Fuchs DEA Schmierstoffe as a 100% operating subsidiary under the name of Fuchs Europe Schmierstoffe.

The EU Commission is currently handling the petrochemicals part of the proposed Shell/RWE DEA joint venture; the outcome of the review is expected soon.

If successful, the merged operations are expected to deliver synergies of at least \$150mn/y.

New Longer IP Library Opening Hours The IP Library is now open from 9.15 am to 5 pm, Monday to Friday (except Bank Holidays) UK UK Conoco has awarded Somerset-based Wincanton a five-year contract for

Wincanton a five-year contract for the distribution of petroleum products to retail and commercial outlets throughout the UK. Some 150 drivers previously employed by Conoco as part of its in-house distribution team are to be transferred to Wincanton.

Independent airfield services company ASIG has been selected to provide into-plane refuelling services to the recently formed ExxonMobil/Shell operating joint venture at London Heathrow Airport.

UK construction company Costain Group has secured a £60mn contract from Burlington Resources to build a gas processing and compression plant at Barrow-in-Furness, Cumbria. The facility will receive 120mn cf/d of gas from the Rivers project in the East Irish Sea from 2004.

Transco parent company Lattice is reported to be considering the construction of an LNG import terminal at the Isle of Grain, Kent, capable of processing at least 7mn cm/d.

**Centrica's British Gas Trading sub**sidiary is to acquire the assets of Enron Direct which supplies electricity and gas to small business and industry in the UK and Europe, for £96.4mn.

### Europe

The Italian Antitrust Authority is reported to have approved Enel's acquisition of a 40% stake in the country's second largest gas distributor Gruppo Camuzzi for euro 434mn.

Eastern Europe

Electricite de France; a joint venture between Enel of Italy and Iberdrola of Spain; and UK-based International Power are reported to have put in bids for a 68% stake in Czech power utility CEZ, which is being sold as part of the Czech Government's privatisation programme.

Rotch Energy of the UK is reported to have lost out to the Czech Republic's Agrofert Holding for a 63% stake in Czech refinery and petrochemical company Unipetrol, despite placing a higher bid of \$386.8mn. Agrofert bid

### In Brief

\$331mn, but has been reported to be considered a 'more strategic' investor.

### North America

The US Government and vehicle manufacturers are reported to have recently unveiled a new programme – Freedom Cooperative Automotive Research (CAR) – aimed at developing hydrogen fuel cell-powered vehicles and reducing the US' dependence on oil imports.

Dynegy is understood to be going ahead with its \$23mn acquisition of Enron Corporation's Northern Natural Gas pipeline in the US midwest, although Enron will retain the option to repurchase the pipeline by 30 June 2002. The two companies have been in dispute since the collapse of their proposed \$8.4bn merger at the end of last year.

**Pipeline operator Kinder Morgan** Energy Partners is reported to be buying Texas-based Tejas Gas, a wholly owned subsidiary of Shell and Bechtel's 70:30 joint venture company InterGen, for \$750mn. Tejas Gas operates a 3,400mile gas intrastate pipeline network with a 3.5bn cf/d capacity.

Air BP is reported to have added 105 former Texaco dealers in the northwestern US to its branded network through its distributor Valley Oil Company.

#### **Russia & Central Asia**

Sibneft reports that it produced 262,000 b/d of products from its refineries in 2001, up 6% on the previous year.

The Russian Government has cut export duty on refined products from euro 39/t to euro 25/t from 1 February 2002, reports UFG.

Itera has signed an agreement under which it will acquire 10bn cm of Turkmen gas in 2002, reports UFG.

#### Asia-Pacific

The Chinese State Development Planning Commission is understood to have approved a feasibility study for a \$5.6bn, 4,200-km gas pipeline linking the northwest region of Xinjiang Province, China, with the city of Shanghai to the east of the country.

# **NEV/Swnstream**

### ChevronTexaco launches new lubes venture

ChevronTexaco has formed Gulf Lubricants, a new company that will manufacture and market a wide range of lubricants, engine oils and greases, initially in the central US and then expanding delivery capabilities across the country over 2002.

The company plans to 'focus on enhancing customer satisfaction and streamlining the ordering process by providing customers with several convenient access options – via the Internet, a

### UK gas price rise

British Gas increased its domestic UK gas prices by 5.3% on 3 January 2002. The increase is expected to add 32 p/week to the average domestic gas bill.

The company stated that its 'yearon-year gas costs have increased by 22% in a marketplace where wholesale costs have almost doubled in the last 18 months and the decision to raise prices has been taken against this background of continuing high gas costs facing the industry.'

Prices for British Gas' 5.5mn UK electricity customers, which fell by 3.7% in April 2001, remain unchanged. toll-free number, or fax.' On the company's website – www.gulflubes.com – customers can research product details, information about delivery options and obtain comprehensive background information 24 hours a day. In addition, the company states that it is to 'offer a clear and open pricing policy with guaranteed freight quotes at the time of ordering' with 'discounts available based on the volume of a customer's total purchase.'

### Nigerian power projects

Shell Gas received Letters of Award for two major gas-fired power projects at the Afam power plant near Port Harcourt, Nigeria, from the National Electric Power Authority (NEPA). The contracts are for the refurbishment, operation and transfer of the Afam I-IV plant and the leasing, operation and transfer of the Afam V plant at a cost to Shell and its joint venture partners of \$540mn. Under the terms of the bids, Shell will take over the existing assets in 2002 and operate the Afam power plant for 15 years. The plant currently supplies about 240 MW to Nigeria's national power grid. The new investments are expected to make 400 MW available to the grid in 2002, rising to 930 MW in 2004.

### Good news for UK haulage industry

Fewer lorries on UK roads will result from a recent European Union decision on working time, reports the UK Freight Transport Association (FTA). The EU has decided that under the application of the Working Time Directive to the transport sector night lorry operations can work on a ten-hour shift in preference to the eight-hour limit that was threatened.

FTA Policy Director James Hookham said: 'An eight-hour night shift would have been an economic and environmental disaster for the UK. In our congested roads infrastructure it is absolutely vital that, for the benefit of both industry and ordinary motorists, we maximise night lorry operations. The eight-hour limit would have pushed lorries into daytime congestion where neither industry nor other road users wanted them.'

In addition to the ten-hour night shift the EU also agreed that the definition of 'night time' should mean a period of at least four hours between midnight and 7 am to be defined by national law.

### Middle East downstream developments

Stella Zenkovich rounds up some of the latest downstream developments in the Middle East.

Saudi Refining and Shell Oil Company are to acquire ChevronTexaco's interest in Equilon and Motiva – which operate 4,800 and 8,200 service stations respectively – that has been divested as a merger condition for \$3.86bn. The deal includes a \$2.26bn cash payment and the assumption of \$1.6bn in debt and liabilities.

- The United Arab Emirate's first petrochemical plant – the \$1.2bn Borouge ethylene cracker located at Ruwais near Abu Dhabi – came onstream in mid-December 2001.
- The Jordanian Government has approved the issuing of a tender for the construction of a 750-km oil pipeline from Iraq, projected to cost \$350mn.

**NEV**Swnstream

### **Downstream Eastern Europe**

Stella Zenkovich rounds up some of the latest downstream developments in Eastern Europe.

- Beopetrol, the Belgrade-based Serbian oil trading company, is to be privatised with a 70% stake in the company to be offered for sale. The company operates a 203-strong service station network. There are six reported bidders, including Russia's Lukoil, OMV of Austria, Croatia's INA, Petrol of Slovenia, Hellenic Petrol of Greece, and Hungary's Mol.
- Hungarian chemical manufacturer TVK is borrowing \$27mn to build a gas-fired power plant in Tiszaujvaros together with regional distributor EDASZ. The plant is to supply power and salt-free water to TVK's production facilities as well as those of Hungarian oil and gas company Mol by 2003.
- SNP Petrom's Board recently held an emergency session in Romania to discuss restricting oil deliveries to private refineries, distributing all refined oil on the domestic market and payments for oil deliveries in cash within 60 days as proposed by Industry

Minister Dan Ioan Popescu. He envisages setting up a holding for the oil sector and pooling cash contributions to create funds for drilling abroad and importing the oil produced.

- Having ditched plans to hike gas tariffs by 19.3% for both households and companies in October 2001 for fear of an electoral backlash, the Slovakian Cabinet decided to raise tariffs only on companies from 1 January 2002, freezing domestic gas prices until September 2002.
- Petrol of Slovenia has set up a 51:49 electricity trading joint venture – Elektropetrol – with Estag of Austria. The Ljubljiana-based company aims to supply 20% of Slovenian demand for electricity.
- Lukoil Neftochim of Bulgaria is to invest \$100mn over the next four years in modernising 435 service stations operated by its Petrol fuel distribution affiliate, according to Vagit Alekperov, Head of the Moscow-based Russian parent group. Alekperov also stated that the company's refinery subsidiary in Bulgaria is to become involved in power generation.

### **Conoco signs Phillips refining process deal**

Phillips Petroleum has signed a corporate licensing agreement with Conoco for the application of Phillips' S Zorb Sulfur Removal Technology (SRT) for gasoline at one or more of Conoco's four US refineries and a refinery in the UK. The Phillips' technology is currently licensed for use at a total of 15 refineries in the US and abroad.

The S Zorb SRT process was developed

to help oil companies comply with the US Environmental Protection Agency's Tier II and the European Commission's Auto-Oil sulfur regulatory levels. A 6,000 b/d plant at Phillip's Borger, Texas, refinery has demonstrated the technology's ability to reduce gasoline sulfur content to levels below 10 ppm, states the company.

For more information on licensing S Zorb SRT, visit www.fuelstechnology.com

### In Brief

The Vietnamese Government is reported to have approved the feasibility study for the construction of a 162-km gas pipeline from Phu My in southern Ba Ria-Vung Tau Province to Ho Chi Minh City at a cost of \$70mn. The 2bn cm capacity pipeline is due to be commissioned in late-2003.

**BP (50%), Sinopec (30%) and Shanghai** Petrochemical Corporation (SPC) (20%) have formed a new joint venture company – Shanghai Secco Petrochemical Company (SECCO) that is to build a \$2.7bn ethylene cracker and chemical derivatives complex near Shanghai, China. The facility is to come onstream in 2005.

Indian Oil is reported to be withdrawing from its Indo Mobil lubricants joint venture with Mobil. Mobil will increase its 50% stake to 100%.



The Algerian Parliament is reported to have passed legislation ending stateowned Sonelgaz' monopoly on the power generation industry by opening up 30% of the country's electricity sector to private investors.

Halliburton KBR is reported to have secured a \$1bn EPC contract from Union Fenosa of Spain for an LNG project at the port of Damietta in northern Egypt. The contract covers the development of a single 5mn t/y train LNG complex, with an option for a second train, due onstream in 4Q2004.

Unipetrol Nigeria is reported to be acquiring a 60% stake in Agip Nigeria for \$74mn.

UK Deliveries into Consumption (tonnes	nnes)
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Products	†Oct 2000	†Oct 2001	†Jan-Oct 2000	†Jan-Oct 2001	% Change
Naphtha/LDF	267,005	102,550	1,890,377	1,351,480	-29
ATF – Kerosene	946,167	847,506	8,657,959	9,301,923	7
Petrol	1,827,728	1,751,157	17,471,348	17,413,764	0
of which unleaded	1,714,125	1,686,598	16,092,518	16,505,678	3
of which Super unleaded	93,765	44,795	397,323	363,728	-8
of which Premium unleaded	1,620,360		15,695,195	6,099,468	-61
ULSP (ultra low sulfur petrol)	-	1,641,803		10,042,482	
Lead Replacement Petrol (LRP)	113,603	64,559	1,378,830	838,201	-39
Burning Oil	235,521	298,010	2,894,111	3,273,122	13
Automotive Diesel	1,323,008	1,393,283	12,845,153	13,372,832	4.1
Gas/Diesel Oil	621,978	502,332	5,771,220	5,136,647	-11
Fuel Oil	168,977	124,123	1,328,163	1,511,099	14
Lubricating Oil	71,840	78,521	682,787	716,664	5
Other Products	854,186	646,187	7,015,014	6,635,293	-5
Total above	6,316,410	5,743,669	58,556,132	58,712,824	0
Refinery Consumption	381,324	372,257	4,321,078	3,823,564	-12
Total all products	6,697,734	6,115,926	62,877,210	62,536,388	-1
t Revised with adjustments			All figures provided by the	UK Department of Trade a	ind Industry (DTI)

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forecast

# Russian oil and gas – gaining momentum

The Russian oil and gas sector is set to continue its remarkable recovery, report *Stephen O'Sullivan* and *Dmitry Avdeev* of Moscow-based investment bank United Financial Group (UFG). The oil sector leads in terms of fundamental performance improvement, while the gas sector leads in terms of the potential for change opened up by the departure of the former management from Gazprom.

Russia's economic outlook remains very positive. Fuelled initially by high oil prices it has now moved on to depend on industrial investment, consumer confidence and the supply-side reforms undertaken by President Putin's Administration. GDP (gross domestic product) growth of 4% in 2002, after a likely outturn of 5% for 2001, suggests that the economic recovery (now in its fourth year) is sustainable.

We at UFG expect the trade balance to remain significantly positive this year (+\$35bn after an estimated +\$51bn in 2001) despite the lower oil prices expected after global recession became a reality in late 2001. Foreign exchange reserves look set to increase by the end of 2002 to \$38bn – the highest for many years.

However, the government's budget balance looks set to be slightly negative for this year because of the decline in oil prices, although fiscal orthodoxy is the order of the day in Russia and expenditure looks likely to be cut to ensure the budget is balanced. This compares with a roughly 2% surplus in 2001 and reflects lower budget revenues from the energy sector.

Inflation will remain a problem and is likely to be 17% in our view, compared with 18.6% last year. While it is improving, it will still have an adverse effect on costs and on the rate of tariff increases that will be necessary to ensure real increases in tariffs. As we forecast in last year's review (see *Petroleum Review*, April 2001), the government serviced its Paris Club debt in full during 2001 but there was no resort to changes in taxation over the year, although at the time we acknowledged that the risks were more on the upside – which they were until the last four months of the year.

### **Oil production**

Russian oil output in 2001 rose by 7–8%, fuelled by high oil prices and the commitment given by President Putin in 2000 that the results of the mid-1990s privatisation process would not be reversed. With both the funds to invest and the security provided by that commitment, oil sector capital investment rose from \$2bn in 1999 to \$5bn in 2001, fuelling the surge in output that has brought Russia and Opec into conflict.

This year looks to be a similarly successful one for the industry, with output expected to rise by a further 7% despite Russia's pledge to cut exports, which are themselves forecast to grow by 8% in 2002. Companies with strong growth planned include Sibneft (27%) and Yukos (23%). Surgutneftegaz looks likely to deliver its traditional 7–8% increase in output, while erstwhile leader Lukoil plans growth of less than 3%. The fortunes of the companies are, in the short-term at least, diverging.

The recent contretemps between Russia and Opec highlights an impor-

tant change in Russia's economic framework. It is oil sector capital investment which is currently driving GDP growth, not any particular oil price level. Costs have been reduced dramatically following the devaluation and efficiency gains of the late-1990s, projects are robust to guite low price levels and the industry has sufficient cashflow (and cash reserves) to continue its investment programme. As a result, cutting output was an extremely unattractive option for Russia and lower oil prices an acceptable alternative if it failed to persuade Opec to cut production while doing nothing itself (or delivering only what we have termed 'a virtual cut').

The short-term picture then is looking good, with substantial production increases resulting from investment in well workovers, field rehabilitation and infrastructure repairs. However, the medium-term picture still poses problems. Only so much can be achieved by making up for past investment that was ignored and much of that is already being carried out. In the medium-term new reserves are going to need to be developed. Exploration is to a large degree unnecessary with the present size of Russia's reserves, but development and production expenditures are certainly going to need to rise.

### Recent downstream developments

Refinery margins remain positive to the tune of around \$2/b and many companies have investment programmes underway. Lukoil has already upgraded two of its refineries at Perm and Volgograd, and Surgut is undertaking a hydrocracker installation at its Kirishe refinery near St Petersburg while Tyumen Oil Company is upgrading its refinery at Ryazan with financing from the US EximBank.

Modernised service stations with facilities such as shops and car washes are in

5/b	102001	202001	3Q2001	4Q2001	2001	2002	2003
Brent	26.27	27.61	25.71	16.80	24.50	18.50	18.50
Urals Med	23.66	25.33	24.01	15.52	22.13	17.15	17.15
Domestic crude	14.11	14.22	13.33	9.27	12.73	11.81	11.68
Gasoil – export	232	236	229	158	214	167	167
Fuel oil – export	126	125	134	89	119	99	99
Gasoline - domestic	370	357	349	286	340	300	293
Gasoil – domestic	272	268	266	201	252	223	221
Fuel oil – domestic	104	84	85	60	83	95	95

Table 1: Oil price forecasts

Source: UFG Research

Russia

forecast

evidence not only in Moscow but also in other large Russian cities as operators target a less price-sensitive segment of the retail oil products market.

### **Capital investment**

We estimate that upstream capital investment of some \$5–7bn/y is necessary to generate sustainable production increases of 2–3% per annum. However, increases beyond this, or step-changes in output, are going to require significantly greater sums of money. This is unlikely to come from the domestic oil industry alone, although at present that appears to be the assumption which both the Russian Government and its domestic oil industry are making.

Production sharing legislation, never a fast-track endeavour in Russia at the best of times, became the responsibility of the Russian Ministry of Economic Development & Trade in 2000. However, progress has been slow inspite of President Putin's personal commitment to PSA (production sharing agreements). It is not difficult to guess the reason why. With oil prices high and both company and national coffers fuller than they have been for many years, the industry and the bureaucrats who regulate it are reluctant to involve foreign investors in a sector that appears to be self-sufficient. That is the legacy of two-and-a half years of high prices, but essentially a short-term philosophy relying on the benign confluence of several factors - sustained high oil prices and a very moderate corporate tax regime occasioned by undemanding debt repayments. It would not be sound to base assumptions about the longterm growth of the Russian oil sector on the continuation of these conditions. Nevertheless, much significant foreign investment looks likely to continue to wait for the resolution of the PSA issue before becoming a reality.

### **Oil prices**

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We have based our analysis in **Table 1** on an \$18.50/b Brent price forecast in 2002 and the historical correlations between international and domestic crude and refined product prices.

We have also assumed that the differential between Brent and the Urals Mediterranean price will compress to \$1.35/b against the \$1.97/b seen in 2001.

One of the key trends that has been evident over 2001 has been the convergence between the domestic price and the export price. Domestic crude oil netbacks are now relatively close to those of export or refinery netbacks (see **Figure** 1). Product price netbacks for the major export grades are equivalent on the domestic and international markets (see **Figure 2**) and exports no longer represent the only option for domestic producers since the Russian oil market has developed into a more mature and sophisticated one. (See also **Tables 2** & 4.)

### Gas sector changes

The gas sector has seen little fundamental change, but has seen significant management change. In May of last year, President Putin, responding to an intensified campaign by western investors, dis missed Gazprom's senior management and replaced it with individuals loyal to the Kremlin. Since then additional management changes have been undertaken and the company has focused on the recovery of assets stripped from it during the Vyakhirev era. At the time of writing,

S mn	1997	1998	1999	2000	9mo2001*	2001F**
Exploration drilling	618	328	192	368	398	527
Operating drilling	1,637	712	140	1.028	1,101	1.456
Equipment	1,214	598	548	1,428	1.002	1.325
Industrial construction	2,420	1,201	786	1.611	1.648	2,180
Non-production capex	448	137	71	154	131	174
Total capex	6,338	2,976	2.007	4,590	4,280	5 661

\*First nine months of 2001. \*\*Forecast

Table 2: Oil industry capital expenditure

Source: Neftegazovaya Vertical, UFG





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the final results of the campaign to restore these assets remains unknown, although the signs are increasingly positive. Just before Christmas the Gazprom board took back control of a major gas asset, Purgas, from Itera while moves – including jailings – are also underway to restore Gazprom's control of Sibur, another group of assets which once looked to have been lost by Gazprom. These are important tests of President Putin's resolve to deal with the corporate governance abuses of the late-1990s.

With the dismissal of the old management, prospects for reform of the gas sector have improved. The government has published an outline plan for dealing with two major issues - the ring fence and the overall structure of the sector. The ring fence is the legal device which restricts direct foreign ownership of Gazprom to the ADS, prevents foreign investors owning local shares directly, and creates a two-tier share structure which has essentially prevented Gazprom from tapping equity markets for more than five years and drove the company's borrowings in debt markets to horrendous levels in 1998.

Of more fundamental long-term importance is structural reform of the gas sector. The ultimate aim appears to be to create a monopoly transmission company and several competing gas production enterprises. That is scheduled to be the end of an eight-year process. In the shorter term, third-party access to the gas pipeline network is to be enforced and new (non-Gazprom) production is to be encouraged.

However, raising domestic gas tariffs is one of the most critical elements in this process and at present the government's policy is unclear. While there is a reasonable 35% cap on overall tariff rises in 2002, it is unclear what level of tariff increase will be granted to Gazprom and when this might happen, with President Putin acknowledging that the current low tariffs are economically unsound but reluctant to raise them because of the social and political problems this would cause. Nevertheless, higher tariffs are essential for reform of the gas sector and it is likely that the government will eventually bite the bullet and raise them. Collection rates have improved dramatically, and cash payments now exceed 90% of annual sales, with the electrical utility UES and the North Caucasus region around Chechnya remaining problem areas.

### **Gas production**

Gas production in 2001 fell by 2% – against Gazprom forecasts that it would rise by 1.3% and this despite Gazprom bringing onstream the large Zapolyarnoye field to replace some of the declining output from the supergiant Yamburg and Urengoi fields. However, the key reason for the decline was lower than expected gas demand in Europe, restrained by high prices and relatively warm weather. In addition to developing this new field, Gazprom made significant progress on its Blue Stream pipeline taking gas to the expanding Turkish gas market.

The challenges ahead for the company include raising domestic gas tariffs, restoring the assets lost during the Vyakhirev era and dealing with an increasingly competitive European gas market.

### **Export capacity**

Exports have for many years been the lifeline of the Russian oil industry. However, as we note above, these have now assumed much less importance in the overall scheme of things. Nevertheless, additional export capacity has been constructed. The Baltic Pipeline System was due to have been commissioned at the end of December 2001 all being well and will add some 240,000 b/d; Lukoil's own Varandey terminal with potential capacity of 180,000 b/d started pilot operations last year; and the Caspian Pipeline Consortium (CPC), which commissioned at the end of last year, will eventually free up between 150,000 and 200,000 b/d of

Tonne/employee	1997	1998	1999	2000	2001F	2002F
LUKoil	592	593	531	584	602	609
Surgut	626	641	678	672	681	699
Sibneft	454	577	605	614	647	776
Yukos	n/a	374	454	537	646	730
Table 3: Output per e	mployee		Sou	rce: company	reports, UFG	Research

						_
	1997	1998	1999	2000	2001F	2002F
Electricity tariffs, \$/MWh	36.69	22.58	10.24	11.07	14.43	16.49
Transneft tariffs, \$/t	n/a	13.14	12.53	13.36	14.79	14.25
Crude freight. \$/t	n/a	3.97	4.17	8.91	9.97	10.40
Average salary, \$/mo	338	184	142	240	309	331
Table 4: External cost facto	rs			5	Source: UFG	Research

Russian export capacity (see p21).

The Blue Stream Pipeline will commission next year and will be the first 8bn cm/y phase of a pipeline that will ultimately carry 16bn cm/y to Turkey.

### Taxation

The overall business environment for the sector in Russia has improved. Taxation has become more predictable since much of it is now enshrined in law rather than subject to government decree. The uniform business tax rate of 24%, together with the elimination of many of the exemptions previously applied to the sector and the incentives to transfer price, means a simplified tax system for the industry.

Costs, initially reduced by the devaluation of 1998, remain low in many cases, with lifting and transport costs often below \$5/b. Not all companies have been as effective at reducing costs as their peers, but the industry is in a far better state than even two years ago.

### **Corporate governance**

Corporate governance, the buzzword of the late 1990s, has now receded as an issue because of changes in both legislation and management attitudes. While not all companies have resolved their differences with investors (Surgut, for example, continues to discriminate against holders of its preferred shares by arbitrarily reducing its net profit before making the required 10% payout to this class of shareholders and looks set to continue doing this until a law change next year prevents this), most now appear to subscribe to significantly higher standards of corporate behaviour and their share prices have benefited accordingly. Investors are right to be cautious and watch closely for signs of backsliding, however - and they may only fully trust company managements again when an oil price downturn confirms that attitudes really have changed.

As a result of this improved operating environment, investment has recovered dramatically and the result is the production growth and financial results seen across most of the sector. The larger companies are posting multi-billion dollar profits, often distributing much of it to shareholders as dividends, and the sector is beginning to resemble those in more 'normal' countries.

### The final word

Russia under President Putin is a much more serious place, as he himself is a more serious President. The oil and gas industry has taken its cue from this and has become over the past couple of years a more serious place in which to do business. The 'black gold' of 1991 looks set to be longer-lasting than many observers had originally thought. **Central Asia** pipelines

# Getting the oil and gas out of the Caspian region

The key obstacle to economic prosperity and independence from Russia for the oil and gasrich Central Asian republics has been the problem of how to get their reserves of oil and gas to their potential markets. The problem has been particularly acute for the states lying to the east of the Caspian Sea. However, they could prove to be the inadvertent beneficiaries of a successful US campaign against the Taliban in Afghanistan, writes *Mojgan Djamarani*.

ver the past decade the US and Russia have been supporting and promoting competing pipeline routes for the export of Central Asian oil and gas. Currently Central Asian oil and gas reach their markets via pipelines that transit Russia. However, these pipelines have limited capacity and the Russians have a record of temporarily halting flows to attain political objectives. Moscow views the region as its 'near abroad' and therefore within its sphere of influence and appears to regard pipelines, by extension, as a lever for political control.

The US objective has been to promote and build pipeline routes that avoid crossing either Russia or Iran. Russian oil companies like Lukoil and Russia's pre-eminent gas company Gazprom have direct control over Central Asia's access to pipeline routes and, as a result of this, foreign oil companies developing the reserves in the region find themselves compelled to include them in their business ventures. Given Moscow's dominance, the Central Asian states have come to expect the foreign oil operators to solve the problem of exporting their hydrocarbon reserves.

Current oil production in the Caspian region (which comprises Azerbaijan, Turkmenistan, Kazakhstan, and Uzbekistan) is about 1.25mn b/d. By 2010, this is forecast to rise to 3.5mn b/d. For gas, present production is 4,000bn cf/y, rising to 8,500bn cf/y in 2010.

### **Exports Westwards**

The Caspian Pipeline Consortium's (CPC) new pipeline that takes a northern route out of the Caspian Basin to the Russian, port of Novorossiysk on the Black Sea can be seen as a victory for Russia, who not only will gain billions of dollars in royalties over the pipeline's 40-year life time but will still be able to exercise control over flow of oil from



the region (see p21). The first phase of the pipeline with a capacity of 28.2mn t/y at a cost of \$2.5bn came onstream last October.

In the short to medium term the new pipeline provides a major export route for Kazakh oil. Existing pipelines go through Chechnya and although Russia is using its support for the US campaign against terrorism to suppress the Chechen separatist rebels there will always be the issue of security of the pipeline. This is one of the reasons why the last stage of the CPC pipeline is a direct link from Komsomolsk to Tikhoretsk. The need to bypass Chechnya becomes clear given that links have already been established between Bin Laden's Al-Qaida group and Chechen warlords who were responsible for the kidnapping and murder of foreign workers in the area.

However, the new CPC pipeline faces a number of difficulties. Turkey is uneasy about increased tanker traffic through its already congested Strait of Bosporus that connects the Black Sea to the Mediterranean and may apply restrictions to the number of vessels using the route. The other major consideration is that use of the CPC line still leaves Kazakhstan dependent on Russia.

For the longer term three possible export routes have been under active consideration. Of these, the Trans-Caspian Gas Pipeline and the Main Export Pipeline (MEP), which would take a westward direction from Azerbaijan to Turkey via Georgia, have the strongest US support. Turkey, Azerbaijan and Georgia have already agreed on a gas pipeline from Baku to Tiblisi to Erzerum that would cost \$2.8bn and would supply Turkey with, initially, 2.2bn cm/y and eventually 6.6bn cm/y of natural gas.

One problem associated with both pipelines is political instability in wartorn Georgia as well as the threat of Kurdish rebels sabotaging the pipeline as they did with the Kirkuk–Yumurtalik oil pipeline in 1997. Another problem lies with the MEP, a detailed engineering study of which should be completed in the next year. Oil production in Azerbaijan by itself is not sufficient to justify the huge cost of the project which is estimated at \$4.2bn. The MEP is also not suitable for the other Central Asian states as they lie to the east of the Caspian and to supply to the MEP an additional subsea pipeline would have to be laid across the Caspian. The territorial division of the Caspian is still unresolved with Iran and Russia, for political reasons, showing little interest in its resolution. Friction among the littoral states over the Caspian was intensified earlier in the year when Iranian gunboats chased away Azeri vessels exploring in disputed waters.

### East and South

The possibility of pipelines going east to China carrying oil and gas from Kazakhstan and Turkmenistan have also been considered and largely aban-

- 1 CPC pipeline: Atyrau–Novorossiysk Now completed and in operation (see p21).
- 2 Baku-Novorossiysk In use by AIOC. Russian portion controlled by Transneft.
- 3 Baku-Supsa In operation; capacity 100,00 b/d.
- 4 Baku–Ceyhan Under study by AIOC, the Turkish and US Governments; the socalled Main Export Pipeline (MEP), the second main proposal for Azerbaijan.
- Baku-Iran A proposed option probably via Tabriz, under consideration by France's TOTAL. Current status unknown.
- 6 Tengiz/Uzen-Kharg Proposed route being promoted by TOTAL. Current status unknown.
- 7 Chardzhou-Ras Malan Proposed to export Turkmen and Kazakh production via Afghanistan promoted by Unocal/Delta. Proposal may now be revived having been effectively abandoned.
- 8 Trans-Caspian Various proposals involving oil companies and the Turkish Government.
- 9/10 Tengiz/Uzen–Kharg New lines needed to link production to Kharg, promoted by Iran, TOTAL.
- **11** *Uzen/Tengiz–China* Under study and being promoted by China National Petroleum Corp. May have been abandoned on cost grounds.
- 12 Atyrau–Samara–Druzhba system In existance. KazakhOil had been promoting expansion of capacity but may now favour alternative route.



### **Central Asia** pipelines

doned because of the huge distance and enormous cost of such a pipeline put at around \$12bn. China's lack of support for these projects may also have been prompted by fears that they may provide its separatist movements in the western provinces, especially the oil and gas rich Xinjiang Province, with an economic target for sabotage.

A southern outlet for the Caspian Basin's oil and gas through Iran is the route most favoured by the international oil companies. It is by far the least costly option as there already exist an oil and gas pipeline infrastructure in Iran. The existing 124-mile, 283-350bn cf/d gas pipeline from Korpezhe in Turkmenistan to Kurd-Kui in northern Iran could link up with the recently completed Iran-Turkey gas pipeline and hence carry Central Asian gas to Europe or the Indian Ocean. The 240km Nekha-Tehran oil pipeline with a capacity of 175,000 b/d, which is expected to come online by 2003, would allow for oil swap operations. But until the US softens its stance on Iran and removes its sanctions legislation, an Iran route will not be on the cards. The leadership of the Central Asian states, given their overwhelmingly Muslim populations, also tend to distrust Tehran's intentions as much as they do Moscow's.

### Via Afghanistan

America's overthrow of the Taliban in Afghanistan opens the possibility of a fifth export route that was considered in the mid-1990s and enjoyed the backing of the US Government. Plans called for the construction of a 1,040mile, 42-inch Central Asian Oil Pipeline with a capacity of 1mn b/d. The line would gather oil from the existing pipeline infrastructure in Turkmenistan, Uzbekistan, Kazakhstan and Russia, carrying it south through Afghanistan to an export terminal to be constructed at Gwadar, on the Pakistani coast of the Arabian Sea.

Unocal and Uzbekistan studied the opportunities to use pipelines in Uzbekistan to deliver oil to Chardzhou, Turkmenistan. The trunk oil pipeline connecting West Siberia to Uzbekistan via Kazakhstan could deliver up to 15mn t/y for further transportation along the Central Asian Oil Pipeline. The project was estimated to cost \$2.5bn and was compared in scope to the Trans-Alaskan Pipeline. Similarly, the Central Asian Gas Pipeline Consortium (Centgas) that had Unocal as its lead operator drew up plans in 1997 for a 1,271-km, \$1.9bn gas pipeline. The plan was to link Turkmenistan's giant 45tn cf Doulatabad gas field via the less moun-



Aerial view of Novorossiysk terminal and jetty under construction.

tainous southern parts of Afghanistan to Pakistan, terminating at Mulat with a capacity of 20bn cm/y of gas. Turkmenistan had reportedly guaranteed to deliver the entire reserves of the Doulatabad field to the consortium. Both projects were put on hold following US attacks on Bin Laden camps in Afghanistan in 1998 in response to attacks on US embassies in East Africa.

At the time of writing, the establishment of the interim transitional government and hopes of future political stability in Afghanistan and continued US interest in the country have rekindled enthusiasm for this South Eastern export route. The Turkmen President, Separmand Niyazov, has already appealed to the UN to revive the projects. The pipelines provide the most direct route from Central Asia's oil and gas fields to the Arabian Sea ports in Pakistan, thus bypassing the choke points in the Strait of Hormuz. They provide an export route for Asian and Australian markets where most of the future growth in energy demand is forecast to take place.

Growth in European and Russian oil consumption is slow and competition is intense. In Asia, by contrast, the reverse holds true and therefore it would be in everybody's interest that there be adequate supplies for Asia's growing energy requirements – otherwise there will be pressure on the oil markets driving prices up. Oil demand in Asia is expected to grow by 10mn b/d in the next 10 to 15 years compared to 1mn



The crude storage tanks under construction at the Novorossiysk loading terminal on the Black Sea.

b/d in Europe.

Above all, from the Central Asian states' perspective, it is a route that would free them from reliance on Russian oil and gas networks and does not cross the controversial Caspian Sea or the volatile Caucasus. From the US point of view it would further reduce Moscow's control of Central Asia's oil and gas riches, thwart Iran's ambitions to become the link between the region and Europe, and it would diversify sources of oil and gas supply therefore reducing Opec's control of the oil markets and prices.

### Disadvantages

The Afghan route is not without its problems. Even if political stability is established in Afghanistan and the logistical problems of constructing pipelines over mountainous terrain are overcome, a lot would depend on Pakistan where ethnic, religious, tribal, and political tensions have intensified since the US campaign against the Taliban.

According to Julian Lee of the Centre for Global Energy Studies, a gas pipeline through Afghanistan is an unlikely scenario so long as India and Pakistan remain at loggerheads. However, Turkmenistan is likely to be the sole beneficiary of the gas pipeline, according to Alex Vatanka, Editor of Jane's Sentinel Russia/CIS, as Uzbekistan consumes most of its gas production and has little export capacity.

President Niyazov's tacitum policies have already alienated Turkmenistan in the gas export projects in the region. The gas pipeline from Shah Deniz in Azerbaijan to Turkey via Georgia is going ahead without Turkmen participation. Turkmenistan currently sells its gas to Iran and Ukraine. In the case of the latter, it is selling its gas at half the world price level via the Russian pipeline network.

To export Kazakh oil the western companies have already invested huge sums of capital in production and westward transportation of oil. Vatanka believes that the western oil companies are not likely to make any major radical decisions and will adapt a policy of wait and see, especially given the current climate of global recession and low oil prices.

The IEA (International Energy Agency) has reduced its forecast for oil demand growth this year and next following the 11 September enhanced recession. In its *Monthly Oil Market Report* for October 2001, it says global oil demand growth is only expected to grow by 120,000 b/d in 2001 and 600,000 b/d in 2002. That is a reduction from the previous month's cautious forecast of 500,000 b/d growth in 2001 and 800,000 b/d in 2002.

continued on p20...

## **Meeting the challenge**

BP's decision to go ahead with the West of Shetland Clair project – currently the largest undeveloped field on the UK Continental Shelf (UKCS) – was a clear sign of returning confidence on the Shelf when it was announced towards the end of last year. Innovative technology and new ways of working will be needed if difficult to develop fields such as Clair are to be successfully exploited in the increasingly mature North Sea. In addition, UK Government and industry initiatives appear to be having some success in ensuring that as many discoveries as possible are developed while the existing North Sea infrastructure remains in place. *Jeff Crook* reports.

KCS activity suffered a 'double whammy' in 1998 when a collapse in crude prices occurred during a review of North Sea taxation by the newly elected UK Government. This led to a decision in September 1998 to leave the tax regime unchanged - but sentiment was damaged by a year-long period of uncertainty. Higher crude prices improved the economic scene, at least until the recent disputes over Opec production cuts. Offshore operators have meanwhile benefited from high gas prices. (British Gas was dubbed 'Scrooge' in the UK tabloid press, when it decided to raise its domestic price by 5.3% from 3 January 2002, after seeing its wholesale prices almost double in 18 months.)

The initiatives and dialogue stimulated by PILOT were important factors in restoring industry confidence on the UKCS, according to an economic report published by the UK Offshore Operators Association (UKOOA) in 2001. The report predicted that offshore investment would recover to £4bn in 2001, from around £3bn in the previous two years. But these levels are well below those achieved earlier in the decade, when investment peaked at £9bn in 1991.

### **PILOTing the way forward**

PILOT, the successor body to the UK Oil and Gas Industry Task Force (OGITF), was established in January 2000 with the aim of securing the long-term future of the oil and gas industry in the UK. It supports a wide range of initiatives, some of which – such as the 'Satellite Accelerator' programme – are intended to promote activity, while others aim to increase competitiveness by focusing on the supply chain.

The body is made up of 23 key government representatives and recognised leaders from the industry who meet quarterly. The specific aims of PILOT are to:

- maintain a production level of 3mn boe/d, with £3bn/y investment up to the year 2010, in order to prolong Britain's self-sufficiency in oil and gas;
- create up to 100,000 more jobs;

- increase exports by 50% by 2004; and
- increase revenues by £1bn/y from new business.

Brian Wilson, UK Energy Minister, welcomed signs of increased activity in the UK oil sector when he chaired a meeting of PILOT in October 2001. In particular, he said there was now a strong response to the government's Fallow Fields Initiative, with ten proposals going forward and another seven in the pipeline. His remarks coincided with BP's decision to go ahead with the Clair development.

### **Challenging Clair field**

The Clair field was discovered in 1977 and lies 75 km to the west of the Shetland Islands, covering 220 sq km in water some 140 metres deep. Operator BP (28.6%), together with its co-venturers Conoco (24.0%), Chevron UK (19.4%), Enterprise Oil (18.7%) and Amerada Hess (9.3%), gained approval for development of the central area of the field from the UK DTI at the end of November 2001. The £650mn Phase 1 project involves a single steel platform with production capacity of 60,000 b/d of oil and 15mn cf/d of gas.

An appraisal programme during the 1980s confirmed that Clair was similar in size to the largest North Sea fields, but the well tests produced disappointing results and the field was placed in the 'too difficult' category. Interest in the field revived in the 1990s when a 3D seismic survey was carried out and economic flow rates were achieved with horizontal wells; but development plans were put on the backburner during 1998 with BP seeking more innovative solutions.

BP says that during the front-end engineering design (FEED) process carried out in early 2001, the project coventurers sought new approaches to project delivery that had not been considered by previous UKCS developments. The adopted solution incorporates best practice globally in terms of project execution, including input from the Gulf of Mexico. This FEED process resulted in Clair becoming competitive in the coventurers' worldwide portfolios.

Wood Group Engineering (WGE) undertook the FEED programme under a \$5mn contract. This was the first development in the UKCS to benefit from the Wood Group's acquisition of Mustang Engineering, a well-respected Gulf of Mexico design house. The project was largely carried out in Houston by a team from Mustang Engineering, with input from other WGE staff. A further contract was placed with WGE for the execution phase of the project in October 2001.

The platform will stand on a 165metre high, four-leg, steel jacket and will have 15 producing wells, 8 water injectors and one drill cuttings re-injection well. The topsides will be constructed as a single integrated unit, and installation will call for one of the heaviest lift capability vessels on the market.

### **UKCS** infrastructure

The oil from Clair will be piped to the existing Sullom Voe terminal in the Shetlands, with gas either being reinjected into the reservoir or being exported by the newly installed Magnus Enhanced Oil Recovery (EOR) pipeline. The Clair platform will also serve as a major hub for developing other fields lying to the west of the Shetlands. Dependent on the success of Clair Phase 1, the remaining part of the field may be developed in later phases to yield an additional 400mn barrels of oil.

The Clair oil pipeline and Magnus EOR gas pipeline represent the first major stage of transport infrastructure construction in the Atlantic Frontier to the west of the Shetlands. While the region's infrastructure is likely to grow in coming years, it is decommissioning rather than construction that preoccupies many operators in the northern North Sea to the northeast of the Shetlands.

The prospect of decommissioning raises fears that many satellite fields could remain undeveloped after major infrastructure has been taken out of service. These fears are fuelled by official figures which indicate that there are 250 fallow fields and 200 unused licenses on the UKCS, with other studies North Sea

### E&P

putting the number of undeveloped finds at over 300. Wilson has said that undeveloped discoveries are 'a luxury we cannot afford at this stage of the UKCS life cycle,' and he has made clear the government's intention that licenses should be in the hands of companies that want to develop them.

While, at first sight, the use of spare transport and processing capacity for satellite development may look like an attractive business opportunity, the projects place significant demands on in-house management and technical resources. Each satellite poses a range of complex issues, including reservoir evaluation, well construction, subsea engineering and 'flow assurance.' It can also prove complicated to modify existing facilities to allow processing and metering of fluids from satellite fields. To further complicate matters, many older facilities need upgrading to extend their lives into the future, as is illustrated by the Brent field.

### **Penguins project**

Shell Expro's £350mn Penguins cluster project (see Petroleum Review, January 2002) will be the first satellite tie-back to the Brent field. This 65-km subsea tie-back to Brent Charlie - the longest subsea satellite in the UK sector exploits a cluster of fields with estimated reserves of 90mn boe. Penguins has remained undeveloped since its discovery in 1974 and could be the first of a number of satellites for Brent, which in November 2001 celebrated its Silver Jubilee (25 years) since first oil. The field is located 186 km northeast of Lerwick in the Shetlands and is a major transport hub for other fields in the area. It exports gas through the FLAGS line to St Fergus and oil to Sullom Voe.

With its four production platforms, Brent is the second largest field on the UKCS. It has recoverable reserves of 1,989mn barrels of crude, 584mn barrels of natural gas liquids, and 4.3tn cf of gas. However it was necessary to undertake a £1.3bn long-term field development in the mid-1990s to extend its field life to 2010. The project was completed in 1997 and involved the complete rebuilding of topsides facilities, with new post-Cullen living quarters and single-train, low-pressure process equipment. One specific aim of the project was to recover an additional 1.5tn cf of gas. Shell Expro is now looking at potential field life extension from 2010 to 2025 - this may be needed if further satellites are to be considered a realistic proposal.

Speaking on Brent's Silver Jubilee, Geoff Dart, Director, Oil & Gas-DTI, highlighted the role that the field will play in the PILOT 2010 Vision: 'The Brent field has not only been important for Shell and Esso, it has been of major importance to the government as we have developed our Continental Shelf to meet the energy needs of the UK. The contribution to date has been impressive by any standard. But more can still be achieved. Future satellite developments like the recently sanctioned Penguins project will see Brent play a significant role towards the achievement of the PILOT 2010 Vision.'

### Satellite developments

Despite the difficult challenges there has been a steady stream of satellite projects on the UKCS, including the \$400mn ExxonMobil-operated Skene project, which is a 15-km tie-back to Beryl Alpha employing a flow-line bundle with heated water-jacket (similar to that adopted for Britannia) that came onstream 3 January 2002 (see p4). This project will recover 95mn boe.

TotalFinaElf's Otter satellite involves a six-slot subsea manifold tied-back 21 km to the Eider platform, with water injection from Tern, and employs electrical submersible pumps in the subsea wells. The sharing of 'host' functions is also a feature of TotalFinaElf's Nuggets project. The well fluids from Phase 1 of this project will be piped 54 km from a subsea manifold for processing on the North Alwyn platform, while umbilical cable conveying signals to the subsea equipment will be connected to the Dunbar platform located 20 km away.

Shell Expro's £75mn Scoter field development gained government approval two days before Clair. This project is notable as the first subsea tie-back to the high pressure/high temperature (HP/HT) Shearwater platform which was inaugurated by the then Energy Minister Helen Liddell in September 2000. This platform, together with its 463-km pipeline to Bacton in East Anglia, was always regarded as a 'key piece in the central North Sea facilities jigsaw' by operator Shell Expro.

### **Outside encouragement**

The real worry, however, is that more difficult fields could be left unexploited without some form of outside encouragement to license holders. In a bid to provide such encouragement, the UK Government's Fallow Field Initiative was followed by the Satellite Accelerator Initiative in 2001, under PILOT, in order to involve the wider industry in some of the more commercially and technically challenging satellites. The aim of the initiative is to harness the expertise of a wide range of participants, not just operators, to find innovative solutions for development of more difficult finds. A key underlying principle is that risks and rewards are shared more evenly amongst the various participants.

It is only through the continued development of such initiatives that the exploitation of the remaining hydrocarbon potential of the UKCS can be optimised most cost-effectively.

#### .. continued from p18

The current situation with the CPC line is also likely to deter western oil companies from making big investments in new export routes. According to recent reports in Kazakhstan production is lagging behind expected exports. The new CPC line is facing serious throughput problems, as some members of the consortium are unable to meet their promised quotas at least until 2005.

Crucially, Russia's failure to deliver 8mn t/v has delivered a major blow to the CPC. The shortfall is a consequence of the conflict between CPC and Transneft (because it was stripped of its status as CPC operator) that has delayed construction of Tikhoretsk-Kropotkhskove feeder branch to the CPC line. Moreover, KazTransOil has developed several other export routes in the past year and is offering lower tariffs that make the majority of its export routes cheaper than the CPC line. In the short to medium term competition amongst the various existing export routes means that there will be surplus capacity in some.

Russia is also claiming it can meet all of Central Asia's oil and gas export needs through its existing oil and gas pipeline network without the need for construction of any new pipelines in the region. It is promoting new export outlets being developed in the Baltic and Mediterranean Seas.

Construction work on its Baltic Sea port should complete soon and it is working with Croatia to connect the Adria pipeline with the South Druzhba pipeline. Reversing flow in the Adria pipeline and tying it to the South Druzhba route would allow oil exports from the Caspian to run via Russia's pipeline system across Ukraine and Hungary and then terminate at the Adriatic deepsea port of Omisalj in Croatia. In addition, Russia has a very extensive gas network where capacity could be easily be increased to accommodate Caspian exports.

### Conclusion

Exporting hydrocarbons from Central Asia appears to involve taking the least worst of the available technological and political options over long distances and difficult terrains through some of the most politically volatile parts of the world.

Adding Afghanistan to the list of export options could be seen as a prudent way of spreading the risks rather than concentrating all hopes on westward routes, Or, is it more realistic to view significant oil transportation through Afghanistan as just one more factor that could go wrong and thereby add further volatility to world oil markets?

Photos courtesy of C. Pala

### Perseverance brings CPC pipeline onstream

pipelines

'Goodbye to all that.' The opening of the pipeline to Novorossiysk will largely replace rail-transport. Photo courtesy of C. Pala

The first pipeline dedicated to carrying Kazakhstan's north Caspian oil riches to the world market was belatedly dedicated in Russia in November 2001 – four months late, at a third of its initially planned throughput capacity and minus the Presidents of the two countries it passes through, writes *Christopher Pala*.

Caspian

Speeches delivered at the terminal near the Russian Black Sea port of Novorossiysk called the 1,510-km steel pipeline a symbol of international cooperation – and that it is indeed, with American oil companies putting up most of the \$2.5bn spent so far and Russia standing to earn \$20bn over its 40-year life.

But the pipeline is also:

- A unique hybrid of Soviet-era over-design and Western hightech, the result of the first collaboration between two diametrically opposed construction philosophies.
- The first step to Kazakhstan's ambitious plan to export more than 3mn b/d in 10 years, helping to keep world oil prices down and becoming one of the top five oil exporters in the world.
- A multi-billion-dollar gamble by Chevron in 1993 that now seems

set to pay off handsomely.

- A glaring example of the difficulty of doing business in bureaucracy-stifled Russia.
- Proof that, with perseverance, it can be done.

The pipeline, built by the 11-member Caspian Pipeline Consortium known as CPC, starts on the desert shores of the northeast Caspian Sea at Tengiz, Kazakhstan, the world's sixth-largest oil field. The pipeline, believed to be the longest 40-inch oil pipe in the world, then curls around the Caspian before striking west across the broad plains north of the Caucasus range to end at a tanker terminal located 25 km west of Novorossiysk. Exactly half of the pipeline - from Tengiz to a point near the port of Kaspiskii - already existed and was refurbished and provided with new pump stations. The other half was built from scratch.

When the first phase is finished in the fall and the pipeline capacity reaches 550,000 b/d, the cost is expected to stand at \$2.64bn. When it is fully completed in a few years at a final cost of about \$4bn, it will be able to carry up to 1.3mn b/d with 17 pump stations.

Production at the Tengiz field is not expected to achieve its peak of 700,000 b/d until the end of the decade, according to Tom Winterton, General Director of the consortium exploiting the field, Tengizchevroil (50% ChevronTexaco; 25% ExxonMobil; 20% Kazakhoil; and 5% LukArco, a Lukoil/BP joint venture since the BP takeover of Arco). When Chevron took over Tengiz from its post-Soviet managers in 1993, it created one consortium for the oil field, while Oman and Kazakhstan created a second one to build the pipeline to the nearest open sea, the Black Sea.

For the first few years, Tengizchevroil diligently overcame such obstacles as

the extreme depth of the reservoir (4,000 metres), its high content of poisonous sulfur dioxide (SO<sub>2</sub>) and the high pressure at which the oil was coming out. Production steadily climbed from 25,000 b/d to 260,000 b/d and the jinx that once gave Tengiz the longest uncontrolled blowout in Soviet history seemed overcome.

But in those years, the pipeline consortium got strictly nowhere in its efforts to finance the pipeline without having Chevron onboard. In 1997 CPC was restructured, with Chevron joining and taking a leading role.

It was not until that year that two newly created Russian oil giants - Lukoil and Rosneft - were brought into the consortium. At the same time the Russian Government reduced its share to 24%. based on its contribution of land and 300 km of existing pipeline. The Kazakhstani Government took a 19% contribution, in proportion with its 455-km share of an existing pipeline, and Oman kept 7%. The three governments' share was 50%. The other half was divided up among the oil companies who would pay to rehabilitate the existing pipeline, build 755 km of new line, create a terminal on the Black Sea coast and build an initial five pump stations along the way.

Chevron (Chevron Caspian Pipeline Consortium Company) took 15%, the biggest share and Lukoil (LukArco BV) took 12.5% in the pipeline building venture. The two companies agreed to rotate the top two jobs, with Chevron executives in the number two job for the first five years having responsibility for operations – building the pipeline. Rosneft Shell Caspian Ventures Ltd and Mobil Caspian Pipeline Company each took 7.5%; Agip International and BG Overseas Holdings Ltd each took 2%, and Kazakhstan Pipeline Ventures (KPV) LLC (in which BP has an interest) and Oryx Caspian

### pipelines

Caspian Pipeline LLC each took 1.75%.

According to Laurent Ruseckas of Cambridge Energy Research Associates, the BP stake in KPV was Amoco's initially – their 50/50 partner in KPV is Kazakhoil, the 100% state-owned oil company – while Oryx Kazakhstan and Oryx Caspian Pipeline are now subsidiaries of Kerr-McGee, which bought Oryx a few years ago.

'There had been other joint ventures in Russia,' said Frederick Nelson, the current Deputy General Director of CPC-Russia, 'but nowhere else did you have an ownership structure as politically potent as this one, with three governments and Chevron, Shell, BP, Agip and Exxon [now ExxonMobil] in one ownership.'

### **Bureaucratic approval**

Then things started moving forward. CPC embarked on the difficult task of getting the design approved. It was perhaps the most bureaucratic approval of any pipeline, requiring 175 signatures on a document that spanned 125 volumes. After a year and a half, the process had slowed so much that it took the intervention of the then Prime Minister Yevgeny Primakov to get the basic design approved in November 1998 – a yearand-a-half after the process first began. Also at the end of 1998, a second crisis came to a head when the Western companies, unhappy at how the first Lukoil-appointed General Director was running things, stopped funding and contractors were sent home. It was not until the spring of 1999 that Chevron and Lukoil reached an agreement under which all decisions had to be signed by an American and a Russian. 'It's very bureaucratic and tedious, but that's how we run the business,' said Nelson, the Deputy General Director.

### **Project over-design**

Meanwhile, work on the various units that would make up the whole system – old pipeline, new pipeline, pump stations and terminal – was running into problems of its own. In the Soviet construction system, which is still in force, a design bureau designs the entire structure. Then the relevant Ministry purchases all the materials and assigns the work to a third party, the constructor, who simply follows what the design bureau ordered.

Because the designers have no responsibility for cost but can be held personally liable for any design flaws that result in an accident, they follow building codes that in effect counter shoddy construction with massive overdesign. This method contrasts with the one elaborated by Western construction companies for whom cost is an important consideration.

Since oil was discovered in the late 19th century in Azerbaijan and the US, the two design philosophies – one to get things done cheaply, the other to do so regard-



Aerial view of the construction work of the Novorossiysk terminal and jetty on the Black Sea. *Photo courtesy of CPC* 



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Crude storage tanks at the Novorossiysk terminal. Photo courtesy of CPC

less of cost – evolved with almost no interaction until CPC came along. 'We've dealt with the senior regulators in Russia and they'd never dealt with Western outfits before,' said one senior executive.

From the start it was agreed that the pipeline would be built to Russian or Western standards, whichever were higher. From a Western point of view, some over-design was inevitable. But the Chevron executive in charge of the Russian portion of the pipeline was unprepared for what was to come. 'If a foundation has to be X by X, the designers would put 2X by 2X, running up the cost four times,' said Dennis Cukr, the CPC Pipeline Manager. 'So we'd find ourselves continually going back to the designers, saying: "You've got to be kidding, we would never want to build something like that. Do you know how much that would cost?" And they would say: "Too bad, that's our design and we're not going to change it."'

Because Russian pipelines do not have computer-linked sensors that can detect a leak instantly and close the relevant valve automatically, building codes stipulate that large retention ditches be built in populated areas. The codes made no provision for the sensors and the computers that were imported. So millions of dollars were spent on ditches that are no longer built anywhere else.

Millions more dollars were spent on huge lightning rods mounted on the holding tanks at the terminal near Novorossiysk that Chevron says were not necessary because floating-roof Western tanks are not vulnerable to lightning. In addition, a bridge over a gully that is dry most of the year had to be built for the eventuality that a 200year storm would occur at the same time as a fire in the tank farm. It cost a million dollars. In all, fire prevention work ate up close to one-quarter of the terminal budget – far more than is usual according to Chevron executives.

### Unexpected problems

One unexpected problem was that the existing pipeline and its pump stations

had been poorly built. Cukr says that when work started on these structures 'we found out they were designed by the same people we were working with. They were built by the exact same constructors who are doing the work for us and inspected by exactly the same agencies and even the same individuals that we're working with now. But back then the party bosses would say "We want this thing done now", so they would do shortcuts. Many, many times the people who built and inspected it and knew where they had screwed up forced us to dig this stuff all back up saying "Look at this, it's screwed up, fix it." That cost me several million dollars and several months of schedule."

One example in which the Russians were less forthcoming, he said, was a pair of crude-oil tanks at the existing Komsomolskaya pump station, which had to be destroyed and rebuilt. 'We wanted to reuse those tanks for crude oil, and they told us we couldn't. We weren't sure why until we found out from the drawings that the foundations of those tanks were supposed to have concrete piles driven underneath to support them. Well, they never drove those piles, they just took concrete ring beams and built the tanks on top of them. The tanks underwent a lot of settlement because of the soil type, they

### IN BUSINESS YOU NEED SPACE TO MANOEUVRE.





Caspian

pipelines

could buckle and you could have a leak.'

If the existing pump stations proved a mine field, building new ones turned out to be no easier. The design bureau for these, Gydrotrubaprovod (GTP), was part of Transneft, the Soviet-era pipeline monopoly for whom CPC represented the first competition it had ever faced. The Transneft President, Semyon Weinstock, had vigorously campaigned against the CPC project, arguing in effect that what was bad for Transneft was bad for Russia.

First GTP ordered lightning rods to be installed on all pump stations, according to the CPC executives. Then the rods had to be lengthened. Finally, they were thrown away so that the stations could be enclosed in huge concrete boxes as protection against theft.

The constructor for the stations, Rosneftigasstroi, was previously a branch of a Ministry that assigned work to contractors but whose staff had never built anything. The result was that of five pump stations to be built or rebuilt in Russia in the first phase of the project, only two have been completed and the last three are not expected to be finished before summer. 'We are going to finish six to nine months late because of the incompetence of the designers, and I don't mind being quoted on that,' Cukr said.

He estimated that as a result of these problems, the pump stations, budgeted at \$240mn, probably will end up costing \$265mn instead. And the pipeline, which was scheduled to operate at its inauguration in mid-2001 at 550,000 b/d, came in at less than 200,000 b/d. However, because pipeline construction does not differ so much between the west or Russia, the new pipeline segment came in on budget at \$745mn.

The terminal did not have the same design problems – it was designed in Paris by Bouygues Offshore and built by a Bouygues Russian subsidiary, Starstroi, according to CPC specifications.

CPC executives say the Russian Federal Government was supportive of the project and eager to establish itself as a reliable partner, not least because it had a stake in proving the redundancy of a rival Caspian pipeline project would that bypass Russia by going from Baku, Azerbaijan, to Ceyhan, Turkey. Yet, because the federal government is now relatively weak and the local authorities have regained much power in the decade since the collapse of communism, federal officials were reluctant to intervene unless the project was in danger of grinding to a halt, CPC executives say.

### **Further problems**

Another problem arose after construction started, when the Port Authority of Novorossiysk extended its jurisdiction by 25 km to the deserted piece of coast where holding tanks were buried near the end of the pipeline. There is no port here, just a small-boat jetty. An underwater pipeline shaped like a three-branched candlestick extends between 3 km and 5 km at sea and connect to hoses that fill the tankers as they lay tied up to mooring buoys.

The administrative move allowed the port authorities to impose a port fee of \$30,000 to \$50,000 per ship (ChevronTexaco uses 100,000-tonne as well as 150,000-tonne tankers), later reduced by half. Negotiations are still underway, with CPC arguing that since it does not use any public port, it shouldn't have to pay these fees.

### Upgrading existing pipeline

The process of upgrading the existing pipeline in the section running from the Tengiz field to the Russian border was easier, partly because Kazakhstan has a stronger central government and because its design institutes are more open to suggestions, the CPC executives said. Kazakhstan has generally welcomed foreign oil companies, while Russia has treated them with suspicion.

However, toward the end, customs problems halted the early flow of oil at the border.

### Major dispute

One of the biggest disputes between



Parker drilling's 258 rig operating in the Tengiz field. Photo courtesy of C. Pala

CPC members – over the quality bank – turned ugly and public when it derailed the opening ceremony that had been scheduled for 6 August 2001 with the Russian and Kazakhstani Presidents due to attend.

Tengiz oil, until the CPC pipeline was built, was exported entirely through Russia. Part of its light, sweet crude (which should sell for about \$1/b more than Brent, the benchmark crude) was mixed along the way with less desirable Russian crudes to make Urals Blend, which trades at nearly \$1 below Brent. 'The Russians got a free ride for years,' commented a diplomat familiar with the situation.

But for the pipeline, Chevron insisted on instituting a quality bank, a system penalising those who would add lowquality crude to the mostly-Tengiz CPC blend. Signing for it was one thing, but agreeing on how it would work proved much more difficult than expected, partly because Russians had never participated in a quality bank, CPC executives said.

Agreement came only three days before the planned inauguration date, which was to coincide with the loading of the first tanker. By then, the ceremony had already been cancelled.

Other delays pushed back the date of loading of the first tanker to 13 October 2001. By the time all the difficulties were ironed out, five fully loaded tankers had weighed anchor and sailed to the Bosphorus and refineries in Europe. A sixth one was loading when the ceremony took place on 27 November. Presidents Vladimir Putin of Russia and Nursultan Nazarbayev of Kazakhstan declined to attend the dedication ceremony, while Russia and the US ended up being represented by Deputy Ministers. ChevronTexaco, the world's fourthlargest oil company, sent Chairman David O'Reilly and the incoming and outgoing Vice-Chairmen. This was not surprising - both the pipeline and the giant oil field it serves are Chevron's babies, multi-billion-dollar gambles that are finally paying off. The pipeline will halve the \$6/b that ChevronTexaco has been paying to transport its oil by rail and pipeline to European markets.

As the biggest foreign investment in the former Soviet Union, the oil field and pipeline are testimony that, with perseverance, Westerners and Russians can work together. 'CPC is a bell-wether project for successful international cooperation,' O'Reilly said at the ceremony. 'It demonstrates the confidence that the international business community has to invest in Russia and Kazakhstan.'

# Pemex – on the brink of major change

Petroleos Mexicanos (Pemex) is expected to dramatically step up its exploration and production of crude petroleum and dry gas following a more than 75% jump in its total annual budget to pesos 250bn (£19bn) for 2002. *Simeon Tegel* reports from Mexico City.

Just over half the pesos 250bn annual E&P budget, some pesos 119bn, was agreed by the Mexican Congress on 31 December 2001. The remainder will come through Pidiregas, a special government instrument used to attract private funding for state projects.

According to Pemex Chief Executive Officer Raúl Muñoz Leos, the money will fund major new capital projects, including development of the Cantarell oil field in the Gulf of Campeche, and the Burgos Basin, a rich source of nonassociated gas on the Texas border. The cash will also help Pemex to raise production from the current 3mn b/d of crude to 4mn b/d by 2006, while natural gas output should go from 4.7bn to 6bn cf daily.

### **Capital campaign**

The budget increase comes after a highprofile campaign by Muñoz Leos to win more capital for the ailing state monopoly after years of inadequate reinvestment. Currently, Pemex hands over most of its net profits to the hardpressed federal treasury. Under Mexico's rigid system of supervising Pemex spending, the politicians have consistently failed for the last two decades to return to the oil giant enough cash for it to prepare for the future.

Muñoz Leos has also repeatedly talked about looking for foreign partners as a source for new capital, a prospect that fills many Mexicans with trepidation and even anger. Many people here are still deeply proud of the 1938 expropriation of British and US oil companies' assets by President Lázaro Cárdenas in response to the failure to meet union demands for a wage increase.

'He [Muñoz Leos] has played a very clever game of blackmail,' said Ángel de la Vega, an Energy Economist at the National Autonomous University of Mexico. 'Congress knows it cannot just say no to Pemex's requests for more funds and also stop the company looking elsewhere too.'

### Structural problems

The structural problems within Pemex resulting from the previous 20 years of under-funding are well illustrated by the fact that it is only able to refine just over half of the crude it produces, some 1.56mn b/d. Despite Pemex being the world's third largest producer of crude, Mexico is actually a net importer of refined products.

At the same time, Pemex's proven reserves have fallen to just under 27bn barrels of crude and condensates – seventh in the world and Mexico's lowest figure for some 20 years. Last year, Pemex invested just £3.5bn in exploration and production, a figure that was deemed insufficient to stop the decline in the reserves base.

Indeed, according to Muñoz Leos, the Mexican Government had no choice but to dramatically increase Pemex's budget this year. In November 2001, he told a congressional committee: 'To continue in Pemex doing what we have done in recent years, we could face a drastic drop in production that would convert us to a net petroleum-importing country very soon. It would imply not having learnt the most expensive lessons of our recent history.'

### Attracting foreign players

But despite the massive new state

funding, Muñoz Leos, backed by President Vicente Fox who unexpectedly appointed the former Dupont Mexico boss to head Pemex early last year, is still looking to spark the biggest influx of foreign companies to Mexico's energy sector since 1938. Given the constitutional ban on foreign ownership of subsoil rights, risk contracts are not possible in Mexico. At the same time, oneoff service contracts, where contractors provide, say, an undersea pipeline without ever owning the oil that passes through it, are unlikely to offer the incentives necessary to entice the industry's big hitters.

Instead, Muñoz Leos has begun offering 'multiple service contracts'. These will allow contractors to explore and produce oil and gas and take part in other upstream activities on a scale that should attract giants such as Shell or ExxonMobil into the market. Bidding in the spring for 20-year gas-drilling contracts could be the first round in a campaign that would see more than £30bn of private capital flooding into Mexico's energy sector by 2010.

So far, potential bidders are keeping their cards close to their chest. Peter Kidd, Chief Executive Officer of Shell Mexico, while describing the new contracts as a 'very positive step' refused to be drawn on whether his company would compete for any. 'The challenge now is for multiple service contracts to be developed that will provide a good incentive,' he said.

### **Dynamic reform**

After one year heading Pemex, Muñoz Leos appears on the brink of achieving some major changes. Like Fox, whose election in 2000 ended 71 years of oneparty rule in Mexico, Muñoz Leos is a dynamic reformer with an ability to listen. That in itself is already a major departure in Pemex management style.

Whether he is able to continue revolutionising Pemex, including shedding up to half of its bloated payroll of 130,000 employees, remains to be seen. Like steering a large tanker in a shallow sea, changing direction will take considerable time and skill.

### Fabrication market review



Europe's fabricators continue to struggle to cope with excess capacity and a lack of large platform construction contracts in the offing as offshore operators increasingly look to bring new developments onstream via subsea completions. *Kim Jackson* reports.

oil output from the UK sector of the North Sea declined at between 10% and 12% in 2001 compared with year earlier levels, providing major pressure for incremental developments as companies strive to keep their production systems loaded up for as long as possible. There are in fact large numbers of incremental projects, with at least 30 projects anticipated to be onstream between now and 2005.

However, for the platform yards, the news is less good as only five or six of these projects involve platform developments and a further three or four FPSOs. Probable and possible UK platform developments include Clair (BP),

Above: Aerial view of KBR Caledonia's fabrication yard. Photo courtesy of KBR Caledonia

Devenick/Rhum (BP), Goldeneye (Shell), Glenelg (TotalFinaElf), and Kessog (BP). Other development prospects include BP's Atlantic/Cromarty field as well as PanCanadian's Buzzard field. In addition, small platforms will be required for a number of gas projects – Juno (BG), CMS III (Conoco), Cleaver Bank (Shell) and Rivers (Burlington). All the rest are subsea tie-backs to existing facilities.

A similar picture is seen in the Norwegian sector, even though production decline has not yet started and the remaining undeveloped accumulations are rather larger than in the UK sector. Possible platform developments include the Ekofisk extension, Flyndre (Phillips) and Gudrun and Volve (Statoil). The move from traditional platformdriven oil and gas development projects to marginal and deepwater subsea and floater development concepts has forced fabricators to change the way they do business in recent years. An ongoing trend is for one-stop-shop EPIC (engineering, procurement, installation and commissioning) contracts which mean yards are usually no longer bidding directly for projects but as part of a consortium.

Yards are also having to offer a range of construction capabilities, including floating production systems as well as hydrid platform/floating production solutions required for the development of high-temperature/high-pressure or heavy oil fields, in order to stay competitive.

### UK struggles on

The UK fabrication sector continues to battle against overcapacity and there have been a number of casualties over the past year. Kellog Brown & Root and J Ray McDermott's Barmac joint venture responsible for the operations at the Nigg and Ardersier yards was dissolved in mid-2001, with the Ardersier yard subsequently closed and the Nigg yard taken under new ownership by KBR Caledonia (which is 100% owned by the Halliburton Group). The UiE yard, owned by French oil field engineering and construction group Buoygues Offshore, was also put up for sale in mid-2001. It secured no buyer and remains closed. Its closure marked the end of offshore fabrication on the west side of Scotland – the Kishorn, Ardyne Point, Lewis Offshore and Hunterston yards all having shut down in previous years.

Commenting on the current situation, Neil Bruce, Vice Chairman of the Offshore Contractors Association (OCA), said: 'At present the European fabrication sector is still recovering from a period of great decline. Although there have been a few positive notes to record recently, with European yards winning global contracts, the activity levels overall are significantly less in comparison to previous years.' Looking specifically at the UK sector, he stated that while activity levels had shown signs of increasing lately, he did 'not envisage returning to the days when yards regularly reach full capacity.'

Echoing this, John Wood, the Business Development Manager at KBR Caledonia, stated that throughout the 1990s the UK offshore market demanded outputs of some 10mn manhours per annum; a figure that has dropped to, and is forecast to remain at, 5mn manhours through the 2000s. 'As a result of this severe decline, we have seen a number of our traditional competitors withdrawing from the UK market with their yards being closed or placed on care and maintenance. KBR Caledonia believe that there remains a viable business and are determined to remain in operation in the Highlands."

At the time of writing, the company had no traditional work booked but was actively bidding on a number of projects and planned to bid for more in 2002 - including BP Clair and Atlantic, and Shell Goldeneye, together with a number of overseas opportunites. The only commitment the yard has at present is the berthing of the Santa Fe 135 for inspection, repair and maintenance (IRM) work, which was due to be completed in January 2002. This is a market that KBR Caledonia intends to grow based on its upgraded dry dock facility, reports Wood. 'This diversification is only one element of a strategy developed in 2000,' he stated, 'the foundation of which is a single yard (Nigg) operation focused on highly productive operations serving our traditional offshore markets both in the UK and elsewhere."

As already mentioned, fabricators are having to develop new contracting

Operator/Contractor Field*	Work	Delivery
UNITED KINGDOM: Amec Offshore Services		
ExxonMobil Kizomba, offshore Angola	partnering Fluor Daniel of US and Hyundai of Ko oil production vessel to be built in Korea	orea; 2003
Shell Bonga, offshore Nigeria	£300mn contract; two modules and topsides for FPSO	2002
Heerema Hartlepool Shell Bonga, offshore Nigeria	4,500-tonnes module	2002
KBR Caledonia Nigg (formerly Barmac)	inspection, repair and maintenance (IRM) – most re jack-up rigs and two semisubmersibles	ecently two
NORWAY:		
ABB ExxonMobil Ringhorne	12,000-tonnes PDQ topsides and 6,000-tonnes	May 2002
Statoil Kvitebjørn	jacket 10,500-tonnes PDQ	Mar 2003
Statoil Sigyn PPCon Ekofisk	tie-in to Sleipner A platform process capacity upgrade, approx 800 tonnes	3Q2003 3Q2004
Statoil Karsto/Draupner	\$35mn, five-year contract for maintenance and modification of the Karsto gas treatment plant and Draupner platforms.	
Aker Stord Phillips Petroleum Maureen	ongoing decommissioning contract pushed	Nov 2001+
Norsk Hudro Valball	forward from cleaning to dismantling	Aug 2002
Norsk Hydro Fram West	800-tonnes module on Troll C	May 2003
Statoil Grane	NKr 5bn contract; floating production platform	2004/5
Aker Verdal		
Statoil Kvitebjørn Norsk Hydro Valhall	4,000-tonnes steel jacket	Aug 2002 Jul 2002
Norsk Hydro Grane	17,500-tonnes steel jacket	Mar 2003
Heerema Tønsberg BP Valhall (flank)	NKr1bn EPIC contract for wellhead platform; option for second wellhead platform	2003
Kvaerner Oil and Gas Norsk Hydro Grane	NKr500mn contract; 5,500-tonnes power generation and living quarters	May 2003
Umoe Haugesund Statoil Kvitebjørn	NKr2bn contract; topsides	-
ITALY: Rosetti Marino		
Eni-Agip Calipso, Italy	700-tonnes deck	May 2002
TotalFinaElf 137B, Libya	2,000-tonnes integrated deck	Oct 2002
Intermare Sarda Agip Calipso, Italy 1278 Libus	jacket	202002
THE NETHERLANDS:	drining modules	502002
Heerema Havenbedrijf Maerek	platform	-
Gaz de France K12, G17	two wellhead platforms	-
Conoco CMS III	1,000-tonnes compression module	-
TotalFinaElf K4, K5	450-tonnes jacket, 2,200-tonnes topsides and	-
NAM K14, L15, L9	three compression modules (1,400 tonnes; 3,000 tonnes; 600 tonnes respectively)	
SPAIN: Dragados Offshore		
Pemex Gulf of Mexico	\$179mn contract; 1,500-tonnes gas platform	-
Izar Exmar Offshore Aquitaine, Med'n Sea, offshore Libya	900,000 barrel capacity FPSO	Jan 2003
SWEDEN:		
Emtunga OKIOC/Deutag Kashagan.	800-tonnes second rig living guarters for	Nov 2001
Esso Norway/Heerema Ringhorne	110 men 1,150-tonnes living quarters for 120 men	Nov 2001
Unocal Indonesia West Seno, Indonesia	sourconnes living quarters for 87 men	May 2002
AIOC Chirag, Azerbaijan	1,300-tonnes living quarters for 110 men 1,200-tonnes full living quarters for 130 men	Aug 2002 Oct 2003
Current workload at some Europe	pan fabrication vards * North Sea unless other	vise indicated

### **Fabrication**

### market review



Øseberg South topsides at Aker Stord yard.

practices and tackle new markets in a bid to stay in business. Bruce comments that BP's Clair project is an example of the new type of contract that UK fabricators need to embrace. 'The Clair contract is an assembly project rather than fabrication-based with the supply chain providing greater integrated units for final assembly.'

In a bid to keep in business, some fabricators have been exporting their North Sea skills abroad. For example, Amec Offshore Services secured a major contract in August 2001, teaming up with alliance partner Fluor Daniel and Hyudai of South Korea, to work on ExxonMobil's Kizomba oil production vessel destined for operation offshore Angola, West Africa. Amec will offer its North Sea expertise to the project. The 300,000 tonnes hull and 20,000 tonnes topsides are being fabricated at Hyundai's Ulsan yard in South Korea. Although the project will not directly generate a large number of UK jobs, it is exactly the kind of contract that the UK Government has been encouraging as it will generate valuable export trade.

Amec is also acting as project manager for the engineering, fabrication and installation of the 17,000-tonnes topsides for the 300,000-tonnes Bonga FPSO. Its Wallsend vard in Tyneside will fabricate two of the modules, the others under construction by Heerema in Hartlepool and Zwijindrecht in Holland, with three small units fabricated in Nigeria. Together with alliance partner Heerema, the company secured the £300mn contract from Shell in March 2001. Scheduled to arrive at Tyneside in August 2002, the vessel's semi-completed hull moved out of Samsung Shipyard's dry dock in South Korea in November last year for additional fabrication work to be carried

Photo courtesy of Aker Maritime

out before it sails to the UK in June. Due to be installed on the deepwater field offshore Nigeria in summer 2003, Bonga will keep the Amec yard busy over the next year.

Other awards this past year included Swan Hunter's Tyneside yard securing the contract to modify Kerr-McGee's *Global Producer* FPSO which is now operating on the North Sea Leadon field. The company is also reported to be set to provide and install process modules for the subsea tieback of BP's MacClure field in the northern sector of the North Sea. Consafe Engineering secured a £3.5mn contract – subcontracted from Halliburton's Brown & Root Production Services – to provide an accommodation extension for TotalFinaElf's Dunbar platform in the northern North Sea. The contract is expected to take eight months to complete.

More recently, the Burntisland, Fifebased fabricator BiFab won its first fabrication contract since completion of a management buyout in mid-2001. It is to build the external turret mooring system for TotalFinaElf's 137B field development in Libya. The project has been subcontracted from London Marine Consultants, who was contracted by Doris Engineering for the engineering, procurement and construction of a mooring system for the field's newbuild FPSO.

Other news includes the acquisition of GVA Consultants by Halliburton KBR for an undisclosed sum from British Marime Technology towards the end of 2001. Based in Sweden, GVA earlier that year secured a contract from BP for the design of the semisubmersible and drilling facilities for the Crazy Horse oil field in the Gulf of Mexico. The GVA designed semisubmersible is claimed to be the largest vessel of its kind in the world and it is to be installed in 2004, with first production expected in 2005. Field reserves are put at 1.5bn boe.

The strong pound which has made bids for overseas projects uncompetitive, in particular against heavy competition from the much cheaper East European and Far East yards, has led some UK fabricators to diversify away from their traditional business in the oil and gas sector. Nigg, for example, put on inspection, repair and maintenance (IRM) work last year after the sailout of the Elgin/Franklin development's PUQ,



Mercon built the K1A topsides for TotalFinaElf; it is the first platform in the Dutch sector of the North Sea to utilise a Foundation Fieldbus-based process control system. Photo courtesy of Mercon

reported at the time that it was looking to diversify into nuclear decommissioning, renewable energy projects, and industrial and marine work. It was also looking to diversify from its traditional central and northern North Sea market, to target smaller southern sector contracts and developments in the Gulf of Mexico and West Africa.

This trend is being followed elsewhere in Europe, with a number of fabricators reporting that they are looking to secure onshore oil and gas construction work as well as civil engineering contracts for the fabrication of bridges, quays etc.

However, some such as Aker Maritime, continue to focus on specifically on oil and gas fabrication. 'To be a winner in the oil and gas industry, we believe you need maximum focus and efforts of both management and staff... this is difficult to do if you are looking to enter new markets,' comments Torbjorn Andersen, Vice President Corporate Communications. Its Aker Verdal subisidary focuses on heavy structural work, such as jackets, decks and floater hulls, while sister company Aker Stord moved from general steel fabrication to specialise on the construction of topsides, hook-up and commissioning. Confident that this is the right road to follow, the Aker Maritime Group has earmarked NKr300mn to be invested in improving and upgrading the Aker Verdal and Aker Stord facilities over the next few years.

### Fair Norwegian prospects

The Norwegian fabrication sector has, and continues, to fare slightly better

than in the UK. In the past, the Norwegian Government has 'rationed' project approvals in order to ensure that its development programme and fiscal changes have tied in with the capacity of its yards, with only a minimum of work permitted to go abroad. This means that most of the Norwegian yards have, to date, had a reasonably full order book. However, although Norwegian prospects continue to be good in the short-term - with upcoming opportunities including Kristin (semi floater), Snøhvit (barge/LNG facilities) and some smaller projects - there are no longer enough projects for the government to continue its rationing policy. Many expect the Norwegian fabrication sector to follow the pattern set by the UK over the past decade with yards closing as overcapacity takes hold. Up to 6,000 job losses, including engineering personnel, are forecast to be lost over the next five years or so.

Recent contract awards include Heerema Tonsberg securing, in August 2001, the EPIC contract for the North Sea Valhall flank development project. The NKr1bn contract includes an option for a second wellhead platform. Development of the flanks of Valhall is expected to add 127mn boe to recoverable reserves; first oil is expected in 1Q2003 with production forecast to reach 30,000 b/d. Meanwhile, Kvaerner Oil & Gas is working on a 5,500-tonnes power generation module and living quarters for Norsk Hydro's Grane platform. Delivery is slated for May 2003. The Grane heavy oil field, which has an estimated 700mn barrels of recoverable oil, is expected to reach a maximum output of 214,000 b/d in 2005.



Ringhorne module in Emtunga's indoor workshop, Gothenburg. Photo courtesy of Emtunga



Grane drilling module. Photo courtesy of Aker Maritime

As in the UK, some Norwegian fabricators are looking to diversify away from their domestic base, bidding for projects in the Gulf of Mexico and West Africa, in particular. ABB – which in 2000 acquired the oil and gas activities and fabrication facilities of Umoe in a bid to target large turnkey projects – appears to have been successful, recently securing the contract for the engineering, fabrication, integration, installation and commissioning of the surface wellhead platform for the Kizomba project offshore Angola.

Aker, too, is targetting the Gulf of Mexico, West Africa and Asia-Pacific markets – it has already made inroads in the latter, involved in part of the engineering for the Bayu-Undan project, and contracted to provide marine operations, hook up and commissioning services. The company is also looking offshore Newfoundland, where it is currently bidding for the White Rose FPSO topsides with its Canadian joint venture partner Peter Kiewitt & Sons with whom it worked on the Hibernia project.

Other news includes the 11-th hour rescue package reported to have saved Kvaerner Group from bankruptcy at the start of December 2001. The company agreed to a merger between its main shareholder, Aker Maritime (20.15%), and its Aberdeen-based subsidiary Kvaerner Oil & Gas. The deal gives Aker a 50% controlling stake in the Kvaerner Group as a whole and may lead to a rationalising of the Norwegian fabrication sector.

### Swedish sector

Emtunga has a number of living quarters fabrication contracts booked (see table) that clearly show that its market is no longer confined to the North Sea. Klas Wallin, Marketing and Sales

### market review

Director, reports that the company is currently bidding on a number of projects for delivery in 2002 and 2003, and states that Emtunga's 'goal for the moment is to deliver at least four projects per year.'

Fabrication

### **Italy targets Med**

The Italian fabrication sector is particularly well placed to target the Mediterranean sector and recent contracts include the award of the 4,400tonnes jacket and 2,000-tonnes integrated deck for TotalFinaElf's 137B field, offshore Libya, to Rosetti Marino, and the drilling modules contract to Intermare.

Intermare is also looking to target other new offshore field developments in West Africa, as well as onshore plant modularisation contracts. Meanwhile, Bruno Dalledonne of Rosetti reports that the company is 'monitoring opportunities in the North Caspian Sea,' having established a joint venture company – Ros-Bar – with a Russian construction yard in Astrakhan in March 2001.

### **Busy Dutch business**

Following a fairly quiet year in 2000/1, Mercon Steel Structures is quite busy at present, working on TotalFinaElf's K4 and K5 450-tonnes jacket, 2,200-tonnes topsides and connection bridges (to K5P and K5A platforms), as well as three compression modules for NAM's K14, L15 and L9 projects.

Plans to develop windmill parks offshore the Netherlands may offer a new



Ringhorne living quarter recreation room facilities.

market for the Dutch fabricators in years to come.

### Spanish specialist

Spanish fabricator Izar Group's Fene yard specialises in the construction of deepwater drilling and production equipment for the oil and gas sector. Most recently it secured the contract to build an FPSO for Exmar Offshore of Belgium, destined for the Aquitaine field in the Mediterranean Sea offshore Libya. At 900,000 barrels capacity, the vessel is reported to be the largest construction contract yet undertaken by the Spanish shipyard. Vessel delivery is slated for early 2003. Photo courtesy of Emtunga

Located in northwest Spain, the yard is well-placed to target West African projects – its close proximity to the region giving it an advantage over its Far East competitors who, although they may be able to put in a cheaper bid for work, are faced with the extra time and risk factors associated with towing large units to West Africa.

Other news includes the award to Dragados in mid-2001 of a \$179mn contract to construct a 15,000-tonnes gas platform for Mexican state-owned company Pemex, destined for use in the Gulf of Mexico.

### **Finland update**

Technip-Coflexip subsidiary Aker Engineering's Mantyluoto fabrication yard in Finland is to undertake engineering work for a deepwater spar floating production system destined for Kerr-McGee's deepwater Gunnison field in the Gulf of Mexico. Delivery is slated for 3Q2003. The mooring system is to be built by Aker Rauma.

### Looking to the future

The Far East, in particular the Korean sector, emerged as the dominant force in the global fabrication market by offering reduced cost bases for projects when the European sector began its downturn in the mid-1990s. The challenge for the European sector now is to wrestle some of these gains back by emphasising its greater technology offering and demonstrating that it can complete jobs more efficiently. Indeed, there are signs that Europe's fabricators are heading in this direction with the recent Bonga and Kizomba contract wins by Amec... perhaps all is not doom and gloom after all.



The Aker Maritime/Kvaerner Oil & Gas joint venture delivered the Snorre B semisubmersible production facilities to Norsk Hydro in early May 2001. Photo courtesy of Aker Maritime



### **IP Week 2002** www.ipweek.co.uk

### 18-21 February 2002 London, UK

#### PROGRAMME OF EVENTS

Monday 18 February	Tuesday 19 February		Wedn 20 Fe	Wednesday 20 February		
09.00 - 17.00	08.30 - 12.00	09.00 - 12.00	08.30 - 16.00	09.00 - 12.15	08.30 - 16.45	
09.00 - 17.00 International Conference: Meeting Growing Expectations - Challenges and Opportunities for the Energy Industries Industries	Seminar: Prospects for the World Gas Markets in association with IGEM World Gas Markets in association with IGEM With Constant of the Majors: Is Scale and Integration the Real Answer to Sustained Shareholder Value in the 21st Century? sponsored by Andersen, HSBC, OIES With Constant of the North of the State North		Seminar: European Downstream Oil Industry Seminar: Challenges of Working in the EU Business Environment in association with EUROPIA Europia L Great George		International Conference on Floating Production Systems in association with OGP DCCC DCCC DCCC DCCC DCCC DCCC DCCC DC	
	15.00 - 18.30	14.45 - 17.40	Street	Street	Street	
	Seminar: Transporting Gas: Capitalising on the	Seminar: European Refining - Addressing the Key	10.45.6	- 19.20		
17.00 - 18.30 Drinkt Recention 9	FSU Pipeline Potential in association with ITE	Issues, Challenges and Opportunities sponsored by Wood Mackenzie	IP ANNUA	L DINNER		
Exhibition Viewing	18.45	- 19.45		art sul		
1 Great George Street	IP London Branch Discussion Meeting The Institute of Petroleum	sponsored by RICENWERHOUSE COPERS	The Grosvenor House Hotel			

• Andersen • Bloomberg • CGES • Commodities Now • Energy Day • IGEM • IPE • ITE • OGP • Petroleum Argus • Petroleum Economist • • PetroVantage • Platts • PH Energy • SAP (UK) • Spearhead Exhibitions • Thompson Financial • Upstream • World Petroleum Congress •

AAPG - APPEX Prospect and Property EXPO (18 - 20 February 2002). Please see www.aapg.org

IP Week 2002 will bring together an impressive panel of speakers including:



**Richard V Giordano** Chairman **BG** Group



Dr. Ria Kemper Secretary General Energy Charter Secretariat



**Thierry Desmarest** Chairman and Chief **Executive Officer** TotalFinaElf



Loyola de Palacio Vice-President Commission of the EU and Commissioner for Energy & Transport



**Dr. Pierre Jungels** IP President-designate CEO, Gas and Power and Former Chief Executive Enterprise Oil Plc



Linda Cook Shell

### **Raising standards for e-business**

OFS Portal, the supplier-led oil and gas content management portal, aims to restimulate enthusiasm for e-commerce in the upstream sector by resolving some of the tricky issues around product definition and transaction standards. *Brian Davis* reports.

Since its launch in March 2001, the not-for-profit OFS Portal has been deep in discussion with suppliers, vendors and key bodies such as the American Petroleum Institute's (API) Petroleum Industry Data Exchange (PIDX) sub-committee to develop an industry-standard products and services classification system.

OFS Portal Chief Executive Bill Le Sage emphasises that the portal is not in competition with any other trading exchange. The portal is mostly focused on publishing electronic catalogues of members' products and services as a common source of standardised information, which can be used 'from the reservoir to the refinery gate.'

Membership has risen from 10 to 17 suppliers\* in recent months, including big names like ABB, FMC Technologies, Kvaerner, Baker Hughes, Schlumberger, Cooper Cameron and others, representing over \$50bn of spend in the upstream and mid-stream arena. Le Sage maintains that OFS Portal's standards initiatives will help accelerate the development and adoption of e-commerce in the oil industry – 'at last delivering the benefits and cost savings promised by e-business to both buyers and suppliers.'

### **Classification scheme**

OFS Portal is currently configuring a mass of content for a product and transaction classification scheme that will be compliant with API/PIDX standards. Le Sage claims the new product classification 'will empower oil companies to make more informed buying decisions.'

By March 2002, OFS will have completed over 1,700 product templates defining commercial and technical attributes so that catalogue content can be easily segmented according to oil company customers' needs. This data segmentation will ultimately provide the functionality needed at different



stages of the procurement cycle, from selection and sourcing, through ordering to fulfilment. The PIDX product classification task group includes Baker Hughes, Chevron, Requisite Technology, PIDX, OFS Portal and Trade-Ranger.

On the transaction side, OFS Portal is focused on standardising data for fulfilment in the e-procurement cycle, as product selection has proved to be a far more complex issue. 'Though most eprocurement activity started at the sourcing side, expectations were simply too high and neither the technology nor the culture was in place to make it happen,' remarks Le Sage.

### **Cost savings**

E-fulfilment promises significant cost savings as drill engineers/managers, for example, spend a considerable amount of time writing purchase orders, field tickets and invoices, which could be handled electronically. Work on e-fulfilment comes under the title RFx (as in request for information, request for quote, etc.) A new technology partner is due to be announced soon, to handle some of the technical issues that arise at this end of the e-procurement cycle. 'We consider that if we can get the operators and oil companies working together with suppliers to address the fulfilment issue, then we can tackle the larger problems later,' says Le Sage.

### **Proof of concept**

OFS Portal won a bid to work along with PIDX, and in conjunction with Marathon and Unocal and PriceWaterHouseCoopers (see p36), to develop transaction standards for complex products and services under the Com.Pro.Serv sub-committee. Five major pilots using XML-based schema documents have been conducted with

'Expectations were simply too high and neither the technology nor the culture was in place to make it happen.'

PIDX as proof of concept.

On the international front, Houstonbased OFS Portal is working with the UK Department of Trade and Industry (DTI) and the Business Software Applications Software Developers Association (BASDA) to internationalise PIDX transaction standards – 'to make sure we are all working from the same song sheet,' says Le Sage. Gap analysis by OFS Portal and BASDA was due to be completed in January 2002, and a meeting is scheduled in Aberdeen with



LOGIC and CIDX, the European e-Commerce Industry Data Exchange.

### Cutting out the middleman

Le Sage reckons that standards are being resolved at a rapid pace. However, on a more confrontational note, he suggests that complete agreement on standards could herald the disappearance of eventually e-business intermediaries such as the public exchange Trade-Ranger. 'I have an issue with the business model for public exchanges. E-business offers real value added between trading partners, so once standards are set, you don't really need a middleman. But not everybody progresses at the same speed, so there is probably a place for public exchanges in the meantime."

OFS Portal is due to carry out tests on exchange of content and interoperability with Trade-Ranger in 1Q2002, and both parties have signed a Memorandum of Understanding.

### Difficulties along the way

Le Sage makes no secret that B2B e-procurement has proved more difficult than expected. 'Content is king, but buying oilfield equipment is not like buying books online. What's more, a one size solution doesn't fit all and many of the promises have not delivered. At present there is no consistency between a supplier's or buyer's system.' Different oil companies have different approaches, so there is an urgent need for common e-commerce standards which will make reconciliation of orders, invoicing and field tickets a lot easier. Most importantly, e-business also promises to reduce or eliminate maverick buying.

Le Sage anticipates that many operators of public or private exchanges will prefer to get standardised content through OFS Portal rather than face the high cost and complexity of building content themselves. He claims even Trade-Ranger no longer sees itself in the content development business as 'it's simply too expensive and should be left to suppliers who recognise oil industry needs.'

\*OES Portal's 17 members are: ABB, Cooper Cameron, Halliburton, Schlumberger, Ambar Lone Star Fluid Services, Ensco, Hydril, Smith Industries International, Baker Hughes, FMC Technologies, Grant Prideco, Kvaerner Oilfield Products, Tetra, BJ Hughes, Greene Tweed, M-I and Weatherford. Energy. Nothing better for moving ahead.

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### **Feedback from members**

Recent editions of *Petroleum Review* have carried articles with reference to a proposal to investigate the possibility of a merger between the Institute of Petroleum (IP) and the Institution of Gas Engineers and Managers (IGEM). In the last article – written jointly by IP President Charles Henderson and Stuart Anderson, IGEM President, in the December 2001 issue – there was a request for views of Members.

t the same time the IP management requested that IP Branches should also seek the views IP Membership. We asked only for 'strong opinions' and received over 200 responses which represents approximately 3% of Branch Members. Of those responding, 89% were in favour of proceeding with the investigation and 11% were against. This varied in the range between 80% and 100% in favour across the Branches. This is a very high positive vote and, coupled with the request for strong opinions only and the low response rate, we interpret this to mean that the number of Members strongly against the merger, overall, is very small indeed.

I shared these results with IP Council and Council has agreed that this is a satisfactory basis on which to continue the investigation of a merger.

### So what next?

The IP recently established a merger working group to work on your behalf to develop the proposals with IGEM to form a new joint body representing the oil and gas industry. The working group is made up of Terry Moore (Chair), David Codd, Sue Karlsen, Ian Dixon, John Evans, Brian Abbott and Jeff Pym. We will now enter discussions with IGEM aimed, primarily, at defining the benefits of merger and ensuring that the interests of the IP are protected. The first step will be to agree a detailed timetable and I will be able to tell you more about this next month.

The vision is to create a single professional body for the upstream and downstream oil and gas industries, a body with sufficient critical mass to ensure ongoing strength and independence (12,000 individual members and 500 company members) together with the assets to develop further initiatives. It has the potential for expansion to provide international services via IGEM and IP branches in other countries.

The vision is also likely to be attractive to the DTI who has expressed the desire to see greater inter-working in the oil and gas sector.

### Why do we think IGEM will make a good partner for the IP?

- Creates a single professional body for the upstream and downstream oil and gas industry.
- Information, training and education.
- Complementarity of IP and IGEM events and courses.
- Programme of technical training courses.

- Commitment to lifelong learning.
- Structures on links with schools.
- Administration synergies, similar structure.
- It will unify the organisations' ability to cover scientific and technical aspects right across the oil and gas industry.
- Broadly similar purpose albeit in a different, but complementary, market sector.
- Supported in principle by the DTI and the Engineering Council.
- Sizes are compatible.
- 4,000 individual members (compared to 8,000 in the IP).
- 150 company members (compared to 400 in IP).

### How can Members contribute?

Extensive discussion with Members is essential. Branches are therefore encouraged to continue to discuss the proposed merger with their Members. A discussion will also take place at this year's Annual General Meeting.

The working group would like to hear Members' views, either fed back directly via Jeff Pym or via Branch representatives.

Jeff Pym, IP Director General

### **IP London Branch Activities**

### **19 February**

As part of IP Week in London The Russian Petroleum Industry in

Transition – Upstream and Downstream by Gerald Rohan,

PricewaterhouseCoopers

(This is an amendment to previously published information.)

Contact: Ian K Robinson

Tel: +44 (0)1932 783774

### **IP Southern Branch Activities**

### February/March

### AGM, and Fuel Cells

by Dave Rickeard, ExxonMobil Research

Contact: Veronica Cloke Browne Tel: +44 (0)1962 715399

### **E-Business** private exchanges

## The private portal vision

*Gary Adams*, lead E-Business Strategy Partner at PriceWaterhouseCoopers (PWC), is closely involved in a number of e-standards and private portal initiatives. He recently spoke to *Petroleum Review's Brian Davis*, outlining the scale of the challenge for e-business operations to succeed in the oil and gas arena against tried and tested E&P procurement techniques.

WC is facilitating the American Petroleum Institute's (API) PIDX (Petroleum Industry Data Exchange) initiative to develop common XML-based standards for the easy exchange of product and service data between buyers and suppliers over the Internet. 'Buyers and suppliers are at last working closely together on the standards issue,' remarks Adams.

Recent pilot e-business transaction initiatives, coordinated by PWC, have been undertaken by Halliburton with Marathon, OFS Portal and Unocal; Schlumberger, SAP and OFS Portal; Schlumberger and Unocal; and separately with ExxonMobil. These studies focus on standards involved in complex products and services under the Com.Pro.Serv committee.

'Until these standard issues are resolved there will be problems for any exchange body operating and for handling transactions,' says Adams. But he believes there's still a space in the middle for organisations such as OFS Portal (see p32) handling e-catalogue content, and portals handling MRO (maintenance, repair and operations) content such as Oilspace.com

In the meantime, there is still considerable difficulty and expense handling complex content with multiple back office systems. Adams considers that private exchanges will be the favoured business model, as they will allow an oil company to deal directly with suppliers from behind the safety of a firewall, so long as the standards are in place for straightforward transactions.

### Transaction areas

Complex products and services actually account for 70% of business in the oil and gas sector. As Adams explains, the private exchange will have to handle four major transaction areas. However, the buyer rarely retains much of the information necessary but relies on the expertise of the supplier to fill in the detail.

'Private exchanges will be the favoured business model, as they will allow an oil company to deal directly with suppliers from behind the safety of a firewall.'

First, there is the technical request, where the supplier (say, Schlumberger or Halliburton) often works under an umbrella agreement with the oilfield operator. The supplier typically has a field operations person who works with the buyer. The pricing information goes directly into the supplier's system and is lost to the buyer. In the e-enabled system, the technical requirement could be put out to bid in an online auction (if it doesn't fall under an umbrella agreement). This means the buyer will hold comparative pricing data directly.

Then a drilling operation plan (DOP) is created. If it is a complex service, the DOP will be created in Excel spreadsheets, bound and sent out to relevant parties. Again, this is not an electronic operation.

Finally, field tickets are created by the supplier. Then the buyer has to go back and reconcile the field tickets against any information created in the past. It requires a major effort to reconcile actual work completed against whatever was contracted by the buyers, and often results in further expense and late payments to suppliers.

Finally an invoice is generated – possibly, but not always, electronically. In fact, most of the work in the above four areas is primarily handled manually, by fax and on the phone. A private portal could create a linkage between the buyer and the supplier to enable that data to come directly from the supplier's system, helping the buyer to reconcile payment information better, storing information about projects and developing a powerful source for knowledge management.

### **Major initiatives**

All of the majors have private portal initiatives underway, in addition to investme continued on p38...

### Long-term opportunity

SAP Markets reckons there are five different types of private exchange:

- Integration services which integrate disparate IT systems within an enterprise.
- For Procurement, enabling online procurement of custom engineered products direct from suppliers.
- For Demand Chain Services, which connect customers and optimise operations across the value chain.
- For Supply Chain Services, which connect entire eco-systems of suppliers to optimise their services across the extended value chain.
- For Design Services, providing deep collaboration between buyers and suppliers for product design and engineering.

Chris Babcock, B2B Business Unit Consultant at CAP Gemini Ernst&Young considers that collaboration is probably the biggest area of opportunity longterm for an organisation. For example, he says: 'If you are designing an oil refinery there will be hundreds of suppliers both onsite and offsite, all using the same project management software and computer-aided engineering, with access to specialist service providers. A private portal allows an organisation to manage this exercise as one project online; whereas today you have to break it down into multiple parts. So, the amount of time wasted and people involved can actually be dramatically reduced.' Energy trading exchanges

### **Markets continue to** squabble over territory

When the aeroplanes crashed into the World Trade Centre, the last thing on anyone's mind was the resulting impact on the energy business. Nevertheless. the events of 11 September 2001 proved a setback for the New York Mercantile Exchange (Nymex) in its private war with the Intercontinental Exchange (ICE), the then new owner of the International Petroleum Exchange (IPE). Liz Bossley reports.

ymex and IPE have skirmished intermittently since IPE launched its successful Brent futures contract in 1988 in retaliation for Nymex's rejection of a proposal to trade its pioneering WTI futures contract on the London exchange.\* These two openoutcry, regulated exchanges between them dominated the energy futures field throughout the 1990s, serving different needs from the over-the-counter (OTC) energy market in bipartite swaps and options.

The regulated exchanges provide financially secure clearing of a limited range of transparent headline contracts. The OTC market is much more flexible providing a myriad of tailored financial products, but it is subject to counterparty credit risk and to opaque pricing. Arguably, a large proportion of the risk covered in the OTC markets was laid off on the two rival exchanges, so the OTC and futures contracts managed to exist and expand more or less peacefully throughout much of the 1990s.

### Upsetting the status quo

What upset this uneasy status quo was the rise of electronic trading. Driven by a need to expand and to cut costs both Nymex and the IPE turned to screen-based trading as their best hope for the future. The launch of Enron Online in 1999 crystallised the fact that while both exchanges had been competing with each other, the OTC market had grown exponentially in the shadows and had become the real threat to both their futures.

The scope of the OTC market was hammered home when ICE was launched in mid-2000 and commenced trading energy contracts in October 2000. Goldman Sachs and Morgan Stanley pulled together an impressive array of partners, including American Electric Power, Aquila Energy, BP, Deutsche Bank, Duke Energy, El Paso Energy, Reliant Energy, Shell, SG Investment Banking, Southern Company Energy Marketing, TotalFinaElf and the Continental Power Exchange. These companies pooled their trading volumes to provide a very liquid and flexible energy trading exchange which, if still not exactly transparent, shed some light on just how big the OTC market had grown.

### **Reducing costs**

Before the IPE or Nymex could think about competing with ICE they had to get their cost base down and improve not only their efficiency, but also their flexibility. Both exchanges have launched failed contracts at great cost - the IPE suspended its fuel oil contract in March 2000 and Nymex's Middle East futures contract, launched in May 2000, was guickly judged a flop. An electronic medium allows contracts to be tried out more cheaply than investing in a new trading pit.

Both exchanges encountered internal resistance from members to the replacement of pit trading and ultimately both demutualised in the year 2000 as a method of circumventing the need to drag reluctant members into the electronic world of the 21st century. But

### **Record growth in trading volumes**

InterContinentalExchange (ICE) announced in January 2002 that trading volumes continued to grow at a record pace, with average daily activity system-wide up 30% on a month earlier. The exchange also set new daily trading records with North American power volume of more than 17mn MWhs (megawatt hours) on 14 January and North American natural gas volume of more than 630bn cf traded on 9 January.

These volumes indicate that the market remains healthy despite the loss of a major player and that liquidity continues to be attracted to the ICE platform,' commented Chuck Vice, Chief Operating Officer (COO) of ICE. 'The ability for ICE users to minimise exposure to any one firm by broadly distributing business across a large and diverse group of counterparties, coupled with our role as a neutral marketplace, is attracting incredible volume. We expect this trend to continue in February as we begin offering clearing services via the global banking and brokerage community that owns and operates the London Clearing House.

ICE emissions and weather derivative markets are also reported to be continuing to be active, with January volumes doubling those in December.

Energy trading exchanges

progress towards getting an electronic system in place was still slow for both.

### **E**-future

Nymex announced in 2000 that it would launch its own custom-built electronic platform, eNymex, in 1Q2001 – but it never appeared and this is attributed by Nymex to a change of plans following the events of 11 September. Market rumours persist, however, that its development ran into litigation with a supplier.

The IPE's hopes for an e-future centred on finding a partnership with another exchange to share technology and development costs. Nymex was not interested in partnership and bought 1.2% of IPE shares in January 2001, saying that they were standing by to make an offer for the rest given some encouragement from the IPE Board. When none was forthcoming, Nymex openly declared war on the IPE on 5 April 2001, by announcing the imminent launch of its own Brent futures contract to steal the jewel in the IPE's crown.

However, if Nymex had planned to take out its lesser rival before tackling the real enemy, the OTC swaps market represented by ICE, it had made a serious misjudgement. ICE made an all-share offer for the IPE on 30 April 2001, recommended by the IPE Board and accepted by the shareholders in due course. At a stroke Nymex's two main enemies had combined their strengths – the IPE paved the way for the clearing of ICE contracts by the London Clearing House (LCH), closing the main chink in ICE's armour, and ICE undertook to bring IPE contracts within its electronic battlements.

On 29 August 2001, ICE and the LCH announced that they had reached a clearing agreement for WTI crude swaps and for Henry Hub Natural Gas swaps, its two most liquid contracts. The fact that Henry Hub and WTI futures are the two big Nymex moneyspinners was not lost on the market. Battle was joined on 5 September when the Nymex Brent contract commenced trading and, amidst a media fanfare, clocked up a record turnover for any new contract.

### **Terrorist attacks**

Market players were forced to choose between two sets of Brent, WTI and Henry Hub contracts, which threatened to divide the available liquidity in existing contracts rather than offer a new range of risk management tools. Then came 11 September. Situated a few blocks from Ground Zero, Nymex trading shut down immediately and did not trade again until 14 September. Volumes of trade recovered quickly on a limited service basis and, up until the end of 2001, Nymex still operated on reduced trading hours in response to continued transportation difficulties.

It is argued that, but for tragic timing, the Nymex Brent contract would have given the IPE a run for its money. This is extremely doubtful – no broker could easily recommend a client to open positions on the Nymex Brent contract, regardless of the fee waiver offered by Nymex as an incentive, when an almost identical liquid contract was already available. So, in the event, the Nymex Brent contract came and went as a mere blip on IPE's radar.

It would be instructive to chart the ICE WTI and Henry Hub contracts against their Nymex equivalents, particularly because Nymex introduced strip trading for the first 36 listed months of its Henry Hub natural gas swaps contract on 19 December 2001. This is even more directly targeted competition for the ICE cleared Henry Hub swap. But ICE still suffers from an OTC mentality that guards its volume and price data jealously. The best that ICE will offer is that it 'is off to a great start in 2002 with notional value of trades done on Wednesday 9 January topping \$4.3bn.' The Nymex flagship WTI contract has, over the last year, consistently traded at around double the number of IPE Brent contracts.

### **Enron collapse**

It is obvious, save for 11 September, that WTI is still a more liquid contract than IPE Brent. What is less obvious is the effect of the collapse of Enron on the market and it will be some time before the long-term ramifications are known. There was, however, a kneejerk drop in trade on the first trading day after Enron filed under Chapter 11 on 2 November 2001.

Risk managers who used to trade OTC with Enron Online could be forgiven for transferring their allegiance to the more financially secure, cleared and regulated exchange-based contracts in the wake of the Enron scandal. It is equally likely that boards of directors around the world will be asking themselves if the business of managing risk has itself become too risky, boding ill for the size of the total territory still hotly disputed by ICE and Nymex.

### **Crack in the ICE?**

One thing is certain, if ICE intend to proceed with an Initial Public Offering (IPO) of shares, an event widely rumoured in the market, it will have to open itself up to closer public scrutiny than it has so far. It may have taken this message onboard – a press briefing and demonstration of the ICE trading system is scheduled for the end of January 2002. Are we about to see a crack in the ICE?

\*WTI is shorthand for the Nymex light, sweet crude oil contract in settlement of which grades other than WTI can be delivered.

#### ... continued from p36

ment in public initiatives such as Trade-Ranger to cover both bets. A few suppliers offer specialist services via the Internet, like the product configurator from Schlumberger and a similar system from Halliburton. The product configurator allows the buyer to go online and configure a tool or product specific to its needs. This system offers a distinct competitive advantage for the supplier. However, buyers often complain that it's simply too much trouble to create buyer requests in multiple formats.

The present lack of a common interface for the buyer means many prefer to pick up the phone and call the supplier direct, often saying something along the lines of: 'Remember what you did on Shell 10/5... make it 100 ft deeper on the new well and price it out!' This leads to the information being lost to the buyer's organisation. 'I think we'll never get to the point where the field operator or procurement manager will prefer to type in the data, rather than make a quick call. There's no incentive, unless a common connection can be created between the buyer and strategic suppliers which goes directly into their systems for easier procurement,' states Adams.

### Extranet connections

However, future extranet connections tied into a corporate portal will enable the buyer and supplier to share information easily. The supplier will be able to enter it using XML-tags created using API standards, allowing the buyer organisation to save that data. Products such as SAP Portals and SAP Markets already have the ability and coding behind them to 'drag' and relate the technical request into a purchase order (PO), which can be coded for relevant information. Then a technical request can be used to create a PO without having to go to all the trouble of typing the data in.

### **Getting a return**

So when does Adams expect the oil majors, and suppliers for that matter, to get a decent return on their e-business investments? He reckons the really significant benefits will be realised about two years down the line. 'I think the technology is finally catching up with expectations. The major suppliers are finally getting to the point where they can start sending complex information and receiving it using an XML-based standard format. But the mid-size suppliers are going to have to struggle because it will be easier to do business with companies who have a full IT capability. They need to do something quickly, and that's where an outfit like OFS Portal can help them get in on the e-business game.'

### **Simon Storage to reorganise**

Simon Storage, the largest operator of bulk storage facilities in the UK, is about to announce a major reorganisation. Marketing Director, *Peter Rendall*, recently spoke to *Petroleum Review's* Editor *Chris Skrebowski* about the organisational changes.

endall started by explaining that like all managements, Simon Storage has been critically examining the structure and direction of its business. The first challenge the company had addressed had been the size of the organisation and its lack of geographical spread.

The management recognised that there was a risk of marginalisation – a challenge that was being addressed with the development of various new products over and above the company's core storage offering. In addition, the company had decided to capitalise on its regional – UK and Europe – focus by targeting a greater presence within the area.

Simon Storage had also recognised the progressive integration or merger of logistics operations – whether by shipping, road or rail, customers were increasingly looking for logistics coordination or a delivery package. The company's new name 'Simon – bulk liquid & gas network' reflects the emphasis on an integrated storage and delivery offering.

### A new persona

In order to reflect the changes taking place in the market and to focus staff on fully integrating all aspects of the business, the Board decided to rename the business and reorganise it into six operational groupings within an integrated whole. The six operational groupings are:

- Tank Terminals will cover the storage and handling process, and packaging, as well as hazardous cargo packing. The company claims to offer the only independent specialist storage sites in the UK that are COMAH (Control of Major Accident Hazards) registered for the secure temporary storage of tank containers and road tankers.
- Intermodal Distribution forms a key part of the supply chain management offering and will control and integrate road, rail, sea, pipeline and tank container movements. The company owns its own railheads, road vehicles and tank containers, and also operates some pipelines enabling a large number of transport options to be offered.
- Training a rapidly developing area where the company is using its own expertise to provide courses on every aspect of bulk liquid and gas handling, from the implementation of terminal automation systems to the training of HGV drivers in the distribution of hazardous products.
- Management covering the provision of support services to oil refineries and manufacturing plants and in managing storage terminals. Support services for shipping and aviation (where the company has

experience in vessel and aircraft refuelling fuel storage), management of fuel farms, port-side and apron services.

- Engineering offers project management skills and engineering expertise built up in expanding and upgrading the company's own facilities to third parties. Projects undertaken can vary from a single storage tank to a complete site redevelopment in full compliance with the latest technical and regulatory requirements. Planned maintenance services are also offered.
- Automation a number of software systems for integrated stock and product flow management are offered as a series of modular units. These programs were developed and proved in use at Simon Storage's own facilities and many of the terminals it manages. Combining with the firm's in-house engineering division allows a turnkey automation service.

Each of the divisions will have its own champion reporting directly to Managing Director Roger Hartless. Graham Towell will champion Intermodal Distribution, Phillip Betts Training and Management, Gary Lacy Project Engineering, while Jack Brown will champion Automation Systems and IT.

Rendall confirmed that the company was focused on growth and profitability, and was always looking for possible acquisitions. He felt that there was genuine interest and support for the company and that rationalisation of sites, both outside the company and particularly in Europe, could provide some interesting opportunities.

... continued on p40



# Do price cycles cause the industry's skill shortages?

The IP's President-designate, *Pierre Jungels*, recently addressed an IP Dinner in Aberdeen giving a number of personal observations on the industry. After outlining some of the revolutionary changes – 3D seismic, horizontal drilling, reservoir modelling and the ability to drill and develop in ever greater water depths, he posed a telling question...

'So how come in a recent review of risks for the UK offshore industry, we all conclude that we are suffering from growing skill shortages in key areas?'

e continued: 'Some would argue that the dot.com and telecom bubble of the past five years drained the best brains away from industries seen as traditional and low growth. I think I have shown that we are anything but traditional. As to low growth, we forget that we are depleting our asset base at around 10% a year and hydrocarbon demand is growing at about 2% a year for oil and 10% a year for gas – so creating new production at a rate of about 15% a year is certainly not low growth.

In other words, we must look somewhere else for the reason why we find it difficult to recruit the best brains of today when we clearly did 20 or 30 years ago.

My theory is that there are two key reasons for this:

- the first our own over-reaction to cycles;
- the second, is reputation.

### Oil and gas price cycles

First, cycles – they affect every industry in different ways. For us in oil, the cycle is, of course, oil and gas prices and how we react to them. We are in an industry where a discovery in deep water will not start producing for between five and seven years after the discovery, and will produce for 20 years. The Clair field, west of Shetland, is going for sanction as we speak, but was found 26 years ago.

Why then, do we over-react to shortterm deviation of prices?

Clearly, when a company such as

### continued from p39...

### Company growth

Questioned about which areas of the company's activities had shown most growth over the last year, he noted that Management Engineering and Intermodal operations had all shown growth. One of the reasons was the progressive deskilling of operations Enterprise Oil makes no money in 1998, with oil prices at \$12/b, and makes £515mn after tax in the year 2000 with oil prices at \$28, it is very hard for managers and shareholders to keep their nerve through the cycle.

We have all as a result seen large job losses and write offs in 1986, 1991 and 1998 with excessive expansion in 1989, 1996 and possibly now. Analysis of the last 20 years shows that none of that should have happened since Brent prompt, 12 month forwards, 10-year futures averaged \$18 through the 20 years.

This is probably why the large companies are now saying that they manage themselves at a price deck of \$16 constant real or \$18 flat nominal which is a statement of steadiness. If true and held, we just might attract top young engineers who again want a long-term career without fear of regular downsizing and its destruction of morale and culture.

### A question of reputation

The other reason the industry is not attracting the best is reputation.

Fiercely competitive in business, but consensus driven in our relations with government, society and pressure groups, we often present an image of the lowest common denominator, which perhaps unfairly allows our opponents to portray us as negative, obstructionists and opposed to society's progress.

We do tend to fight battles already lost in the forum of public opinion. Some random examples of the past 25 years include lead in petrol, low to zero sulfur in automotive fuels, Brent Spar and abandonment of offshore installations, and greenhouse gases. More important is our apparent failure to recognise that in a lot of developing countries our activ-

within the oil, gas industries and the ever more demanding SHE (safety, health and environment) regulations. This had provided Simon with a number of new opportunities with Rendall noting that Immingham now stored and handled over 80 different products.

He also noted the way that Intermodal's offering in terms of ities deliver huge resources to governments who use them to buy excessive amounts of weapons, very often to oppress their own people. We need to understand that we will not be allowed forever to say that it is not our problem.

### It IS our problem

In his remarkable Cadman Lecture, Sir Mark Moody Steward said: 'What we have achieved is a testament to the quality of the people in this industry. Their skills and commitment will be vital for meeting future energy challenges, which is vital for our world.'

Doing so requires attracting, developing and getting the best from the best people. We need to be truly multinational, valuing cultural diversity and individual worth throughout our operations. People will work for an organisation whose value they can share. For that we should never just say 'this is not our problem.' If it is a problem for society, it is a problem for us.

How right he is since after all the bright young people we want to attract are part of the very fabric of that society. Let us as an industry back all initiatives to get a positive message to schools from the IP programme for 7 to 11-year-olds, to the DTI Engineering and Research Council's campaign for 16 to 19-year-olds called NOISE (New Outlook in Science and Engineering), to the Society of Underwater Technology scholarship programme and COGS (Careers in Oil and Gas Sector).

To summarise, let me tell you about the four strategic statements attributed to Charles de Gaulle:

- Always expect the unforeseeable which means never get complacent.
- Expedite its occurrence which means get through anything with steady nerves.
- Stay in with the outs which means be creative and accept diversity.
- Whatever you do, never put yourself between a dog and a lamppost because you will get wet!' .

improved supply chain management was proving attractive. He confirmed that Tank Terminals was actively looking at some possible acquisitions as well as the development of a new terminal at Grangemouth. Planning permission had already been applied for and the company was hopeful that construction work could begin by mid-summer 2002.

### In-service lubricant grease quality – determination of wear and contamination elements

Due to an offshore incident where a life was lost, an Approved Code of Practice (ACOP) has been developed by the UK Health & Safety Executive (HSE) entitled Guidance on the safe use and operation of lifting equipment offshore. This ACOP is required to meet the mandatory regulations in terms of the safety of the operation of offshore cranes and contains statements regarding the necessity to monitor the quality of lubricating greases used in the offshore equipment in terms of both sampling and quality testing.

While a number of standard test methods already exist for testing the quality of new lubricant greases, it was recognised that standard test methods were not available for monitoring the condition of the greases while in-service for determining 'fit-for-purpose' use. On behalf of the offshore industry, the Institute of Petroleum has taken the initiative to develop a standard test method that will measure the presence of elements in greases arising from the wear of specific mechanical metal components and from contamination due to the ingress of, for example, sand or dust.

Initially, the standard test methods will cover the following elements:

Nickel (5 to 30 mg/kg)

- Chromium (3 to 20 mg/kg)
- Copper (1 to 100 mg/kg)
- Silicon (5 to 50 mg/kg)

Investigative work on identifying the most suitable methodologies was carried during 2001. As a result, two draft methods are to be evaluated during 2002 on a range of grease samples to obtain data to calculate precision statements for each of the two methods:

- sample fusion followed by either an atomic absorption or inductively coupled plasma emission spectroscopy finish;
- wavelength dispersive x-ray fluorescence spectroscopy.

These precision statements can then be used to set quality monitoring limits.

Volunteer laboratories are being sought to participate in the Round Robin exercises to produce data for calculating precision statements for the two methods.

If your laboratory would be willing to participate or if you want further information, please contact John Phipps, IP Technical Manager–Standards on Tel: +44 (0)20 7467 7130; Fax: +44 (0)20 7467 7156 or e: jp@petroleum.co.uk

### Our website can be found @ www.petroleum.co.uk/tech/stds

### **IP Certificate of Appreciation**

Ian Chamberlain, Chairman of the IP Petroleum Measurement Committee (right) recently presented Mike Pettitt (formally of BSI) with an IP Certificate of Appreciation in recognition of his work on Test Method Standardisation and Petroleum Measurement. Whilst at BSI, Mike was a Project Manager in the BSI Chemicals and Health Section. His responsibilities included Petroleum Test Methods, Specifications and Measurement. In addition, he was the Secretary of the ISO TC 28 Petroleum Static Measurement Sub-Committee and a member of the IP's Test Methods and Petroleum Measurement Committees.

Annual IP Health Workshop

### HEALTH AS A BUSINESS

MANAGEMENT ISSUE IN THE 21ST CENTURY

#### 8 March 2002 Institute of Petroleum, London

The aim of this limited attendance, one-day health workshop is to provide a forum for discussion between business managers, employee representatives and occupational health professionals on the topic of personal and business health and well-being in the 21st century. The workshop, which will be limited to 50 participants, will feature speakers from various sectors of the international oil and gas industry and will be specifically useful to senior HR and business managers as well as occupational health professionals.

The proceedings will be published at a later date. To reserve your place or receive more details please contact:

Jo Howard-Buxton Tel: +44 (0)20 7467 7127 e: jhb@petroleum.co.uk

Cost £50 to cover refreshments including lunch, and proceedings.

# NEWischnology

### Slashing process development times and costs

Flexylab, the new modular, multireactor synthesis system developed by Systag System Tecnik of Switzerland and now available in the UK from distributor Ken Kimble (Reactor Vessels), is claimed to significantly reduce scale-up costs and time spent on process development from laboratory to production.

The system comprises an array of between four and six glass reaction vessels – although this can be extended to 16 or more when mounted in parallel. The vessels can be operated either independently, under identical conditions, or in conditions in which an important parameter such as temperature, pH and reactant concentration is varied in a pre-programmed or manually defined way.

All the reactors use the same cooling thermostat with the heat transfer fluid passing through a jacket surrounding the vessels in the array. However, each individual reactor also has independent temperature control from an electric heating jacket in each reactor unit. Each reactor has an electronically controlled mixer; two accurate, gravimetric dosing systems; facilities for flushing the system with air or nitrogen; and entry points for measuring and sampling devices. Basic and highly sophisticated analysis techniques, including particle size analysis, Fourier transform



infra-red analysis and high pressure liquid chromatography can be used onor offline.

Each of the 250-ml capacity reactors can be easily taken out of the system, rinsed, washed or autoclaved as necessary.

Efficiency and reproducibility are assured by a Windows-based software package. The easy-to-use program includes a recipe controller for quick programming of each vessel. It also allows existing programs to be edited to reflect the intended changes in recipe and conditions, and provides data logging and graphical presentation facilities. As the Flexylab system is computer controlled, the reaction processes and sampling programs can proceed without manual supervision, 24 hours a day, states the company.

Tel: +44 (0) 1732 882791 Fax: +44 (0)1732 885840 e: flexylab@kenkimble.co.uk

Portable digital

### Website explains changes to EU dye/marking regs

New legislation is scheduled to come into force in August 2002, harmonising the marking of low tax diesel and heating kerosene in all 15 European Union Member States. Under Council Directive 2001/574/EC, all gas oil and heating kerosene which attracts tax rebates must be marked with 6 gm/l Solvent Yellow 124, known as the Euromarker, from this date.

Current legislation allows countries to dictate their own dye/marking regulations. For instance, in the UK, red dye and quinizarin are used to mark low tax diesel, whereas in Germany red dye and furfural are used. The dye provides a visible indication between low and high tax diesel, while the covert markers are invisible chemicals which require a reaction with a simple chemical to produce a colour.

From August 2002, EU countries can either retain their current marker system and include Solvent Yellow 124, or dispense with current marker systems and use only Solvent Yellow 124 and a visible dye.

Decisions on individual member country legislations are being made through consultations between government authorities, oil companies and marker manufacturers. It is hoped that these will be finalised by April 2002, allowing oil companies and dye/marker suppliers to introduce new systems as required.

In response to the rapid changes expected over the next six months, UKbased global supplier of dye and marker packages for the oil industry John Hogg has designed a new website – www.Euromarker.com The site provides the latest information on the changes that will affect the oil industry, including details relating to legislative changes and technical information on Solvent Yellow 124, and outlines how the changes will affect different countries.

If you would like further information, log on to www.Euromarker.com Alternatively, Tel: +44 (0)161 872 5611 or e: andy\_rudd@johnhogg.co.uk



A new high performance digital pressure module has been unveiled by SI Pressure Instruments of Birmingham, UK.

Designed to send pressure and temperature related information digitally to a PC or directly to a printer, the portable unit measures just 105 mm x 45 mm x 45 mm and weighs 370 grammes. It has a pressure measurement range of -1 to 1,000 bar (15,000 psi).

Tel: +44 (0)121 784 6855 Fax: +44 (0)121 784 4795 e: sales@si-pressure.com

# **NEW**Schnology

### Site samplers for remote locations

The new Jiskoot 710EL range of electric samplers has been designed to provide fast and accurate sampling of low abrasion, low viscosity fluids in a wide range of crude oil or refined product applications and chemical processes. Developed for use in remote sites or locations where there is no plant air, the units are reported to have a low cost of installation, operation and maintenance, operating for between 1mn and 3mn cycles between overhauls and allowing easy inline servicing when required.



Claimed to be suitable for use with most liquids, the samplers take a large number of individual 'sample grabs' of 1 cc or 3 cc that together accurately represent the quality of the fluid. Positive displacement is used to discharge the sample, making the 'grab' extremely repeatable and unaffected by pressure or viscosity changes, while also reducing the likelihood of blockages, states the company. The sampling rate is up to 50 per minute, suiting applications where there is limited time to take the required sample volume – such as small batches.

The range comprises a probe and cell sampler which both use an electric motor directly coupled to the sampler. Sampling is actuated by an industry standard solenoid with a manual override to permit individual sample grabbing for test/calibration or troubleshooting.

Two probe lengths are offered for use in 8-inch to 52-inch pipelines, which can be mounted in any orientation through a 2-inch or 3-inch ANSI 150/300# RF flange. The probes can be withdrawn at full process pressure using a Jiskoot hydraulic extractor, and have a flow-profiled aerofoil head that is said to reduce the influence of 'bluff body' effects to ensure representative sampling.

Tel: +44 (0)1892 518000 Fax: +44 (0)1892 518100

### **Monitoring moisture**

Able has released the latest addition to its line of Meeco precision moisture analysers, the Aquavolt and Aquavolt Plus. Two of the compact systems may be built into a single 19-inch rack mount package. The user-friendly keypad interface, bright vacuum fluorescent display and helpful menu-driven prompts make it simple to specify, to configure and to start up in any given application, reports the company.

The Aquavolt has a lower detection limit of 1 ppmV and a range of 0 to 1,000 ppmV. It is suitable for providing online moisture monitoring for industrial process gases in production, industrial gases at various stages of product purification, tanker and cylinder filling operations, and shielding gases used in welding. The Aquavolt Plus may be used for all the above applications, but its lower detection limit of 35 ppbV and range of 0 to 20 ppmV make it also suitable for speciality gas applications, research and scientific laboratories, and semiconductor manufacturing.

Both systems have a choice of display options, including ppbV, ppmV, ppmV, F and C. In addition, a range of outputs is available as standard, including alarm relays. Gas flow is controlled by selecting the appropriate sample gas from the main men; the microprocessor automatically adjusts the mass flow controller to the correct set point.

Tel: +44 (0)118 931 1188 Fax: +44 (0)118 931 2161

### 'World first' for mobile drill cuttings process unit

Total Waste Management Alliance has developed what it claims is the 'world's first mobile drill cuttings process unit to successfully operate offshore'. The RotoMill™ is the result of design adaptation on a technology that has been proven onshore over the past decade. Over 30,000 tonnes of drill cuttings and waste has been processed during the development and proving period, reports the company.

Developed with cooperation from a major North Sea operator, the unit is designed to treat drill cuttings at any wellsite location, onshore or offshore. It is expected to be an important tool for operators and contractors as they meet new European offshore discharge legislation, which came into force in January 2001, imposing a limit of <1% of retained oil on cuttings for discharge offshore.

The RotoMill is reported to have successfully completed performance trials, complying with all industry established safety considerations, on the Glomar Arctic III drilling rig on the Skene field in North Sea block 9/19. During the trial period some 200 barrels of base oil was recovered and reused in the drilling fluid with no reported significant change in properties.

The unit's footprint is reported to be so compact that it can be fitted onto virtually any offshore installation worldwide, located adjacent to the wellsite installation's drilling package, allowing easy access to solids control equipment and the drilling fluid system.

Drill cuttings are reduced to a dry powder with a retained hydrocarbon level of <0.1% which easily meets the legislative requirement for discharge offshore. Oil is recycled back into the drilling fluid; water which has been recovered by the process is suitable for reuse or disposal.

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If you would like your new product releases to be considered for our Technology News pages, please send the relevant information and pictures to: Kim Jackson Associate Editor, Petroleum Review 61 New Cavendish Street, London W1G 7AR, UK

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### **IP TRAINING COURSES 2002**



### Financial Performance Management in the Oil Business

A new and highly participative, **three-day course** which provides a good understanding of the essentials for successful management of financial performance in the oil industry. Combining a theoretical framework, focused on rigorous benchmarking of competitive position, with real-life practical examples and syndicate exercises.

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### LP Gas Trading, Marketing and Price Risk Management

An interactive, **five-day course** aimed at developing the understanding of the dynamics of LPG supply, pricing, shipping, trading and marketing in the region and the identification and management of price risk. The course includes presentations from industry experts, case studies and a visit to LP Gas facilities in the area.





### Investment Profitability Studies in the Petroleum Industry

This **four-day course** covers the fundamentals of investment profitability analysis theory and looks at advanced case studies involving project finance and tax systems of production sharing contracts. The basic objective is to understand these concepts and to see the application of investment profitability analysis in examples drawn from the petroleum industry. In association with

FORMATION INCUSTRE Course Dates: 26 February - 1 March 2002 Course Venue: Institute of Petroleum, London Registration Fee: IP Member: £1800 (£2115.00 inc VAT) Non-Member: £2000 (£2350.00 inc VAT)

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Course Dates: 18 - 22 March 2002 Course Venue: The Møller Centre, Cambridge Registration Fee: IP Member: £1950 (£2291.25 inc VAT) Non-Member: £2150 (£2526.25 inc VAT)

### **Economics of the Oil Supply Chain**

During this **five-day course**, delegates will examine the various activities of the fictional Invincible Energy Company to explore the economic forces which drive the oil supply chain. They will examine areas of risk and opportunity from the crude oil supply terminal, through transportation, refining and trading to the refined product distribution terminal. Delegates will learn about the quality aspects of product supply. They will study refinery process economics, blending, negotiating a processing deal, trading international markets and various methods of price risk management.



### Aviation Jet Fuel

This **three-day course** is designed to provide a technical overview and to introduce delegates to the many facets of the Aviation Jet Fuel business – a business which operates at a truly global level. It will not only examine the workings of the modern jet engine, but will build the picture as to why, unlike some fuels, jet fuel specification, production and handling is critical to the continuing success of the aviation industry. It explores components of the business from several key perspectives, including oil company fuel suppliers and civilian and military users.

### In association with **QinetiQ**

Course Dates: 19 - 21 March 2002 Course Venue: Institute of Petroleum, London

Registration Fee: IP Member: £1300 (£1527.50 inc VAT) Non-Member: £1500 (£1762.50 inc VAT)

### In association with NEXT

Course Dates: 25 - 28 March 2002

Course Venue: Institute of Petroleum, London

**Registration Fee:** 

IP Member: £1500 (£1762.50 inc VAT)

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### Introduction to Petroleum Geoengineering

The **four-day course** reviews the emergence of Geoengineering as a close integration of geoscience, petrophysics and engineering, through reservoir modelling for reservoir management decision-making.

The course objectives are to weigh the relative importance of various geoscience and engineering aspects, concentrating on their interactions and their integration. The course provides a framework for the integration of subsurface disciplines.



For more information, see enclosed inserts or contact Lynda Thwaite at IP Training or visit: www.petroleum.co.uk/training

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### **Membership News**

### **NEW MEMBERS**

Mr J Barbour, UK Petroleum Industry Association Mr E Benediktsson, Iceland Oil Limited Mr G J Bjornsson, Fjolver EHF Mr S Bodhankar, UAE Mr M G Camilleri, Malta Mr J R Camiueri, Malta Mr D Corzilius, USA Mr W Evans, Environmental Protection Strategies Limited Mr S Gudmundsson, Iceland Oil Limited Mr D Hoon, Chesterfield Mr A Ismail, Oiltest Inc Mr A Kalashnikov, Russia

Mr T J Lee, Glendee International

Dr A Mayr, W L Gore & Associates GmbH Mr M T McCaskie, Ayrshire Mr J C Merren, Lowestoft Mr J O Methven, PGS Production Services Mr B T O'Donnell, Bletchingley Mr J Roberts, Oldham Mr M Spiteri, Malta

### STUDENTS

Miss A O Abass, Edinburgh Mr A C Eyemonu, Teesside Training Enterprise Mr S Fordyce, UAE Mr M Khiar, London Miss V Koumis, London

### **New Year Honours recognition**

The Institute of Petroleum is proud to announce that Anne Poynter of the IP Accounts Department was awarded an MBE for her services over 15 years to the Institute in this year's New Year Honours List. Anne says that she is delighted to have received the award and would like to take this opportunity to thank all those who have sent her letters and cards of congratulation.

### OBITUARIES

### Gilbert Jenkins FInstPet

#### 1936-2001

The sudden loss of Gilbert Jenkins at home in early December came as a complete shock to most of his colleagues because he was so actively involved in our industry, in so many fields. His statistical expertise coupled with the analytical perception of a petroleum chemist kept him at the forefront of a wide range of advisory and editorial activities both upstream and downstream in the UK and internationally.

He joined BP in 1957 after completing his BSc at the University of Wales to become a Petroleum Testing Analyst at the Sunbury Research Centre, where he was shortly to meet his future wife Sue. So began the family home at Sunningdale, and the arrival of Simon, Sally, Richard and Sara – and an M.Phil(Econ) at Surrey University. In 1968 he transferred to BP head office in the newly-formed Central Planning Department, at a time when external world events were beginning to buffet the industry. It was Gilbert's ability to sort the wheat from the chaff just as he had done at Sunbury for petroleum quality, but now for statistics of international energy economics that quickly placed him in charge of the data team that *inter alia* produced the *BP Statistical Review* which was to expand from petroleum and ocean tanker trade to all forms of primary energy. These seeds produced two harvests.

The first harvest came in the early 1970s as US oil imports rose rapidly leading to the first world oil crisis in 1973. This forced tanker freight rates to rise and create a high landed oil price that Opec could capitalise upon. Those who saw it coming were a small minority – but links outside BP with others of a like perception, such as those forged with Pierre Shammas in 1971, were to stay with Gilbert for the rest of his life.

The second harvest was to be in Gilbert's creation of the *Oil Economists Handbook*. Drawing on both BP and other reliable sources this is now in its fifth edition as an indispensable reference to energy data going back over a century as far as sources permit. The shipping side of the crisis work led also to the *World Tanker Databook*, (together with Mike Champness of John I Jacobs.) No researcher seeking to understand the crises in the seventies can prevail without their analytical bedrock.

For the past two decades being an independent consultant enabled Gilbert to broaden his range and scene of activities. His skills gave him a prominent role in publications and advice on emerging post-Soviet markets and the development of oil refining in new areas in the Indian Ocean and Atlantic Basin. He also monitored and published frequently on world bunker markets, especially in the aviation sector, and world trends in petrochemical feedstock and gasoline additives.

But two activities above all stand out and continued right up to date. Firstly, the weekly price monitoring of retail motor fuels for the Petroleum Retailers Association (PRA) which continued right up to December 2001, and which established him as an authority and broadcaster on the problems faced by independents in the sector. Secondly, his long participation in the annual series of Middle East Strategy Conferences hosted by Pierre Shammas of APS in Cyprus. This series began with a dinner in London with Gilbert, Pierre and the writer in February 1986 and from autumn 1987 has proved a hardy perennial, bringing people from producer and consumer countries together and leading to long term relationships. Gilbert not only gave a presentation every single year, but often more than one, as well as writing or editing articles in the APS *Energy Business Review* or in

other magazines he was still editing such as the '3–Es' (*Energy, Exploration and Exploitation*). Altogether he contributed over 50 papers to APS over the years and he was due to give the latest in Teheran last September, but after the attacks on the eleventh, that event was postponed to 16 February. Gilbert's paper will, however, be given for him in Teheran.

Gilbert will also be remembered as keen sportsman and enthusiastic golfer who was always ready to play another round, another course.

For Gilbert, life was just that – for living, and time and time again people of all ages and backgrounds warmed to him at first meeting and would respond to his easy smile. He will be remembered by all as a proud, principled, kind and gentle family man. He was dearly loved and will be greatly missed.

Tony Scanlan

### Sir Anthony Driver FInstPet

#### 1920-2002

Tony Driver was first and foremost an oil man, serving Shell-Mex and BP during his entire working life, starting at the age of 16 in the lubricant and marine oil sales department. He joined the Light Artillery Regiment in the war, and from 1942 saw action in North Africa, Italy and finally at Arnhem where he was captured. On his release he took up a place at King's College London and rejoined Shell-Mex and BP, remaining there until 1975 in a variety of posts, culminating in Marketing Manager Europe for BP. He joined the Institute of Petroleum in 1941. Heavily involved in the demerger of Shell-Mex and BP, Sir Anthony Driver served as Director of Personnel and Administration of the newly streamlined BP until his retirement in 1980.

He then became Chairman of South West Thames Regional Health Authority in 1982, over the next six years steering a public service employing more than 40,000 people and with a budget of £300mn. Sir Anthony Driver was knighted in 1986.

### Charles Raymond Meek FinstPet

#### 1929-2001

Ray Meeks started work in the industry as an Engineer with Isherwoods/VIP after leaving the army as a regular soldier in the Royal Engineers where he had applied his skills as an electrician. After a series of takeovers VIP eventually became Elf Oil (GB), where he served as a Senior Company Engineer for many years.

He served on Committee B at the IP, a body that was instrumental in forming legislation along with other bodies as the industry grew and expanded.

Even in retirement, his interest in the industry never waned and he remained a regular Member of the northwest branch of the Associated Petroleum and Explosives Adminstration (APEA), and a Fellow of the Institute of Petroleum.

#### IP 🐺 THE INSTITUTE OF PETROLEUM

New publications

### Petroleum Measurement Paper No.12 Guidelines for the Development of Uncertainty Estimates for Pipe Prover Calibrations

All high accuracy flow meters require calibration to establish their optimum operating parameters and, in some cases, to take account of specific process conditions or measurement requirements. The uncertainty of any flow meter can only ever be as good as its last calibration, after which the performance of the meter may be affected by wear, damage or changes in process conditions.

This document is a basic guide to the principles of traceability and uncertainty of prover calibration, suitable for operators in the field. It is designed to augment the procedures and experience of the established calibration companies and to add the estimation of uncertainty to the established certificates in a metrologically sound manner.

Guidance is provided for each of the calibration methods in common use in the oil industry. This is to augment the existing standards. Block diagrams are used to demonstrate suggested traceability for each method. The guidance for method, traceability and uncertainty outlines what the operator, calibration company and regulator should expect from prover calibration operations.

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BJ Services has announced that Stuart Murphy has been appointed Well Services Manager for the UK with its Well Services Division-Europe & Africa Region. Murphy has worked for BJ Services since 1994.



Robert Long has been promoted to President of Transocean Sedco Forex.

The position of President at Imperial Oil has been filled by **Tim Hearn**, whose previous role was as Vice President of Human Resources at Imperial's US parent ExxonMobil.

Cambridge Energy Research Associates has appointed **Dr Matthew Sagers** as its Director of Energy Economics for Eurasia and Eastern Europe.

Norman Lessels, Chairman of Cairn Energy, has announced his plans to retire in May. He will be succeeded by Norman Murray.

Following the promotion of **Marcus Davi** to Vice President of Sales at Dynamco in Texas, US, **John Ford** has been appointed to take his place as Sales Director at AMOT Controls Europe.

Al Mitchell is now Executive Vice President, Trading of Conoco Gas and Power Marketing, a division of Conoco. His responsibilities include developing and implementing strategy for Conoco's North American gas and power risk trading operations.

The Board of Arciris has named **David Willis** as its Chairman and Managing Director.

**Rupert Marks** has been appointed Chief Executive Officer of Oil-On-Line, as industry-driven electronic oil trading initiative.

Søren Gath Hansen and Kurt Bligaard Pedersen are joining the group managment of DONG. The management will now comprise of five members: Anders Eldrup President, Peter Skak-Iversen Finance, Hans Jørgen Rasmusen Technical Area, Søren Gath Hansen Trade and Kurt Bligaard Pedersen Business Development.

The Board of BP has appointed **Dr DeAnne Julius** as a Non-Executive Director of the Company.

**Saqwindar Singh** of Arizona Chemical located in Almere, The Netherlands, has won this year's British Lubricants Federation (BLF) Young Employee of the Year Award.

UWG Group has appointed **Dave Lindsay** as Explosives Manager. He will be responsible for securing and managing relevant decommissioning contracts and will lead offshore teams in wellhead and conductor severance projects.

The Supervisory Board of Vopak has appointed **Gary Pruitt** to the Executive Board.

Working at Emerson Process Managment for 18 years, **Geoff Flisher** has now been appointed as Emerson Process Management's new Sales Operations Director for the UK and Ireland.

**Bader al-Khashti** has taken over as Chairman at Kuwait Foreign Petroleum Exploration Company (KUFPEC), a subsidiary of Kuwait Petroleum Corporation.

William J Sember is now Vice President Offshore Development for ABS.

ICF Consulting has announced the appointment of **Simon Allen** as President of its European operations.

**Boyd Wright** has taken the role of Director – Health, Environment and Safety at ARAMARK. He will be responsible for HESQ across all of the company's UK operations – both onshore and offshore.

Synergy Technologies has selected **Dr Tom K loannou** as Managing Director of CPJ, the company's heavy oil upgrading division.

**Mark Strange** has been assigned Director of UK Gas Origination at Entergy-Koch. His responsibilities include managing all structured products relating to natural gas in the UK.

Invincible Energy has appointed **Michael Jarvis** as its new Director of Marketing.

**Thomas Skains** has replaced **Ware Schiefer** as President of Piedmont Natural Gas. **Skains** will also act as Chief Operating Officer.

AnTech has placed **Clair Brown** in a key post as Development Engineer with its Special Engineering Projects department. **Brown** will serve as a Project Engineer, spearheading the development of COLT, the company's electrically powered coiled tubing drilling tools.

**Carl Mook** is the new Base Manager of BJ Process and Pipeline Services' operational facility in Dubai, United Arab Emirates.

JSC Gazprom has announced the selection of **Alexander Ananenkov** as its Administration's Deputy Chairman.

Alan L Boeckmann has been appointed Chairman and Chief Executive Officer of Fluor Corporation.

With over 26 years of experience in the oil and gas industry, Bruce Crager has joined ABB Offshore Systems as its President.

Kvaerner has named **Helge Lund** as its new President and CEO. **Lund** succeeds **Kristian Siem**, who held the position during a transitional period from the beginning of November 2001.

Koninklijke Nederlandsche Petroleum Maatschappij (Royal Dutch Petroleum) has announced that **H J M Roels** is to relinquish his positions as a Managing Director of the company and a Group Managing Director of the Royal Dutch/Shell Group of Companies at his own request.

# VEN Forthcoming

### **FEBRUARY 2002**

#### 5-6

London Negotiating International Border Disputes Details: Global Business Network, UK Tel: +44 (0)20 7291 1030 Fax: +44 (0)1553 770441 e: info@gbnuk.com www.gbnuk.com

Panorama 2002 Details: AMCI Aérovoyages, France Tel: +33 1 47 42 91 02 Fax: +33 1 47 42 43 91 e: amci.aerovoyages@wanadoo.fr

#### Houston

Paris

LNG 2002 Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.serv@informa.com www.ibcenergy.com/eq1092

#### 11-12

6-7

London Petroleum Trading and International Law Details: Abacus International, UK Tel: +44 (0)1953 497099 Fax: +44 (0)1953 497098 e: register@abacus-int.com www.abacus-int.com

#### 11-12

New Dynamics of Scandinavian Gas & Power Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.serv@informa.com www.ibcenergy.com/scandinavia

#### 13-14

London Petroleum Trading and Cargo Shortages Details: Abacus International, UK Tel: +44 (0)1953 497099 Fax: +44 (0)1953 497098 e: register@abacus-int.com www.abacus-int.com

### 13-14

Restructuring and Recovery Details: Nexant, UK Tel: +44 (0)20 7950 1600 Fax: +44 (0)20 7950 1500 e: jkilbane@nexant.com www.chemsystems.com

#### 15-19

Tehran 15th Annual Conference - Middle East Strategy to the year 2014 Details: APS London, UK Tel: +44 (0)20 8997 3707 Fax: +44 (0)20 8566 7674 e: mailbox@biee.demon.co.uk

### 20-22

ERTC Petrochemical Conference Details: Global Technology Forum, UK Tel: +44 (0)1737 365100 Fax: +44 (0)1737 365101 e: events@gtforum.com www.gtforum.com

#### 21-22

Nigeria Energy Summit Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.serv@informa.com www.ibcenergy.com/eq1090

### 21-22

CIS Oil Details: Marcus Evans, UK Tel: +44 (0)20 7436 7532 Fax: +44 (0)20 7436 5741 www.marcusevansbusinessstrategy.com

### 25-26

Amsterdam Offshore Pipeline Technology Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.service@informa.com

### 26-27

Oslo

London

Amsterdam 3rd European Catalyst Technology Conference Details: EPC Conferences, UK Tel: +44 (0)20 7357 8394 Fax: +44 (0)20 7357 8395 e: conferences@europetro.com www.europetro.com

#### 27-28

London Gas to Liquids Details: IBC Global Conferences, UK

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### MARCH 2002

### 1

London

**Pricing Strategies** Details: IBC Global Conferences, UK Tel: +44 (0)1932 893852 Fax: +44 (0)20 7453 2274 e: cust.serv@ibcuk.co.uk

### 4-5

London Seismic 2002 Details: PenWell Petroleum Group, UK Tel: +44 (0)1628 810562 Fax: +44 (0)1628 810762 e: francesw@penwell.com www.global-energy-events.com

4-5 London Minimising the Environmental Effects of Drilling Operations

### Amsterdam Details: IBC UK Conferences, UK

5-8

London

Vienna

Tel: +44 (0) 1932 893851 Fax: +44 (0) 1932 893893 e: karen.bligh@informa.com www.ibcenergy.com/eg1025

Oceanology International 2002 Details: PGI Spearhead, UK Tel: +44 (0)20 8949 9222 Fax: +44 (0)20 8949 8186 e: oilondon@spearhead.co.uk www.oceanologyinternational.com

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#### 11-12

London Structured Commodity & Trade Finance in the CIS Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.serv@informa.com www.ibcenergy.com/fe1123

### 13-14

London

London

Learning From Marine Incidents II Details: Royal Institute of Naval Architects, UK Tel: +44 (0)20 7235 4622 Fax: +44 (0)20 7259 5912 e: conference@rina.org.uk www.rina.org.uk

### 17-22

Prague The Gas Chain (TGC) - From Reservoir to Burner Tip Details: Alphatania, UK Tel: +44 (0)20 7650 1430/1402 Fax: +44 (0)20 7650 1431/1401 e: events@economatters.com www.alphatania.com

#### 18-19 Houston Deepwater Risers, Moorings & Anchorings Details: IBC Global Conferences, UK Tel: +44 (0)1932 893851 Fax: +44 (0)1932 893893 e: cust.serv@informa.com

25-1 Cambridge Prce Risk Management in Traded Gas and Electricity Markets Details: Invincible Energy, UK Tel: +44 (0)1420 22862 Fax: +44 (0)1420 22863 e: learning@invincible-energy.com www.invincible-energy.com

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