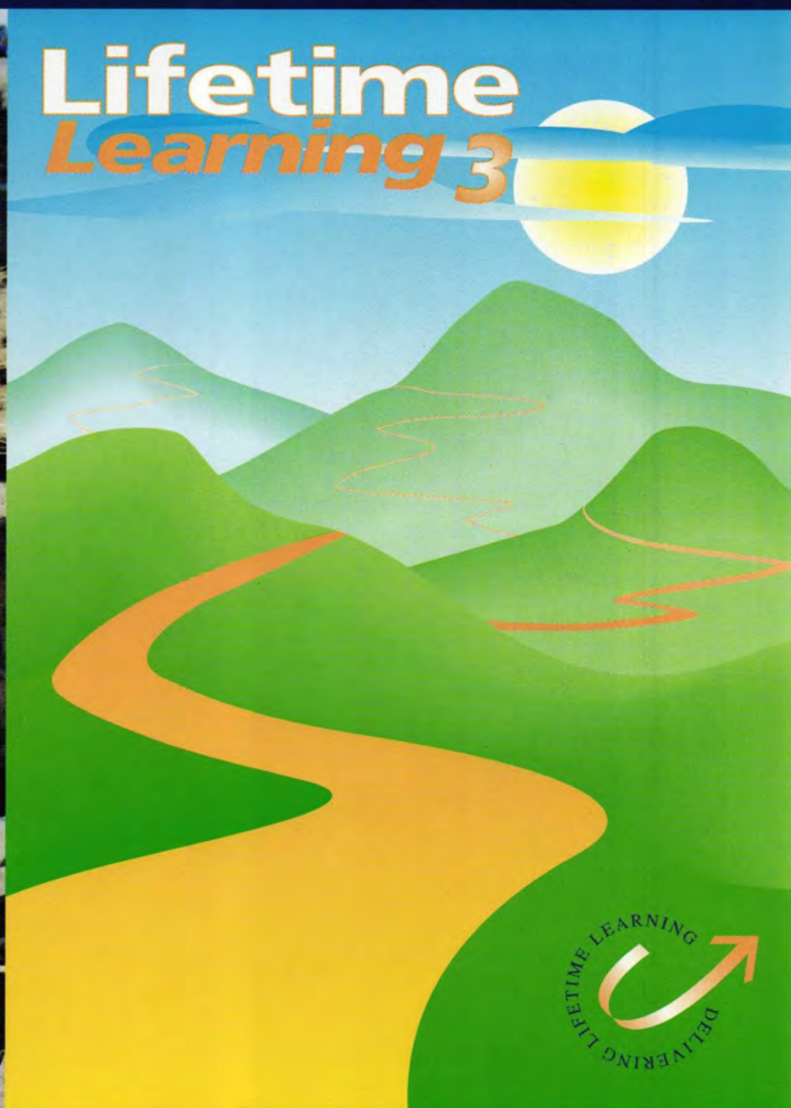
# Petroleum review

MAY 2000

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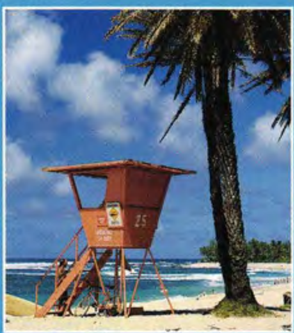

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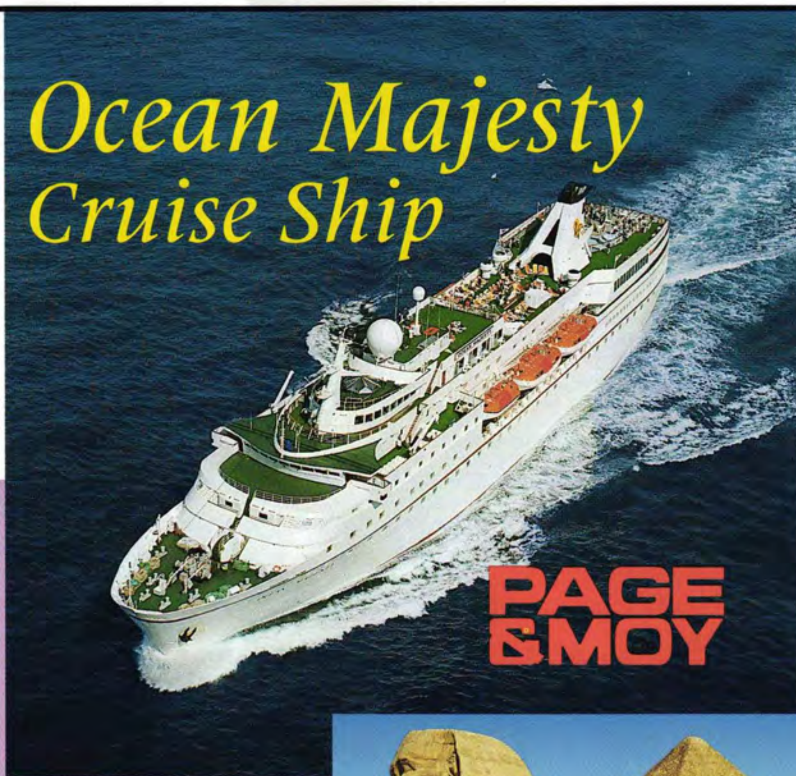

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# Petroleum review

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**ABBREVIATIONS**

The following are used throughout *Petroleum Review*:

| | |
|---|---|
| mn = million ($10^6$) | kW = kilowatts ($10^3$) |
| bn = billion ($10^9$) | MW = megawatts ($10^6$) |
| tn = trillion ($10^{12}$) | GW = gigawatts ($10^9$) |
| cf = cubic feet | kWh = kilowatt hour |
| cm = cubic metres | km = kilometre |
| boe = barrels of oil equivalent | sq km = square kilometres |
| | b/d = barrels/day |
| t/y = tonnes/year | t/d = tonnes/day |

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



Front cover: People in action: the IP's Lifetime Learning concept

# inside...

## news



## special features



## supplement



## features



## regulars



# ROUNDUP From the Editor

## Sun, moon and volcanoes

Over recent weeks we have seen Mount Usu, a volcano on Hokkaido, erupt while Mount Etna has apparently been blowing steam rings in the air. Mercifully no one has been hurt. It is, however, instructive to remember that a single major volcano erupting discharges more greenhouse gases into the atmosphere than all the world's motor vehicles in a year. This observation is not to belittle concerns about global warming, nor to deny the link with human activity, but just to put them in perspective.

The past month has seen Charles Keeling of the Scripps Institution of Oceanography at the University of California, San Diego, claiming to have established a link between the moon and global warming. The moon effect follows earlier descriptions of linkages with sunspot activity.

A few years ago the linkage between greenhouse gases and global warming seemed clear. Now, it is much less so. There are solar and lunar effects of uncertain impact and about which we can do nothing. There is also a linkage between greenhouse gases and global warming. A mechanism has been proposed, but the predictive fit is not very good.

Environmentalists have seized on the link with energy consumption to promote draconian actions – but it is easy to call for action when you're not paying. The most reasonable middle course for countries is to accept some (albeit unproven) linkage, promote fuel efficiency and carbon dioxide minimisation and move away from coal use. All this is happening – not fast enough for the believers; too fast for the unbelievers. It seems a satisfactory outcome.

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In terms of energy policy the current UK Government has the great strength that it is prepared to listen to criticisms of policy and to make changes. We have seen this with North Sea taxation and to a more limited extent on gas-fired power generation and energy taxes for energy-intensive industries. The great weakness of the government is that it appears to be easily persuaded by insubstantial academic analysis (North Sea taxes) or green crusaders (gas generation, energy taxes, fuel taxes).

The last budget included a proposal that companies pay tax on their car fleets in proportion to the amount of carbon dioxide they emit. A splendidly green sounding suggestion. However:

- Carbon dioxide emission is directly proportional to fuel consumption. A 25 miles per gallon vehicle will always produce less carbon dioxide than a 20 miles per gallon vehicle.
- There are small variations between diesel and petrol, there are small variations between designs with the same miles per gallon. Has anyone asked 'So what?'
- What will be the cost of vehicle manufacturers appealing the emission assessment, making small design changes and reapplying?
- What are the administrative costs?
- How do you deal with the car manufacturers who are now fitting equipment that improves air quality? Do they get a rebate? How do you calculate this?
- Do you have spot emissions tests to see if the vehicles on the road conform to the theoretical?

The proposal is complicated, expensive and of uncertain benefit. There is, however, one very simple act which would concentrate the mind of every fleet manager in the country to purchase the most fuel efficient vehicles – make VAT on company cars non-rebateable. Maximum impact, little cost to government.

---

The regulators appear to be catching up with e-commerce. The US Federal Trade Commission (FTC), fresh from its battles with Microsoft and BP Amoco, has now started investigating the new online auto exchange recently formed by General Motors, Ford and DaimlerChrysler. The FTC apparently fears the e-marketplaces because their size and global influence make them potential monopolies. They even argue that the owners of a joint marketplace could deliberately pay high prices and commissions and then recover the excess as profits to the owners.

To those with a straightforward turn of mind the answer would seem to be that B2B marketplaces will probably have to be owned and operated as separate or arms-length companies from the major users of them. It is interesting to note the new oil industry mega-portal (see p9) has taken this route. The announcement of a portal with a realistic potential for a turnover of over \$100bn makes it the most important e-announcement to date.

*Chris Skrebowski*

### e-world

Texaco has jointed the Petrocosm marketplace as a founding member of what is claimed to be the first global Internet marketplace created and owned by the energy industry. **www.petrocosm.com** will launch in the 2Q2000. It will offer an open marketplace for companies of all sizes to buy and sell products and services that span the petroleum industry supply chain.

Meanwhile, BP Amoco is reported to be taking a 3% stake in the Altra Energy Technologies wholesale energy exchange as part of a drive to increase the oil company's web-trading presence. BP Amoco's North American gas and power arm is also understood to have contracted to transact a fixed volume of energy products, including physical and financial natural gas and NGLs via Altra's e-commerce exchange.

Last month's guide to e-commerce sites printed **Wellfinder.com** as **Wellfind.com** the latter actually sells Russian helicopter gunships. Our apologies.

*continued on p14, see also p8–10*

## New IP President

Charles Henderson (CB), Chairman of both Total Oil Holdings and Total Oil Marine, is the Institute of Petroleum's President-Elect. He will be formally confirmed during the Annual General Meeting in June this year.

Henderson first joined the UK Department of Trade and Industry in 1971 and held a series of positions over the next 15 years – culminating in his taking over the Energy Directorate in 1992, where he oversaw the privatisation of British Coal, British Energy and AEA Technology, and the full liberalisation of the gas and electricity supply industries.

Since leaving the DTI in 1996, his assignments have included serving as a Member of the Competition Commission, as a Senior Associate with Cambridge Energy Research Associates, an advisor to the Oxford Institute for Energy Studies. He became President of The Society for Underwater Technology in December 1999.

# Lukoil focuses on Severny region

Lukoil reports that the *Astra* jack-up rig has completed drilling the first well on the Khvalynskoye field in the Severny licence area in the Caspian Sea. A total of seven oil and gas bearing reservoirs were found after drilling to a depth of 4,200 metres. The well is currently undergoing testing.

Lukoil plans to drill eight more exploratory and 200 development wells in the Severny licence area, on which it secured E&P rights in December 1997. Recoverable reserves in the region are put at about 300mn tonnes of hydrocarbons. Development drilling will commence on the fourth year of the project term, production on the fifth. Annual output is expected to peak at 15mn t/y in the eighth year of the project's lifetime.

The Russian oil company also reports that the *Shelf-7* jack-up rig is currently being constructed at the Astrakhan shipbuilding yard. The unit will be capable of operating in waters up to 800 metres deep, and drilling wells up to 8,000 metres depth. Lukoil plans to develop other oil and gas areas of the Caspian using the unit, which is claimed to be the only one of its kind currently in the region.

# Phased development plan for Perth field

Amerada Hess and partners in North Sea block 15/21 have agreed a phased development approach for the Perth field and a number of other adjacent prospects and undeveloped discoveries. The sour nature of the crude contained in most of the reservoirs, together with the need for new dedicated processing equipment, has rendered a traditional development approach uneconomic.

A contract for pre-FEED study to refine and test a range of possible development options for the Perth field has been awarded to a contractor alliance consisting of Transocean Sedco Forex, Stolt Offshore, Kvaerner and RML.

Field development will take place in two phases. The initial, pre-FEED part will focus on reservoir studies designed to prove up reserves in the Perth field and in the adjacent prospects and discoveries. Concurrent with that, essential engineering work will be performed, targeted primarily at ensuring that a technically and environmentally safe development solution can be secured. Providing the first phase is concluded satisfactorily, the results will be used to develop a more detailed scope of work for the second phase, which is expected to commence in May.

The outline development concept for the field involves the drilling of dual-lateral production wells, a subsea tie-back to the Scott platform, and the installation of new processing facilities on the platform.

# Companies compete to develop Kovykta

The Russian Ministry of Natural Resources has recently given Tyumen Oil Company (TNK) a licence for the exploration block adjacent to the 6.3bn boe Kovykta gas condensate field, reports the United Financial Group's *Russia Morning Comment*. The area – on which Surgutneftegaz, Gazprom and Russia Petroleum had also expressed an interest – may contain up to 3bn boe of reserves (more than half of the UK's proven gas reserves).

TNK has already announced its intention to cooperate with BP Amoco, which holds a stake in Rusia Petroleum – holder of the current licence for Kovykta. This appears to have been a planned deal between the two companies, comments UFG.

Having failed to acquire Kovykta, Surgut is now expected to turn its attention to reserves in the Sakha Republic (which are reported to be of poorer quality and further from export markets) in order to fulfil plans to expand into gas production in Eastern Siberia.

Following the award of the licence agreement to TNK the Irkutsk regional administration indicated that it planned to ask the Federal Ministry of Natural Resources to expand Rusia Petroleum's licence to develop the field.

The regional administration is reported to have stated that a single licence holder would best serve field development. While UFG says that it does not necessarily disagree with such an approach, it points out that there is actually no need for the field to be owned by one company or to be operated by one company. However, the Group comments that the request may be more 'straightforward' – the regional administration owns 17.8% of Rusia and may simply want to protect the value of its investment by expanding the area under the control of Rusia.

# In Brief

## United Kingdom

***Brovig Production Services is reported*** *to have signed a letter of intent with Premier Oil regarding development of the marginal North Sea Chestnut field. First oil from a horizontal producer well with subsea completion is expected in 4Q2000. Production is to be enhanced through the use of water injection in the second phase of development.*

***Conoco has announced that the £25mn*** *fast-track Vixen natural gas field project in North Sea block 49/17 is on schedule to reach first production in October 2000 following installation of the subsea wellhead protection structure. Field reserves are put at 117bn cf of recoverable gas. Production is planned to peak at 120mn cf/d at start-up.*

***Shell is reported to have brought*** *onstream the 4mn barrel Curlew D South discovery as a satellite to the Curlew FPSO in the UK sector of the North Sea. It is producing 15,000 b/d of oil, boosting output from the FPSO to over 40,000 b/d.*

***Shetland Decommissioning Company*** *is a new public/private sector initiative entering the market for the decommissioning of redundant offshore oil and gas installations.*

***Kvaerner is reported to be selling its*** *Teesside fabrication yard as part of a move to reduce its reliance on North Sea offshore business and to focus more on subsea development solutions.*

***The Triton FPSO has finally set sail for*** *the North Sea Bittern and Guillemot oil and gas fields. The Shell UK, Veba and Amerada Hess-operated fields are due onstream in April 2000. They are expected to produce 105,000 b/d of oil and 140mn cf/d of gas. The FPSO has a storage capacity of 630,000 barrels.*

## Europe

***Shell is reported to be planning to*** *invest $359mn on extending the life of the Draugen field in the Norwegian sector of the North Sea. It is hoped that development of the Garn West and Rogn North extensions, together with enhanced oil recovery rates of up to 70%, could extend field life to 2014. Draugen is currently producing 227,00 b/d of oil. Recoverable reserves are put at 700mn barrels. The field is also reported to hold the world record for oil production from a single offshore well – its A4 well produced 76,775 b/d.*

# NEWS Upstream

## Volatility is the watchword for North Sea oil

Opec's decision to increase output from April (see p7) may lead to a modest decline in prices in the short term, but volatility is the watchword for the rest of 2000, reports the latest Royal Bank of Scotland *Oil and Gas Index*. If the world economy continues to grow strongly, demand may increase and so will prices, says the report. Alternatively, if US growth weakens, demand could slow and prices fall. Further uncertainty surrounds the quotas – will Opec make further changes and how much will producers adhere to the new limits?

Stephen Boyle, Head of Business Economics at the Royal Bank, commented: 'The aim of Opec and its allies is to stabilise prices rather than to fix them. Yet there is an unreal air to talk of stabilising prices. A casual glimpse at any oil price graph shows that volatility and unpredictability are constant companions.'

During February, Brent averaged $27.97/b, up 9.1% on the on the month and 174.2% on the year. This drove an increase in oil revenues which climbed 7.4% to £44.5mn, their highest level since December 1985. Combined revenues rose, provisionally, by 4.6% to £61.6mn.

Oil production fell by 3%, from just under 2.65mn b/d in January to 2.57mn in February. Compared with February 1999, output was down by 4.1%.

| Year Month | Oil production (av. b/d) | Gas production (av. mn cf/d) | Av. oil price ($/b) |
|---|---|---|---|
| Feb 1999 | 2,678,138 | 11,532 | 10.20 |
| Mar | 2,679,786 | 11,107 | 12.54 |
| Apr | 2,717,767 | 9,863 | 15.66 |
| May | 2,507,093 | 7,349 | 15.18 |
| Jun | 2,400,277 | 6,785 | 15.91 |
| Jul | 2,602,363 | 6,852 | 18.90 |
| Aug | 2,645,493 | 6,604 | 19.93 |
| Sep | 2,588,488 | 7,379 | 22.83 |
| Oct | 2,666,146 | 9,380 | 22.03 |
| Nov | 2,698,681 | 11,641 | 24.64 |
| Dec | 2,634,050 | 13,054 | 25.64 |
| Jan 2000 | 2,645,841 | 12,900* | 25.63 |
| Feb | 2,567,535 | 12,645 | 27.97 |

*Source: The Royal Bank of Scotland* Oil and Gas Index ** revised data*

North Sea oil and gas production

## New E&P training alliance unveiled

OGCI Training, Shell Technology EP and BP Amoco have formed a new alliance – PetroSkills – to support technical skills development in the field of exploration and production technology. It is hoped that the worldwide scale of the alliance will reduce costs through the elimination of duplicated efforts, take advantage of economies of scale and enable previously expensive 'niche' training to be carried out economically.

Increased opportunities for accelerated learning and a step change in effectiveness are envisioned through jointly screening and incorporating new technology into training at a rapid pace and from cross-fertilisation of learning technologies.

The industry-wide programme will be made available to third parties, as well as the partners, on a commercial basis. As a first step, the alliance will offer 90 learning sessions during 2000 from centres at Houston, The Hague, London, Kuala Lumpur and other venues. Further information can be found at **www.petroskills.com**

The alliance members will continue to develop their own proprietary technologies and training, and OGCI will continue with its public and in-house training programmes.

# In Brief

***Statoil is understood to be selling a*** *number of interests in fields and licences offshore Norway, including stakes in the Ekofisk, Brage, Grane, Jotun and Njord fields.*

***Elf Petroleum Norway is reported to*** *have opened bidding for decommissioning of the Frigg field in the Norwegian sector of the North Sea.*

***Load-out and float-off of the steel hull*** *of the Snorre B semi-submersible, currently under construction at Dragados Offshore's Cadiz yard, is scheduled for September 2000. Smit Transport & Heavy Lift has secured the contract. Hook-up of topsides/hull is scheduled to take place at Aker Stord, Norway, at the end of the year. Towout to location is expected in May 2001.*

***Development of the Kvitebjorn oil*** *field, and nearby Mikkel project, may be postponed following the failure of field partners to secure a market for the field's gas from the Norwegian Gas Supply Committee.*

### North America

***TotalFinaElf reports that the Aconcagua*** *appraisal well in the Gulf of Mexico is successful. Aconcagua is one of several deepwater natural gas fields to be included in the recently announced Canyon Express joint subsea development project. It is anticipated that production will flow to the Elf-operated Virgo platform in Viosca Knoll 823, with start-up planned for late 2001.*

***BHP has entered into a joint venture*** *agreement with Total Exploration & Production covering 21 leases owned by BHP in the Walker Ridge area of the Gulf of Mexico.*

***Halliburton is understood to have*** *agreed a strategic alliance with McMoRan Exploration under which Halliburton will conduct operations on McMoRan's recently acquired Gulf of Mexico fields.*

***The Canada-Newfoundland Offshore*** *Petroleum Board is reported to be putting 14 offshore blocks out to tender this year. The blocks are located in the Jeanne d'Arc, Carson Bonnition and South Whale basins. Bids must be submitted by 15 November 2000.*

***Husky Oil is reported to have confirmed*** *that it is to develop the White Rose field offshore Newfoundland via a FPSO*

# New Zealand E&P prospects look good

Under-explored New Zealand – tipped to become a world-class fuel producer – is yielding a one-in-three success rate for finding hydrocarbons, according to Roger Gregg, spokesman for Crown Minerals, the New Zealand Government's resource management agency. *Clare Blackburn* writes that Gregg said: 'In New Zealand last year there were about 15 wells drilled. Of them, five were commercial discoveries.' Recent large-scale discoveries of oil and gas, especially in the Taranaki Basin, have indicated further reserves and boosted interest in the country's potential.

John Mork, Chief Executive of Denver-based Energy Corporation, told an international exploration conference in Christchurch in March: 'New Zealand is an outstanding country in which to explore for and produce petroleum. When compared to the US, New Zealand has one-tenth the potentially productive area, but approximately one-5,000th the number of wells drilled to date.' He also said lack of drilling meant fields are 10 times the size of US fields and their average production per well far exceeded the world median.

The Taranaki Basin on the west coast of North Island is the most explored region, with 250 of New Zealand's 500 wells. The East Coast Basin, also in North Island, and the Canterbury Basin, South Island, are attracting increasing interest. Since 1995, when the government switched to Acceptable Frontier Offer (AFO) permits, there has been a huge increase in the number of companies exploring. By the end of 1999, 50 permits had been issued covering six regions, mainly to independent North American and Australian companies.

The high success rate of 15 wildcat wells drilled in 1999, five rated as commercial discoveries – has spurred explorers into further activity. The Taranaki Basin is the only currently producing area – meeting half the country's domestic oil needs from its Maui and Maari fields – but is still under-explored by world standards.

In March 2000 New Zealand's Fletcher Challenge Energy found gas at Pokuhura-1 in offshore Taranaki. The well intersected a gas-bearing sequence totalling 133 metres thickness, which Fletcher and its drilling partners predict will contain 50 metres of net pay. With hydrocarbon saturations of up to 70%, the well is being drilled to 4,200 metres – 300 metres deeper than its original target depth. The partners have increased their estimate of potential gas reserves to half a trillion cubic feet, likely to be tapped by extended onshore wells.

Fletcher holds a 33% interest in the permit, with German-based Preussag Energie holding a further third. The remaining partners are Shell Petroleum Mining and Todd Petroleum Mining. In December 1999 Houston-based Swift Energy, in its first operating venture in New Zealand, discovered oil and gas in onshore Taranaki to the south of existing fields. Up to 100mn barrels is projected – doubling New Zealand's oil reserves.

Swift is also predicting up to 500mn barrels from the Kauri prospect, further south. Swift announced that its Rimu-A1 well had tested at rates up to 1,525 barrels of oil and 4.8mn cf/d of gas. Gas to oil ratio was calculated at 3,000 cf/b and the oil found was 44° API gravity oil.

Studies by Spectrum Exploration of the Western Platform area offshore Taranaki have estimated that the platform, in less than 200 metres of water, has large reserves. Two prospects have been estimated to have middle-case reserves of 200mn barrels of oil and 700bn cf of gas.

In the East Coast Basin, Enerco New Zealand and Energy Corporation-owned Westech Energy Corporation made a significant gas find in 1998 in their Kauhauroa-1 well. Activity in the East Coast Basin, mostly onshore, has since increased.

Another new US entrant, Denver-based Anschutz New Zealand, was recently granted the country's second largest permit, at 17,856 sq km, to explore the offshore Canterbury field. The fiscal conditions are considered favourable, with company tax at 33 cents in the NZ dollar and wellhead royalties at 5%, the fourth lowest in the world. Overall, explorers keep 53% of their profits.

Gregg, at Crown Minerals, said that in a survey looking at the country risk of 99 nations around the world, New Zealand ranked seventh with a negligible risk rating. The government is keen to attract explorers and developers from around the world, a fact reflected in its permitting and fiscal regime, he said. The country also has a good network of gas and oil pipelines and storage facilities, and a skilled workforce.



# In Brief

*system. The FPSO is expected to be capable of handling 100,000 b/d of oil and to have storage capacity of 800,000 barrels. First oil is forecast in 2003 or 2004.*

***Chevron is understood to have been*** *chosen to head a consortium of four companies planning to develop the Hebron–Ben Nevis oil field on the Grand Banks, Newfoundland. It is hoped to bring the field, which has recoverable reserves of 600mn barrels of oil, onstream in 2005 or 2006.*

## Middle East

***TotalFinaElf is reported to in discus-*** *sions regarding the rehabiliation of the Sweidieh oil field in northeast Syria. Plans are to boost production from 85,000 b/d to 150,000 b/d of oil.*

***R&B Falcon reports that the Mari-B #2*** *appraisal well offshore Israel has confirmed a substantial gas accumulation.*

***Syrian Petroleum has invited proposals*** *for developing natural gas reserves uncovered in the Palmyra region.*

***Elf Aquitaine of France is to add new*** *production platforms, an injection platform and more process facilities and pipelines to double oil production to 60,000 b/d from Qatar's offshore Al-Khalij field at a cost of $200mn by 2001, reports* Stella Zenkovich.

***Qatar General Petroleum Corporation*** *is understood to have awarded a contract which is worth over $200mn to Snamprogetti of Italy covering the construction of a gas lift plant for Dukhan, the largest onshore oil field.*

## Russia & Central Asia

***The Caspian Pipeline Consortium has*** *awarded Turkish contractor Tefken the $45mn final contract for construction of the $2.3bn, 1,500-km oil pipeline linking the Tengiz field in Kazakhstan to Novorossiysk, reports* Stella Zenkovich.

***Surgutneftegaz is reported to have*** *secured the rights to develop the Kondinsky, Chaprovsky, Zapadno-Erginsky, Novo-Bystrinsky and Sykhtymsky oil fields in the Khanty Mansiysk region of Russia. Field reserves are put at 130mn tonnes of oil.*

***Wintershall of Germany is reported to*** *be participating in development of the Urmanskoye, Archinskoye, Ostankinksy*

# NEWS Upstream

## EC proposal to improve ship safety

European Union Ministers have been asked to ban old ships with a poor safety record from visiting EU ports in a bid to prevent a disaster such as that involving the tanker *Erika* from occurring again, writes *Keith Nuthall*. A proposal from the European Commission has suggested that 'ships over 15 years of age [that] have been detained by Port State Control authorities more than twice in the previous two years' should be prevented from delivering cargoes to the EU. Brussels said that it also planned to publish a 'black-list' of such ships every six months.

The Commission has proposed that port controls for older ships should 'systematically include inspection of ballast tanks' and the requirement that ships 'report certain data before entering a port so that inspections can be properly prepared'.

Transport and Energy Commissioner Loyola de Palacio said that EU Member States should also recruit and train more port inspectors, enabling them to 'control more ships more thoroughly and to avoid the creation of "ports of convenience"'.

## Lukoil boosts current Caspian reserves

Lukoil's recent discovery of the 2.2bn barrel Severnoye oil field in the Russian sector of the Caspian Sea represents a 13% addition to the company's current reserves, according to the United Financial Group's *Russia Morning Comment*.

Crude will be transported primarily by Lukoil's new tanker fleet to Astrakhan and then to Volgograd up the Volga river – where Lukoil's refinery is currently working at full capacity. Transport via pipeline is also possible, either by the the Caspian pipeline, in which Lukoil has a 12.5% stake, or the recently completed Chechnya bypass pipeline.

Having already invested $150mn in exploration in the region, Lukoil is understood to be planning to invest a further $6bn over the next decade in order to boost production to 400,000 b/d (28% of current production).

Output from the new Severnoye field will help to further reduce the Russian oil company's dependence on Western Siberian reserves. Expansion in new areas has reduced Lukoil's exposure to Western Siberia from 78% in 1997 to 43% in 2000.

## Tough times despite rising oil prices

Oil and gas service and supply companies in northeast Scotland have seen a significant deterioration in business conditions over the last year despite the rapid and substantial increase in oil prices during this time, according to a recent survey by The Royal Bank of Scotland and Scottish Enterprise. Over half the companies surveyed reported that both volumes and prices were down on a year ago, although most expected conditions to improve in 2000 or 2001.

The survey also looked at cost reductions and the industry's aim to cut the cost of a barrel of oil by 33% between 1998 and 2002. Some 60% of firms surveyed believe these cuts are not achievable because the targets are too ambitious, margins are already too tight and costs just cannot be reduced any further.

Encouragingly, the survey revealed the strength of export activity, with four-fifths of companies currently exporting to an average of four countries and 56% exporting into three foreign markets. Such diversification is seen as vital for the long-term health of the sector, particularly against the background of UK cost reductions.



## Chad deal for Chevron

Chevron has joined ExxonMobil and Petronas by taking a 25% stake in a $3.5bn project to develop the landlocked Doba oil fields in southern Chad, together with a related 650-mile export pipeline project through Chad and Cameroon.

The Doba fields are expected to produce about 1bn barrels of oil over 25 to 30 years. Project construction is due to begin this year.

# In Brief

*and Kazansky oil and gas fields in the Tomsk region of Russia.*

***Lukoil and Fortum of Finland are*** *reported to have signed a cooperation agreement. The companies currently have a joint interest in developing the southern Shapka field in Russia.*

### Asia-Pacific

***Samsung Heavy Industries is reported*** *to have secured a $352mn contract to build floating, production, storage and residential facilities for the Cakerawala gas and condensate field in the Gulf of Thailand.*

***Phillips Petroleum is reported to be*** *expecting to recover around 500mn barrels of oil from the central area of its Peng Lai field in Bohai Bay block 11/05, with first production slated for late 2001. It is understood that the flank areas of the field – which hold heavier crudes – could add a further 200mn to 300mn barrels of recoverable reserves over the 30-year field life.*

***BHP, Lasmo and Premier have finalised*** *agreements with the Government of Pakistan and the Sui Southern Gas Company to supply 70mn cfld of gas from an extended well test on the Zamzama field in southern Pakistan. First gas is expected early 2001.*

### Latin America

***Enterprise Oil is reported to be taking a*** *55% stake in the 150mn barrel Bijupira/Salema oil field offshore Brazil. First oil is slated for early 2003. Odebrecht will hold a 25% interest in the project, Petrobras the remaining 20%.*

***The Venezuelan Government is*** *reported to be planning to put out to tender 10 natural gas exploration blocks as part of a $10bn programme aimed at developing the country's 147tn cf of gas reserves.*

### Africa

***Petrolin has selected Schlumberger's*** **IndigoPool.com** *portal to market Gabon's ninth licensing round at* **www.IndigoPool.com** *A total of 27 blocks – 13 onshore, five shallow water and nine deepwater – are to be put out to tender.*

# Opec raises production quotas

Nine Opec member countries – Algeria, Indonesia, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela – have agreed to restore their oil production to pre-March 1999 levels. The decision, announced at the 109th Opec Conference in Vienna on 29 March, brings individual member country output levels to:

| Opec member | New quota (mn b/d) | Old quota (mn b/d) |
|---|---|---|
| Algeria | 0.788 | 0.731 |
| Indonesia | 1.280 | 1.187 |
| Kuwait | 1.980 | 1.836 |
| Libya | 1.323 | 1.227 |
| Nigeria | 2.033 | 1.885 |
| Qatar | 0.640 | 0.593 |
| Saudi Arabia | 8.023 | 7.438 |
| UAE | 2.157 | 2.000 |
| Venezuela | 2.845 | 2.720 |

Iran chose to remain outside the agreement (3.620 (3.359) mn b/d). However, the Centre for Global Energy Studies believes that the country will, in practice, restore output to the pre-March 1999 level, bringing Opec's total production increase to 1.7mn b/d 'on paper'. CGES points out that, given that Opec members are already over-producing by at least 1mn b/d, this 1.7mn b/d 'paper' increase will probably translate to a rise of just 770,000 b/d in actual production – were the members to stick rigidly to their new quotas. If past experience is anything to go by, compliance is unlikely to be absolute and some leakage is to be expected.

However, this leakage may be curtailed to some extent by the lack of spare capacity among many Opec members. CGES believes that over-production will add a further 300,000 b/d to 400,000 b/d to Opec output – yielding an actual increase in Opec production of 1.1mn b/d.

CGES also comments that an output increase of 1.1mn b/d from the beginning of April 'will not have a significant downward impact on oil prices, although it should prevent them from returning to the $30/b level witnessed recently'. Unless revised in June, the agreed increase is expected to leave the price of Dated Brent between $26/b and $27/b on average in the 2Q/3Q2000.

Mexican Energy Minister, Luis Tellez, is reported to have announced plans to increase Mexico's oil exports by 150,000 b/d as part of an agreement with Opec. Mexico is not a member of the oil cartel.

# BP Amoco and Arco merger gets green light

The US Federal Trade Commission (FTC) has given BP Amoco and Arco the green light to merge their operations and create a new company with a market capitalisation of some $200bn.

In a separate announcement, BP Amoco reports that is has reached agreement with ExxonMobil, Arco and Phillips Petroleum which resolves issues relating to the ownership and operation of the Prudhoe Bay Unit (PBU) and the Point Thomson Unit (PTU) in Alaska. The agreement – which is subject to the completion of the BP Amoco–Arco merger and assumes Phillip's acquisition of Arco's Alaskan interests – will optimise operations, reduce costs and facilitate new oil and gas development in the state.

The aligned oil and gas interests will now be 26.7% for BP Exploration (Alaska), 36.8% for ExxonMobil and 36.5% for Phillips. BP Exploration (Alaska) will become the single operator at Prudhoe Bay. ExxonMobil and BP Exploration (Alaska) have also agreed to work towards alignment in the Point Thomson field area, with respective interests of 45% for BP Exploration and 55% for ExxonMobil.

The agreement also resolves the issues that resulted in recent legal action by ExxonMobil relating to North Slope preferential rights and field operatorship.

According to the companies, the deal provides a number of 'key advantages' for all parties involved:

- It will retain three major working interest owners in the PBU (BP Exploration, ExxonMobil and Phillips).
- It establishes a single operator at Prudhoe Bay, thus providing cost and ultimate recovery advantages.
- It provides a more even distribution of liquids production among the three major working interest owners. Final equity percentages have not been determined, pending a decision by the remaining PBU owners on alignment. However, ExxonMobil's and Phillips' liquids production will increase by approximately 30,000 b/d respectively, and BP Exploration will acquire additional interest in the PBU gas cap and at Point Thomson.
- It would remove the need for lengthy and complex agreements between parties with different interests. This may contribute to improved timelines for new economic developments within the PBU.
- Phillips will become a major new operator of the North Slope Kuparuk and Alpine fields, following FTC review and closing of the Arco Alaska acquisition.

# In Brief

## United Kingdom

***BG Group is demerging its UK*** *domestic regulated gas pipeline business from its international energy operations – a move which is reported to have pushed up the Group's share prices by 10%. The Group internally separated its Transco pipeline business from BG International last year.*

## Europe

***The European Commission has called*** *on EU Member States to back a proposal that would scrap an EU ban on taxing aviation fuel for flights within the EU, to cut air pollution. Brussels also asked Member States to work for a global deal at the International Civil Aviation Organisation allowing fuel taxes on all flights worldwide.*

***Italian group Eni is reported to have*** *made a recommended cash offer for UK independent British-Borneo. No further details are available.*

***Coflexip Stena Offshore is understood*** *to be acquiring Houston-based engineering business R J Brown – which is owned by Kvaerner and has particular expertise in deepwater subsea pipeline systems – for an undisclosed sum.*

## North America

***The US Federal Trade Commission is*** *reported to have cleared BP Amoco's $4.75bn takeover of Burmah Castrol.*

***Anadarko Petroleum and Union Pacific*** *Resources have announced a merger that is claimed will create one of the largest independent E&P companies in the world in terms of 1999 reserves, production and drilling activity. The combined operation, which will have a market capitalisation of over $9bn, will be called Anadarko Petroleum Corporation and will be headquartered in Houston, Texas.*

***Canadian E&P company Petrobank is*** *reported to have made a C$1.6bn takeover offer for Canadian independent Ranger Oil.*

***ExxonMobil is understood to have filed*** *a lawsuit in Los Angeles seeking a preliminary injunction that could delay BP Amoco's $33bn merger with Arco. The three companies are partners in the Prudhoe Bay oil field in Alaska and it is reported that ExxonMobil objects to*

# Lukoil to expand upstream and downstream

Lukoil plans to increase oil production by at least 15% from 1999 levels (75.6mn tonnes) by 2005. Some $10bn of investment is expected to be needed to meet this target, most of which will come from internal sources, according to the company. It is envisaged that the increased production will be fully attributable to new reserves. About 3,000 wells are to be drilled in Russia by 2005.

Total volumes produced by Lukoil's refining operations are to be maintained at 23mn tonnes. However, the proportion of gasoline in the output mix is expected to rise substantially following a recent upgrading programme and increasing demand for high quality transport fuels. Lukoil also plans to build and upgrade some 600 retail outlets (a 70% increase) in Russia, and to open 40 shops under the Lukoil brand during the five-year period.

# ASTM test method on CD-ROM

*Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants, Software Programme* – The ASTM has now produced a Windows Version of the Precision Programme for the processing of interlaboratory (round robin) data into the equations for repeatability and reproducibility that form part of a precision statement. The programme meets or exceeds the requirements of IP 367/EN ISO 4259. It accepts input from Excel and prints out reports in Word.

*For further details contact ASTM's offices in the UK.*

# The oil market cycle

Morgan Stanley Dean Witter (MSDW) has formed a joint venture with Norwegian Energy to distribute a new oil market research and analysis product – The Oil Market Cycle – on MSDW's website (protected client access only). The product is claimed to deliver 'comprehensive market statistics and original analysis that should be of great value to all segments of the oil industry, including producers, refiners, end users and investors'.

The rationale behind The Oil Market Cycle is that all sectors of the market are interrelated and a complete understanding of each segment is needed to be able to make the appropriate trading, risk management or investment decisions. The product delivers analysis in a homogeneous format, assembling information gathered from numerous sources and reporting agencies.

# WorldOil.com

**WorldOil.com** – an information and business to business e-commerce portal for the oilfield services industry – has launched a live online version of its proprietary Composite Catalog for Oilfield Equipment & Service® to create what it claims it the largest listing of oilfield equipment and services available anywhere on the Internet.

The online catalogue is to form the foundation of **WorldOil.com**'s e-commerce capabilities. Buyers can currently access direct e-mail links to suppliers in the online catalogue.

The company plans to add interactive request for quote capabilities the website in May 2000, and full, seamless interactive procurement capabilities and initial fulfillment and logistics services in 3Q2000.

# Shell unveils new management training tool

Shell International E&P has unveiled a just-in-time open learning tool on CD-ROM, which is aimed at business leaders and managers.

The 'Leadership Toolbox' focuses on key areas of management skills relevant in business today and has been designed to fit in with working schedules. The toolbox comprises a total of 75 soundbites for when the user 'has 15 minutes to spare' and 70 learning modules, each of approximately two hours duration and which are based on Shell's in-house Diploma in Management Programme. It also features critical reviews of Distance Learning Material and Business School Courses.

The package costs £950 or $1,590. For more information on Leadership Toolbox visit **www.leadership-toolbox.com**

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# In Brief

*the planned sale of Arco's share in the field to Phillips Petroleum. The company is also reported to have said that it wants it made clear who is going to act as operator of Prudhoe Bay and how the field will be operated.*

## Russia & Central Asia

***Exports of Russian oil products** increased significantly in February 2000 following the easing of restrictions by the Ministry of Fuel and Energy, reports the United Financial Group's* Russia Morning Comment. *Gasoline exports during February increased by 280% from January 2000, reaching 110,000 b/d. Fuel oil exports were up 15% at 440,000 b/d, while gasoil exports showed more modest growth of 3% to 593,000 b/d.*

***Lukoil has confirmed a rumour that it** will issue 34mn shares, or 4.2% of the current number, reports the United Financial Group's* Russia Morning Comment. *The issue will be used to acquire 100% in the 2bn barrel ArkhangelskGheolDobycha and to acquire the outstanding minority stakes in KomiTek subsidiaries.*

***Russian Tax Minister Alexander** Pochinok reports that his Ministry collected Rb47bn in March 2000, according to the United Financial Group's* Russia Morning Comment. *The oil and gas industry accounted for almost 30% of the Tax Ministry's collections.*

***The US Secretary of State is reported to** have lifted opposition to the US Export Import Bank granting Tyumen Oil Company (TNK) a $500mn loan guarantee package, reports the United Financial Group's* Russia Morning Comment.

***Hungarian oil and gas company Mol is** to acquire an initial equity stake of up to 36.2% in Slovnaft of Slovakia for $262mn. The acquisition is claimed to be Central and Eastern Europe's first major intra-regional cross-border transaction.*

## Latin America

***Repsol YPF and Petrobras are under**stood to have agreed a number of downstream and upstream gas asset swaps. The deals will provide Repsol YPF with a greater market presence in Brazil, and Petrobras additional downstream interests in Argentina and upstream assets elsewhere in Latin America.*

## Major e-procurement portal unveiled

A group of 14 energy and petrochemical companies from around the globe have teamed up to launch an independent industry procurement exchange. The exchange will provide a global electronic marketplace, open to buyers and sellers both large and small. In addition, the exchange is to develop technologies to remove inefficiencies in procurement, supply chain management and capacity utilisation.

The scope of the initiative will initially include all the procurement activities related to goods and services used within the oil and gas exploration and production business, as well as the petrochemicals, refining, marketing and retail sectors of the industry.

Participants in the exchange are: Shell, BP Amoco, Conoco, Dow Chemical, Equilon Enterprises, Mitsubishi, Motiva Enterprises, Occidental Petroleum, Phillips Petroleum, Respol YPF, Statoil, Tosco, TotalFinaElf and Unocal. Discussions are already underway with further partners and participants, including members from the supplier community.

According to Sir John Browne, BP Amoco's Group Chief Executive: 'The leading players within the industry have come together to improve performance, productivity and capital efficiency. Exchanges are a very exciting example of the application of Internet technologies to drive efficiency and innovation across the supply chain.' Harry Roels, a Shell Group Managing Director added that: 'By working together with industry partners and suppliers, we can deliver greater savings in a shorter time.'

The collective annual procurement spend of the founding partners exceeds $125bn – 40% of which is spent in North and South America, 40% in Europe and Africa, and 20% in the Asia-Pacific and Middle East. The partners plan to use the exchange for a 'significant' amount of their procurement.

An independent company will be created to own and operate the exchange, which is to be launched using the CommerceOne Marketsite platform. It is intended to prepare the company for initial public offering in the future.

## Freight transport online

The UK Freight Transport Association is joining forces with Freight Traders™, the online freight transport auction service, to bring the benefits of the Internet to shippers and carriers of freight. Freight Traders is linking with FTA's global information portal – the Supply Chain Network™ – to provide news, events, documentation and supply chain industry information to buyers and carriers of freight transport. The Supply Chain Network allows online discussion and networking between users and access to added value services.

## Fuel cell power plant

Norske Shell and Siemens Westinghouse Power Corporation have announced plans to build a 250-KW solid oxide fuel cell (SOFC) power generation plant fuelled by natural gas in Norway. The companies state that the plant will show that the carbon dioxide normally emitted in exhaust gases can be successfully recovered at low additional cost and with the highest electrical efficiency of any fuel cell type in the industry. It is hoped that the new technology could ultimately lead to reduced greenhouse gas emissions.

## Spanish gas sales agreement first

BP Amoco's newly established Gas & Power division claims to have become the first company to agree sales to business customers in Spain's recently deregulated gas market. The company has signed gas sales agreements with two business customers at seven sites and claims to have become the first company to agree transportation terms with Engas, Spain's gas transportation company, for the delivery of gas to customers' premises.

The first sales agreements total over 100mn cm of natural gas to the Valencia-based Pamesa Ceramica Group and will commence supply on 1 April 2000.

BP Amoco also reports that it was the first international company among the first five businesses who were granted the licence to commercialise natural gas in October 1999 within the new framework established by the Hydrocarbon Law.

According to Paul Reed, Managing Director of BP Amoco's Gas & Power business in the Western Mediterranean, the company has secured an initial 2% share of the eligible Spanish gas market. 'The framework for competition is in its infancy,' he comments, 'but as it develops, we see the opportunity to develop a significant gas marketing business leveraging the brand built by the refining and marketing company, backed by one of the world's largest portfolios of gas production.'

# In Brief

### United Kingdom

***Announcing his latest Budget, the UK*** *Chancellor of the Exchequer, Gordon Brown, raised diesel and fuel prices by 1.89 pence per litre in line with inflation. In addition, he announced that cars with engine sizes of up to 1,200cc would be eligible for a £55 discount on annual car tax, bringing the price down to £100.*

### Europe

***The Turkish Government is reported to*** *have doubled the size of the stake it is selling in state-owned oil refining company Tupras to 31.5%. The stake has been valued at $1.25bn.*

***Statoil is reported to have raised its*** *cost estimates for the Kaarstø gas treatment plant in Norway by NKr622mn ($74mn) to NKr10.35bn.*

### North America

***A subsidiary of ExxonMobil, Mobil*** *Alaska Pipeline Company, is reported to be selling its 3.1% stake in the TransAlaska Pipeline System (TAPS) to a unit of The Williams Company. The disposal is required to meet conditions of the US Federal Trade Commission's approval of the ExxonMobil merger. The ExxonMobil Pipeline Company will, however, retain its 20% stake in TAPS.*

### Middle East

***Saudi Petrochemical Company (Sadaf)*** *is to invite bids by 1 August 2000 for construction of Saudi Arabia's first IPP, a 160–180 MW cogeneration plant, reports Stella Zenkovich. The six prospective bidders are the US quartet of Enron, AES, InterGen and CMS Energy, plus Tractabel of Belgium and the local national contracting company.*

***State-owned Kuwait Petroleum has*** *pulled out of the proposed Eastern India refinery project joint venture with Indian Oil Corporation which was due to complete in 2003. Kuwait Petroleum is reported to have decided that there was already excessive refinery capacity in South Asia.*

***Sasol of South Africa is reported to be*** *preparing to launch its first gas-to-liquids (GTL) project in Qatar under a*

## Funds for Powershift clean vehicle programme

The UK Department of the Environment, Transport and the Regions (DETR) has announced a £9mn budget allocation for the Energy Saving Trust's Powershift programme, the government-backed initiative which aims to create a sustainable market for clean fuel vehicles (CFVs). The DETR has also allocated an additional £6mn for a new 'cleaner vehicle programme' to be run alongside Powershift, which will aim to cut pollution in towns and cities by targeting older vehicles such as taxis and buses. (The Powershift programme is aimed at converting vehicles less than 12 months old.)

The £9mn budget made available to cover the Powershift programme throughout England in 2000/2001 is the largest-ever allocation of government money since the programme's launch four years ago, and is almost three times higher than last year's budget of £3.2mn. The rise reflects the growing demand, particularly among company fleet managers in the UK, for vehicles, which run on LPG, electricity and natural gas. According to Jonathon Murray, Powershift Manager, the programme has seen a fourfold increase in calls from fleet operators to its Hotline over the past year. He also points out that: 'With unleaded petrol and diesel now costing 79 pence per litre (p/l) on the forecourts, compared with 39 p/l for LPG, the economic argument to switch to clean fuels is overwhelming.'

This year alone, Powershift claims to have stimulated over 2,200 orders for CFVs and offered grants to over 364 organisations that want to convert their fleets. The programme also publishes a buyers guide to the cleanest vehicles on the market – *The Powershift Register* – which features over 260 different makes and models of cars, vans and lorries, as well as details of conversion companies.

## Fuels sector looks to the Internet

European oil companies, threatened by the plateau in automotive fuel sales are taking their battle for market share onto the Internet in a bid to increase customer loyalty and reduce costs. The findings come from London-based ICE (International Card Enterprises), a specialist supplier of standard and web-enabled fleet card management and loyalty products to the oil industry. According to ICE, in the race to re-invent themselves as e-commerce operations, UK oil companies are lagging behind their continental counterparts.

According to research by ICE, automotive fuel sales, which account for over 50% of most oil company's operational profits will only increase from 260bn litres in 1999 to 270bn in 2003. As a result, the oil industry is now focusing on the Internet as the best way to compete on price, reduce time to market for new products, tie-in loyal customers, and generate new income through the sale of non-fuel products, while achieving quickly the cost reductions that the industry is looking for.

ICE's research indicates that 80% of the average oil company's sales will be made through Internet portals by 2003. It also predicts that the explosion in oil industry e-commerce, electronic marketing and use of customer relationship management technology will help increase customer loyalty.

'The Western European fuel market is stagnant,' comments Philippe Chautard, European Business Director at ICE. 'Oil companies face low margins in fuel retailing and, in countries like the UK and France, vicious competition from the hypermarkets. While the Internet wasn't a major issue for the oil giant in the 1990s, the new decade will see them scramble to re-invent themselves as e-business specialists.

'From our dealings with the European oil industry, it is the UK companies that are slowest to adapt to life in the new Internet playground. Unless the UK oil industry develops online payment solutions soon, it could lose significant market share to more web-savvy continental competitors.'

## Dutch unmanned forecourt first

Tango, the new Dutch petroleum brand – of which 75% of the shares are held by Amsterdam-listed oil company Petroplus International – has launched its first unmanned, automated service station at Nijmegen in the Netherlands. A further 15 sites are planned to be opened during 2000. The sites will be open 24 hours a day, seven days a week, 365 days a year. Tango reports that it plans to sell petrol and diesel at 'significantly lower prices than the competition'. Customers will be offered petrol at 17 guilder cents per litre and diesel at 13 cents per litre below current market prices.

Customers will be able to pay via a terminal accepting all bankcards, lease cards or a dedicated Tango fuel card.

*joint venture with Qatar General Petroleum Company and Phillips of the US. A 20,000 b/d GTL plant is planned at Ras Laffan industrial city.*

***Five bids were attracted for the $20mn*** *front-end engineering and design package of Oman's planned $700mn Sohar refinery project, writes* Stella Zenkovich. *Bidders were a Japanese duo of Chiyoda Corporation and JGC Corporation, US companies ABB Lummus Global and Foster Wheeler, and Italian/local joint venture Snamprogetti Oman Refinery Company. UOP of the US is providing the licence for a 75,000 b/d fluid catalytic cracker, the central element of the eight-unit project.*

***The Azeri Government is studying an*** *Iranian request for supplying 4mn t/y of crude to its northern refineries in a swap for an identical amount of Iranian crude in the Gulf, and for exporting 8bn cm of gas from 2005, plus renovating the existing IGAT-1 Baku–Astara Soviet-era gas pipeline.*

***The Japanese export credit agency*** *JBIC-MITI is reported to have issued Gazprom an official confirmation of a $600mn guarantee for construction of a 16bn cm/y underwater pipeline to Turkey, says the United Financial Group's* Russia Morning Comment. *Gazprom has already secured $1bn in guarantees from the Italian export credit agency, comments UFG. The two guarantors cover the bulk of the funding requirements for the project, making its successful completion in 2001 almost certain.*

***Lukoil is reported to be planning*** *to build a new refinery at the Mokhnatkina Pakhta oil depot in the Murmansk region. The plant will be designed to handle 3mn t/y of crude oil from fields in Timan-Pechora and is due onstream in late 2003.*

***Slumping economic ties can be revived*** *between Bulgaria and Russia by expanding joint energy projects and gas transmission capacities, Vladimir Titov, Russian Ambassador to Sofia recently stated, writes* Stella Zenkovich. *Pipelines carry Russian gas through Bulgaria to Balkan neighbours Turkey, Greece and Macedonia. Bulgaria has just become an EU Member and its adoption of EU norms will increase the potential for cooperation, said the Ambassador. Meanwhile, Bulgargas claimed in mid-March that it had started two loop additions of 90 km near the Romanian border and the enlargement of the pipeline to*

# In Brief

*Turkey, aiming to increase Russian gas deliveries. Bulgargas spent $40mn in 1999 on widening its transit network and building a 55-km pipeline to Turkey and 96-km to Greece and Macedonia.*

### Asia-Pacific

***Yemen LNG is reported to be in discus-*** *sions with Gujarat Pipavav LNG, in which BG International holds a 52% stake, to supply 2.65 t/y of LNG to northwest India via a terminal in Gujarat state. It is understood that supplies could rise to 5.3 t/y.*

### Africa

***The Point Noire Congolese national oil*** *refinery in Brazzaville resumed activities at the end of March after nearly four years of inactivity, reports* Stella Zenkovich. *The facility will initially handle 21,000 tonnes of crude bought by London-based Swiss partner Trafigura.*

***Algerian state oil and gas company*** *Sonatrach has come to an in-principle agreement to cooperate with five Spanish partners in operating an LNG regasification terminal at Ferrol, in the Galicia region of northern Spain. Partners are: Galicia regional council, Caixa Galicia Bank, the Tojeiro Group, and the Endesa and Union Fenosa power utilities.*

### World

***Shell is reported to be planning to*** *invest $200mnly over the next five years on new LPG projects worldwide.*

## BP Amoco and PetroChina alliance

Following the significant rise in its Asian gas reserves as a result of the imminent combination with Arco, BP Amoco has unveiled plans to form a gas marketing joint venture with PetroChina aimed at supplying the rapidly growing energy markets of eastern China. Gas currently meets just 2% of China's energy needs, but this is projected in government plans to increase to between 7% and 8% by 2010.

The two companies plan to cooperate in building infrastructure, potentially including an LNG terminal, and to supply imported and domestic gas to the regions around Shanghai and the Yangtze River Delta. The alliance also includes a preliminary agreement to build a fuels marketing business in China's coastal provinces with the prospect of further expansion into other regions.

Including some existing sites, the companies aim to build or acquire up to 150 service stations in the first year of operation, and maintain that momentum towards building a significant retail presence within five to seven years. They are also reported to be considering joint expansion in lubricants and aviation fuels. BP Amoco currently has joint venture operations at 17 airports in China.

The alliance also allows BP Amoco to participate in the West–East China gas pipeline and, longer-term, provides the potential to market gas from East Siberia where the company has a stake in the Kovyktinskoye oil field. Both these options are subject to feasibility studies and appropriate approval.

In a separate announcement, BP Amoco announced that it will take 20% of the shares currently being offered up to a maximum of $1bn, by PetroChina through its initial public offering.

## Hazardous goods transport quality standards

Suckling Transport, the West Thurrock, Essex-based haulier, has published the findings of a recent survey of levels of accreditation to quality standards within the UK hazardous goods transport sector. The report indicates that in 1995, some 92% of respondents were familiar with the ISO 9002 quality standard and all were registered to it. In 2000, however, while 97% were familiar with the standard, only 83% were registered. According to Suckling, this 'slight decline in quality as an issue' reflects the 'increasing popularity of the environment as the "issue of the day"'. Only 3% of respondents were registered to the Environmental Standard BS 7750 in 1995, compared with 15% in 2000.

In spite of the decline in registration to BS EN ISO 9002 by the companies surveyed, it is interesting to note that there was no corresponding reduction in the percentage of companies requiring their contractors to be registered to the quality standard.

The British Standards Institute introduced BS EN 12798 in 1999, a standard that specifically refers to the carriage of dangerous goods. However, Suckling Transport reports that little has been done to market the new standard – despite the fact that 59% of companies see the need for it, only 2% of the respondents were familiar with it and none had chosen to register. Indeed, Suckling Transport claims to be the only UK haulier to have achieved registration to the standard to date.

**UK Deliveries into Consumption (tonnes)**

| Products | †Feb 1999 | *Feb 2000 | †Jan–Feb 1999 | *Jan–Feb 2000 | % Change |
|---|---|---|---|---|---|
| Naphtha/LDF | 315,128 | 247,381 | 567,702 | 485,771 | –14 |
| ATF – Kerosene | 609,806 | 689,458 | 1,336,394 | 1,425,975 | 7 |
| Petrol | 1,688,524 | 1,683,262 | 3,333,630 | 3,368,222 | 1 |
| of which unleaded | 1,397,812 | 1,530,810 | 2,756,479 | 3,072,312 | 11 |
| of which Super unleaded | 28,148 | 29,771 | 54,276 | 70,938 | 31 |
| of which Premium unleaded | 1,369,664 | 1,501,039 | 2,702,203 | 3,001,374 | 11 |
| Lead Replacement Petrol (LRP) | 0 | 152,452 | 0 | 152,452 | – |
| Burning Oil | 423,831 | 436,080 | 826,142 | 841,702 | 2 |
| Automotive Diesel | 1,231,191 | 1,251,654 | 2,424,712 | 2,429,299 | 0.2 |
| GasOil/Marine Diesel Oil | 635,529 | 641,639 | 1,164,658 | 1,283,270 | 10 |
| Fuel Oil | 100,766 | 157,004 | 374,169 | 323,361 | –14 |
| Lubricating Oil | 65,532 | 66,751 | 123,328 | 130,898 | 6 |
| Other Products | 790,272 | 706,532 | 1,498,319 | 1,317,576 | –12 |
| Total above | 5,860,579 | 5,879,761 | 11,649,054 | 11,606,074 | –0.4 |
| Refinery Consumption | 585,242 | 449,520 | 1,126,130 | 910,284 | –19 |
| Total all products | 6,445,821 | 6,329,281 | 12,775,184 | 12,516,358 | –2 |

† Revised with adjustments   * Figures dated from Feb 2000 onwards are the final figures as supplied by reporting companies, they are no longer provisional figures

# e-Trading: A challenge to the system

**E-trading has the potential to revolutionise the oil business, and raises fundamental questions about the future of the industry and the role of the trader in particular, writes *Brian Davis*.**

First it is worth looking at allied industries where trading is important and considerable changes are taking place. Open outcry markets, like LIFFE, are disappearing and similar patterns can be seen in commodity trading. The chemicals industry is well ahead of the oil industry with a proliferation of e-trading sites, such as **ChemConnect.com, ChemTrade.com** and others. These Internet-based markets are already taking a rapidly increasing proportion of the chemicals trade.

Faced with such change, most markets and groups of traders are convinced that their sector is unique and have special factors that cannot readily be computerised. Be very suspicious of such arguments. On-line trading sites have become very sophisticated and already offer features that can replicate the traditional trading environment in particular sectors.

For example, **HoustonStreet.com** has already signed deals with a US downstream alliance of Shell Oil, Texaco and Saudi Aramco to trade oil and refined products at wholesale level, and is due onstream on 18 May 2000. Frank Getman, CEO of **HoustonStreet.com** stressed the importance of getting feedback from oil traders when creating the site in order to give it the right feel. 'Having consulted with oil traders in the development process, once these trading floors go live, traders will be able to make deals based on the product and volume of their choice much as they do today, but more *efficiently* and *easily* with the Internet.'

**HoustonStreet.com** is to provide up-to-the-second market information, a neutral trading environment where companies of any size can participate, and easy integration with back office systems to facilitate analyses of overall trading performance. Although the **HoustonStreet.com** exchange will initially cover the US market for trading oil and refined products, there are plans to encompass international markets.

## Speed of change

In March, BP Amoco agreed to link up with Royal Dutch Shell, TotalFinaElf and a team including Goldman Sachs, Morgan Stanley Dean Witter, Societe Générale and Deutsche Bank to create the IntercontinentalExchange – potentially the largest over-the-counter (OTC) energy, metal and other commodity products marketplace the world has ever seen. Gary Cohn, the Global Head of Commodities at Goldman Sachs claimed: 'The prospect of increased market efficiency in the area of OTC commodity products is long overdue.'

Reputedly, Nymex was approached with a view to involvement in the new exchange and refused outright. But on hearing official announcement of the IntercontinentalExchange only a few days later, and judging by the scale and power of the parties involved, it is seriously having to review the impact of e-trading on the traditional market.

*Petroleum Review* Editor Chris Skrebowski suggests that 'these Seven Samurai of the oil and financial sector have committed to provide the new market with the sort of liquidity and turnover that means IntercontinetalExchange can be a dominant world player from day one.'

At present, the vast bulk of trading in the wholesale OTC energy and metals market is conducted via telephone trading networks. The new Internet-based IntercontinentalExchange will offer OTC traders increased market transparency, liquidity and efficiency while preserving the anonymity most markets require, and offering all the interactivity of the Net. Traders will be able to view OTC and futures markets on the same screen, as well as route orders to existing futures exchanges or their electronic platforms, with credit intermediation features and links to many other industry-related sites.

The size of the market is far larger than most people recognise. In 1999 the notional value of OTC commodity contracts was then more than $1.8tn and growing rapidly.

This new market will start with oil and precious metal trading 'later this year,' while the trading of natural gas, electrical power and various base metals follows a little later. BP Amoco's press office declined to give an exact date, but 3Q2000 seems a reasonable bet. There will be no memberships, dues or fees in the exchange beyond those incurred in the process of trading. Participation will be open to all commercial market participants.

But these are not the only players. Since the beginning of the current year *Petroleum Review* has identified 11 other new sites specifically dedicated to e-trading, and this is probably only the tip of the iceberg.

These include **TradeCapture.com** which has a strategic partnership with Texaco and came onstream at the end of February, set up by people who had come out of Phibro; **NRGonline.com; RedMeteor.com; HoustonStreet.com; Fuelspot.com; Petrolplus-oil.de** – a Dutch-based oil products portal which is initially targeted at the German oil market but plans to expand to other European markets; **Bolero.net** which promises expertise in secure financial transfers utilising it's banking background; **Fueltrader.com; Pepex.com** which came onstream in April with a beta test by Columbia's national oil company Empresa (Pepex also says negotiations are underway with several national oil companies, governments and large consumers) and **Altra.com** Conceptually similar is the recently announced **LevelSeas.com** a new Internet-based online exchange for seaborne wet and dry bulk commodity shipping including freight derivatives, set up by BP Amoco, Cargill, shipbroker Clarksons and Royal Dutch Shell.

Undoubtedly BP Amoco is a front runner in the move towards e-trading. In March, BP Amoco announced purchase of a 3% interest in Altra Energy Technologies for **Altra.com**, a wholesale energy marketplace to trade crude oil, natural gas, natural gas liquids and power in the US. In addition to the super portal IntercontinentalExchange, BP Amoco is also investing in several neutral energy exchanges, and has taken equity in **ChemConnect.com** as well as a share in **Levelseas.com** most recently.

Undoubtedly the best established e-trader is Enron which has established a position for itself as a trader of both gas and electricity and is now looking for new trading areas – the latest of which is bandwidth. The key question is the degree to which the minimal assets/maximal trading strategy of Enron will find application in the oil industry, which has traditionally been an asset-dominated business.

Enron's new European web-based trading service EnronOnline apparently had 'the best prices in the market' on its first day (5 January). Certain traders believe the launch may have taken some trade away from the IPE and OCM markets. In February, Enron launched **EnronCredit.com** – the first global online credit department to enable B2B (business to business) customers to hedge credit exposure instantly via the Internet.

## Re-examining business

All oil companies are having to re-examine their business models. Deciding the degree to which they wish to derive their supply from traditional asset ownership, and the degree to which they are prepared to rely on the market to give them the supplies that they need.

In the emerging integration of gas and electricity markets in the US, Shell appears to have taken the traditional asset-based route with a forward integration all the way through to the end consumer. In contrast, BP Amoco has been distinctly more circumspect about acquiring physical assets and has given clear hints that it is prepared to trade for a proportion of its requirements.

Indeed, BP Amoco's Sir John Browne has not only committed his company to 95% e-procurement by the year-end for the oil business, but has also committed to 95% e-procurement for the chemicals business by year-end.

According to Tony Fountain, the President of BP Amoco's North America gas and power business unit: 'BP Amoco has invested in several neutral energy exchanges because these types of neutral trading platforms help harness the power of the Internet to bring a more transparent, low cost, multi-party market to a much broader range of buyers and sellers of energy products.'

Skrebowski suggests this poses the question: 'Have three of the four largest oil companies on the planet committed themselves to a more open, less secretive method of trading in pursuit of lower trading costs?'

This also raises the competition question: 'Will the majors fall foul of the Anti-Competition law in the US which tends to be more stringent than in Europe?' This is not an academic question as the Federal Trade Commission (FTC) has just announced an investigation into the competition implications of the joint e-procurement site being developed by General Motors, Ford and DaimlerChrysler.

According to Catherine Jago, a Manager in the Energy Division of Arthur D Little, and a former oil trader herself, she foresees a divergent approach to e-business according to commodity trading or physical trading.

'Commodity trading – where there is a standard contract and everybody knows the terms, offers great potential for introducing trading on the Internet especially for futures, Swaps and some of the other paper business where there is an agreed standard contract,' she says.

However, on the physical trading side, where each contract has to be negotiated individually, there are unlikely to be standard terms. Jago suggests: 'Most physical traders do not consider that e-business will bring much benefit other than as a communication tool. Traders always believe that they know more about the marketplace and have better contacts than anybody else, and that's how they make their money.'

Key areas of reluctance for futures traders on the traditional side of the oil business, are fears that it will increase transparency and reduce the opportunities for making money. 'There's no doubt that e-business has increased transparency,' says Jago. 'But traders may couch their fears in words like: "There are too many details we need to negotiate to operate in the e-business environment." This may be true for physical transactions, but it doesn't ring true for the more commodity-type of dealings.'

Maybe it's a question of history? Historically, before we had formal stock exchanges, people used to buy and sell stocks between 'contacts.' The meeting places of these contacts were initially coffee houses. These informal exchanges then developed into formal exchanges.

People still make use of personal knowledge and personal contacts when they decide to buy or sell stocks, but if the source of knowledge is privileged we refer to it as 'insider trading' and deem it illegal. This raises the question: 'Is the trading of oil and oil products on the point of moving from being an informal, insider (sic) trading activity to being a more formalised and possibly more regulated activity?'

## Opening up business

At present oil trading is a relationship-based business. Internet trade has the potential to open this business up to many more players. The degree to which existing relationships and structures survive will depend on which system brings the most benefit.

Benefit however is in two forms: financial reward and reduced risk. Skrebowski suggests: 'At risk of gross simplification, relatively closed markets and direct relationships are likely to bring the higher rewards, while open multi-player markets are likely to reduce risk.'

Whichever is more important to oil industry management will determine whether trading continues in its current form – taking only the straightforward economies of the Net, ie low-cost financial transfer, e-mails and rapid information transfer. Alternatively, where risk is more important to them. Then there will probably be a move towards full, multi-player web transaction.

## Who are the new players?

The new players are likely to be the national oil companies (like Columbia's Empresa, Spain's Endesa, or Venezuela's PdVSA) who are becoming ever more sophisticated in their use of the new e-based techniques, once the sole preserve or the big western oil companies. The progressive privatisation of much of the world's oil industry means that these companies, relatively free from government interference, are now able to make use of the sophisticated techniques and market innovations such as e-business.

Also, major financial players are always on the look out for liquid trading markets that they can exploit. Although some still like to believe that a 2mn barrel tanker of crude is beyond the economic reach of those outside the Magic Circle in the oil business. 'Do not believe this dangerous nonsense. There are far more companies and financial institutions today with the resources to play in a market with a $100mn entrance ticket' warns Skrebowski.

## Industry fast-forward?

According to Arthur D Little's Catherine Jago: 'We can't afford to wait to learn from others like the financial community. I think we should move faster because we lagged behind last time with the introduction of futures and Swaps. So we lost out as we didn't have a full enough understanding early enough, which gave the openings for the banks to come in, and some would say – *disrupt the market*. This time we should be more proactive. Generally the oil industry has been laggard about e-business and should move more quickly. Otherwise dot.com people will come in and move the oil industry, perhaps in a way that the oil traders don't want it to move.'

There are no particular technical barriers to e-trading. The oil industry has generally been eager to take new technology on board, and oil traders are used to taking electronic feeds for IPE and NYMEX data.

Some experts feel that the first wave of e-trading sites are rather parochial. Jago says: 'They tend not to cover international trading opportunities but that may change very quickly.'

Greg Steller of **TradeCapture.com** says most of the trading on their site, which launched on 29 February, has been done by Sempra Energy Trading (a US firm which trades physical and financial energy products including natural gas, electricity and crude), and to a lesser extent by Texaco which has a stake in the dot.com company. Steller admits: 'We are increasing our marketing push to attract other major oil traders.'

Undoubtedly the success of the new e-trading sites will depend on attracting significant volumes of trade. Of course, some of these early e-trading sites will fail, but the first site that establishes a dominant position as a liquid market will succeed handsomely. Ultimately traders want liquid markets that allow them to transact easily and efficiently. The first e-trading site that provides this stands a very good chance of becoming the market leader.

Transaction costs will decrease significantly because of three factors: automatic financial transfer, a ready audit trail (which allows the established trading strategy to be closely adhered to); and the removal of the back office paperwork.

## Looking to the future

Looking to the future, it would appear that the oil and gas industry will be a fully electronic business, with no paper in sight, from the well-head to the end consumer, within a couple of years.

Inevitably e-Trading will eliminate a lot of the paperchase. The big question is how many traders will continue to act in a similar manner to the way they do today, where it's a close club. Maybe the computer will do the trading eventually, as we move towards the grail of a 'perfect pricing mechanism.' In that scenario, there will just be trading strategists and the IT experts who set up these strategies. Then the traditional trader may have to look for new areas where established skills can be applied!

So what will be the impact on the IPE, Nymex and markets further afield? The IPE and Nymex are busy demutualising in order to give themselves the freedom to become fully electronic exchanges, in much the same way as LIFFE decided to recast itself as a screen-only electronic exchange. The fact that we still have an open outcry trading on futures, makes the oil industry and the IPE in particular look pretty archaic.

The forthcoming InterContinental-Exchange specifically mentions the possibility of trading futures contracts. It then becomes likely that a high proportion of the futures exchange trade will flow through an electronic exchange. At which point it is not clear whether current exchanges will remain separate or tend to coalesce into one vast electronic exchange offering everything from spot products to long dated futures contracts. It also seems fairly clear that 24/7 (24 hours a day, seven days a week) trading will become the norm, as there is already an overnight futures market in the oil business.

As for smaller markets like Simex which trades fuel oil in Singapore, its current move towards becoming a full electronic exchange means that trader or user location will be unimportant. E-trading will bring a lot of new players into the game. The attraction of that, is that it brings a lot more liquidity to the market and this attracts further business. Since these small markets will be more liquid, less manipulable and more attractive.

Then what happens to the personal touch and confidentiality? 'In the world of oil trading, there is no reason to believe that face-to-face contact is any more vital than having to go round to **Amazon.com** to buy a book,' says Skrebowski. 'The issue of confidentiality is a red herring. The world's billions are currently being safely transferred electronically every minute of the day. There certainly are understandable fears in the light of recent attacks on major portal operators, but two things should be remembered. The non-electronic world is neither crime or scam-free. And the standards of electronic protection are improving all the time.'

Keeping up to the minute with security is of course a cost, but to suggest that it undermines e-commerce or e-trading is to miss the point of a business which experts like Forrester and Dataquest estimate will be worth trillions of dollars within a couple of years.

Traders can learn from the example of other sectors like chemicals, which have a two-year lead on the oil industry. However, the oil industry's tradition of secrecy is a real liability in the fast moving, open communication Internet Age.

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e-world

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Global technology company ABB has launched a new e-business initiative to provide customers with a broad range of its products and services – including evaluation, ordering, documentation and lifecycle support – online. The company states that the new site – www.abb.com – will allow customers to personalise their e-business environment, select products and pricing to match their individual purchasing needs or supply agreements, and participate in a variety of community centres and news groups. ABB also plans to extend the site to offer third-party web portals and online marketplaces.

ABB and Investor AB of Sweden have launched 'b-business partners', a new company which is to invest in and develop business-to-business e-commerce companies across Europe and aims to forge closer links between 'new economy' and traditional enterprises. ABB and holding company Investor will each contribute euro 300mn of initial capital to the new venture. SEB, a European leader in Internet banking, will contribute euro 50mn. Additional partners include: AstraZeneca, Atlas Copco, Electrolux, Saab (aerospace), Sandvik, StoraEnso and WM-data. The venture partners plan to provide support for sourcing and distribution, sharing technologies and business models and acting as hands-on advisors. It is planned to float the new company in an initial public offering within the next three years.

Petrolin, the company mandated to promote Gabon open acreage internationally, has selected Schlumberger Oilfield Services company **IndigoPool.com** to market Gabon's ninth licensing round at **www.IndigoPool.com** A total of 27 blocks – 13 onshore, five shallow water and nine deepwater – are to be put out to tender. **IndigoPool.com** will offer interested parties immediate access to detailed online information and data on the blocks. The company will gather and quality check data, as well as organise virtual and physical data rooms. Secure access to the proprietary data sets will allow clients to browse data and conduct indepth asset analysis online.

**LevelSeas.com** is a new Internet-based online exchange which is claimed to revolutionise the traditional marketplace where shipowners, shipbrokers and cargo owners conduct business. Backed by BP Amoco, Cargill, shipbroker Clarksons and Shell, the new company will offer a 'life of the voyage' solution for all seaborne wet and dry bulk commodity shipping. It will provide comprehensive freight management services encompassing market intelligence, online chartering, pre- and post-fixture activities and risk management tools, including freight derivatives.

# UN urged to up 'oil-for-food' funding

**The Security Council of the United Nations has increased the amount of money that Iraq may use to purchase spare parts and equipment for its ailing oil industry under the 'oil-for-food' humanitarian programme to $600mn, reports *Keith Nuthall*. Its unanimous support for the scheme followed the release of a report written for UN Secretary-General Kofi Annan, which had recommended the increase.**

Until now, Iraq has been permitted to use $300mn during each six-month phase of the UN programme, which began in December 1996. Annan had recommended the increase because of the deteriorating condition of Iraq's oil industry – which was confirmed by a panel of oil experts who visited Iraq from 16 to 31 January 2000.

Their report concluded: 'The lamentable state of the Iraqi oil industry has not improved. The level of oil exports during phase 7 (December 1999–June 2000) will decline from the level of 2.2mn b/d achieved in phase 6 (June 1999–December 1999) to a level of between 1.8mn to 1.9mn b/d.' A further production decline of between 5% to 15% per annum is forecast unless the delivery of spare parts and equipment is immediately accelerated. 'The oil transportation infrastructure has not been improved during the last two years. Insufficient spare parts and equipment have arrived in time to sustain production. The issues of pollution and safety have not been addressed. An alternative investment strategy for optimising production, by applying modern recovery techniques such as horizontal drilling, is recommended.'

The six-strong group of experts had a number of goals during their January visit. These included:

- A comprehensive survey of the condition of the Iraqi oil production sector and export capacity.
- To review alternatives for increasing Iraq's petroleum production and exports, in line with Security Council restrictions.
- Checking the options for involving foreign oil companies in Iraq's oil sector.
- Writing a list of additional spare parts required by the Iraqi oil industry and making recommendations about whether they should be secured.
- Assessing the impact of holds on contracts for oil spare parts and equipment on Iraq's oil production and export.

In order to fulfil these goals, the group visited, the Iraqi Ministry of Oil, Daura refinery, the Taji LPG bottling plant, a gas processing plant, Kirkuk, the Khabbas separation station, the ZAB water injection facility, Memlehah and Baiji refinery – all in northern Iraq. In the south, they visited Basrah refinery, Garmat Ali water intake station, Khor al-Zubair LNG facility and the Mina al-Bakr loading platform.

## Unsustainable production

Their report noted that problems had especially been caused by the decision of the Iraqi authorities in 1998 to increase oil production to a level of 3mn b/d by November 1999, to maximise revenue and in expectation of the arrival of spare parts and equipment. However, because this was carried out without the technical resources to apply good oil field practice, this was achieved by inadequately controlled water-injection programmes bringing onstream some of the pre-1991 stock of pre-drilled wells, and by initiation of production from fields such as Saddam and West Qurna.

The report said: 'The Iraqi oil industry is unable to sustain production at these levels due to its inability to replace the lost capacity of depleted strata and watered-out wells. The suspension of drilling, well-workover and completion activities, and delays in the commissioning of wet-crude treatment plants, directly result from a lack of spare parts as well as equipment. Without prompt action, a continued decline in production is strongly indicated. The Iraqi oil industry continues to adopt high-risk solutions in order to balance the production quantity/oil-price equation against the necessity to export crude oil, to produce gas for domestic use, and to refine products for transportation and power generation.'

Another UN report, released in 1998 – had warned that a 'sharp increase in production without concurrent expenditure on spare parts and equipment would severely damage oil-containing rocks, and pipeline systems.'. The latest report gloomily concluded that 'this has now occurred.' It added that the existing spare parts and equipment programme 'has not been demonstrably effective.' Only some $250mn of spare parts and equipment of the $900mn approved under phases 4, 5 and 6 had actually arrived.

## Release of spare parts

The experts called on the UN to expedite the release of consignments of spare parts, which are often hold up because of international bureaucracy associated with ensuring that imported technologies are not used for military purposes by Saddam Hussein. Their report said: 'An agreed and specific mechanism, whereby the holds applied to contracted spare parts and equipment can be resolved in a timely fashion, is recommended. Without such a mechanism, or an acceptable alternative review procedure, the existing deadlock will continue. 'In the meantime the Iraqi oil industry will continue to scale down their expectations, increasingly taking the operational "safe route" resulting in reduced production.'

## Investment required

Current oilfield drainage practice, said the report, would result in 'a large percentage of the oil remaining in the ground, with ultimate recoveries of only 15% to 20% of the oil volumes-in-place being typical'. The report said that $100mn/y investment would be required to introduce modern technologies associated with horizontal well exploitation, (such as horizontal drilling, 3D seismic acquisition and reservoir simulation in particular), to bring recoveries of between 35% and 50% of oil volumes-in-place.

Regarding the development of untapped reserves, capital expenditure to develop and recover 200mn barrels from a new oil field in the south would probably exceed $300mn, with a similar, but shallower, field project in the north maybe costing $250mn.

# Lifetime Learning 3

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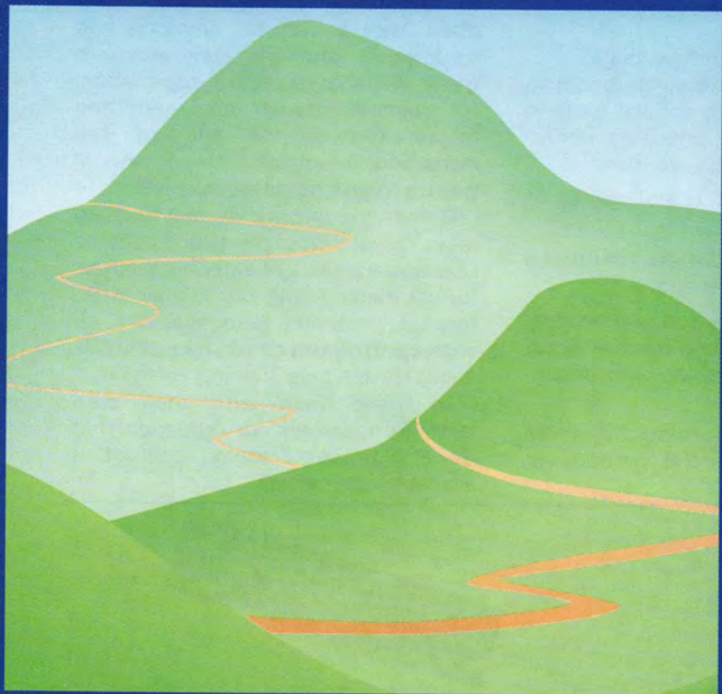

## Contents



A special supplement to Petroleum review

# Life-long employability

***John Evans*, Director, IP Membership Services, outlines how the Institute of Petroleum aims to help individuals develop a unique portfolio of skills and knowledge on which to build a long-term career in the oil and gas industry.**

*A definition of employability?*
'The possession by an individual of the qualities and competencies required to meet the changing needs of employers and customers and thereby help to realise his or her aspirations and potential in work' (CBI, 1998).

Perhaps this definition should include some reference to development of life skills beyond the workplace, but it provides a useful backdrop to the third *Petroleum Review* supplement devoted to Lifetime Learning – the process by which an individual acquires a unique portfolio of skills, knowledge and understanding during his or her working career that contribute to ongoing employability.

The IP announced its commitment to becoming 'a learning society' early in 1997. The essential principles underlying the IP's approach are that:

- Learning is the responsibility of individuals.
- Learning should have improved performance as its aim.
- Learning objectives should be clear and should address industry needs as well as professional and organisational needs.
- Outcomes of learning are more important than the amount of input.

The concept of learning, *per se*, is still not well understood. The IP's approach to Lifetime Learning stresses that personal development comes from developing competencies through a range of different 'learning experiences.' These include formal training, but also encompass personal study, work on the job, participation in peer groups, such as specialised technical committees, attendance at lectures, seminars and conferences, and ultimately access to freely-available sources of information, for example through our Library and Information Service and of the increasing important role of the IP website **www.petroleum.co.uk**

Despite the recognition that learning takes many forms, this year's Lifetime Learning supplement extensively covers formal training with our regular directory of providers (also available on **www.petroleum.co.uk**) and an article about the IP's own Training Portfolio.

To assist them with their own learning, members are reminded that the IP's Lifetime Learning 'tool kit' is available (see below).

# *The IP Lifetime Learning Plan*


Recognising the growing need for guidance among our members in managing their own personal and career development, the IP offers its own *Lifetime Learning Plan*.

The *IP Lifetime Learning Plan* can help you with:

1. **Self-assessment.**
2. **Checking the validity of this assessment.**
3. **Identifying aims and objectives.**
4. **Developing an action plan to achieve those aims and objectives.**
5. **Implementing the action plan.**
6. **Monitoring and recording your performance against your plan and provide you with a template for its management.**

Many companies in the oil and gas sector and other professional institutes provide similar templates. This is an alternative that you may wish to use if it fits your circumstances.

The IP Lifetime Learning Plan and accompanying Workbook is available only to members of the Institute. If you would like more information, or copies of the Plan and Workbook, please contact our Membership Department at:

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**e:** memb@petroleum.co.uk

# The role of IP training

**The Institute of Petroleum's comprehensive training portfolio, acts as a keystone in the IP Lifetime Learning philosophy. *Nick Wilkinson*, IP Training Business Manager, provides a brief overview.**

Given the Institute of Petroleum's stated mission: '... *to be the best independent European centre for the advancement and dissemination of technical, economic and professional knowledge relating to the international oil and gas industry,*' it comes as no surprise that we, as an organisation, should have developed a portfolio of industry-related training courses. It was also a natural fit for an organisation promoting a philosophy of 'Lifetime Learning.'

The evolution of our programme has parallels with contemporary economic development. Launched some 18 years ago, our two key training course 'products' – an *Introduction to Oil Industry Operations* and an *Introduction to Petroleum Economics* – had been periodically up-dated. However, as a range, the course portfolio remained static until economic pressures and external influences (self-help to maintain skills and employability), coupled with innovative thinking in response to these factors, coincided with a review of the IP range of services.

## Launch of new portfolio

This exploratory work culminated in 1999, in the launch of an extended range of IP Training Courses. The new portfolio covers a much increased number of industry-related topics, and its development represented a shift in the role played by the IP – moving from passive provider to proactive facilitator and marketer, capable of capitalising on its respected brand in attracting equally respected training providers.

By entering into cooperative partnership with providers and focusing on the specialised needs of the oil and gas industry, rather than seeking to provide 'generic skills' training, the IP was well placed to satisfy needs, perceived among its membership and the wider industry population, thus supporting the requirements for Lifetime Learning.

The scope of the 1999 programme covered such topics as: *Trading and Price Risk Management; UK and US Financial Accounting Methods*; plus *Refining Planning and Economics*; as well as the established IP Introductory courses to the industry.

Bespoke in design, each course has been structured to meet practical needs and to provide skills which translate readily into the workplace. In addition, courses are delivered in such a way as to maximise the level of delegate participation, thereby facilitating the learning process and experience and, as a by-product, providing opportunities to network with and share the experiences of other delegates. In the case of the *Trading and Price Risk Management* courses – where the purpose-built, residential training course facilities of the Møller Centre, Churchill College, in Cambridge, are used – long-term relationships build quickly through the daily syndicate work and after-class socialising on and off campus.

*Training – practical education in any profession; the act of one who trains (a dictionary definition)*

Given the industry back-cloth of \$10/b crude and its rapid restructuring through a series of mega-mergers and take-overs, 1999 was not, with the benefit of hindsight, the most opportune time to launch a new range of products and to gamble the substantial development costs of both the IP and each training provider.

## Continued development

Happily, however, the success enjoyed in this first year has since led to further development of the IP's training portfolio for 2000. New partnerships have been forged with such organisations as: Cordah Limited, IBRU – International Boundaries Research Unit, SGS-Redwood Services, together with DERA, to allow an extension to the range of topics catered for. New areas covered include: *Environmental Risk Management, Boundary Dispute Resolution* as well as *Maritime Jurisdiction, Loss Control Issues and Management,* and *Aviation Jet Fuel*. Furthermore, in response to newly established needs, additions to the original suite of courses have been made in conjunction with existing providers.

## The road ahead

The oil and gas industry has experienced a period of change and is now expected to enter into a stage of consolidation. Allied so closely to the industry, both nationally and globally, IP Training needs to pause, albeit momentarily, in order to firmly establish its product range and consolidate its position as a 'brand leader.'

During this period, consolidation must not become synonymous with inactivity or complacency. Rather the IP needs to explore, in parallel, new opportunities and new approaches to training. To this end – and with the advent of everything 'e' and the need to contain corporate costs – we too, must be mindful of the need to remain innovative in the provision of appropriate solutions to training needs and issues.

The dynamic nature of the oil and gas industry will, inevitably, continue to impact and exert influence on those currently providing training services and products to it. It is therefore reasonable to expect a structural change in the way in which these items are delivered and by whom they will be delivered in the future. Needless to say, the IP's plans are well advanced in this regard and it is intent on continuing its pivotal role within this market.

# Building better business

**Human skills are subject to obsolescence at a rate perhaps unprecedented in history. It is vital that all those working within the downstream industry have the opportunity to learn through work, and at work, the new skills that will be required to help to build better businesses for the future. *Allan Connarty*, General Manager, PINTO (Petroleum Industry National Training Organisation) explains.**

Lifelong learning is as much an attitude of mind as it is a process. As children, we continuously experiment and interact with the world, learning what works for us and what does not; then we enter the formal world of learning for a few years. That provides us with a set of skills to enhance our ability to interact and learn. Traditionally, most people leave the world of formal learning far behind as they move out of their twenties. By that stage, all the primary knowledge and skills necessary for a successful career have been established. Thereafter, we rely heavily on deepening that package through experiential learning at work.

That worked well enough while the pace of change was steady and evolutionary. Most people could remain in one industry, or even one company, throughout their careers. Over the last 15 years, however, the rate of change in business, driven on by customer demand and the technology revolution, has considerably accelerated.

Recent research by PINTO reveals that over the next five years employers in the downstream industry expect the pace of change to quicken. They will be seeking different skills from the workforce, demanding more adaptability in response to the developing market place and better IT skills. This is a picture reflected across UK industry.

## Addressing skills shortfalls

Adaptability means that relying on skillsets learned years ago, developed by several years of experience, is not always enough. At present it is important to learn new skills, to broaden the knowledge base and to address any shortfalls in the portfolio.

There is help available. Many education and training providers have developed short learning programmes aimed at addressing the common areas of need. There is an increased awareness of adult learning needs and the government is introducing Individual Learning Accounts to help with the cost of courses.

As well as individuals addressing their own needs, it is, of course, important that companies examine their training programmes to ensure that they are providing the appropriate learning packages for their future business requirements.

## The learning business

There is now ample evidence that the 'learning business' is a successful enterprise. PINTO is working with companies and other partners to review industry standards and to develop new syllabuses that will be contributing to improved learning opportunities for the workforce. It is, in our view, important for everyone working within the downstream industry to have the opportunity to learn through work, and at work, the new skills that will be required to help to build better businesses for the future.

It is PINTO's mission to promote education and training that is aimed at improving business performance across the industry. We are working with a number of organisations and companies to develop new learning packages using the Internet and company intranets to produce the opportunity to learn on demand. We are encouraging training providers, trade associations and the Institute of Petroleum to support this process by providing opportunities for all through their various individual training courses and programmes.

I'd like to take this opportunity to encourage everyone, as individuals, to take responsibility for their own learning and to ensure that they offer the best package of skills to their

# Training and education directory

**This directory lists training and education suppliers, both within the UK and overseas, which offer courses that are particularly relevant for the oil and gas industry. Where courses have received official accreditation from the relevant National Training Organisations (NTOs), this is indicated. Additional sources of general information are provided below.**

***Note: *OPITO approved establishment***

## IP partners in training

### Cordah
Unit C Kettock Lodge, Aberdeen Science & Technology Park, Aberdeen, AB22 8GU, UK
Tel: +44 (0)1224 414200 Fax: +44 (0)1224 414250
e: **main@cordah.co.uk** **www.cordah.co.uk**
Provides research, consultancy, technical and training services. Courses on Environmental Risk Management (in association with the IP).

### Defence Evaluation and Research Agency (DERA)
Fuels and Lubricants Centre, Building 442, DERA Pystock, Farnborough, Hants, GU14 0LS, UK
Tel: +44 (0)1252 374772 Fax: +44 (0)1252 374791
e: **pcarberry@dera.gov.uk** **www.dera.gov.uk**
Courses on Aviation Jet Fuel (AV), (in association with the IP).

### École Nationale Superieure de Petrole et des Moteurs Formation Industrie (ENSPM)
232 Avenue Napoleon Bonaparte, 92852 Rueil – Malmaison, Cedex, France
Tel: +33 1 47 52 71 06 Fax: +33 1 47 52 70 41
e: **bernard.lery@enspmf.com** **www.ifp.fr/enspmfi**
Economics & Management; Exploration; Drilling; Production; Refining; Equipment; Maintenance.

### International Boundaries Research Unit (IBRU)
Suite 3P, Mountjoy Research Centre, University of Durham, DH1 3UR, UK
Tel: +44 (0)191 374 7701 Fax: +44 (0)191 374 7702
e: **ibru@durham.ac.uk** **www-ibru.dur.ac.uk**
Courses on Maritime Jurisdiction and Boundary Disputes (in association with the IP).

### Invincible Energy
Westport House, Bentley, Farnham, Surrey, GU10 5HY, UK
Tel: +44 (0)1420 22862 Fax: +44 (0)1420 22863
e: **learning@invincible-energy.com**
**www.invincible-energy.com**
Courses in Trading Oil on the International Markets; Price Risk Management; Economics of the Oil Supply Chain (in association with the IP).

### The Professional Development Institute of The University of North Texas (PDI)
PO Box 310769, Denton, Texas 76203-0769, USA
Tel: +1 940 565 2483 Fax: +1 940 565 3362
e: **hbrock@pdi.org** **www.pdi.org**
Offers seminars, schools, conferences and in-house training programmes in oil and gas accounting, finance and taxation. PDI is the continuing professional education arm of the University of North Texas in Denton, Texas. Courses on Financial Accounting for Petroleum Companies; Accounting for International Petroleum Contracts; Production Sharing and Risk Service Contracts; and Joint Operating Agreements (in association with the IP).

### SGS Redwood Services
Old Station Approach, London Road, Purfleet, Essex, RM19 1QS, UK
Tel: +44 (0)1708 681923 Fax: +44 (0)1708 681910
e: **bcemy@sgsgroup.com**
Courses on Custody Transfer of Crude Oil (in association with the IP).

## General information sources

### ECCTIS 2000 Ltd
Oriel House, Oriel Road, Cheltenham, Gloucestershire, GL50 1XP, UK
Tel: +44 (0)1242 252627 Fax: +44 (0)1242 258600
e: **enquiries@ecctis2000.co.uk** **www.ecctis.co.uk**
The official courses guide to approximately 100,000 courses at over 1,000 universities and colleges of further and higher education. Users can search by course subject, location, method of study or by institution. The database also provides information on routes to professional qualifications, including how study can lead to exemption from examinations.

### EMD – European Management Development
Naarderstraat 296, 1272 NT Huizen, The Netherlands
Tel: +31 35 695 1111 Fax: +31 35 695 1900
e: **mail@emdcentre.com** **www.emdcentre.com**
Since 1992, the EMD Centre has provided annual Management Education Directories for Europe, Asia-Pacific, North America and in-company. All directories are in hard cover and on-line accessible. See also **www.emdcentre.com/demo** Training managers in over 60 countries worldwide use these Directories for selecting, budgeting and planning management courses.

### National Training & Consultancy Index
174 Hammersmith Road, London, W6 7JP, UK
Tel: +44 (0)20 8267 4289 Fax: +44 (0)20 8267 4291
e: **editindex@dial.pipex.com** **www.trainingindex.co.uk**
Established 1967. It provides information, evaluation and course booking service on a wide range of generic training suppliers. They cover: IT; Finance; General Management; Industrial Management; Management Techniques; Marketing; Personnel & Training; Health & Safety; and Specialised Industries (including Geology – Geophysics; Petroleum – Gas – Petrochemicals; Energy – Coal).

### OPITO – The National Training Organisation for Oil and Gas Extraction
Minerva House, Bruntland Road, Portlethen, Aberdeen, AB12 4QL, UK
Tel: +44 (0)1224 787800 Fax: +44 (0)1224 787830
e: **info@opito.co.uk opito@opito.co.uk**

**www.opito.com**
Develops and sets training standards for the offshore oil and gas industry, as well as programmes and courses to satisfy training needs.

### Petroleum Industry National Training Organisation (PINTO)
8 Fulton Road, Wembley, HA9 0ND, UK
Tel: +44 (0)20 8982 1550 Fax: +44 (0)20 8982 1554
e: **reception@pinto.co.uk** **www.pinto.co.uk**
PINTO is the National Training Organisation for the downstream petroleum industry. It is recognised by the UK Government as the industry's voice on education and training issues. It belongs to its member companies and provides information on developing people. Further information of PINTO's services is available on its website.

## Professsional level and short courses

### Abacus International
214 Inchbonnie Road, South Woodham Ferrers, Essex, CM3 5WU, UK
Tel: +44 (0)1245 328340 Fax: +44 (0)1245 323429
e: **info@abacus-int.com** **www.abacus-int.com**
A totally independent organisation which, since 1993, has specialised in providing professional training for the petroleum industry. Regular open seminars are presented in Europe, the Middle East and the Asia-Pacific region. It also designs customised in-house training courses for individual clients that can be presented almost anywhere, worldwide.

### Aberdeen College
Gallowgate Centre, Gallowgate, Aberdeen, AB25 1BN, UK
Tel: +44 (0)1224 612000 Fax: +44 (0)1224 612001
e: **enquiry@abcol.ac.uk** **www.abcol.ac.uk**
Courses in Multi-Disciplinary Engineering; Marine & Offshore Technology; and Electrical Technology.

### Aberdeen Drilling School & Well Control Training Centre
50 Union Glen, Aberdeen, AB11 6ER, UK
Tel: +44 (0)1224 572709 Fax: +44 (0)1224 582896
e: **info@aberdeen-drilling.com** **www.aberdeen-drilling.com**
All aspects of drilling technology and equipment, well control, drilling technology, management and safety training. Standard in-house training and specialised training offered to meet individual customer requirements.

### Aberdeen First Aid School
Norton Centre, Poynernook Road, Aberdeen, AB11 5RW, UK
Tel: +44 (0)1224 585844 Fax: +44 (0)1224 585899
e: **info@afas.co.uk** **www.afas.co.uk**
HSE-approved Offshore and Onshore First Aid Courses. 4-day HSE courses with 2-day refresher courses running every week. Places are always available, and courses are never cancelled. Advanced courses also available.

### Aberdeen University Oil and Gas Centre, Research and Innovation
23 St Machar Drive, Aberdeen, AB24 3RY, UK
Tel: +44 (0)1224 272484 Fax: +44 (0)1224 487658
e: **e.bowie@abdn.ac.uk** **www.abdn.ac.uk/oilgas**
Offers wide ranging multi-disciplinary expertise including areas such as Petroleum Economics; Petroleum Geology; Safety Engineering; Environmental Monitoring; Environmental Law; Business Management; International Relations. The Centre facilitates and project manages collaboration with the University of Aberdeen. It works with the University's Vocational Training Unit to develop accredited programmes and short courses requested by the industry.

### Advanced Drilling International
Forties Road, Montrose, Angus, DD10 9ET, UK
Tel: +44 (0)1674 671600 Fax: +44 (0)1674 671090
e: **enquiries@advanceddrilling.com**
**www.advanceddrilling.com**
ADI runs training courses in all the key areas of oilfield expertise. It also hires its rig out to those companies wishing to train their own personnel, or those wishing to test oiltools in development.

### AEA Technology plc
E1 Culham, Abingdon, Oxfordshire, OX14 3ED, UK
Tel: +44 (0)1235 842424 Fax: +44 (0)1235 464033
e: **alan.wilcockson@aeat.co.uk** **www.aeat.co.uk**
Short courses in a wide range of topics including Safety; Environmental Hazards; Risk Based Inspection; all aspects of Plant and Equipment, including Rotating Machinery and Pumps, Production Engineering, Reservoir Engineering and Decision Risk Management.

### American Association of Petroleum Geologists
1444 South Boulder, PO Box 979, Tulsa, Oklahoma 74101 0979, USA
Tel: +1 918 560 2650 Fax: +1 918 560 2678
e: **educate@aapg.org** **www.aapg.org**
The AAPG Education Department stimulates and guides a viable programme by setting goals, guidelines and directions that satisfy changing needs in continuing education. These needs are reflected in the short courses, schools, field seminars, training seminars, course note series and related education activities on offer.

### Appropriate Training Ltd
Strand Street West, Preston, Lancashire, PR2 2NS, UK
Tel: +44 (0)1772 723377 Fax: +44 (0)1772 768611
e: **train@appropriatetraining.demon.co.uk**
**www.appropriatetraining.co.uk**
Institution strengthening analysts, consultants and training materials providers. Bespoke training programmes for individuals and small groups.

### AUPEC Aberdeen University Petroleum and Economic Consultants
Block C, Davidson House, Campus 1, Aberdeen Science and Technology Park, Balgownie Road, Aberdeen, AB22 8GT, UK
Tel: +44 (0)1224 853700 Fax: +44 (0)1224 853701
e: **mail@aupec.com** **www.aupec.com**
AUPEC provides economic products and services to industry and public organisations worldwide. Its services/products include: benchmarking, cost-benefit analysis, economic modelling and forecasting, economic risk analysis, investment appraisal, taxation analysis and in-house training for clients.

### Baker Atlas Geoscience
455 London Road, Isleworth, Middlesex, TW7 5AA, UK
Tel: +44 +44 (0)20 8560 3160 Fax: +44 (0)20 8231 7260
e: **zahid.patval@bakeratlas.com** **www.bakeratlas.com**
Petroleum Technology; Petrophysics; Geology; Economics; Well Logging; Usage Schools; Reservoir Engineering and Simulation.

### Bentham Technical Training
Dilke House, Malet Street, London, WC1E 7JN, UK
Tel: +44 (0)20 7436 7500 Fax: +44 (0)20 7436 2112
e: **v.li@bentham.co.com** **www.bentham.com**
2-day and 3-day offshore engineering training courses (Introduction, Advanced, and Specialised); Finite Element Analysis; Pipeline Design & Engineering; Risk Analysis Techniques/Offshore Safety; General Management and Engineering Training; Engineering Technology.

*** Blackpool and the Fylde College – Fleetwood Offshore Survival Centre**
Fleetwood Offshore Survival Centre, Broadwater, Fleetwood, UK
Tel: +44 (0)1253 779123 Fax: +44 (0)1253 773014
e: **jbo@blackpool.ac.uk**
**www.lboro.ac.uk/departments/CHARM/charm.html**
Health & Safety Management; Waste Management; Healthcare Risk Management; Backcare Management; Industrial and Commercial Security.

**Caledonia Training & Consultancy Ltd**
Crombie Lodge, Campus 2, Aberdeen Science & Technology Park, Balgownie Road, Bridge of Don, Aberdeen, AB22 8GU
Tel: +44 (0)1224 708141 Fax: +44 (0)1224 705718
e: **info@caledoniactc.co.uk**
Specialists in drilling and well services. Accredited by IWCF, IADC, SQA.

**Cambrian Consultants Ltd**
Mayfield, Llanbbadoe, Usk, Monmouthshire, NP15 1SY
Tel: +44 (0)1291 673022 Fax: +44 (0)1291 673023
e: **training@cambri.com** **www.cambrian-group.com**
Cambrian provides specialist geoscience and IT training courses to the upstream oil industry. It also offers geoscience services and products ranging from wellsite geology to technical evaluation and software applications. Offices in Usk (South Wales), Houston and Kuala Lumpur, enable the full range of services to be supported internationally.

**Centre for Advanced Maritime Studies**
Albert House, 7 Johns Place, Edinburgh, EH6 7FL
Tel: +44 (0)131 555 0525 Fax: +44 (0)131 554 0565
e: **admin@camsedin.org.uk** **www.camsedin.org.uk**
Courses on Petroleum Tanker Safety; Liquified Gas Carrier Safety; Crude Oil Washing and I G Systems; Pollution Prevention and Abatement; Chemical Tanker Safety; Introduction to Ship Inspection Principles.

**Centre For Energy, Petroleum & Mineral Law & Policy**
University of Dundee, Park Place, Dundee, DD1 4HN
Tel: +44 (0)1382 344300; +44 (0)1382 345175
Fax: +44 (0)1382 322578
e: **cpmlp@dundee.ac.uk** **www.cepmlp.org**
Flexible degree programmes: full-time, part-time and limited distance-learning Diploma/LLM/MSc/MBA/PhD in energy, the environment, international business transactions, mining, oil and gas, water law and policy available.

**Centre for Marine Technology**
Room D15, DERA, Portsdown West, Portsdown Hill Road, Fareham, Hampshire, PO17 6AD
Tel: +44 (0)2392 335500 Fax: +44 (0)2392 335414
e: **cenmartec@dera.gov.uk** **www.dera.gov.uk**

**The Centre for Professional Advancement**
Oudezyds Voorburgwal 316 A, 1012 GM Amsterdam, The Netherlands
Tel: +31 (0)20 6382806 Fax: +31 (0)20 6202136
e: **amsterdam@cfpa.com** **www.cfpa.com**

**CHARM – Centre for Hazard and Risk Management**
Loughborough University, Loughborough, Leicestershire, LE11 3TU
Tel: +44 (0)1509 222175 Fax: +44 (0)1509 223991
e: **J.G.Bostock@lboro.ac.uk**
**www.lboro.ac.uk/departments/CHARM/charm.html**
Health & Safety Management; Waste Management; Healthcare Risk Management; Backcare Management; Industrial and Commercial Security.

**College of Petroleum and Energy Studies**
52 New Inn Hall Street, Oxford, OX1 2QD, UK
Tel: +44 (0)1865 250521 Fax: +44 (0)1865 791474
e: **registrar@colpet.ac.uk** **www.colpet.ac.uk**
Supply & trading, international oil, gas, petrochemical and energy short and long courses, bunkering, tanker ownership, chartering & operations, petrol retail and lubricants.

**Construction Industry Training Board**
Bircham Newton, Kings Lynn, Norfolk, PE31 6RH, UK
Tel: +44 (0)1485 577577 Fax: +44 (0)1485 577689
**www.citb.org.uk**

**Cordah**
Unit C Kettock Lodge, Aberdeen Science & Technology Park, Aberdeen, AB22 8GU, UK
Tel: +44 (0)1224 414200 Fax: +44 (0)1224 414250
e: **main@cordah.co.uk** **www.cordah.co.uk**
Provides research, consultancy, technical and training services. Courses on Environmental Risk Management (in association with the IP).

**Corrosion Engineering Consultancy**
15 The Close, Hampstead Norreys, Newbury, Berks, RG8 0RY, UK
e: **Cbrit 79727@aol.com**
Training courses available include Corrosion Basics; Corrosion in the Oil and Gas Industry and Corrosion Monitoring and Inspection. Courses provides in-house for companies and organisations.

**Cranfield University**
Cranfield, Bedford, MK43 0AL, UK
Tel: +44 (0)1234 750111 Fax: +44 (0)1234 751206
e: **shortcourse@cranfield.ac.uk** **www.cranfield.ac.uk**
Courses on Safety; Corrosion; Underwater Engineering; Pipelines; Maintenance.

**DataCad Ltd**
Beckett House, Caird Street, Hamilton, ML3 0AL, UK
Tel: +44 (0)1698 543040 Fax: +44 (0)1698 543041
e: **peter.turnbull@ifigroupplc.com**
**www.datacad.co.uk**
Providers on company and discipline specific training solutions.

**Defence Evaluation and Research Agency (DERA)**
Fuels and Lubricants Centre, Building 442, DERA Pystock, Farnborough, Hants, GU14 0LS, UK
Tel: +44 (0)1252 374772 Fax: +44 (0)1252 374791

e: **pcarberry@dera.gov.uk** **www.dera.gov.uk**
Courses on Aviation Jet Fuel (AV), (in association with the IP).

**De Montfort University**
Department of Chemistry and Physics, De Montfort University, The Gateway, Leicester, LE1 9BH, UK
Tel: +44 (0)116 257 7698 Fax: +44 (0)116 257 7287
e: **sjd@dmu.ac.uk** **www.dmu.ac.uk**
Offers Postgraduate Certificate/Postgraduate Diploma/MSc in Lubricant & Hydraulic Technology.

**Downhole Technology Ltd**
Offshore Technology Park, Exploration Drive, Bridge of Don, Aberdeen, AB23 8GX
Tel: +44 (0)1224 828484 Fax: +44 (0)1224 826458
e: **downholetechnology@compuserve.com**
An independent, open access facility for training personnel and developing, testing and demonstrating new drilling and downhole equipment and techniques

**École Nationale Superieure de Petrole et des Moteurs Formation Industrie (ENSPM)**
232 Avenue Napoleon Bonaparte, 92852 Rueil – Malmaison, Cedex, France
Tel: +33 1 47 52 71 06 Fax: +33 1 47 52 70 41
e: **bernard.lery@enspmf.com** **www.ifp.fr/enspmfi**
Economics & Management; Exploration; Drilling; Production; Refining; Equipment; Maintenance.

**Edinburgh Telford College**
Crewe Toll, Edinburgh, EH4 2NZ, UK
Tel: +44 (0)131 332 2491 Fax: +44 (0)131 343 1218
e: **mail@ed-coll.ac.uk** **www.ed-coll.ac.uk**
Measurement Technology; Computing; Programmable Systems; Pneumatics and Hydraulics; Electricity; Electro-Magnetism; Mathematics.

**Engineering & Marine Training Authority**
EMTA House, 14 Upton Road, Watford, Hertfordshire, WD1 7EP, UK
Tel: 0800 282167 (UK only); +44 (0)1923 238 441
Fax: +44 (0)1923 256086
e: **ecis@emta.org.uk** **www.emta.org.**

**Environment & Resources Technology Ltd (ERT)**
Research Avenue 1, Heriot-Watt University, Edinburgh, EH14 4AP, UK
Tel: +44 (0)131 449 5030 Fax: +44 (0)131 449 5037
e: **Ingeborg.McNicoll@ert.co.uk** **www.ert.co.uk**
Provides environmental and scientific services and consultancy to industry, government and government agencies. Technical areas include: Environmental Management; Oil Spill Studies; Waste Management; Environmental Survey and Monitoring; Consent and Compliance Support.

*** Fire Service College**
Moreton-in-Marsh, Gloucestershire, GL56 0RH, UK
Tel: +44 (0)1608 650831 Fax: +44 (0)1608 651839
e: **enquiries@fireservicecollege.ac.uk**
**www.fireservicecollege.ac.uk**
Offshore Fire Emergency Response Team Member & Team Leader/Offshore Emergency Helideck Team Member. OPITO-approved establishment.

**Gas Engineering Section of the School of Environment and Life Sciences**
University of Salford, Salford, M5 4WT, UK
Tel: +44 (0)161 295 5213 Fax: +44 (0)161 295 5454
e: **s.peake@salford.ac.uk** **www.salford.ac.uk**

**Geosphere Ltd**
Netherton Farm, Sheepwash, Beaworthy, Devon, EX21 5PL, UK
Tel: +44 (0)1409 281810 Fax: +44 (0)1409 281810
e: **timharper@geosphere.demon.co.uk**
**www.geosphere.demon.co.uk**
Short course on the basics of well performance for asset team staff, primarily geoscientists and drilling engineers. Complex wells offer new opportunities and effective asset teams depend on the informed contribution of ALL members. Provides the means to quantitatively estimate the influence of reservoir and well characteristics on well productivity.

**Glasgow Caledonian University**
70 Cowcaddens Road, Glasgow, G4 0BA, UK
Tel: +44 (0)141 331 3000 Fax: +44 (0)141 331 3005
e: **rhu@gcal.ac.uk** **www.gcal.ac.uk**
Maintenance Systems; Engineering & Management.

**GSM Training Services Inc**
PO Box 9920, Amarillo, Texas 79105, USA
Tel: +1 806 358 6894 Fax: +1 806 358 6800
e: **gsmrdg@arn.net** **www.gsm-inc.com**
Training seminars about drilling.

**Heriot Watt University**
Dept of Petroleum Engineering, Research Park, Riccarton, Edinburgh, EH14 4AS, UK
Tel: +44 (0)131 451 3383 Fax: +44 (0)131 449 5153
e: **s.dickson@hw.ac.uk** **www.hw.ac.uk**
Postgraduate courses in petroleum engineering and offshore engineering. See website for full details of courses and contacts.

**Honeywell Hi-Spec Solutions**
Chilworth Science Park, Southampton, Hampshire, SO16 7NP, UK
Tel: +44 (0)23 8076 0111 Fax: +44 (0)23 8076 3500
e: **info.centre@honeywell.com** **www.hispec.com**
Hi-Spec Solutions, Honeywell Industrial Control's advanced application software and services business unit, is the leading supplier of Unified Manufacturing™ Solutions for Business Optimisation in the process industries. These solutions help companies maximise their profitability through a balanced approach with regard to improving manufacturing performance, expanding asset capability and enabling improved decision making.

*** HOTA**
Malmo Road, Sutton Fields Industrial Estate, Hull, HU7 0YF, UK
Tel: +44 (0)1482 820567 Fax: +44 (0)1482 823202
e: **bookings@hota.org** **www.hota.org**
HOTA is one of the UK's leading offshore, standby vessel and maritime training providers offering over 80 training courses. More recently, HOTA has diversified into the provision of Nationally Approved Health & Safety, Medical, First Aid and Electrical (City & Guilds and COMP 'Ex') courses available for both onshore and offshore organisations.

*** IFAP Survival Training Centre**
Postal address: PO Box 339, Willetton, Western Australia, 6955. Location: 12 Rous Head Road, North Fremantle.
Tel: +61 8 9430 6611 Fax: +61 8 9430 6093
e: **cryrie@ifap.asn.au** **www.ifap.asn.au**
IFAP Survival Training Centre provides OPITO and Australian accredited courses in HUET, sea survival, OSH management, equipment (crane, scaffolding, rigging,) safety consulting and customised training. Courses: BOSIET, FOET; Basic Offshore Survival & Refresher; Aviation Escape and Survival – HUET; Fast Rescue Craft – STCW95; Firefighting; Helicopter Landing Officer; H2S; Confined Spaces; Breathing Apparatus.

### Imperial College Centre for Continuing Education
Room 526 Sherfield Building, Exhibition Road, London SW7 2AZ, UK
Tel: +44 (0)20 7 594 6882 Fax: +44 (0)20 7 594 6883
e: **cpd@ic.ac.uk** **www.ad.ic.ac.uk/cpd**
Short courses on Petroleum Engineering.

### Institute of Energy
18 Devonshire Street, London, W1N 2AU, UK
Tel: Admin & Accounts: +44 (0)20 7580 7124; Membership, Education & Training: +44 (0)20 7580 0077; Conferences: +44 (0)20 7580 0008
Fax: +44 (0)20 7580 4420
e: **info@instenergy.org.uk** **www.instenergy.org.uk**
The Institute provides short courses, distance learning and national qualifications in energy management. Tailor-made courses based on The National Standards for Managing Energy can be developed for teams. Free energy management training consultation and staff awareness programmes are available for companies in membership. The Institute is an accrediting body able to approve and certificate in-house training.

### Institute of Petroleum
61 New Cavendish St, London, W1M 8AR, UK
Tel: +44 (0)20 7467 7100 Fax: +44 (0)20 7255 1472
e: **ip@petroleum.co.uk** **www.petroleum.co.uk**
Introductory courses on Oil Industry Operations; Petroleum Economics and other courses relevant to the oil industry.

### Institution of Chemical Engineers
Davis Building, 165-189 Railway Terrace, Rugby, Warwickshire, CV21 3HQ, UK
Tel: +44 (0)1788 578214
Fax: +44 (0)1788 577182 (Conference Dept.)
e: **tlepkowska@icheme.org.uk** **www.icheme.org**
Provides training for the process industries in the form of courses, slide/video packages, books and journals.

### International Boundaries Research Unit (IBRU)
Suite 3P, Mountjoy Research Centre, University of Durham, DH1 3UR, UK
Tel: +44 (0)191 374 7701 Fax: +44 (0)191 374 7702
e: **ibru@durham.ac.uk** **www-ibru.dur.ac.uk**
Courses on Maritime Jurisdiction and Boundary Disputes (in association with the IP).

### International Human Resources Development Corporation (IHRDC)
Brouwersgracht 288, 1013 HG Amsterdam, The Netherlands
Tel: +31 20 638 0110 Fax: +31 20 421 6228
e: **ihrdceurope@compuserve.com** **www.ihrdc.com**

### International Human Resources Development Corporation (IHRDC)
535 Boylston Street, Boston, Massachusetts 02116, USA
Tel: +1 (617) 536 0202 Fax: +1 (617) 536 4396
e: **mgmt.programs@ihrdc.com** **www.ihrdc.com**
Energy management programmes: The International Petroleum Management Certificate Program; The International Gas Business Management Certificate Program; Negotiating Successful International Petroleum Agreements; International Trading of Oil, Gas and Power – The New Realities; Knowledge and Learning Systems for International Petroelum Companies; The International Petroleum Exploration and Development Business Management Program.

### Invincible Energy
Westport House, Bentley, Farnham, Surrey, GU10 5HY, UK
Tel: +44 (0)1420 22862 Fax: +44 (0)1420 22863
e: **learning@invincible-energy.com**
**www.invincible-energy.com**
Courses in Trading Oil on the International Markets; Price Risk Management; Economics of the Oil Supply Chain (in association with the IP).

### IPE (International Petroleum Exchange)
International House, 1 St Katherine's Way, London, E1 9UN, UK
Tel: +44 (0)20 7 481 0643 Fax: +44 (0)20 7 481 8485
e: **training@ipe.uk.com info@ipe.uk.com**
**www.ipe.uk.com**
The IPE is Europe's leading energy futures and options exchange. Established in 1980, it trades a variety of products: Brent Crude, Gas Oil and Natural Gas. The IPE is also researching opportunities in electricity, carbon dioxide emissions and other energy related markets. The IPE runs short courses covering energy markets.

### japectraining
11 Batchworth Lane, Northwood, Middlesex, HA6 3AU, UK
Tel: +44 (0) 1923 823 752 Fax: +44 (0) 1923 842 467
e: **info@japectraining.org** **www.japectraining.org**
Geology; Geophysics; Seismic; Geochemistry; Introductory Geological; Petroleum Economics; Technical Writing and Illustration; Geostatistics; Exploration Development; Reservoir Geology; Structural Geology; Sequence Stratigraphy.

### Kennet Oil Logistics
Trevellion Barn, Trevellion, St Austell, Cornwall, PL26 8RT, UK
Tel: +44 (0)1208 831145 Fax: +44 (0)1208 831143
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# Securing a future for upstream oil and gas

**Much has been said about the challenging future for the oil and gas industry given the prospect of reduced oil demand and the maturing nature of the UK Continental Shelf. Against this background, the UK Oil and Gas Industry Task Force (OGITF) worked during 1999 to draw up short, medium and long-term objectives and actions for UK Government and industry to achieve together. *John Ramsay*, Chief Executive, OPITO (Offshore Petroleum Industry Training Organisation), reports on how work is progressing.**

Pilot, the successor body to the Task Force is continuing the work to retain the UKCS as an active centre for oil and gas exploration, development and production. The Pilot initiative recognises that a vital component in securing the industry's future is a highly skilled, well trained and motivated work force.

A central recommendation of the skills and training work group set up by the Oil and Gas Industry Task Force was to establish a National Training Organisation (NTO) group to serve all sectors of the upstream oil and gas industry. The group comprises:

- Engineering Construction Industry Training Board (ECITB),
- Engineering and Marine Training Authority (EMTA),
- National Electrotechnical Training (NET),
- Offshore Petroleum Industry Training Organisation (OPITO), the NTO for oil and gas extraction.

The NTO group comprises the Chief Executives of the member NTOs, together with senior industry members and UK Government representatives.

## What skills are needed?

To properly inform the Lifelong Learning debate it is important to have a clear picture of the skills needs of the whole industry. A survey was undertaken to provide labour market information while a 'Skills Foresight' report focused on labour market demographics and how working practices and changing technologies will impact on skills.

The analysis was based on a survey of 927 companies in the UK oil and gas industry. The participating companies employ almost 105,000 staff and contractors. Given current estimates of some 300,000 employees in the industry, the survey analysis covers one-third of the industry's employment base.

The study reveals that the UK oil and gas industry faces considerable recruitment difficulties – even after the recent downturn in the levels of activity. Managerial, technical and engineering staff presents the greatest recruitment difficulty to the industry, with both relevant skills and qualification reported to be in short supply.

Some sectors of the industry display age profiles that are strongly skewed to older workers and this provides a real challenge given that other research has indicated that young people do not see the oil and gas industry as an attractive career prospect.

The survey also examined companies' commitment to training. A significant number of companies in industry failed to provide regular training, while others only train a small selection of their employees with contracted employees least likely to receive training.

The main reasons for reluctance to increase the provision of training relates to cost plus an inability to see the benefits of training.

## Forsight findings

The skills and employment foresight analysis has brought a number of reported findings to light. While unanimity is not found there is a sufficient degree of convergence to draw out some fundamental recommendations.

- Significant efforts will need to be made to tailor training and development to the needs of both large and small employers. Small firms will need to be particularly encouraged to train their employees.
- A strong collaboration between the industry and training institutions will need to be developed. The survey analysis supports the conclusion drawn in the Oil and Gas Industry Task Force report that the development of the necessary technological skills can only be brought about by creating and maintaining an environment for enhanced collaboration.
- As the Task Force's Innovation and Technology Group (ITG) has indicated the effective exploitation of new technology will be of a paramount importance. Innovative ways to tackle recruitment difficulties thus merit particular attention in the areas of engineering, technical and managerial skill development. At present, current job applicants and their skills and qualification portfolios fail to meet the needs of employers. 'Job ready' graduates are needed who can manage and work with people as well as machines.
- The industry's demographic development justifies a renewed recruitment drive to attract young individuals. At the same time the concept of lifelong learning will need to be supported throughout the industry, not least to provide a pool of skilled trainers who could be encouraged to continue in work beyond the traditional retirement age.
- Above all, flexibility is required in an industry that has tried to predict and react to changes in the oil price rather than develop and maintain a pool of skilled and highly adaptable individuals.

The Skills Foresight Report provides an opportunity for the industry to engage in an informed debate about the future strategy for skills and training. The report is not an end in itself and needs to be seen as the beginning of a structured plan to meet the industry's future needs. Failure to act may threaten the industry's ability to deliver the vision for 2010.

# A lifetime of learning

***Tom Odell*, a member of the Institute of Petroleum's NorthEast Branch, perfectly embodies the concept of lifetime learning having recently graduated with a MSc in computing from the University of Northumbria at the age of 60.**

I became part of the industry's downsizing fallout in 1997. However, after 19 years in the North Sea with one of the majors, I looked forward to avoiding regularly attending courses on specialist equipment, the intricacies of electrical equipment in hazardous areas and those most masochistic of delights – fire fighting and sea survival. Having also completed a BA and BSc (Hons) with The Open University, a 'study break' was welcome!

I embarked on revamping a new home and decided to look for work of a type that would interest me. At 58, I knew the odds were against me. I used my many contacts to network my way around the world, but found that the oil world was changing fast. In addition, just as potential jobs started to appear in the Far East, their economies collapsed – and the job opportunities died.

## Knowledge gap

Having revamped the home, in 1998 I decided to reassess my future. The oil industry appeared to hold little for me in the short term – so what should I do?

As an electrical apprentice many years ago, transistors were a mystery. Each course I went on over the years increased my knowledge, but a gap always remained. Then, what I can only describe as a continuous explosion happened – microchips, PLCs, PCs, etc, appeared and were associated with just about every piece of equipment I was involved. The knowledge gap became a chasm. Perhaps now was the time to play catch up?

## Life skills important

Since leaving school at 15 I had always undertaken part-time or distance learning. With my wife's support, I applied for, and gained, a full-time place at the University of Northumbria at Newcastle on a one-year MSc computing course.

The workload was heavy. The learning curve was even steeper – I could not hope to absorb information as quickly as a 25-year old! However, drawing upon life skills proved to be my saviour. Working in an environment where there was never enough time had taught me the importance of prioritising. I knew not to be afraid of admitting ignorance and seeking out whoever could help. Nor did inflated egos and 'jobsworths' intimidate – it was merely a case of stroking or ignoring them as required.

I was also well aware that large organisations operate strange systems. Therefore, handbooks were read when given and when the system demanded X copies of a form at a specific time, I knew to provide them. I also ensured the forms were pre-completed, with only the date to add – from experience I was well aware that the forms might not be there when actually needed. I also understood the need to give advance warning of any potential problems – not dropping them in someone's lap at the last moment – and the importance of deadlines and, worse, failure to deliver, when working as part of a team. I also knew how to apply pressure – as one youngster put it: 'You look at me just like my Father'!

## Learning never ends...

With the benefit of years of experience, we all know that life is strange and to expect the unexpected. For example, I was offered three jobs – but only well after accepting my place at Northumbria!

Having now graduated at age 60, I am contemplating a number of ventures. There is a problem, however. I have become conscious of a knowledge gap – do I need yet another course or training?

# First step on the road to Lifetime Learning

**The Institute of Petroleum awards prizes to outstanding students studying Masters' courses appropriate to the oil and gas industry. As usual, the past year has produced a very high standard for which the IP was honoured to make the awards. *Gill Haben*, IP Education and Training Manager, reports.**

The annual IP Student Prizes comprise a cash sum, a three-year membership of the Institute of Petroleum and a framed certificate. Where possible, we like to hold an award ceremony to celebrate the achievement of the students and to introduce them to the Institute and our Branches.

The winners of the 1999 IP Student Prize Winners were:

***John Horsburgh*** – John gained a MSc in Petroleum Geology from Aberdeen University. He was presented with his prize at Grangemouth refinery by John Williams, the Chair of the Edinburgh & South East Scotland Branch and General Manager of Grangemouth refinery. Our prize-winner has just returned from a three-month, dream trip to Australia and New Zealand – a well deserved holiday!

***David Wright*** – David was awarded an IP prize for his MSc in Geophysics from Durham University. George Bailey, the Chair of the Institute's Northeast Branch, made the presentation at Durham Castle.

***Kevin Whaley*** – Kevin received his MEng in Petroleum Engineering from Heriot-Watt University. The prospect of work-related travel meant Kevin had to decline the offer of a formal award presentation. However, he did have the opportunity to tell me that after graduating from the University of Glasgow in 1993 with a First Class Honours degree in Civil Engineering and working for five years in the Water/Geotechnical Engineering Department of multi-disciplinary consultancy Babtie Group – during which time he obtained Chartered Status – he felt that he 'needed to alter the direction' of his career towards 'a discipline that would allow him greater involvement in subsurface engineering and geology'. He gained his MEng degree in Petroleum Engineering with distinction and is now employed as a Petroleum Engineer with BP Amoco in Aberdeen.

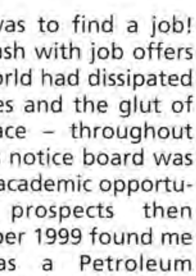
***Miguel Jakymec*** – Miguel gained an MSc in Petroleum Engineering with the Royal School of Mines, Imperial College of Science, Technology and Medicine. He had to hotfoot it back to South America after receiving his award, but had the chance before he went to explain how the concept of Lifetime Learning had impacted his career path to date.

Miguel started working in the process simulation and design division of Venezuelan state oil company PdVSA after graduating from Zulia University with a First Class Honours degree in Chemical Engineering. According to Miguel, the company focuses heavily on the training of its young recruits in order to develop their skills and to capture the best practices and technologies for augmenting hydrocarbon reservoir life and value. As part of this programme, Miguel joined Imperial College in 1999, and subsequently graduated as the top student in his class after completing an internship with Enterprise Oil. He has now rejoined PdVSA as a Reservoir Engineer. His new job involves the study and proposal of new technologies to optimise oil field recovery and company profits. He states that the experience gained while obtaining his MSc has given him a 'better perspective of the company's development.'

Miguel plans to continue his studies and to obtain a PhD in the future. 'This industry is very challenging,' he says. 'I like the way that everything changes every day, so that an engineer must be in a very dynamic position to let new ideas flow into his mind and then apply them.'

***Madeleine Bry*** – Madeleine studied at Imperial College for a MSc in Petroleum Geoscience. Jeff Pym, IP Director General, and myself were delighted to meet her when we were invited to Imperial College to take part in the examination announcement ceremony. Jeff took the opportunity to acknowledge the hard work of both Madeleine and all the students, and went on to give them a comprehensive overview of the industry and the benefits of being a member of the Institute of Petroleum.

***Nicholas Pink*** – Nicholas won the IP prize for environmental related studies – a new award introduced for the first time in 1999. He received an MSc in Petroleum Engineering – Environmental from Imperial College. Nick, who has already embarked on a career in the industry, provided me with an intriguing insight into a student's perceptions of the oil and gas sector:



'The first perception I had of the oil industry was how hard it was to find a job! Hopes of being awash with job offers from around the world had dissipated due to low oil prices and the glut of mergers taking place – throughout 1998-99, the careers notice board was bare save for a few academic opportunities. However, prospects then improved and October 1999 found me in employment as a Petroleum Engineer. The work is varied. I have already been in contact with companies from all over the world and am hoping to be 'let out' on some well tests abroad soon.

'Now that the oil price appears to have reached a steady state, I feel confident that I can experience enough of the industry to support me if the price drops again and redundancies follow. My prevailing perception of reality is that oil jobs are transient, but experienced and skilled people with always find work.

'As for my contemporaries in the class of 1998-99, a few are still on holiday. However, around 70% of us now have jobs and we have a global contacts list – very handy if circumstances change in the future!'

***Francesco Beltrami*** – Francesco came through with a PgD/MSc in Offshore Engineering from Robert Gordon University. He had to dash straight over to Italy to take up an appointment as a Project Manager with ECIS, an Italian company that designs and supplies systems for offshore and onshore installations, and was unable to attend a formal award ceremony. However, he did have the chance to tell me of his background, study and aspirations for the future before he went and it is interesting to note in the light of his comments that, even though 1999 was a difficult year for the industry, there is still the perception that excellent qualifications coupled with drive will pay dividends.

The Tony Fox Memorial Award was made to **Michael Rogerson**. The award commemorates the life of the late A F Fox MBE, ARSM, BSc, FGS, FInstPet for his great contribution to the Institute of Petroleum. The award went to Michael who is studying for a MSc in Petroleum Geology at Imperial.

## The road ahead

I have asked our new Student Members to keep in touch in order to follow what will surely be successful careers. I have also encouraged them to take full advantage of the services offered by the IP as, although they should take the time to bask in their glory, this is the successful end of the first stage on their journey of Lifetime Learning.

Right: Jeff Pym, IP Director General presented the Tony Fox Memorial Award to Micheal Rogerson at the IP offices in New Cavendish Street, London. (l-r) Professor Ala, Imperial College; Jeff Pym; Gill Haben; Michael Rogerson; Douglas Hobson (IP Award Committee); and Geoff Pryke (IP Award Committee).

# Playing on the right team

***Colin Black*** **is a Committee Member of the Aberdeen Branch of the Institute of Petroleum and an active Lifetime Learning practitioner. Here he outlines the role of Lifetime Learning in developing team working.**

As part of the research for my recently completed MSc in Management at Robert Gordon University, Aberdeen, I identified the IP Lifetime Learning workbook and plan (see pII) as having an important part to play in personnel development. My dissertation, *Team Working – Managers' Roles and Organisational Structures*, indicated that managers can, and often do, block the implementation of team working. The idea of a 'self-managed team', delayering of organisational structures and the removal of line management positions, have left many managers considering their future.

For a company to become a team-based working organisation there needs to be senior management commitment, support from a competent team-working development consultant and the creation of a 'true' management team.

Research established that within a team environment it is often the manager who has to change most. Team managers move from traditional front-line operational roles, towards a more strategic development and supporting position. The IP Lifetime Learning workbook provides a focus on personal strengths and areas for development. The IP Lifetime Learning plan can then be created to map out personal development goals and objectives.

This significant resource material is designed to be suitable for all employees. However, managers who focus on leading and enabling their team become highly effective. This then creates a culture that empowers and develops people, yet also respects them as individuals.

# Russia – worth the risk?

**Russia is, once again, on the minds of international investors. After a disastrous 1998 and a relatively dull 1999, the country has again begun to pique investors' interest, writes *Stephen O'Sullivan*, Head of Research at Moscow-based United Financial Group. The reason for this is not hard to fathom – with the ailing Boris Yeltsin replaced by the apparently more vigorous former spy Vladimir Putin, hopes are high that reform in Russia, stalled for so long, may be about to pick up speed.**

Hope is the right word. Little is known about President Putin's plans for the future – a deliberate stratagem ahead of the elections given Putin's understandable desire to appeal to the widest possible cross-section of Russian voters. It proved a wise course, since he won only 52.5% of the votes in the March 2000 elections, scraping home by just 2.5%.

Expectations are high, although those investing would be wise not to expect too much. Russia's problems are not only severe, they are broad-based and structural. The impact of one man, even a powerful president, will be limited and the best that can be expected is probably a gradual improvement from the depths into which the country sank during the last years of the Yeltsin era.

Putin starts with a benign economic environment – GDP is likely to grow by more than 6% this year, inflation is moderate, the balance of trade is running a large surplus and the government budget even balances. The economy therefore is in good shape. But what of the oil and gas industry, the largest industrial sector in the economy, representing some 17% of industrial output?

## Industry background

The sector itself is in great shape – on the surface at least. The oil price has trebled, and not just the international price – the Brent price has moved from \$9/b a year ago to over \$30/b recently. Furthermore, despite the recent fall as a result of the March Opec meeting, a \$20-25/b range looks achievable for 2000. The domestic price has risen from \$4/b a year ago to \$15/b today, just as significant a move as that in the Brent price, since 60% of Russia's oil is sold on the domestic market.

On the cost side, the devaluation of August 1998 has cut the industry's costs by at least 60%; and this is not being inflated away, with rouble costs remaining relatively stable. The *laissez-faire* approach by the Russian Government has seen this tremendous increase in profitability (\$70mn/d in operating profit for the industry, equivalent to \$24bn/y) remain largely with the industry. Some new taxes have been imposed:

- Export duties have risen with the oil price from zero a year ago to euro20/t (an increase of \$2.75/b over a period when the oil price moved up by \$16/b).
- Excise duties, fixed in roubles, have collapsed in dollar terms from \$9/t in 1998 to \$2/t today.
- Corporation tax has been reduced from 35% to 30%.
- Royalty taxes have been minimised through the use of artificially low wellhead prices.

For an industry that used to complain that it was heavily taxed, the past 18 months have been astonishing – while profitability has rocketed, taxes have barely changed.

Last year (1999) was a record year for Russian oil industry profitability level. Managements, and to some extent politicians, are in 'pat-on-the-back' mode, congratulating themselves on a job well done rather than acknowledging that it is almost entirely external factors which have led the industry to the sunlit uplands of record profitability. The right industry, in the right place, at the right time.

The outlook for 2000 is more clouded than the results of 1999 would suggest, however. Price uncertainty remains a key issue – with further Opec meetings scheduled for later in the year, uncertainty about how both Iran and Iraq will now behave, uncertainty about the level of Opec non-compliance and uncertainty about how non-Opec producers will behave.

Corporate governance concerns still remain serious, with every major Russian oil company giving investors cause for concern at one point or another in recent months. The regulatory environment remains murky and the enforcement of regulation is seen as arbitrary. The playing field is not level, as the recent experience of BP in trying to retain control of Sidanco indicates.

Consequently, valuations of Russian oil assets remain discounted versus their international peers. However, these valuations are not the bargain-basement ones of 1995 and 1996. The world has moved on and enterprise value/EBITDA multiples are some two-thirds of comparable emerging market ones. The sector does, however, have extraordinary profitability. We at United Financial Group estimate that Lukoil will earn some \$2.5bn after tax this year and Surgutneftegaz some \$1.9bn. Compare that with the earnings in other, more fashionable sectors – such as telecoms – and it is easy to understand why the oil sector represents some 75% of Russia's market capitalisation.

## Upstream developments

Production increased in 1999, only by some 0.5%, but that was an achievement in a year which started with expectations of a steep decline. 1999 was also a year which sorted the wheat from the chaff. Those companies which had been investing in their businesses for several years saw the results of that investment in the form of an upturn in their production. Those that had failed to invest saw the reverse. Surgutneftegaz, Russia's best-managed oil company, achieved 7% production growth in 1999 and has achieved 10% so far in 2000. Sibneft, with low investment, saw production decline by more than 5%, the seventh year of decline in a row.

With rising prices and falling costs, margins rose five-fold over the year.

## Downstream developments

In the downstream sector, refining volumes were stable while exports of refined products were reduced by around 6%. The decline in exports was not that significant given the government's efforts to curtail them to maintain supplies to the domestic market at a time of high international prices. There was, however, a switch towards lower valued exports with more fuel oil and less gasoline being exported. Netbacks rose, but so did crude prices and overall the downstream margin tightened slightly over the year, to a level that would probably not remunerate investment in the sector.

## Future outlook

There are five key drivers for the Russian oil industry:

- oil prices
- production
- exports
- taxation and costs
- restructuring

Opec remains the major uncertainty for the sector globally and Russia is no exception. Russia is different from many – although not all – Opec members in one key regard. It has no spare export capacity and a fall in oil prices translates directly into a fall in revenues. For the same reason, Russia has virtually no influence on world oil markets since, with no spare oil capacity, it is unable to respond to high international prices by increasing exports, and it maximises exports in any event.

As noted earlier, 1999 was a better year than expected, with an increase rather than a decrease in production. The outlook for 2000, however, depends on the level of investment made in the upstream business. Companies which invest will see a return, as they did in 1999.

We expect to see the development of new reserves in two areas: in locations close to existing infrastructure and in new areas such as parts of East Siberia and northwest Russia. There is also likely to be increased use of more advanced technology, such as horizontal drilling and hydro-fraccing, all of which will require investment and capital spending.

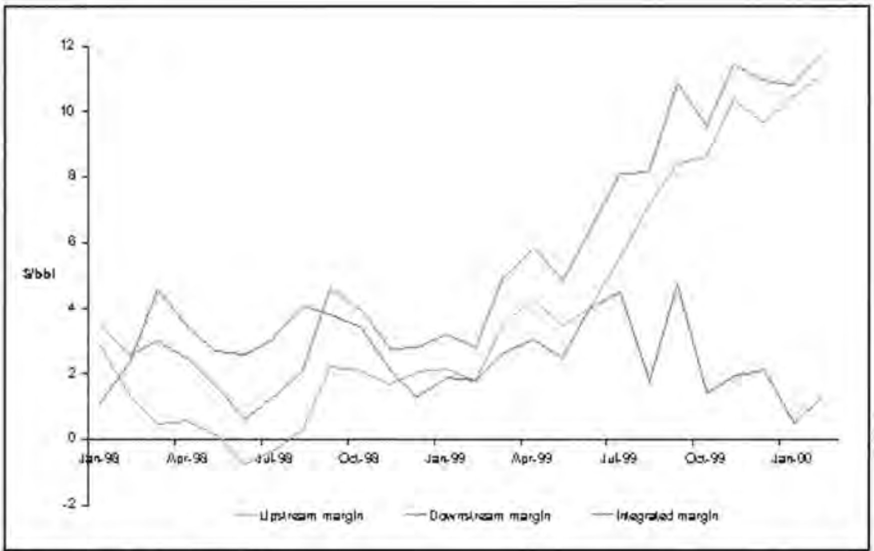



**Figure 1: Industry profitability**

Exports declined in 1999, by 1.6% for crude and 6% for products. Crude exports remain capacity constrained, although more capacity is being planned, with the CPC pipeline, the Baltic Pipeline System and Timan-Pechora and Sakhalin sea-borne exports all expected to contribute to higher export volumes in years to come. Product exports are not restricted by the capacity of the transport systems but limited by the profitability of transporting them over increasingly large distances from within Russia. The government also imposes restrictions on exports of key products when they are most needed domestically (fuel oil in winter and diesel fuel during the sowing season).

There will continue to be upward pressure on domestic prices and government controls may continue to be needed to keep products in the country against the ongoing temptation of a high-priced export market.

Taxation has not been the burden it once was. However, export duties, which already cost oil companies $0.90/b of production will increased in mid-April by a further $0.25/b. These

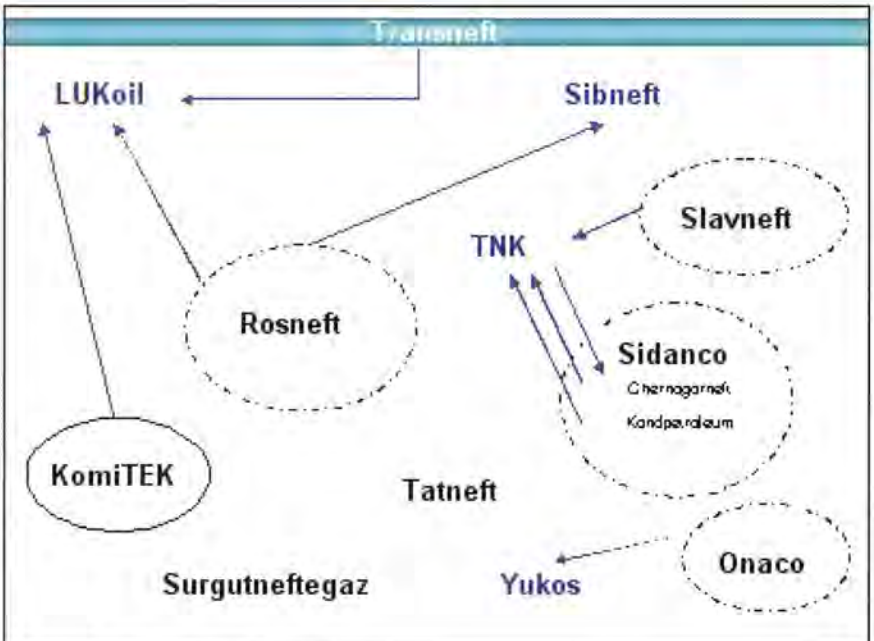



**Figure 2: Possible restructuring options**

duties have risen fairly sharply as the oil price has risen; the industry can only hope that they fall as swiftly when oil prices fall. Excise tax on the other hand has fallen significantly in dollar terms and may ultimately be completely abandoned. PSA is becoming a real taxation option for the future, with a number of Russian companies seeking to develop projects under this legislation, including Lukoil, Surgut, Tyumen Oil Company (TNK) and Yukos.

Inflation in the sector appears to be less significant than once feared and the benefits of devaluation look likely to last for longer than originally thought. The sector has benefited from a one-off cost reduction which it looks set to retain for some time. However, the key to future progress will be managements' willingness to make the tough decisions on restructuring that will be necessary but which have been postponed by the devaluation.

Sector restructuring has been a feature over the past year. Lukoil acquired the regional producer KomiTek in an all-stock transaction in 4Q99. Sibneft disposed of the East Siberian Oil Company which required significant investment with a long payback period. TNK and BP resolved, for the time being at least, their differences over Sidanco. Rosneft, Slavneft and Onaco are all in play and likely to disappear into the existing private oil companies during the year. TNK has admitted to holding a stake in Slavneft while Yukos is positioning itself for Onaco. Lukoil, Sibneft and TNK are all well-connected and well-placed companies but the risk of relying on connections for most of your success is that others may replace them as court favourites and it may not be a viable strategy in the long term.

Two of the key issues facing the sector are financing and corporate governance. In terms of financing, equity issues are likely this year, with Lukoil, Gazprom, TNK and Sibneft all raising the possibility of ADRs (American Depository Receipts). Lukoil and Gazprom are likely to be the first while Sibneft appears to have postponed its issue until 2001.

External borrowing is unlikely until sovereign borrowing resumes with the refinancing of the Russian Federation's Eurobond due in the first half of 2001. There are, however, likely to be other types of financings made available such as export credit guarantees, multilateral institutions and even reports of prefinancing of export receivables surfacing again. Domestic debt offerings have not necessarily been that successful, with some offerings bought internally and loans from Sberbank (the state savings bank) being relatively small.

The biggest difference between 1997 and now is corporate governance and the fact that investors – both portfolio and strategic – are extremely conscious of this aspect of Russian business. Most corporates in Russia have given their shareholders something to be concerned about, be it untransparent asset sales, share issues or price manipulation.

Investors are right to be concerned. Most managements have yet to either understand that investors have a legitimate interest in how their company is being run or to accept this fact beyond paying it lip service.

Despite this, the sector remains a potentially attractive investment proposition. At a time when well known companies across other Russian sectors are generating profits of just $2mn, oil company profits are at the level of several billion dollars. These are very large and very real profits, which are not often repeated in other parts of the Russian economy.

Nevertheless, given the past history of investment in Russia, investors – both portfolio and strategic – are likely to be cautious in their approach to Russia. President Putin, if he acts in a responsible manner, can start the process of changing investors' attitudes. However, only time will tell whether investors match the risk of investing in Russian oil with the perceived returns.

# Gas hydrates in the wings

**Solid gas technology may be on the brink of commerciality, according to estimates presented at a recent London conference on behalf of BG plc, writes *Fred Thackeray*.**

This was the first time that BG has published results of its R&D programme on gas hydrates on which it has so far spent £3mn. It is now seeking strategic partners to join it in further work with the aim of bringing the first commercial plant onstream by 2005.

With this in view, talks are being held with several major oil companies and discussions have been launched with four EPC companies who have expressed their interest in the possibility of participating in a feasibility study.

BG's hydrates production concept is illustrated in **Figure 1**. Put simply, it amounts to adding water to natural gas and 'stirring.' After removing water from the resultant slurry, a granular powder is obtained, comprising 90% water and 10% gas. This is cooled to between -30°C and -40/45°C. The hydrate can then be exported at atmospheric pressure in a conventional ship with insulation to maintain the low temperature, but without the need for any further cooling.

To date, the work carried out by the BG Hydrates Team has included:

- Extensive laboratory investigations
- The construction and operation of a 1t/d pilot plant

Techno-economic studies incorporating spreadsheet work on an integrated cost model covering complete projects from the production of hydrates through to their regasification on delivery at the market.

## Cost reductions

In 1999, redesign and simplification of the hydrate production process resulted in a substantial reduction in its estimated costs. Estimated overall costs, including shipping and regasification, were cut by 30%. For one potential trade of 200mn cf/d of natural gas over a one-way distance of 3,000 km, it is estimated that this can lead to a delivered cost of $2.80/mn btu.

At $2.80 delivered cost, BG reckons the technology could now be economic in niche situations. Dr Paul Martin, a Senior Engineer of Upstream Services in BG Technology, considers that a further cost reduction of 20% is a 'realistic' expectation and that this would make the technology fully competitive with alternatives.

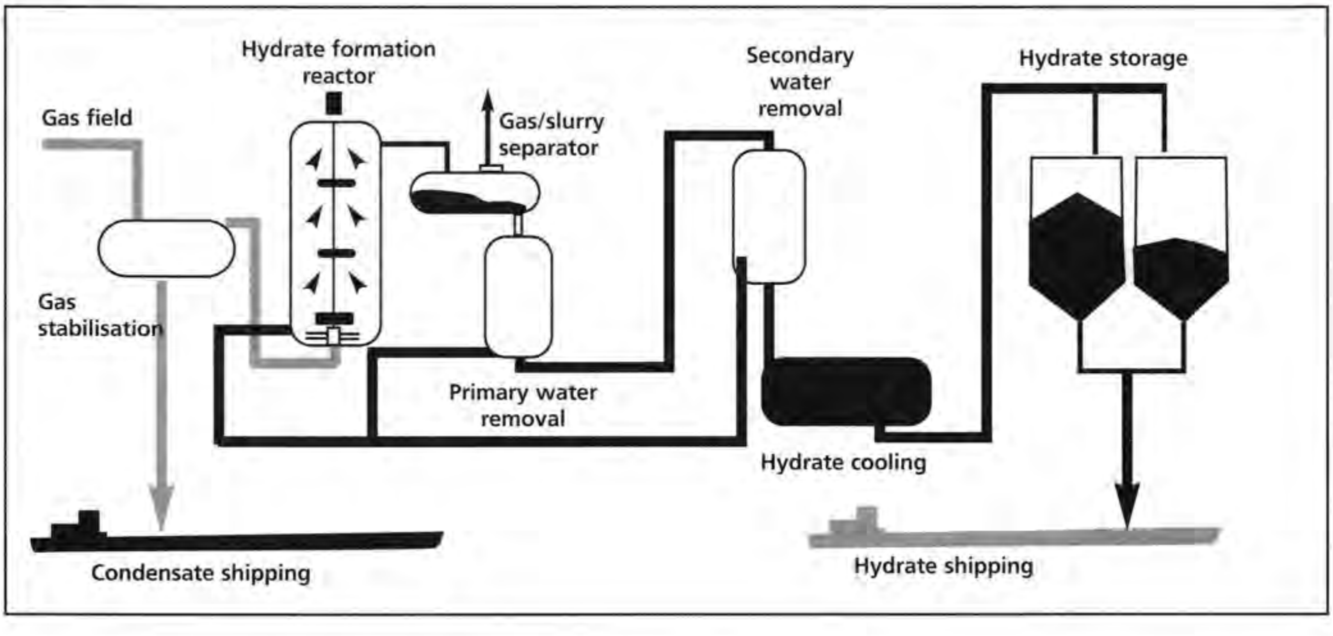
BG is focussing on the scope for its hydrates technology to resolve the problems of marketing associated gas. Growing environmentalist pressures to reduce gas flaring frequently create the situation in which an oil development cannot proceed if – in the absence of an economically viable project to reinject the gas – there is no means to dispose of it. When the volumes of gas are comparatively small, an LNG solution is uneconomic, but a gas hydrates project could be ideal.

## Offshore applications

The potential of gas hydrates for small-scale operation would be particularly appropriate for offshore applications. Although there have been many proposals for floating LNG plants, none have yet come to fruition. Compared with LNG technology, gas hydrates technology is comparatively simple. A typical plant could be installed, for example, on an FPSO barge.

An unrelated R&D programme using a different technology to produce natural gas hydrates has also been under way for several years in Norway. In essence, the Norwegian technology consists of the production and transport of gas hydrates in a slurry with crude oil. Some early results of this work – based on the Snohvit field – were presented in an article in *Petroleum Review* in May 1996 by Aker Engineering and the Norwegian University of Science & Technology.

In a paper presented last September in London, Anton Hove of Aker Engineering gave an updated account of progress on the Norwegian hydrates technology. This included an estimate of the overall cost of natural gas hydrates after its regasification at $3.50/mn btu, assuming a one-way shipping distance of 3,000 km. Asked by *Petroleum Review*, Hove said that there is no new progress in their work which can be reported currently.



# How much gas can a polar bear?

**The race is on to connect the huge reserves of natural gas that sit atop North America. The prize? – as much as $200bn in today's market, writes *Gordon Cope*.**

One of this year's hottest plays in North America is taking place in its coldest climate area – the Canadian Arctic. Recent developments include:

- During January, Chevron Canada Resources completed a gas well near Fort Liard, North West Territories (just north of the 60th parallel), that tested at 50-75mn cf/d of raw gas. The well confirmed a previous discovery well, drilled in the spring of 1999, that tested at 75mn cf/d (the wells are expected to come onstream in May 2000 at a combined rate of 150mn cf/d).
- AEC will drill up to four wells this year near Norman Wells, North West Territories, in an effort to find oil fields in excess of 100mn barrels.
- PetroCanada, Anderson Resources, Burlington Resources and Poco have combined work commitments totaling C$183mn following successful bidding in 1999 for mineral parcels in the Mackenzie Delta.

But the biggest news this year so far is the announcement in February that Imperial Oil, Gulf Canada Resources, Shell Canada and Mobil Oil Canada will launch a feasibility study to exploit 6tn cf of previously discovered Mackenzie Delta reserves. 'Our first step is to assess the commercial viability,' says Hart Searle, spokesman for the consortium. 'It's a complex situation of evolving regulatory process, markets, Northern parties, regulatory approvals, environmental considerations and fiscal terms.'

The feasibility study will examine four areas: support from the Northern native communities and their expectations, pipeline participation and financing, regulatory and environmental approval processes, and the fiscal terms (royalties and taxes). 'The initial development concept is to have producing wells at Tiglu and Parsons Lake fields, then a pipeline to the existing natural gas transmission system in Northern Alberta,' explains Searle. 'We will take advantage of the existing structure, and make the pipeline accessible to other producers.'

BP Amoco also joined the fray in March 2000, with an announcement that it will look at tying its immense natural gas resources in Alaska's Prudhoe Bay field into any new infrastructure in the Mackenzie Delta and Beaufort Sea.

The sudden push into Canada's frozen realms has been instigated by a stellar confluence of markets, support from the Northern authorities, regulatory approvals, environmental considerations, pipeline participation and fiscal terms.

By far the most important factor, however, is the North American marketplace for natural gas. 'North American gas demand is very robust,' says Bob Reid, Vice President of Northern Development for Trans Canada Pipe Lines (TCPL). 'It was 24tn cf/y in 1998 (65bn cf/d), and we're looking at something like 30tn cf/y (80bn cf/d) by 2010. The demand is being driven by power generation, and the fact that natural gas is more environmentally-preferred.'

'We estimate a 2% annual compound growth in Canada and a 1.7% annual compound growth in the US,' comments Roland George, a principal at Purvin & Gertz, an oil and gas consultancy. 'That's a base-case. If the Kyoto protocol is taken into account, we can envision a serious increase in natural gas demand. If all coal-fired electricity generation in the US was replaced by natural gas, it would double natural gas consumption.'

Recently, Purvin & Gertz completed a study on Arctic gas economics. 'Our study has indicated a Henry Hub (Alberta–US border) price of $2.50/mn Btu to make the area economic,' says George. The price is currently hovering in the $3 range, and is expected to remain at a level higher than $2.50 for the next several years.

Another positive factor is the lowering of costs for major pipeline projects. 'There's been a lot of technological advances in the last 20 years,' says TCPL's Reid. 'We can build higher pressure, lower diameter pipe, which saves a lot of cost. Also, from an environmental point of view, we have developed winter construction techniques in wetland areas that limits impact.'

## Woolly mammoth grounds

Not to be forgotten, of course, is the sheer, immense size of the prospects – Niglintgak, discovered by Shell in 1973, holds 1tn cf of gas; Parsons Lake, found by Gulf in 1972, holds 1.8tn cf, and Taglu, delineated by Imperial in 1971, holds 3tn cf.

David Newman is a Geologist with Sproule Associates, a geological consultancy. Sproule recently completed a study entitled 'Hydrocarbon Potential and Exploration Play Trends in the Northwest Territories and Yukon'. According to Newman, there are three major plays in the Mackenzie Delta. 'The Fort Liard play (near the border of British Columbia) is largely structural, a foothills type fold and thrust belt that creates large anticlinal features,' he says. 'The reservoirs are low porosity Devonian carbonates with high fracture-induced permeability. So far, 1.2tn cf of gas has been discovered in four fields, with the potential for a further 4tn cf of gas.'

The Norman Wells oil play (approximately 600 km north, in the Mackenzie River valley), is in Devonian carbonate reefs. 'The reefs create a drape feature that shows up especially well on seismic.' explains Newman. So far, 260mn barrels of oil have been discovered, with the potential for another 100mn barrels. There is a small amount of associated gas, with the potential of 1.5tn cf.

The Mackenzie Delta, which lies another 500 km north, adjacent to the Beaufort Sea, has several distinct traps. 'Tertiary delta sands coming from the Mackenzie system have been folded and faulted to create structural traps in which 2tn cf have already been discovered,' says Newman. 'Undiscovered gas stands at approximately 8tn cf. There is also 164mn barrels of oil, with the potential for another 371mn barrels.'

Finally, Tertiary sands that have been deposited further out in the Beaufort Sea hold great promise. 'In all, undiscovered reserve potential stands at 5bn barrels of oil and 53tn cf of gas for the region.'

And, to the west, through approximately 500 km of frozen tundra, towering mountain ranges and wildlife reserves, lies Prudhoe Bay. The onshore oil field contains an estimated 35tn cf of gas that is currently re-injected to build reservoir pressure. 'Undiscovered reserves might range up to 100tn cf,' predicts George.

## A slight case of indigestion

If such immense riches have been know since the early 1970s, why has it taken until now to light the fuse? One major reason was the issue of unresolved land claims. Approximately three-dozen different First Nations (native Americans) laid claim to large tracts of land along the Mackenzie Delta. Native unrest over the situation in the 1970s led to an inquiry held by Justice Thomas Berger in 1977. Berger made a recommendation that resulted in a decades-long moratorium on petroleum development in the region, pending resolution of the claims.

A second delaying factor was a distressing lump of surplus gas that proved to be as difficult for the markets to digest as a litter of piglets in a python. 'At one point, there were over 30 year's reserves of current production,' says George. 'It has taken many years to work the surplus off.'

A third element has been the belief that the deepwater Gulf of Mexico would serve as the long-term solution to North America's immense appetite for natural gas.

The US consumes approximately 22tn cf/y, or 60bn cf/d of gas. Shallow water Gulf of Mexico gas fields currently produce about 14bn cf/d, but they are in decline. By 2015, production is expected to drop to 7bn cf/d. The shortfall was expected to be made up by deepwater gas production, which is predicted to rise from 1.5bn cf/d today to 15bn cf/d by 2015.

Although extensive oil reserves have been discovered, ultimate natural gas reserves in the region may be disappointing. 'The deepwater Gulf of Mexico has not turned out as hoped,' notes Michael Doyle, President of Petrel Robertson, an oil and gas consultancy based in Calgary. 'Why do you think they're suddenly looking at the Mackenzie Delta?'

## Native reservations

Fortunately for all concerned, the doubts that aboriginal groups had expressed in the 1970s have dissipated, and the majority are now agreeable to development.

Most of the natural gas that is


Figure 1: Potentail gas pipeline links in Northern Canada

already discovered rests within the boundaries of the Inuvialuit Settlement Region, where the Mackenzie River meets the Beaufort Sea. Recently, six mineral blocks of highly prospective land were posted by the Inuvialuit Regional Corporation, the native land group that now owns mineral rights to the region. 'The parameters and criteria on operating in these regions are set,' says Nellie Cournoyea, Chair and CEO of the Inuvialuit Regional Corporation. 'People here know they will be involved, and we are well-placed to respond to offers of full-time jobs, training and business opportunities.'

Oil companies are heartened by the business-like approach. 'We've recently seen comments from aboriginal and metis leaders that they will consider pipeline development,' says Imperial's Searle. 'They are key interested parties. Our companies have a long history of working with aboriginal and metis communities in the North, and we hope to continue and expand our relationships'

'We've been focusing attention on working with aboriginal communities in the Mackenzie Delta,' adds TCPL's Reid. 'The aboriginal groups are fully aligned and committed to working with other stakeholders to ensure a pipeline can be built.'

## Pipe dreams

All that remains to be done is build a pipeline, something that is easier said than done. Gulf Canada Resources reckons pipeline costs will represent as much as 80% of capital requirements to bring gas from the Mackenzie Delta onstream.

There are several different proposals for pipeline systems on the table. Probably the best known is the Foothills or Alaska Natural Gas Transportation System (ANGTS), that routes its way through Alaska and the Yukon into Northeast BC. 'It has regulatory approval and most environmental

*continued on p41...*

# Winning the battle but losing the war?

**The pressure that the US Government brought to bear on Opec members and other petroleum exporters to open the spigots enough to bring American gasoline prices down somewhat – at least for a while – may, in the fullness of time, prove counter productive, writes *Peter S. Adam*. Most Opec members seem to realise that price moderation is in their best interests and are trying to adapt their organisation to the dynamics of a new market-driven, Internet-besotted e-conomic order. However, are US politicians and US independent upstream oil companies (and others) ready to follow suit?**

Opec's recent meeting ended with price-hawk Iran balking at what it considered US meddling and refused to sign the final accord. And apparently Teheran isn't the only oil capital where America is considered to be interfering in Opec members' affairs. Wider resentment over US Secretary of Energy Bill Richardson's charm offensive prior to and during the recent Vienna meeting is expected to engender more discord when the production levels are reviewed in June 2000. Then, in the face of expected growing world demand, producers' inability or reluctance to increase output again could send oil up and over $30/b.

## Oil on troubled political waters

For the moment though, expectations that an additional 1.7mn b/d will be pumped – along with the UN possibly allowing increased Iraq production – have caused crude to drift down to under $25/b. This is about 20% off this year's highs, but double the $12 oil price of about a year ago. Then, many felt, crude would stay interminably subdued, and perhaps even sink far lower.

How times have changed. Even US politicians have shown a newfound interest in oil. They tend to do this when gasoline at the pump starts to climb and supposedly threatens not only America's love affair with gas-guzzling, 'rhinomobile' sports utility vehicles, but also, maybe, the viability of its economic expansion. Until prices subsided, there was even chatter on Capitol Hill about somehow sanctioning Opec countries, and – with the White House even joining in – talk of, at some point opening up the US Strategic Petroleum Reserve to dampen them.

## Disconcerting straits

In contrast to this inside-of-the-beltway breast-beating, the Federal Reserve and its watchers, participants in the financial markets and, seemingly, (if interest rates are any guide) the US economy, have shrugged off inflationary implications of higher oil. Not surprisingly, the link between energy consumption and economic growth is not what it once was in the US and developed countries generally. Now the world's monetary authorities are more disciplined than in Opec's heydays in the late 1970s and early 1980s. And many feel oil prices may have peaked, for a while.

The muted response of upstream oil and related enterprise shares in recent months would, on the face of it, suggest so. A run-up in crude of this magnitude – after a sudden and somewhat lengthy drop off – should have sparked wild enthusiasm for oil industry shares. Although many energy related stocks are up 25% to 30% in the last month, this is from very low lows. In some cases oil related concerns were for a while selling at prices far lower than replacement costs. And apart from the international majors, most energy stocks remain down 10% to 25% from their highs of 1997, the last time high crude prices were considered sustainable. That was before oil collapsed in the wake of Russia's default and financial distress in the Far East. Shares of smaller exploration and production companies in particular remain well below their highs over two years ago.

One would expect, too, that prospectors would be diligently scouring and sinking drill bits into the earth for more oil. But as recently as 1998, when the price of oil was half what it is now, the drill rig count was double today's.

## What gives?

This disappointing state of oil patch equity affairs seems to evidence, on the face of it, petroleum's increasing irrelevancy in the new, widely proclaimed economic order. But the way money is being bet in US stock markets today implies something more nuanced is going on *vis-a-vis* oil's role in the world, or more precisely, the market dynamics of finding and extracting the stuff. The recent sell-off in high tech shares and the resurgence of the Dow Jones Industrial stalwarts would suggest that the new e-conomy has yet to eclipse the old economy. And a close look at the share valuations of upstream independent oil companies shows there's been a new wrinkle of the game of finding and developing black gold.

Anyone seeking to profit either with a drill bit or through a stock brokerage account (or today's variant a discount e-broker) should take note of a recent report entitled *It's a Whole New Ball Game*, written by Mark Meyer and Ryan Zorn of Simmons and Company, a Houston-based research and investment banking concern. Their findings shed light on why the oil patch dogs are yapping and not barking, and why as the year progresses some are likely to bark, while others stay silent.

## Equity market perception driven

'Time and time again,' Meyer and Zorn note, 'the capital markets have generously rewarded the sector for the confluence of high prices and robust cash flow. Armed with the markets' mandate, producers consistently spent well beyond their internally generated funds in the quest for absolute reserves and production growth.'

But not any more. '[Because of this] many value-destroying investments were made, a fact that is substantiated by a long-term return on capital employed well below the industry's capital costs.' The two go on to argue, quite convincingly, that from 1993 to 1998, 18 corporate exemplars of the US independent oil and gas industry earned returns averaging only 6% or so, well short of capital costs averaging 12%.

The sun has fully set on the days when all companies had to do was build up reserve empires, they note. 'The option value of oil and gas reserves in the ground erodes over time.' And apparently investors are becoming increasingly aware of the fact that 'maximising value in the E&P business is about converting reserves into revenues by finding the optimum balance between speed and efficiency.'

While this sounds obvious, successful operators on the US independent sector, both before Opec and during Opec's ascendancy in the late 1970s and early 1980s, built up reserves when prices were high and money chased upstream deals. And then these same companies went back to the banks to request workouts and extended repayment terms when prices weakened. But this no longer works – at least not smoothly like it used to. The US is increasingly dependent on foreign oil. It's petroleum resource base is depleted. In terms of employment, the US oil industry is a mere shadow of its former self. With very few notable exceptions, high tech advances – 3D seismic, other software, e-commerce and all that goes along with it – have not, as was widely expected, led to significant major new discoveries, here or worldwide. What the wizardry has done is facilitate the more rapid depletion of older fields.

The US lacks the political will to do anything meaningful about energy, for example promoting further efficiency by recasting internal combustion engines. Furthermore, and perhaps most importantly with regard to upstream activities, capital market participants are refusing to reward the oil empire builders indiscriminately.

## R-e-ality sets in

In the light of the continuing disconnect between the commodity and equity price performance, Meyer and Zorn believe 'a sorting out process is well underway.'

Opec seems to be adapting to reality. The organisation's new mechanism for automatically changing production in response to prices moving outside of a band of \$22–\$28 may be unworkable. But it seems to evidence an awareness that the organisation cannot, through high oil prices risk, killing the goose of economic growth that lays the eggs of black gold and has to find a way to stabilise prices.

Likewise, independent upstream companies have to wake up to altered investor expectations or they'll risk the wrath of the capital markets.

And US politicians can point the finger at Opec, but it's America's thirst for oil and refusal to be fuel-efficient that's at the heart of its potential energy, particularly oil problems.

J Paul Getty put the old commercial rule of thumb this way: 'Rise early, work late and find oil.' Today he'd have to add, 'and produce it quickly and efficiently.' And Opec, which once served the needs of those who wanted higher oil prices, may well be evolving into a stabilising mechanism that assures efficient enterprises rates of return sufficient to attract capital. Political discourse in the US has got to start to include energy policy seriously. Welcome to the Real (energy) World!

# Canada gas

*...continued from p39*

approvals, so it has a two-year advantage,' says TCPL's Reid, whose company owns 50% of the proposal. 'But, it's more expensive, at around \$6bn.'

As an alternative to the ANGTS, BP Amoco has joined the Alaska North Slope LNG project, (formed by Arco Alaska, Philips Petroleum, Foothills Pipe Lines and Marubeni Corporation), in order to look at a \$14bn pipeline to ship 7mn tonnes of LNG to Valdez for export to Asia.

The third major route, and least costly, is straight down the Mackenzie Delta. 'We think it can be done for less than C\$3bn, with a toll to the Alberta border of under C\$1, which is economic at today's gas prices,' says Reid.

Theoretically, Prudhoe Bay's reserves could also be tied into the Mackenzie Delta system, via an offshore leg, although doubts abound. 'We don't have any indication if it is technically or environmentally feasible,' comments Reid. 'There's no price tag. We're also looking at an onshore pipe running south of the Alaska Natural Wildlife Refuge, but there's no price tag on that either.'

One of the biggest changes since natural gas was discovered in the Mackenzie Delta a quarter century ago has been the emergence of a competitive midstream industry. Alliance Pipeline, which will inaugurate its 2.8bn cf/d pipeline from Fort St John to Chicago, has shown the effectiveness of limited partnerships and joint venture arrangements to successfully finance expensive transportation systems. 'We think a consortia approach is the way to go,' says Reid.

Assuming that no insurmountable obstacles arise, how long will it take before the first gas begins to flow down the Mackenzie Delta? 'These days, greenfield pipelines like Alliance take seven to eight years to approve and build,' says Reid.

At Purvin & Gertz, Roland George agrees that the lengthy timeline will enable companies to deal with native concerns. 'I've heard one company president say that we'll have this all connected in five years, but I can't conceive of it in five years. It's in nobody's interest to get local community people disappointed; it's important to listen to their concerns. It's been a show-stopper in the past – nobody wants it to be this time.'

Paradoxically, the agreement to employ aboriginal people may act as an anchor on the project, in that there may not be enough local workers to fulfill obligations in a timely manner. Schlumberger's seismic division, for instance, has a long-standing policy to employ First Nations peoples, and it is already creating a labour shortage. 'We had over 2,000 channels of equipment scheduled from mid-summer through December last year, which is half a crew year, and I think we'll see something similar this year,' says Al Chatenay, Canada Manager for Schlumberger's Reservoir Evaluation Seismic Division. 'But it's tough for us – the demand for local workers is exceeding the supply.'

In the meantime, the feasibility study by Imperial *et al* will roll ahead. 'We anticipate that the study will be complete by the end of the year,' says Searle. 'Our objective is to get pertinent, complete information to make the most informed decision. We will assess what we find, then make a determination. We're excited about it; we're anxious to hear what the study tells us.'

# Share and share alike

**'Knowledge Management' looks set to be among the buzzwords of the new century. More and more organisations across a wide range of industries are realising that, in order to continue succeeding in business, a certain degree of knowledge sharing can be every bit as beneficial as competitive secrecy. *Harry van der Vossen*, Director of Petroweb* reports.**

The vision that shared knowledge will benefit each of the networking companies is well accepted by leaders throughout industry. However, the only way to achieve results is through the end-users. To simply give them access to a database is not going to change the way they work, particularly if it requires them to adopt a different habit.

The most successful implementations of the knowledge sharing principle hinge on making the process an integral part of the existing work process, instilling a culture that makes it 'natural' for staff to check out the experience of their peers in the industry. It is also essential that the users be encouraged from within their own company (preferably by management and one or more 'champion' users) to share their documented lessons with a wider audience.

The sharing culture also brings about a shift from individually owned knowledge, to company-owned knowledge. In other words, knowledge that has become a company asset will remain with the company and ensure that the learning curve does not backtrack if a team or individual moves on to other places.

Furthermore, by extending the knowledge flow beyond company boundaries, the industry as a whole will be more effective in learning from within. In the long run, this will save not just a single company but the whole industry time and money – ensuring that those who currently prosper can continue to do so for a long time to come.

## Why share knowledge?

The obvious question is: Why share when a company's competitive edge has traditionally relied on what it knows and can do better than others? The answer is simple – by making the most of what other companies have learnt through their working practices, the industry learning curve will grow exponentially. Successes will then be repeated, mistakes and ineffective products and processes will be avoided, and over-all industry efficiency can be built upon.

Established in September 1997 by two former international oilfield professionals, with the single aim of providing a knowledge sharing service to the oil and gas industry, Petroweb aims to take the concept of knowledge management a step further. Through a secure website – **www.petroweb.co.uk** – member companies can access a shared knowledge base to exchange and retrieve information and expertise on a wide variety of industry issues from equipment through to developments in procedures and operations. The North Sea was chosen as the launch pad for the service and, to date, the company has focused on the well operations arena. The long-term strategy is to expand into new specialist areas.

Well operations is traditionally not a competitive area for the operators but does see very high capital expenditure (capex) – a factor which encourages the use of knowledge exchange to reduce long-term operating costs. Note that some 50% of all offshore capex is thought to be taken up by the drilling and completion of wells.

In the most simplistic view, wells provide the means to access the reserves of oil that the operators want to exploit. They are assembled out of 'building blocks' that are provided by the service industry. The building blocks themselves are constantly developing to offer innovative new capabilities and technologies. However, it is the process of how these building blocks interface with each other that is the real issue. The aim behind Petroweb is to make this process more efficient, for the benefit of the entire industry.

Collectively helping each other to reduce costs, to stop re-inventing the wheel and to avoid as much of the inevitable waste, is of tremendous value to the industry as a whole. Learning from each other is therefore to the benefit of *all* the players – no one loses out!

## Direct Internet access

Petroweb's Internet-based 'tool' is designed to appeal to the busy well engineering professional by offering quick and direct access to industry knowledge on operational, procedural, and equipment issues. It offers a direct link to a network of several hundred engineering professionals, giving each user the opportunity to adopt ideas that have proved successful elsewhere in the industry. Alternatively, it will highlight actual problems and solutions directly associated with currently ongoing operations. It is this crucially important network of individuals that offers the ultimate opportunity for further improvements in efficiency, safety and reliability of offshore operations.

Since the service and website became operational in August 1998, the database has grown to contain over 600 valuable lessons learned and other knowledge-based articles. The vast majority of these lessons have the capacity to significantly reduce offshore costs, expressed primarily in the saving of valuable rig-time. With industry initiatives such as CRINE and, more recently, LOGIC, Petroweb is providing a perfect vehicle for what these initiatives aim to achieve – industry collaboration, communication and the sharing of experience.

*Petroweb (**www.petroweb.co.uk**) is an Internet-based knowledge management company providing an independent 'information sharing service' to global organisations in the oil and gas industry. It is not an advertising medium – its mission is entirely focused on encouraging oil and gas companies to benefit from each other's practical experiences and knowledge, with the purpose of facilitating a more productive, time and cost effective, efficient industry.

## Remote filling units launched on UK market

Ehlert of Germany recently launched its remote filling units for petroleum delivery and storage on the UK market. Forming the link between the delivery tanker and the storage tanks, the pre-fabricated units contain all the necessary valves and control systems for bulk fuel delivery, including offsets, vapour recovery couplings and optional electronic coding systems to protect against product contamination and overflow. Local monitoring of pressurised interstitial pipe space in double-wall installations can also be provided in order 'to ensure the highest levels of leak protection and safety'.

Available in a range of standard specifications, customised units can also be fabricated to individual customer specifications without significant increase in cost, states the company.

The units are available in both above ground and below ground configurations, and are said to be capable of withstanding vehicular traffic of up to 40 tonnes if required. Claimed to be simple to install, the units can also be tailored to be compatible with driver control delivery systems. The company states that the units have been installed in over 2,000 forecourts across Europe to date.

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## Active corrosion monitoring

CORPAC® is a single-channel intelligent system for detecting active corrosion processes designed for use with online chemical and petrochemical plant. Developed by Euro Physical Acoustics, with the chemical industry and licensed from Rhone-Poulence and Solvay, the technology was recently launched on the UK market – having been widely adopted in France.

The system is claimed to be the only technology available for detecting the presence of active corrosion. Stress corrosion cracking, for example, is very advanced by the time it can be detected with dye penetrant or ultrasound – CORPAC is said to able to detect signals from the very early stages of the active microcracking process as it occurs as a function of the process conditions (chemical content, temperature, stress, etc). It can be used for maintenance planning and verifying whether or not corrective actions, such as inhibitors, have had the desired effect.

Tel: +44 (0)1954 231612
Fax: +44 (0)1954 231102

## Twister technology

Shell and private equity investor The Beacon Group have joined forces to form the Shell Technology Investments Partnership which will be based in Rijswijk in the Netherlands. The new venture will invest in new businesses that market oil and gas industry technologies, products or services developed or acquired by the partners. The partners have unveiled the first commercial venture of the partnership – Twister BV – which will market innovative gas processing technologies to the global exploration and production market, based on Shell's supersonic gas separation technology.

Twister's initial commercial product – a supersonic separator – separates both hydrocarbon liquids and water from natural gas. It is claimed to reduce field facilities costs by up to 40%, by processing gas more efficiently and more effectively. The unit is said to incorporate a number of unique features, including a considerably smaller environmental footprint compared with other separators, zero emissions and the complete absence of moving parts.

Tel: +31 70 311 3022
Fax: +31 70 311 2142

## Thermal mass flowmeter

The new FCI ST98 Flowmeter is now being marketed by Allison Engineering. Available with weatherproof protection or Cenelec explosion-proof EExd IIC certification, the thermal mass flowmeter features integral and remote electronics, insertion/in-line designs and adjustable insertion lengths and housing options. The unit is claimed to offer accuracies of ±1% of reading and +0.5% of fullscale. It is said to be suitable for use in all process industries, including chemical and refining, oil and gas production and power generation.

Tel: +44 (0)1268 526161
Fax: +44 (0)1268 533144

# Membership News

## NEW MEMBERS

Mr M Al-Jebouri, Lazard Brothers & Company Limited
Ms J Aldersey-Williams, CMS Cameron McKenna
Ms V I Bagnall, Furrows Haybridge Service Station
Mr J R V Brooks, Brookwood
Mr D Brown, Bicester
Mr M Buhler, Jones, Day, Reavis & Pogue
Mr R Burt, BP Exploration Operating Company Limited
Mr R R Connelly, RRC Contols Services Limited
Mr M R Cooke, PricewaterhouseCoopers
Mr R Dye, Peregrine Systems
Mr G S Farquhar, Inverness
Mr R D Ferguson, Blackwatch Petroleum Services Limited
Mr D N Galbraith, Auchenblag
Mr A Grachev, London
Mr S J Gymer, SGS Redwood (UK) Limited
Captain M J P Halle, Standard Marine Services (ExxonMobil)
Mr H W Hart, Hartlepool
Mr P M Harvey, By Larkhall
Mr N M Hugh, Bicester
Mr P Johnson, Oilfield Production Consultants (OPC) Limited
Mr R P T Korver, ROS Holland BV
Mr C J Laney, OBC Shipping Limited
Mr M Macleod, Core Laboratories (UK) Limited,
Mr R Malvisi, Indeva Energy Consultants Limited
Mr J Mathenge, Caltex Oil (Kenya) Limited
Mr A McNulty, Billingham
Mr A B McPhail, Standard & Poor's
Mr M Modibbo, Unipetrol Nigeria plc
Ms P Mondal, EMC- Energy Market Consultants Limited
Mr A J Murray, Statoil Ireland Limited
Mr D L Nelson, Pipeline Simulation & Integrity Limited
Mr K Nicholson, C&D Insulation Company Limited
Ms S C Owolo, Suzy International Company
Mr F A R Paretti, Api Group of Companies
Mr R Parker, Schlumberger GeoQuest
Captain I J Power, Kidlington
Mr D V Richards, DV&GL Richards Partnership
Mr D Risebury, OTS International Training Services
Mr D J Robottom, Hampton Hill
Mr F Sexsmith, Downstream Oil Advisors Limited
Mr M Steeves, Amossco
Mr T H K Stockman, ANG Trading Limited
Mr T Symes, Singapore
Mr M Thompson, McKinsey & Company
Mr A Thompson, Rex Software Limited
Mr I Thompson, Swanland
Mr A C Tidy, Poole
Mr M Walsh, M W Consultants
Mr P A Wheeler, Billinghurst
Dr J Wills, Jonathan Wills
Ms L Winterbotham, Amossco

## STUDENTS

Mr K Ahmed, Pakistan
Ms Y Hirota, Sevenoaks
Ms E E Woodey, London

## NEW FELLOW

**Mr G Sabir-Ali FInstPet**
Ghazi Sabir-Ali, after graduating with a degree in Civil Engineering from the University of Sheffield in 1958, started his career with the Iraq Petroleum Company in Kirkuk, Iraq. In

## NEW FELLOW CONTINUED

1972 IPC was nationalised and is now known as North Oil Company, which, until the Gulf War, produced and exported more than half Iraq's oil. Ghazi became Director of Engineering and Projects in 1978 and, in 1983, also Deputy Chairman. In 1989 he was then appointed Chairman and Managing Director and held these posts until his retirement at the end of 1993. He was Iraq's representative on the Board of Directors of the Arab Petroleum Investment Corporation. He is a Fellow of the Institution of Civil Engineers and Fellow of the Royal Society of Arts as well as a Trustee of the Bath Royal Literary and Scientific Institution. Mr Sabir-Ali is presently working as an Oil Consultant.

## NEW CORPORATES

**National Inspection Council for Electrical Installation Contracting, Vintage House, 37 Albert Embankment, London SE1 7UJ, UK**
**Tel: +44 (0)20 7564 2323 Fax: +44(0)020 7564 2370**
**e:** enquiries@niceic.org.uk
*Representative:* Mr M C Clark, Technical Director
The NICEIC is the independent consumer safety organisation which has regulated the electrical installation contracting industry, on a voluntary basis, since 1956. There are currently about 10,500 electrical contractors throughout the UK on the NICEIC Roll of Approved Contractors, ranging from sole traders to the largest electrical contracting businesses. The NICEIC is in the process of developing new procedures for assessing the competence of contractors to undertake electrical work in hazardous areas.

**Technical Editing Services Ltd, Barbour Square, High Street, Tattenhall, Cheshire CH3 9RF, UK**
**Tel: +44 (0)1829 770569 Fax: +44 (0)1829 771354**
**e:** tesmail@t-e-s.co.uk
*Representative:* Mr G Charnock, Managing Director
TeS is a specialist 'one-stop-shop' communications company that provides brochures, magazines, books, multimedia, websites and exhibition/advertising material for the international oil industry. It has 50 staff in offices in the UK, USA and Holland.

**WTI Training Group, Burn Hall, Tollerton Road, Huby, York YO61 1JB, UK**
**Tel: +44 (0)1347 825516 Fax: +44 (0)1347 838878**
**e:** wti.york@dial.pipex.com
*Representative:* Mr S Martin, Group Manager
WTI Training Group is a charitable trust providing a wide range of training packages to major national utilities, airports, Ministry of Defence and health care estates. Our courses are recognised by major engineering institutes and many lead to BTEC or City & Guilds qualifications.

**MeesPierson M.V, Herengracht 548, PO Box 293, Amsterdam**
**1000 A6 Amsterdam**
**Tel: +31 205274386 Fax: +31 205274643**
*Representative:* Jan W M de Laat, Manager, Energy Desk
The Fortis Group is a major integrated multi-channel provider of financial services. The core activities of Fortis focus on insurance, banking and investment. MeesPierson MV is part of the Fortis Group and active in banking specialised in trade and commodity finance, private banking, project finance etc.

# IP Discussion Groups & Events

*Energy, Economics, Environment*

## 'Solar Power – a friend or a foe?'

**Monday 8 May, 17.00 for 17.30**

**Mark Hammonds,** Global Product Manager, BP Solarex

IP contact: Jenny Sandrock

*Energy, Economics, Environment*

The British Institute of Energy Economics invites you to the launch of

## 'The BP Amoco Statistical Review of World Energy'

**Wednesday 21 June, 14.30 at Britannic House**

**Prof. Peter Davies,** Chief Economist, BP Amoco

Contact: Mary Scanlan BIEE Tel +44 (0)20 8997 3707 (prior registration essential)

IFEG **Information for Energy Group**

## Electronic journals for the energy industries

Afternoon Seminar, 2pm to 5pm,
Wednesday, 10 May 2000
Institute of Petroleum, 61 New Cavendish Street,
London, W1M 8AR

This seminar will focus on the availability of electronic journals for the energy industries – what they are and how to obtain them and their benefits over printed formats.

This is your opportunity to hear some of the producers and suppliers of these journals, quiz them on what they offer and express your opinions.

*Speakers and organisations will include:*
**Harts E&P Group, FT Energy On-line, Swets, British Library Web Inside, Everetts**

Sponsored by Sagemaker (**www.sagemaker.com**)

Admission free to IFEG members, £20 to non-IFEG members. A light lunch will be available before the seminar. Please let us know you are coming.
For more details contact Catherine Cosgrove on 020 7467 7111 Fax: 020 7255 1472; e: **lis@petroleum.co.uk**

*Energy, Economics, Environment*
*Discussion Groups*

*Please notify the contacts if you plan to attend any of the advertised events*
*All events will take place at the IP unless stated otherwise*
*Institute of Petroleum , 61 New Cavendish Street , London W1M 8AR, UK*
*Tel: +44 (0)20 7467 7100 Fax: +44 (0)20 7255 1472*
*e: jsandrock@petroleum.co.uk*

IP THE INSTITUTE OF PETROLEUM

## Branch Activities

**Aberdeen**
*Contact:* *George Wood Tel: +44 (0)1224 205736*
9 May: *Forties Pipeline System into the Next Century* by Ian Cansfield, BP Amoco
13 June: Visit to Peterhead Power Station

**Humber**
*Contact:* *David Hughes Tel: +44 (0)1469 555237*
11 May: Visit to Humber Tugs, Howard Smith Towage

**London**
*Contact:* *Carol Reader Tel: +44 (0)20 8852 9168*
21 June: Gatwick Airport Fuel Depot visit

**North East**
*Contact:* *John Sparke Tel: +44 (0)1642 546411*
16 May: Visit to the Virtual Reality Centre, University of Teesside

**Southern**
*Contact:* *Veronica Cloke Browne Tel: +44 (0)023 80896303*
(May): Site visit to EniChem
June 14: Visit to Wytch Farm

**Stanlow**
*Contact:* *John Hinde Tel: +44 (0)151 342 1636*
18 May: Visit to Vauxhall Motors engine plant, Ellesmere Port

# IP Conferences and Exhibitions

**Annual Introduction Courses**

## Oil Industry Operations Course

**14–16 June 2000**

## Petroleum Economics

**19–21 June 2000**

**Both courses will be held at the Institute of Petroleum**

**The programme and registration forms will soon be available.**

**International Conference on**

## Oil and Gas Accounting

**London: 6–7 November 2000**

The following topics will be discussed:

- New OIAC SORP – what has changed?
- Accounting and reporting for joint ventures and consortia
- Decommissioning, dismantlement, removal and restoration – a revolution in accounting, resulting from FRS 12
- Business combinations
- Cost ceilings and impaired issues
- Oil and gas reserve definitions, measurement and valuation – the SPE and IP recommendations and disclosure
- Problems arising from the use of commodity-based and financial-based derivatives
- Accounting for risk sharing and financial arrangement
- Accounting for and reporting commodity-based derivatives
- Accounting for and reporting financial derivatives
- International accounting developments affecting the petroleum industry

**International Conference on**

## INTERSPILL 2000

### Brighton, UK
### 28–30 November 2000

A major conference and exhibition featuring the activities of the European spill response industry, both at sea and on land, under the direction of the **British Oil Spill Control Association** and it is being organised by the **Institute of Petroleum**. It is planned that **INTERSPILL 2000** will be the first in a regular series of such events.

### Topics to be covered

The topics to be discussed during the conference sessions, and through the exhibition and its associated poster presentations, will include:

- nature of the response problem in all its aspects
- avoidance of secondary releases in marine casualty situations and the implications for response provision
- influence of shoreline and inland characteristics, and the different response requirements for water and solid surfaces
- strengths and weaknesses of available techniques and equipment in respect of operational factors
- waste disposal options and the impact of regulations on option choice, storage, handling, and transportation
- need for ways of minimising the amount of waste arising from pollutant clearance operations resulting from limited capacities of authorised waste disposal facilities
- means by which pollution response can be improved through the pooling of all available expertise and resources within governments and the private sector plus
- scope for further innovation in equipment, techniques, and operational planning

### Who should attend?

INTERSPILL 2000 will be of interest to all who are concerned about the environment and those involved in its protection, including:

- national and international environmental agencies
- oil, chemical, and transport industries
- port and harbour authorities
- offshore oil field operators
- central and local authorities
- emergency services

**For exhibition package and further conference details, please contact the numbers below.**

**For further information please contact:**

Pauline Ashby, Conference Department, Institute of Petroleum,
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Tel: +44 (0)20 7467 7100 Fax: +44 (0)20 7255 1472 e: **pashby@petroleum.co.uk**

**or view the IP Web Page: www.petroleum.co.uk**

# EVENTS Forthcoming

## MAY 2000

**8–9** **Abu Dhabi, UAE**
*Middle East Refining Forum (MERF) 2000*
Details: World Refining Association, UK
Tel: +44 (0)1242 529090
Fax: +44 (0)1242 582157

**8–12** **Dundee, Scotland**
*Inter-Company International Petroleum Industry Contracts: Evaluation, Negotiation and Drafting*
Details: Centre for Petroleum Energy and Mineral Law, UK
Tel: +44 (0)1382 344303
Fax: +44 (0)1382 345854
e: m.r.mckinlay@dundee.ac.uk
www.cepmlp.org

**8–9** **Singapore**
*Land Tank and Shipboard Measurement*
Details: Abacus International, UK
Tel: +44 (0)1245 328340
Fax: +44 (0)1245 323429
e: register@abacus-int.com

**8–11** **Birmingham**
*Safety & Health at Work, Fire Expo, IFSEC*
Details: Miller Freeman, UK Ltd, UK
Tel: +44 (0)20 8987 7860

**10–11** **Singapore**
*Flow Metering and Meter Proving*
Details: Abacus International, UK
Tel: +44 (0)1245 328340
Fax: +44 (0)1245 323429
e: register@abacus-int.com

**15–26** **Aberdeen**
*Integrated Environmental Management and Sustainable Development*
Details: Cordah Ltd, UK
Tel: +44 (0)1224 414211
Fax: +44 (0)1224 414250
e: j.butler@cordah.co.uk

**16–18** **Aberdeen**
*Basic Principles and Practice of Flow Measurement*
Details: National Engineering Laboratory, UK
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e: stough@nel.uk

**17–19** **Venice, Italy**
*Corrosion in Refinery Petrochemical and Power Generation Plants*
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**18-19** **London**
*Meeting Challenges in European Electricity Trading Markets*
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Fax: +44 (0)20 7436 5741

**21–24** **Montreal**
*World Forum on Energy Regulation*
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e: info@energyforum.org
www.energyforum.org

**22–23** **Washington DC, US**
*European Power Forum*
Details: The Center for Business Intelligence
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e: l.santillo@cbinet.com

**22–25 May**
*Pipelines 2000*
Details: Interbuild 2000, UK
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Fax: +44 (0)20 7505 6661

**23** **Aberdeen**
*Oil-in-Water Monitoring*
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e: stough@nel.uk

**23–24** **London**
*OILOP 2000 – 2nd International Conference on Oil & Gas Trading and Shipping Operations*
Details: Asdem Ltd
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Fax: +44 (0)20 7499 5270
e: info@asdem.co.uk

# NEW Publications and Data Services

## Environmental Impact of the Offshore Oil and Gas Industry*

*Stanislav Patin (EcoMonitor Publishing, PO Box 866, East Northport, NY 11731, USA). ISBN 0 9671836 0 X. 448 pages. Price (hardback): $199.*

This book looks at worldwide advances in the study, control and prevention of the offshore oil and gas industry's impact on the marine environment and living resources. It provides a multi-disciplinary perspective and includes over 700 references. The main impact factors are considered by the author, who also outlines the conditions required to provide a balance of interests for the oil and gas industry and fishing sector. Special attention is given to the environmental levels, behaviour and toxicities of oil, gas and related chemicals and wastes, including drilling muds and cuttings. The final chapters analyse strategic principles of environmental management and regulation. The book also presents data on the environmental aspects of Russian offshore oil and gas developments.

## Inside an Industry: Coryton Oil Refinery

*(Contact: Gill Haben, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK).*

*Inside an Industry – Coryton Oil Refinery* is the Institute of Petroleum's latest educational resource. This is a geography case study designed specifically to meet the requirements of the GCSE geography syllabuses for the in-depth study of an industry. The booklet will meet the needs of teachers by providing up to date, detailed and fully illustrated information. Printed in full colour, it includes aerial photographs, maps, pupil activities and teachers' notes. Although designed primarily for GCSE, the publication includes sufficient information for use at A-level. Copies are available from the Institute of Petroleum and will shortly be on the IP website at **www.petroleum.co.uk**

## European Natural Gas

*Fred Thackeray (FT Energy, Maple House, 149 Tottenham Court Road, London W1P 9LL, UK). ISBN 1 84083 209 6. Price: £395 ($632).*

The hype which befogs much current reporting of Europe's natural gas markets is put firmly in its place in this newly published analysis by Fred Thackeray, a regular contributor to *Petroleum Review*. It is packed with figures, facts and trends for 30 European countries, covering the period 1990-2010. Significantly, the report says (a) spot markets will diminish in importance when today's surplus supply capacity ceases; (b) gas prices will need to rise to provide funds for future exploration and development; and (c) the EU Gas Directive is inadequate in the face of import contracts already concluded which pre-empt future markets. Optimistically, however, the report foresees a very rapid growth of the markets, spurred by the urgent need to rely increasingly on environmentally friendly natural gas.

## Under Sand, Ice & Sea: The Memoirs of an Oilman

*A Bryce Cameron (Trafford Publishing, Suite 6E, 2333 Government Street, Victoria, BC V8T 4P4, Canada). ISBN 1 55212 319 7. Price: C$24.95 (US$16.21).*

This book follows the life of petroleum engineer Bryce Cameron across three continents and four decades. During WWII, Cameron was commissioned in the British Army with the Royal Engineers and was involved in the defence of Britain's shores preparing sea-based oil fires to thwart Hitler's proposed invasion. After the war, he returned to the Middle East, then spending time in Trinidad, Canada's Arctic and the North Sea in the unending quest for 'black gold'. His story is fascinating and provides personal glimpses into this modern period of history as well as countless historical anecdotes recounting man's quest for a vital substance that has played a crucial role in the development of the world as we know it today.

** Held in IP Library*

## Modern Petroleum Technology

*Editor: Richard A Dawe (Available from John Wiley & Sons Ltd, 1 Oldlands Way, Bognor Regis, West Sussex PO22 9SA, UK). ISBN 0 471 98411 6. Price (2 vol set): £375.*

Now in its sixth edition, The Institute of Petroleum's *Modern Petroleum Technology* is to be published in June. It provides a comprehensive, authoritative and up-to-date review of technology across the whole of the oil and gas industry. Entries in every field are written by leading international experts, ensuring that this publication remains the essential information source for libraries, technicians and managers.

- Volume 1 looks at the upstream sector and provides a definitive guide to exploration and production; geoscience, geochemistry, geophysics; drilling engineering; petrophysics; reservoir engineering; production engineering; gas; transportation; and heavy oil.
- Volume 2 addresses the downstream arena, and is divided into two sections. The Process chapters provide an overview of the modern refinery; crude processing; catalytic cracking; H-processing; visbreaking; coking; solvent desasphalting; gasification; gasoline processes; kerosine and gasoil processes; base oils; bitumen; petrochemical interface; MTBE; refinery utilities; control and optimisation; and the environment. The Product chapters provide a guide to gasoline; ago; distillate/residual fuels; aviation turbine fuels; LPG; lubes technology; base oils; gasoline engine lubes; diesel engine lubes; industrial oils; gas engine oils; white oils; greases; bitumen; waxes; marketing operations; and specifications.

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# World Petroleum Congress – the way ahead

***Petroleum Review*** **asked *Pierce Riemer*, Director General of the World Petroleum Congress (WPC) about future plans for the WPC. We also provide a brief taster of the programme for the 16th WPC Congress in Calgary on 11–15 June 2000.**

**Q You took over as Director General of WPC last year. How do you see your role and what do you hope to achieve?**

**A** The WPC was formed in 1933 to promote the management of the world's petroleum resources for the benefit of mankind, and my role is to build on the considerable achievements of my predecessors in enhancing value for our increasing membership. We are very fortunate to have an excellent team of staff and volunteers. One of my main roles is to reduce bureaucracy and to move with, if not ahead, of the times. In particular, I am currently working to improve the efficiency of communications throughout the organisation by moving rapidly to embrace the digital age. We are already making progress and at Calgary we will launch our new website which will be the portal for all our members. Throughout the rest of the year there will be rapid enhancements made to the site – the aim is to be innovative rather than to follow the crowd.

This will be the first WPC Congress that is totally digital. Our sophisticated website has been set up to combine Congress information with real-time data exchange and discussion between forum chairs and authors. In addition, all of the papers can be previewed by the Chairman online. We will also be able to provide pre-prints on CD to all delegates on their arrival. After the Congress, the proceedings will be distributed for the first time on CD-ROM. All the authors/presenters will be using digital presentations during the event. This is the beginning of the end for conventional overheads and slides.

**Q Historically, WPC has acted as a forum for the world's energy producers to promote their wares. How do you see the Congress evolving, particularly in the light of increasing concerns about the environment and global climate change?**

**A** The fossil fuel industry has never looked as exciting and challenging than at present and there are unprecedented activities that the WPC will be involved in during the 21st Century. The Congress has always been the place to experience the latest advancements in technology and business management; to give networking opportunities with foreign governments and markets; to explore international business opportunities; to investigate new markets and to obtain international perspectives on the major current issues. This will not change!

The issues surrounding the environment and climate change have featured in previous congresses. This year, in Calgary, the theme of social and environmental responsibility is featured throughout the technical forums. In particular, for this Congress, it will be followed by a workshop focusing on the latest technologies for the reduction of climate change – an area I know well. This will illustrate the ability to continue to use fossil fuels (and the fossil fuel infrastructure) in an environment of reduced carbon emissions. It will also, illustrate the latest technological advances and show that many of the world's major oil and gas companies are investing heavily, with success, on these technology options.

**Q What do you think will be the highlights of this year's WPC in Calgary?**

**A** Over 3,000 delegates will have the chance to hear the top people in the industry speaking. Sir John Browne, Group Chief Executive of BP Amoco, and also Gazprom Chairman, Viktor Chernomyrdin, lead the plenary session, together with the CEOs and senior management of virtually every oil and gas company in the world. In addition, we have been inundated with proposals for papers and posters, which have been reduced down to over 400 very high quality technical presentations. Midweek we will also be hosting the Opec lunch where the Secretary General of Opec will make a presentation just days before the next Opec meeting.

On the social side there will be examples of typical Calgarian hospitality. There will be social and technical tours for attendees and accompanying persons. During the conference all the delegates will experience the famous stamped breakfast and the Calgary home hospitality night where delegates go into the homes of local Calgarians.

The 16th WPC will continue tradition of excellence and people will return with memories.

## Calgary hosts 16th WPC Congress

The World Petroleum Congress offers an international oil and gas congress hosted by one of its 57 member countries every three years. This year, Canada – a founding member of WPC – is to host the showcase, which will be held at Calgary, Alberta, on 11–15 June 2000.

Some 3,000 delegates from 80 countries are expected to attend the event. The overall programme includes technical presentations (plenary sessions, forums, review and forecast papers and poster sessions, in four programme blocks:

- upstream
- downstream
- natural gas, petrochemicals, transportation
- business management

There will be numerous networking opportunities, together with social functions, technical tours, pre- and post-congress tours. There is also an accompanying persons programme.

**Anyone wishing to attend the 16th WPC Congress should contact Ms Lamia Elhouni, Scientific Programme Committee.**

**e:** lamia@world-petroleum.org **or Tel: +44 (0)20 7637 4995. It is also possible to directly register online at** www.wpc2000.com