

A North Sea Renaissance

Its future seemed bleak but recent discoveries, higher commodity prices and a new tax regime are pushing hopes for U.K. North Sea production higher.

Five years ago, what was once Europe's leading oil and gas producer was in deep disarray. With alarming outlooks on levels of extraction and rig counts and a globally depressed oil and gas industry, the U.K. sector was looking at its future with an eye on retirement schemes. Half a decade later, the outlook seems radically changed, with the sector buzzing with news of fresh deals and renewed activity and oil and gas industrialists adopting a much more optimistic stance, both at home and abroad.

Oil was first discovered in the U.K. in the early 1910s onshore. In 1919, the first oil was produced from the Hardstoft

Field, in the East Midlands. Today, 45 onshore fields are producing 32 million barrels of oil per year and around 23 billion cubic feet (Bcf) of gas.

Despite more than 80 years of activity, significant discoveries are still being made, the coalbed-methane industry is still in its infancy and there is much room for innovative thinking in the basin to expand the onshore production life-cycle.

Yet, the U.K.'s real potential, and base for its oil-producing status, comes from its offshore hydrocarbon reserves, out of which 31 billion barrels have been extracted, with an estimated 24- to 32 billion barrels of extractable reserves remaining.



Going offshore

In 1959 the massive Groningen onshore gas field was discovered in the Netherlands. Geologists estimated that the same rock formations might be found beneath the southern

BP's Northwest Hutton platform north of the Shetland Islands in the U.K. North Sea is among older platforms that are being decommissioned as production has declined below what is economic. (Photo by Lowell Georgia.)

This special report was prepared by London-based Global Business Reports after meeting with some of the industry's leaders and upcoming players. It highlights some of the elements leading the U.K. oil and gas industry into its rebirth. Authors are Gilles Valentin, oil and gas reporter, Global Business Reports (gilles@gbreports.com); Carsten Gueber, financial reporter, Global Business Reports; and Naomi Sutorius-Lavoie, project and marketing coordinator, Global Business Reports.

North Sea basin in U.K. waters. They were right, and gas was discovered off the U.K.'s East Coast in the 1960s.

Clues discovered around the coast of Greenland gave geologists the idea that there may be oil and gas around Scottish waters. There had been onshore oil wells in Europe since the 1920s, but it wasn't until the 1960s that exploration in the North Sea really began, without encountering much success in the early years.

The first commercial oil was finally struck in 1969 in Amoco's Arbroath Field and discoveries succeeded one another from then on. The first oil shock accelerated U.K. offshore development and efforts to put hydrocarbons onstream. In 1975, Hamilton's Argyll oil field started production, bringing the first U.K. offshore oil to market in June that year. By 1978 U.K. North Sea production topped 1 million barrels of oil per day for the first time. The first major discovery of gas, now in production at the West Sole Field, was in 1965.

Following these early stages, a major offshore exploration campaign opened the North Sea backed by the resource base for the industry in the U.K. and Norway. By 1991, 100 fields were in production in the U.K., with majors like BP and Shell leading the way, building their offshore know-how and facing the challenging task of operating assets from offshore infrastructures in some of the harshest maritime conditions possible.

With gusts of up to 120 miles per hour, cold waters and building-size waves, the challenge of realizing such successful operations out of such an unforgiving basin cannot be considered an easy one. It was excellently tackled nevertheless, and for more than 30 years, the North Sea was the bread and butter of a national industry that was built up benchmarking itself against the most stringent of environments.

A buoyant service industry sprung in the wake of this oil boom and developed as an internationally active and recognized subsector. Yet, with 30 billion barrels extracted and now considered a mature province, the frontier is no longer hidden in the harsh seas of the North Sea or indeed onshore U.K. With most of the majors concentrated on hunting elephants off the coasts of West Africa, in the Caspian Sea

With gusts of up to 120 miles per hour, cold waters and building-size waves, the challenge...[is not] an easy one."

or onshore Russia, the U.K. fell into decay, with levels of exploration falling and the country looking nostalgically as its oil-producing status slipped.

A large discovery

A steep rise in oil prices, however, at the end of the 1990s, doubled with a forward-thinking government policy, resulted in the outlook suddenly looking less bleak. New exploration campaigns went under way and new players entered the fray.

In June 2001, Canadian independent EnCana sent the signal that the industry had been seeking during the past decade: the Buzzard discovery, estimated at more than 400 million recoverable barrels, proved that there was still major potential held on the U.K. Continental Shelf (UKCS) and that the life expectancy of

the basin could, beyond any doubt, be further extended. That find, which is currently in development, will be in production in late 2006, with peak output of 180,000 to 190,000 barrels per day expected in 2007.

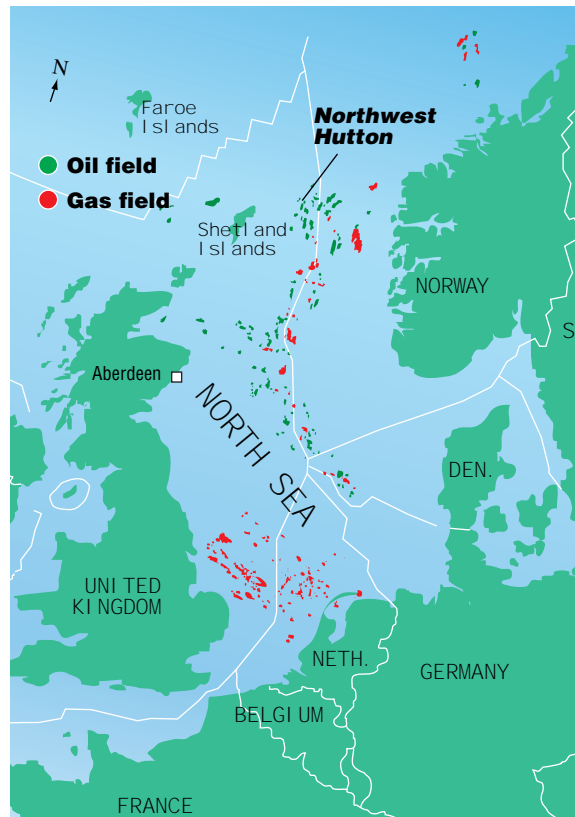
The discovery triggered a wave of extra interest and pushed the U.K. Department of Trade and Industry into an even more aggressive promotion of the opportunities to be found in the U.K., both offshore and onshore. The 21st offshore licensing round held alongside the 11th onshore round, which was open to applications from February to May 2003, witnessed a record number of new entrants willing to grab exploration licenses from all across the basin and the complete range of asset profiles.

Sixty-two E&P companies, from veterans to minnows and total newcomers, successfully participated, winning licenses in what became the most successful licensing round in the U.K. oil and gas industry's history. The wave of optimism triggered by these rounds and the great level of new interest cannot be measured. It holds a great number of promises for the local support industries, which were looking at declining production rates with some trepidation, and has signaled the beginning of a new era for the U.K.'s oil and gas industry.

With many more entrepreneurial, fast-moving and lateral-thinking organizations coming to the fore, the problem of decline has taken on a whole new dimension and the U.K. can look ahead with confidence. The next 10 years will be innovative and productive, and the U.K. will surely remain a considerable oil and gas producer.

It is now time to assess if the efforts put together by the existing players, the newcomers and their supporting partners from the financial sector, the service industry and the public authorities will be good enough to slow the decline and meet the U.K.'s rising gas consumption as well as its oil-export commitments with its ailing production. The future of Britain's security of supply and its status as a producing nation is at stake.

A large part of the country's industrial and technological development achieved in the wake of the oil and gas boom also needs to rethink its positioning. This report is addressing these issues at a crucial time in the basin's history, both offshore and onshore. □



Oil and gas fields in the North Sea have been prolific producers of revenues for companies and governments throughout the area.

Majors, Move Over

Opportunities onshore and offshore the U.K. are increasingly falling into the hands of non-majors.

The U.K. is going through a historical phase as a hydrocarbon-producing country. After having relied on small entrepreneurs for the development of its onshore underground oil and gas wealth, it let the state-owned and private majors take care of the major risks and the colossal investments required for the exploration and development of its offshore resources.

BP, the chief explorer and producer, expanded its reserve base, financial wealth and experience enormously thanks to its 35 years of active presence in the basin. As a state-controlled organization, BP contributed greatly to the U.K.'s economic growth and its global stance as an oil and gas producer during these three decades while the company grew to become the second-largest oil and gas operator in the world.

Meanwhile, Shell also expanded its activities throughout the U.K. offshore oil and gas development, alongside many of the largest European E&P operators, who, at different stages of their lives, moved into the U.K. Continental Shelf (UKCS) to grab the rewards, and the thrill of the North Sea.

Today, BP, still the key major operator of the basin, accounts for more than 15% of the drilling activity (comprised of exploration, appraisal and production wells) and more than 15% of the U.K. North Sea total investment. The super-major reckons that it continues to have 4.5 billion barrels of oil and gas to extract from the North Sea.

BP has also redeployed its activities on a number of other core areas, dubbed "strategic profit centers," in Angola, Azerbaijan, the deepwater Gulf of Mexico, Trinidad and Asia-Pacific LNG.

BP is also looking at strengthening its global position by working on major projects including in Russia, through the TNK joint venture. But despite such major strategic redeployments, the U.K. North Sea still accounts for around 20% of its oil and gas production and is expected to remain a major part of its business even when the new areas go into production in the years ahead.

New entrants inland

The North Sea has recently offered the opportunity of adventure to a number of smaller producers. Although the ticket to enter the U.K. offshore is expensive, the last decade has been particularly fruitful for the smaller player, as industry consolidation has released a lot of human resources very willing to use their skills, experiences and networks to join the fray.

Former BP, Shell, Exxon and Conoco personnel have joined forces and started a number of oil and gas minnows that are now at the forefront of the British independent sector. These early movers are now mostly in the production stage and their success has been emulated. The recent 21st offshore licensing round is in itself a testimony to that, as 36 out of the 75 applicants were total newcomers to the U.K. offshore, and were comprised mainly of business ventures set up to join the independent sector or new entrants with previous experience in other basins.

Eventually 27 new entrants were awarded licenses out of the 62 distributed in total. Alongside this offshore round, the 11th onshore licensing round was held, where eight licenses were awarded.

Total inland production cannot rival in any way the offshore figures. Onshore fields have yielded more than 25 million tons between 1975 and 1995, when a steep decline in yearly production set in. Production in 1996 was 5 million tons; in 2002, it was 2.6 million. This was from 24 fields.

During the same period, the offshore U.K. was producing 1.8 billion tons; in 2002, it yielded 105 million.

In the 1980s, a tax scheme allowed oil companies to offset their onshore exploration costs against their offshore costs. A robust inland exploration campaign followed, driven by the majors, which struck some interesting discoveries like the mega-field Whytch Farm, thought to contain 350- to 500 million recoverable barrels, and today still yields more than 2 million tons of crude per year.

With the withdrawal of tax relief however, the larger com-



Winds of 50 miles per hour or more in the North Sea make for sea action on platform risers. (Photo by Lowell Georgia.)

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panies made room for their smaller U.S. and U.K. counterparts. Though unable to maintain the previous levels of production, these assets nevertheless still offered some room for much more entrepreneurial types of ventures.

The U.K. onshore activities offer much less risk than their offshore cousins, and the rewards can be great. There have been 46 onshore discoveries since 1983, most of them generated by the tax incentive.

Recently, the good news has been provided by the smaller independents. In August 2003, Pentex Oil UK announced a discovery of more than 100 million barrels of oil equivalent on farmland at Avington, near Winchester, Hampshire. The privately owned company, which also has interests in the Balmoral Field in the North Sea and operates wells in Hampshire and the East Midlands, says the find is at least 30% larger than its biggest existing U.K. reserve, 15 miles away.

Pentex claims to be the U.K.'s third-largest onshore supplier of oil, behind Star Energy and market leader BP, and its find, thought to be the largest onshore Britain discovery in the last two decades, has triggered renewed interest in the inland basins.

A number of very interesting operators emerge from the onshore operating picture. Star Energy, today the second-largest inland producer after BP, has developed a unique model of oil and gas production and independent energy generation, acquiring four gas turbines generating 25 megawatts from gas that was previously flared.

The company is now exploring possibilities for new business developments. With the company's oil fields moving into depletion and the expected future growth in demand for gas storage, Star Energy is currently developing gas-storage projects in its declining oil fields. It is also working on a wind farm, comprised of 14 wind generators in four locations, epitomizing the birth and rise of home-grown multi-activity energy organizations.

Other small operators are looking at such examples of success with a mix of envy and confidence. Midmar Energy, a dynamic operator with experience onshore, is looking towards the company's next leap forward. Already working to redevelop five mature onshore assets in different parts of the U.K., the company has recently benefited from the government's push to help the U.K. offshore get a second wind.

The "promote" licenses, first offered to the industry during the 21st licensing

round in February 2003, are among the critical reasons for the round's success. They grant developers two successive two-year periods, the first dedicated to exploration, followed by two years for development.

During the first two years, the company exploring the license will pay reduced rental fees for the acreage, and at the end of this period will decide whether to drill the prospect, or to drop it.

Midmar Energy grabbed an offshore license under these terms with venture partner Providence Resources. This foray offshore the U.K. builds on the development of the company's onshore portfolio.

Besides its rewarded participation in the 21st offshore licensing round, Midmar is planning to drill a very promising offshore prospect in 2004 with its partner and license operator, Providence. Black Rock is in the Celtic Sea, offshore Ireland, and "could be our jewel in the crown," says Midmar chairman P.J. Redman.

Several other onshore players are emulating these examples. Odiham, Hamp-

The U.K. onshore activities offer much less risk than their offshore cousins, and the rewards can be great.

shire-based Egdon Resources is, for instance, technology-driven, looking at applying PC-based software tools and applying workstation technology to reprocess seismic data. The company is looking at assets that weren't correctly tested or drilled and aiming to realize their value at lower costs. It is also a 20% partner in Pentex's major Avington find and this should provide it with a welcome line of cash flow.

And there is more potential ahead. With the rather brutal stop in exploration activity following recent tax changes, a lot of "half-done" work is available.

"One of the opportunities in onshore U.K. is the fact that data is very widely available, through the U.K. onshore geophysical library and reprocessing the data is largely facilitated," says Mark Abbott, Egdon Resources joint managing director. "The U.K. onshore industry attracts

small companies, as virtually no major or even medium-size companies are present in this area, and the costs are low."

Andrew Hindle, second joint managing director, adds, "The main problem faced by companies like ours onshore is that there isn't the level of drilling activity that would drive the prices down for oilfield services and make the onshore U.K. really attractive."

Independents offshore

For some independents, onshore operations provide a springboard to offshore ambitions, where levels of production and reward can dwarf inland operations. Since the beginning of the offshore rush, 294 fields have been approved for production, out of which 275 were approved after January 1976. Today, there are 151 offshore oil fields in production, yielding between 5,000 and 5.3 million tons per year (like the Schiehallion Field operated by BP).

Besides the majors, a few independents are making a name, leading the pack and opening the way.

Venture Production, an independent, was successful in acquiring assets from Shell and Conoco. It is focusing on brown-field investments, in securing cash flow-generating producing assets, and exploring the fringes to reduce risk. The company is looking at releasing new volumes and reserves through the drillbit and has been investing heavily in the last years, capitalizing on these brown-field opportunities.

Venture Production managing director Bruce Dingwall, who is also president of the U.K. Offshore Operators Association (UKOOA), says, "It has taken a while for big companies to start rationalizing their portfolios. Promote licenses, a very welcomed novelty, are a joint initiative of industry and the Department of Trade and Industry (DTI).

"Today is a time when more appropriate operators are moving in the U.K. basin because of the materiality of assets to be found in the U.K. Continental Shelf. We are, for instance, quite happy to drill 10- to 20-million-barrel-of-oil-equivalent prospects, while big companies cannot do it, as it doesn't impact their bottom line."

After the acquisition of the Kittiwake assets and infrastructure from Shell, the company signed a duty-holding agreement with service provider and facilities management operator Petrofac. This partnership with service operators builds on a strong tradition of cooperation among oil companies to work cost-efficiently in the basin. It was started when Shell and Exxon teamed in the 1980s.



Above, a slug-catcher at Tullow Oil's gas terminal in Bacton. At right, Tullow Oil chief executive Aidan Heavey, who says there used to be a "big company" approach to the U.K. North Sea—usually expensive and slow—but that has been changing.



director.

Xcite Energy Resources, on its side, is looking at appraising a reservoir also acquired under the promote initiative during the 21st round and taking it through development. Its license covers an asset in the northern North Sea that has been proven to contain huge volumes of oil—around 650- to 700 million barrels, according to DTI estimates.

The main question mark concerns the quality of the oil, which has never been fully tested. Here again, a group of entrepreneurs is teaming to generate value on a proven, but untested, field, and are now looking at finding the most suitable approach to test the block with a strong view to developing it, most probably with partners.

Another interesting innovation is epitomized by Tuscan Energy, also a newcomer to the basin. Looking at brown-field opportunities, Tuscan was awarded a license for an abandoned field. The main novelty in this case is the fact that, highlighting the DTI's commitment to lateral thinking and innovation, it awarded Tuscan an operator license without it having any previous experience.

Tuscan's Dave Workman says, "But that also implied a lot of work on our side to present a good field-development plan contained directly in our license application. We are now working on redeveloping the field and will go on with drilling throughout 2004, drilling high-angle wells at 60 to 70 degrees instead of the original vertical wells."

The company's model seems to hold a brilliant future, as the first well drilled and commissioned started flowing at rates of up to 20,000 barrels of oil per day, proving the worth of the business plan.

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The North Sea partnership approach is unique, often featuring groups of up to 10 partners, all of them equity participants in an asset, and nevertheless achieving, in most cases, great levels of efficiency. This may create some sort of cultural shock for North American companies willing to enter the basin, says Nick Hooke, executive director of asset-management consultancy Challenge Energy Ltd.

"Most North Sea ventures are multi-company partnerships and therefore decision-making is taken by a group of companies, each with their own business agenda and processes. Most American E&Ps are used to owning 100% of a license and are consequently not used to anyone interfering with their decision-making."

Opportunities abound for medium-size companies like Venture, Palladin Resources and Tullow Oil. Dingwall says, "It is a great time to invest here, but very few people actually are. We aren't opportunity-strained in the basin."

Tullow Oil chief executive Aidan Heavey adds, "In our case, as well as in a few others, our experience abroad has been very helpful in defining new approaches in the North Sea. There used to be a 'big company' approach to the sector, usually synonymous with expensive and rather slow.

"In the old days, fields were being shut down for a month for maintenance while it is now an ongoing process achieved without any shutdown.

"There is also a very cooperative approach between smaller players, trying to share costs and cut overheads by putting in common facilities, sharing transportation costs, and such. The industry is changing, and after watching the majors gobble up independents during the past five years, we can now see the majors breaking up into small independents, as the sizes of projects are much more suitable for smaller operators."

Many opportunities are opening up for total newcomers, especially on the more marginal side of the business. Promote licensee Corsair Petroleum, without linkage to its North American cousin, is for instance looking at developing an asset thought to contain heavy oil, therefore calling for different expertise than in most of the rest of the basin.

But the partners behind the venture are very confident that their combined experiences across the scope of offshore petroleum exploration and production will turn Corsair into a successful company, should its licensed asset hold its promises and the quest for partners bring to the company a successful combination of expertise and financing.

"Looking at the Gulf of Mexico, you can see a lot of small companies developing assets and developing value that the majors might not even see. One of our advantages here is that we are home-grown and therefore know about the pitfalls of the U.K. sector," says Simon Gorringe, Corsair Petroleum managing

About this project, Stephen Timms, energy minister, says, "This is excellent news for the North Sea. Government and industry have worked closely to ensure that the UKCS is still an attractive place for exploration and development. The revival of this once dead field shows this collaboration is working."

Challenges ahead

Yet, despite such successful examples and innovative approaches, difficulties remain. With high oil prices and the majors looking at maximizing the value of their assets when they farm out their interests, acreage doesn't go for a bargain. Apache Corp.'s recent acquisition of BP's 96.14% interest in the Forties Field exemplifies that.

Described as a win-win for the North Sea by the energy minister at the time, the sale triggered a lot of interest from the U.S. and was well received by the financial markets.

Discovered by BP in 1970, the Forties Field is the largest ever found in the U.K. sector of the North Sea, and still ranks eighth in production and reserves after having produced approximately 2.5 billion barrels to date. Apache's acquisition economics estimate average 2003 pro-

duction of 45,100 barrels of oil per day and net proven reserves of 147.6 million barrels.

This deal should underline the fact that with more reasonable prices per barrel, the deal flow could increase considerably in the months and years ahead, notably featuring more asset deals between smaller companies.

The acquisition also epitomizes one of the issues highlighted by some UKCS players that may help to explain the sluggish pace of investment from independents. From the sale of Forties, BP retained ownership over the pipeline infrastructure tied to the field's production. This decision makes perfect business sense, as it is an economically viable infrastructure with a potential for tie-backs into the pipeline from operations in the vicinity in the years ahead.

With most of the pipeline infrastructure in the hands of the majors, smaller players are very prompt to denounce the big companies' abuses of their dominant position, or indeed monopolistic posture and their lack of understanding in defining win-win access tariffs positions.

When looked at closely, the situation isn't so dramatic and most of the problems encountered are actually down to

For some independents, onshore operations provide a springboard to offshore ambitions....

delays in putting a deal together.

However, the DTI has taken into account some of the concerns of the industry and has worked closely with some of its representatives to put together an infrastructure access code, formalizing relationships and conditions of access between infrastructure owners and producers.

The issue of decommissioning of played-out fields has also been presented as a potential headache in the basin, as some of the infrastructure in place is more than 20 years old. The cost of abandonment could be a potent deterrent for new entrants who might not have the financial shoulders to bear it.

A number of innovative approaches



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have been adopted to tackle the decommissioning problem. In some cases, majors like BP and Shell have transferred their assets and infrastructures to U.K. minnows while agreeing to retain the cost of abandonment. Obviously, the majors have made provisions to take abandonment into account, but are also expecting that the transfer of ownership will delay the end of a field's life and the associated costs of decommissioning for as long as possible.

Finally, the major hindrance to the successful second wave of development of the U.K. oil and gas industry, and most notably of its offshore dimension, is the release by the majors of fallow acreage, exploration blocks, proven discoveries, brown fields and other assets lying undeveloped and waiting for the right combination of risk-taking and innovative thinking.

Here again, things are moving in the right direction, as the industry and the DTI are cooperating in the so-called "fallow field initiative," to release more acreage and opportunities for smaller players to enter the fray. The ball is now in the camp of the majors, who retain rights on most fallow acreage and are widely expected to move ahead speedily

***"We are...quite happy to drill 10- to 20-million-barrel-of-oil-equivalent prospects, while big companies cannot do it, as it doesn't impact their bottom line."
Bruce Dingwall, Venture Production***

to give the basin more room for growth.

These issues are being tackled efficiently and the North Sea picture is becoming rosier by the day. U.K. independents have interesting, and rewarding days, months and years ahead.

Onshore, the picture is filled by small entrepreneur-driven companies, some of them already with very sizeable operations. The innovative approach preferred by most of them has been proven successful in many cases and one can expect more in the years ahead. It may be fuelled by increased levels of cooperation among U.K. and North American companies, and applied to the problem of mature onshore oil and gas production.

This could in turn fuel even more deregulation, liberating a sector that is still kept under check by local regulatory framework and the local population's

aversion to oil production.

Offshore, the picture is even more exciting. After years of disillusionment, the U.K. North Sea is addressing the challenge of production decline in a wholehearted manner.

Great ideas are coming to life, newcomers are showing enthusiastic interest and the U.K. government has proven its will to sustain the momentum and extend the basin's life term by increasingly knocking down barriers to entry.

It is now the turn of the operators to demonstrate their commitment to a secure, yet costly, area of operation. With the application of technology and the coming together of experiences from the North Sea and other mature basins like Canada or the Gulf of Mexico, the North Sea should retain its status as a major producer for at least a decade to come. □

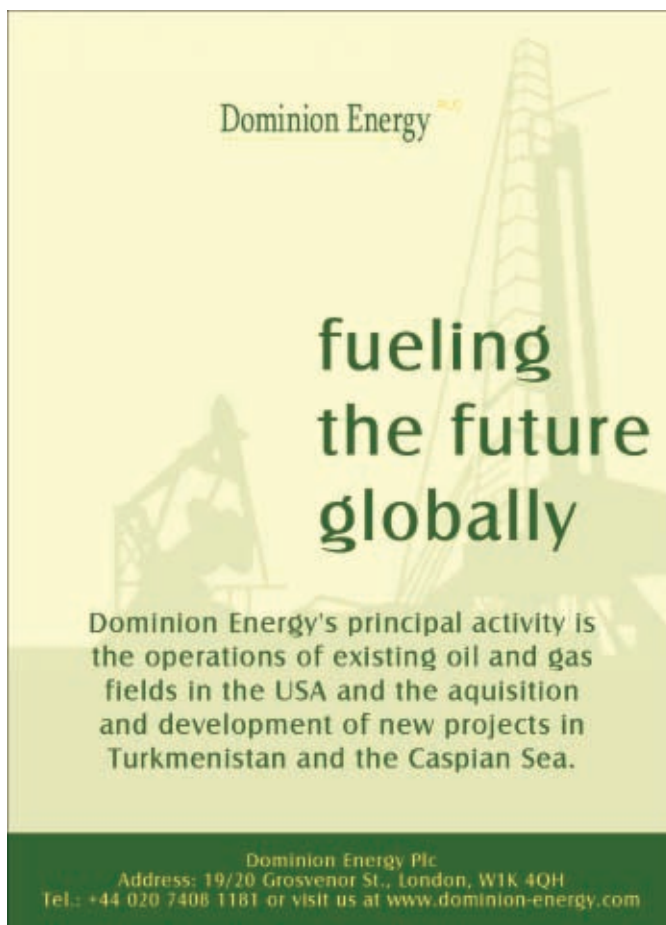


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Bracing for a Sea Change

Innovation among service-company offerings in the U.K. North Sea is allowing many operators to continue production cost-efficiently.

From the outset, the U.K.'s oil and gas industry was able to build a large part of its development on the back of the country's long-established and well-developed industrial base. Providing capable engineers, technicians and a solid supply chain, the British industrial sector was able to sustain its overall growth, which went some of the way in reversing the steep decline of traditional heavy industry in the second part of the last century.

A direct inheritance from the Victorian industrial revolution, the textile, mining and metallurgical industries plummeted from the post-war years onwards, but some engineering firms were able to grab the benefits of the birth and rise of a new sector of activity—the offshore oil industry.

While the onshore exploration and production industry was marginal in fuelling the development of a service industry, the vigorous development of offshore production activity following the first oil shock gave a very welcomed breath of life to two areas in particular.

Aberdeen, a city on Scotland's eastern coast, was looking at its traditional fishing activity with an increased sense of doom, as the European Economic Community (now the European

Union) brought union fisheries under a common set of stringent norms and fishing limitations. The oil boom reverted the gloom and turned the city into the offshore petroleum center of the U.K., and indeed Europe, with the Norwegian city of Stavanger playing a similar role on the eastern fringes of the basin.

Aberdeen witnessed a flow of oil and gas workers and industrial operators coming and settling down in its region, creating jobs and lifting the local economy and spirits alongside the production levels off its shores.

Today, the city is using these 30 years of development and accumulated experience to claim the title of "Energy Capital of Europe," notably putting together incentives to attract and promote technology-intensive industries linked to the oil and gas sector and to the development of alternative renewable energy sources. A number of ambitious wind-farm projects are in the pipeline along the northeastern Scottish coast.

The other region that saw its economy regenerated by the birth and rise of the U.K.'s oil and gas industry is northeast England. Traditionally known for its heavy metallurgical industry and ship-building, the region had been declining since the early 1960s. The development of offshore exploration activities allowed shipyards to use their docks to manufacture platforms, manufacturers to work on topsides, and steel foundries to turn to pipe-making.

Cities like Newcastle benefited strongly from this second industrial revolution which helped to offset the decay of their industrial facilities. Today, the level of activity cannot be compared to what was the case in the late 1970s through the mid-1980s, but some fabrication yards have been catching the wind of change and have started developing competencies in pressure vessels, FPSOs or subsea equipment, managing to conserve the strong industrial tradition of the region.

The service providers

Today, U.K.-based service operators range from engineering firms to fully integrated service companies. One of the major engineering, procurement and construction (EPC) operators is Wood Group, based in Aberdeen, which grew from a family owned fishing business to the rank of No. 1 service company in the U.K. It has become a market leader in engineering design and project management-services, providing "life-of-field" engineering, from green-field to infield engineering, production enhancement and maintenance management, to decommissioning of platforms.

Employing 12,000 people worldwide, the group demonstrates the strength of the U.K. service sector. Ian Wood, chairman, says, "Out of the U.K.-based companies, we are probably the one that has the biggest impact on the U.K. oil and gas service sector."

Clearly, the role of such an organization is expanding beyond its direct scope of business, as Wood adds. "We have a very significant role in the supply chain by the sheer size of our operations. But we also take a direct approach by running seminars for local SMEs (small- and medium-size enterprises), help-

UK-9



A tugboat brings a ship into Aberdeen's historic harbor. (Photo by Lowell Georgia.)

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A large offshore oil rig is silhouetted against a dark, cloudy sky at dusk or dawn. The rig's structure is complex, with a tall central tower emitting a bright flame. In the background, another smaller vessel is visible on the dark sea.

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ing them to integrate themselves into the supply chain and expanding ways on how they can cooperate amongst themselves and with us. As we move internationally, we also try when possible to take those who can offer potential services to our foreign customers.”

Competition is lining up from the likes of Expro Group. Employing more than 2,000 people worldwide, it has become an innovative leader in oilfield technology aligned with the needs of its customers. In addition to its presence in the U.K., Expro Group has a corporate office in Houston and facilities in Broussard, Louisiana.

Chief executive officer Graeme Coutts says, “Expro is a top-tier player in the global service industry. As such we require state-of-the-art facilities to support our activities and our growth aspirations. The Gulf of Mexico, and both the deep and shallow U.K. Continental Shelf (UKCS), remain very important to the future development of Expro. But we believe that the U.S. market will underpin the strategic growth plans for years to come.”

“Exit strategy from the North Sea? No way.”

***Ian Wood,
Wood Group***

Amec Plc, an international provider of specialized services and engineering solutions for clients in manufacturing, commercial, infrastructure and process industries, is another key operator in the U.K. basin. It is also headquartered in the U.K. and although oil and gas isn't its main field of business, it has made a name on this front too, playing a major role in the development of the North Sea offshore infrastructure.

Internationalization

With the maturing of the industry, some service companies have developed major international dimensions, to the extent that foreign operations now represent the major part of their activity.

Internationalization works both ways, however, through acquisitions abroad (like Wood's purchase of Houston-based Mustang Engineering in August 2000) and through the entrance of foreign service operators into the U.K., bringing with them their expertise and pragmatic approach to development at a time when it is largely required.

“U.K. offshore engineering service
oilandgasinvestor.com • February 2004

companies had a strong tendency to 'over-engineer.' We dropped this approach when we internationalized that environment in the 1980s and 1990s and opened up to the use of fit-to-purpose equipment, notably with U.S.-made topsides and platforms. Now, we have learned to combine the two approaches, thanks to this influx of foreign expertise," says Wood.

An aggressive acquisition campaign and successful internationalization of the U.K. upstream sector helped to fuel the global development of the local service sector and put it in a position to become a serious contender for major projects in the Caspian, West Africa and the former Soviet Union. The British service sector has also made its way in the Gulf of Mexico in recent years, but the North Sea is still very much a core area for most of them and isn't considered to be abandoned.

"Exit strategy from the North Sea? No way," says Wood. "We see it as a mature area with many more years of productivity. The basin still has got a huge number of brown-field opportunities and a large number of fallow fields that will offer much work for the service industry in the U.K."

Increasing safety

The service industry has also been building on the basin characteristics, which are unforgiving in many cases and necessitate a particular approach to safety, health and environment. When tragedy struck in July 1988, the basin was changed forever. On July 6, a fire broke out aboard a production platform operated by Occidental Petroleum, followed by an explosion and, in what became the worst accident in the offshore industry worldwide, 167 men died.

The Piper Alpha disaster was a turning point in the U.K. offshore industry and marked the low point of safety in the basin. From then on, the number of accidents has decreased dramatically as more stringent rules and regulations were imposed and observed.

Some organizations were able to build on this necessary threshold and developed their own products to answer the needs of the industry. RGIT, an offshore survival and safety training company, merged with Montrose, an organizer of fire-fighting courses, in May 2000 and is today dispensing compulsory safety and survival courses to offshore workers from the British and Norwegian sectors of the North Sea.

With the change in the shape of business of the majors and the increasing number of new entrants in the basin, or-



Offshore personnel return to land via North Sea helicopter transportation. (Photo by Lowell Georgia.)

ganizations like RGIT Montrose have had to address the challenges of change, notably providing their customers with the possibility of totally outsourcing their health, safety and environmental (HSE) training.

The safety culture, force-fed into the sector following the Piper Alpha tragedy, is now widely exported. "The culture of safety is spreading across the industry, and we can bring the North Sea approach and experience to the world, and build on the most stringent set of norms," says Murray Strachan, RGIT Montrose group managing director.

Similarly, marine operations have developed, notably through the security requirements for safety standby and supply vessels being moored to offshore facilities at all times. Local fishing companies struck by the crisis in the 1960s managed to develop and expand their role in this area of operations, later on expanding into mooring, towing, transportation, cable- and pipe-laying, offshore catering and a wide range of necessary operations to sustain E&P operations offshore.

Cooperation

With the maturing of the U.K. offshore basin also came the need to reinvent the market approach for the service sector. Based on the traditions of high-level cooperation between oil companies in the basin, a number of innovative approaches stand out, notably based on the spread of cooperation between service operators.

The Sigma 3 project epitomizes this cooperative approach. Set up in April by Amec, Wood Group Engineering and KBR, a business of Halliburton, to support Shell U.K. Exploration and Production (Shell Expro), Sigma 3 provides

integrated services for a seven-year contract on behalf of Shell Expro worth an estimated 750 million pounds to operate in the U.K. sector of the North Sea for Shell, Esso and other co-venturers.

"Sigma 3 is a very pragmatic approach. We have skills that our competitors don't have and they have skills that we don't have. So we put all our skills together to serve Shell and also managed to develop a cooperative approach on the cost front," says Wood.

Expanding on this cooperative approach, Bill Murray, chief executive of the Offshore Contractors' Association (OCA), points to the role played by the OCA in developing the spirit of cooperation among companies.

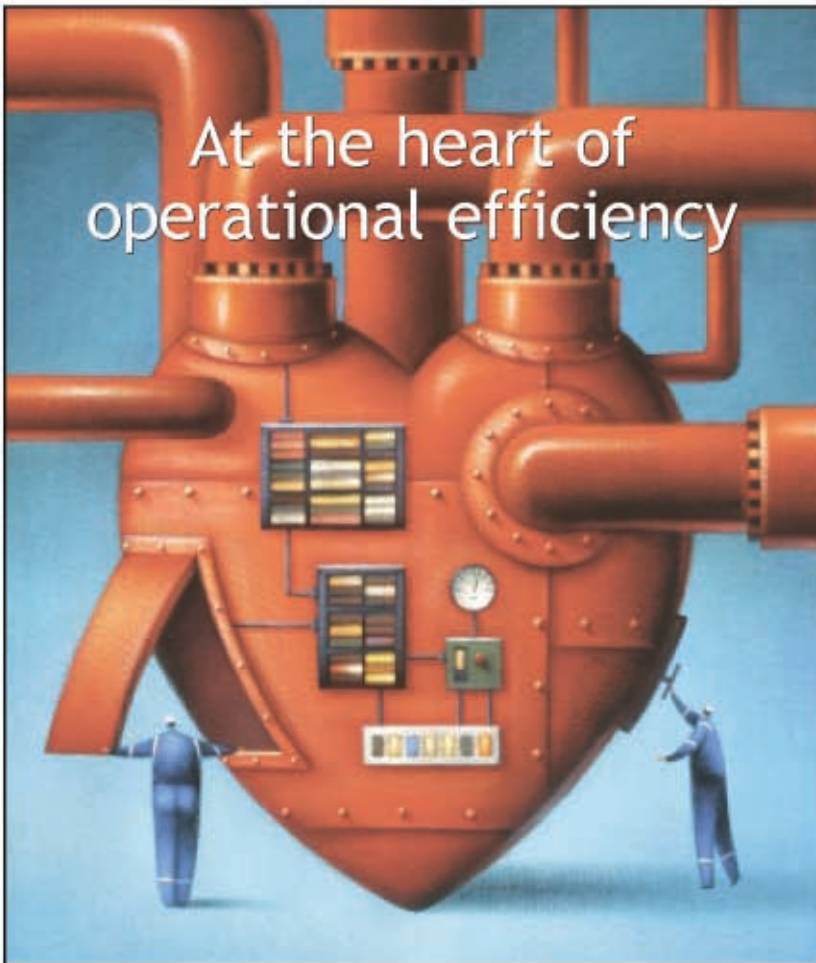
"This cooperative approach would not have happened to the same extent had not the association published codes of good practice for a number of years to which our members have signed up," Murray says.

"As an example, all the workforces on the Sigma 3 project should be paid roughly the same, as we negotiated, on behalf of the member companies with the trade unions and we produced baseline terms and conditions. Similarly, we took care of good contracting practices for transfer of workforces and in matters of standard contracts. All these have contributed to the ability to nail these contractual agreements together and we believe this is a great contribution from our side. The overall lesson from these operations is that companies can cooperate together for better business."

BP's MAST initiative

Another initiative that attracted attention before Sigma 3 was the Mast Experience, brought to life in 1998 by BP.

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Having recognized in the early 1990s that a different approach was required for the management of its mature fields, BP brought together the Beatrice, Buchan, Clyde and Thistle fields, along with their respective satellites, to form a single asset named MAST.

The net result was a big success involving the coming together of an alliance of various contractors that together managed to increase the value of BP's assets. The four fields were consuming 17% of overheads, yet contributing 4% of production.

These fields were each at an advanced stage of maturity, but did not share many other characteristics. Beatrice, with its series of platforms, is in the environmentally sensitive Moray Firth. Buchan was one of the very earliest floating production facilities, with subsea wells tied back to the platform. Thistle, in the northern North Sea, was one of the first-generation platforms with many wells, so the estimated abandonment costs were high. Clyde was much more modern and in the central North Sea.

BP's goal was to improve cash flow, extend field life and defer abandonment by increasing reserves, improving production profiles and lowering costs. The super-major wanted to focus on core skills and looked to the marketplace to provide the expertise and operational experience required for those activities perceived as noncore.

This was a bold move at the time as some of these activities, like reservoir management, were being outsourced for the first time in the North Sea. An operating alliance of different contractors was formed to manage the fields, and members were given challenging targets and incentives for extraordinary delivery.

The seven alliance companies were given various responsibilities, for the topsides, the well-management, subsurface operations and other tasks. Teamwork was a key contributor to the success of the group, featuring interesting innovations like board meetings held on the platforms.

During the first year of MAST operations, operating expenditures were reduced by about 20% across the board for the four fields. Significant savings were achieved in logistics, marine helicopters, and other areas. Headcount cuts occurred everywhere too, helped by cross-training onshore and offshore personnel.

Production profiles were improved by additional water-injection capacity generated by rerouting some of the topsides systems, and additional reserves were realized through infill drilling and satellite development.

The most tangible result was that abandonment was deferred by a number of years. Before MAST, the four fields would have reached the end of their lives between 1995 and 1999. This deadline was pushed to beyond 2000 in all cases and the assets are still producing today.

Field management

Besides this and other innovative approaches, some of the local service operators have built their competitive edge on a radical rethinking of their client needs and a remodeling of their businesses. Founded in Texas in 1981 and today based in London and Aberdeen, Petrofac is a name that has stood out during the last decade.

Now with more than \$700 million in revenues per year, the company has expanded its presence in the Middle East, the Caspian region and the former Soviet Union and has added facilities support and operational management to its EPC activity, notably through the acquisition, in December 2002, of Aberdeen-based PGS Production Service. The company has announced its ambition to become a world-leading, fully integrated EPC and facilities management company.

The dimension of its activity that may make the difference with the competition in the years ahead is Petrofac's capacity to provide financing and take equity participation in selected projects. Unlike other attempts at contract-to-produce experiments in the 1990s, Petrofac co-invests as a minority for alignments, only where it can drive value for customers through application of its engineering, construction or operational services. Petrofac remains strongly service-led.

Petrofac also recently struck facilities-management deals (not including equity participation) with Paladin Expro, Tullow Oil and Venture Production. All three companies are amongst the most prominent of U.K. independents. These deals were following on five years of successful management for ChevronTexaco's Galley Field.

In the case of Paladin, Petrofac Facilities Management took over responsibility for their Montrose, Arbroath and Arkwright assets in May 2003. The deal with Tullow Oil came as a blessing for this company, as it was struck straight after Tullow had purchased the entire ConocoPhillips interest in the Hewett assets in the southern North Sea sector of the UKCS.

That allowed the oil company to manage a smooth transition, using the service operator's experience to successfully take onboard the management of six

"The operatorship is a key issue in the North Sea...."

**Aidan J. Heavey,
Tullow Oil Plc**

gas-producing installations (three unmanned, the others connected to a central complex) as well as the operation of the Bacton onshore gas terminal in East Anglia.

It was the first time in the U.K. that a service operator was given responsibility for an onshore gas terminal, demonstrating again the change in business approach that has been filtering through the sector.

Aidan J. Heavey, chief executive of Tullow Oil Plc, says, "The operatorship is a key issue in the North Sea, as the companies who operate have to have very specialized staff and very strict HSE departments and policies in place. To take over the operatorship, you have to obtain the approval of the Department of Trade and Industry.

"What has changed, is that a lot of the duty-holding activities, basically the people on the rig doing the day-to-day work, is passed on to contractors, but the actual operatorship is still maintained by the companies. So companies like ourselves would have a very specialized operating group and we subcontract the duty-holding job to someone else, like in our case in Bacton and Hewett."

In the case of Venture Production, Petrofac Facilities Management took over operation of Kittiwake, a production platform and oil-loading facility previously owned by Shell. The deal included the Mallard oil field, a subsea development tied back to Kittiwake, as well as the Goosander, Grouse and Gadwall oil fields, which have yet to be developed.

Rob Pinchbeck, Petrofac Facilities Management managing director, says "Our aim in this business has long been to develop as a turnkey operator, because we saw many more companies coming to the North Sea, notably much smaller companies that did not necessarily have the capacity or the interest to develop operating capability.

"The logic was that the oil company would do the reservoir management and investment management, and the service company would do the production management. If you look through the independent oil sector, they tend to be mostly exploration-driven rather than production-driven."

This service is, in any case, widely welcomed in a basin that is eager to find cost savings, but also for companies that as new entrants, may not benefit from any offshore production experience, while their financial lifeline resides in the fast and steady flow of oil or gas from their assets.

Besides which, Petrofac's readiness to become a direct stakeholder through equity participation in the management deals is a guarantee for the client that the service operator will seek an aligned common interest in the production success of an asset while also guaranteeing a fair service fee.

Such a scheme was organized in Algeria's Ohanet gas project, where Petrofac is co-venturer, alongside eight partners including Sonatrach, in a risk-service contract. The U.K. service operator, besides being associated 50/50 with ABB Lummus Global in the EPC for a gas-processing facility, is also receiving a share of the liquids production over a target eight- to 12-year period.

Future contracts

This kind of agreement promises a great future in a mature basin like the U.K. offshore, where operating costs are the biggest headache in the face of declining production levels and where new entrants might be willing to go for innovative approaches for asset management.

The success of facilities management, and the announced will of other U.K. service operators to move into such duty-holding schemes, is a clear indication that the U.K. service sector is looking at the future with confidence.

Its successes abroad and the second breath of the North Sea are reasons for optimism. But the keen interest from North American operators in the recent licensing rounds is also expected to trigger a wave of interest from North American service players in the years ahead.

Most North Sea players are keen to draw parallels between the history and profiles of offshore development in the Gulf of Mexico and the UKCS. It is also clear that service companies from the U.S. and Canada have developed strong competitive edges in mature basin operations, end-of life and remedial field work and tailor-made, cost-cutting solutions to meet customers' exact requirements.

This possible increase in the competition levels could bring even more interest in the U.K. offshore's renewed lease of life. At a time when decommissioning and the future cost of abandonment is a worry to some operators, it allows the basin to refocus on some of its more immediately optimistic prospects. □

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Financial Kingdom

Long experienced in large capital structures, the U.K.'s financiers are developing capital-provider programs that more closely fit the needs of smaller energy-sector players.

The U.K. has a long-established position as a world financial center. Just as the country's maritime and industrial traditions fuelled the growth of banks in the 19th century, oil and gas development from the 1970s onwards has also driven the growth of financial services. Today, the U.K. oil and gas industry's second breath of life and the arrival of smaller independent players demand new financial tools and ample supplies of capital from the major banks.

Compared with North America, Britain's financial institutions are relatively unfamiliar with the requirements of mid-tier and small independents. The U.S. and Canada have a wealth of "boutique" investment banks and financial institutions specifically dedicated to the oil and gas business. Meanwhile, the U.K. has only major banking institutions and is lacking the smaller operators that can offer finely tailored financial engineering to fit different phases of a project, and even small ones.

But things are shaping up, and with the changes in the sector during the last decade, financial institutions are rethinking their approach to the industry, no longer characterized by an accumulation of mega-projects with financial needs passing the \$1-billion mark.

The first sign is the strengthening of the presence of venture capital and private equity funds in the industry. Leading British venture capitalist firm 3i, has, for instance, invested heavily in both the upstream and the service sector, with more than 30 capital and equity participations in the industry. In the U.K., it invested in the small Venture Production, helping the company finance its growth and become the largest holder of acreage amongst the independents.

3i also invested \$40 million in service and facilities-management firm Petrofac, helping fuel the development of its North Sea and international businesses.

Meanwhile, oil and gas investment banks like Houston-based Simmons & Co. International have moved in, with offices in Aberdeen and London. They have been busy scouting for technology-intensive companies in need of financial engineering, while being closely associated in other deals with E&P operators and service providers.

Besides such cut-to-fit solution providers, the largest banking institutions have also been working hard to develop offers. A key operator is the Halifax Bank of Scotland (HBOS), which in the 1970s was the first British bank to establish a specialized oil and gas financing unit. For more than 10 years, the bank has been the top senior debt provider to the U.K. management buy-out market and one of the pillars of the oil and gas industry.

Since participating in the development of the Forties Field, the bank has deepened and expanded its knowledge of the U.K. North Sea to become the recognized industry leader in financing the oil and gas sector in the U.K. and with interests ranging worldwide.

In 2003 it was involved in arranging oil and gas deals worth more than \$1.3 billion and participated in deals worth \$1.4 billion. It currently has mandates to arrange further loans worth

nearly \$800 million, and has other well-advanced deals in the pipeline.

Gerald Kenny, Bank of Scotland head of natural resources, says HBOS aims to remain the leading arranger of loans to independents in the U.K. "Our business is expanding in size, product range and geographical coverage and we believe we can provide a second-to-none service to the industry.

"There are exciting opportunities for the independent sector in the North Sea and there is no bank better placed to assist those companies that wish to invest there. However we recognize that this is very much a global industry and we are happy to provide financing solutions for our clients operating in many regions around the world."

Its rival to predominance in the British industry is the Royal Bank of Scotland (RBS). Fighting hard to quell the reputation for conservatism attached to the U.K. banking sector, RBS was involved in the North Sea since the beginning and a strong player in the U.S. through its Houston office. It has been a key



Castle Dunnottar perches on the rugged coastal cliffs of the North Sea near Stonehaven, Scotland. (Photo by Lowell Georgia.)

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Intrepid Energy (North Sea) Ltd

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development,
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Ramco Seven Heads Ltd

Development
of Seven Heads
gas field, Irish Sea

£60m

April 2003

Venture Production plc

Refinancing, oil field
acquisition &
development costs, UK
North Sea
& Trinidad

US\$175m

March 2003

Burrup Fertilisers Ltd

Construction of ammonia
plant, Burrup Peninsula,
Western Australia

US\$270m

December 2002

Dana Petroleum plc

Refinancing and oil field
acquisition,
UK North Sea

US\$75m

June 2002

Lundin Petroleum AB

Acquisition of
Coparex
International,
France

US\$172m

June 2002

AWE Petroleum Pty Ltd

Development of Yolla Gas
Field, offshore Victoria,
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Insurance leader Marsh has developed an instrument for containing the risks of decommissioning costs, says John J. Lapsley, chairman of the Marsh marine and energy practice.

partner for some new entrants and small independents as well as big E&P projects undertaken by the majors.

For RBS, the North Sea is a core area. "We have been slightly more innovative than our competitors, notably investing equity in a few start-up companies, which was a big step for a commercial bank," says Peter Buchanan, director of the oil and gas division at RBS.

"The thing that makes us different is that we are a truly oil and gas bank, with a long experience in the North Sea, including throughout the downward cycle."

The conservatism of the banking sector is an element sometimes presented by E&P players as hampering the full development of the oil and gas sector because of a lack of significant underwriting capability and debt products. The limited availability of mezzanine debt is especially resented.

"The lack of mezzanine here is simply due to the fact that there hasn't been the demand for it up to now. In the U.S., with thousands of oil companies against a handful here, the demand is much more important and filled by specialist providers of mezzanine. Over here, you see a much more traditional capital structure. Nevertheless, a number of smaller companies are now starting to get more interested in using the leverage to increase the equity return and this is now seen as an opportu-

"The lack of mezzanine here is simply due to the fact that there hasn't been the demand for it up to now."

**Peter Buchanan,
Royal Bank of Scotland**

nity on both sides, the companies and ours."

The influence of the North American financial sector is very noticeable, with U.K. oil and gas attracting equity and now mezzanine from the big banking operators. But a wider spread of innovative products and attitudes is required to make sure local players don't turn systematically to the U.S. or Canada for the financing of their North Sea activity, through equity, debt or private finance.

Already, a number of new entrants are indicating they strongly believe they will find more receptive ears and understanding for their project financing and partnership quests on the western side of the Atlantic.

Other financial operators are also working on tackling specific North Sea issues. With decommissioning lurking on most of the early North Sea infrastructure, risk insurance leader Marsh has developed a financial product to address the issue in a cost-efficient way.

"This issue is certainly a matter of concern for big companies although they can absorb it in their balance sheets, but for smaller companies that may have a nonoperating interest in an asset, the ul-

timate cost of decommissioning may eventually prohibit their ability to attract capital," says John J. Lapsley, chairman of the Marsh marine and energy practice, headquartered in London.

"Our product is a way of paying for decommissioning now, in a very efficient financial transaction. This product is unique to the North Sea and has been well received by the sector."

All those operators are working hard to adapt their services to the existing and upcoming challenges presented by the U.K. oil and gas industry. In a maturing basin, with smaller entrants and an increase in new deal flows, a strong, innovative and lateral-thinking financial community is a must.

Looking at the way the sector is structured in the U.S. and Canada, a number of local E&P operators wish the U.K. were offering the same facilities. But with the increased interest in the basin by North American operators, and the larger presence of U.K. financial institutions in the oil and gas industry in the U.S. and Canada, one may expect a great deal of cross-fertilization to occur in the years ahead, for the benefit of the industry, in the U.K. and beyond. □



A view of Scotland's spectacular Highlands. (Photo by Lowell Georgia.)

“Our track record and expertise in the sector make us the bank of choice for independents in the North Sea.”

Steve Mills
Head of Oil & Gas, London



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Taxation

Recent U.K. tax law changes were shocking to some existing players' field economics but may prove to be a boon to new players.

Despite its seeming fiscal steadiness, the U.K. oil and gas tax regime has witnessed a number of changes throughout its development, especially during the last few years. The change that has had the most impact on the industry was the 10% corporate tax increase introduced in 2002.

It came as a surprise to the industry, as it was believed that stable, low oil prices in the late 1990s had removed the threat of increased taxes. The Treasury argued that the changes were brought in to ensure that companies paid their fair share of taxes as well as to encourage "long-term investment" in the sector.

Foreign investors in particular have been put off by this change, as they believe the U.K. in general is a good but expensive place to do business, making it an even larger investment for them.

Investors need stability when committing money to long-term investments. However, even after the initial changes, new ones have occurred about once every nine to 10 years. Although there may be no more giant fields to be found in the North Sea, one would expect many development projects to last for more than 10 years, and the tax regime at the end of a project life can still have a strong influence over the project's economics.

Having said this, despite the 10% corporate tax increase, marginal tax rates for new oil and gas fields remain at 40%, and are still some of the lowest in the world.

Overall, these measures have been revenue-raising for the government and driven by political factors, but there have also been beneficial developments. According to U.K. Energy Minister Stephen Timms, the government has been focusing on providing incentives to specific areas of the industry that have been perceived as weak. These include:

- Changes to the capital allowances regime giving 100% first-year allowances for the majority of U.K. upstream capital expenditure.

- Abolition of royalty from January 2003.

- PRT exemption for tariff income arising from new business from January 2004, in order to promote further use of existing North Sea infrastructure.

To anticipate future changes in the tax regime one needs to take into account the declining North Sea reserves and reduced exploration. The larger operating companies are focusing their activities in Africa and Russia while smaller players are coming into the market to develop mature assets. The government's strategy to extend the life of the North Sea and maximize recovery is intended to encourage exploration and to further the use of infrastructure.

The Fallow Fields Initiative is intended to persuade the majors to divest their portfolio of assets that do not fit their strategic review, but this has been a very slow-moving process. While some smaller developers have been successful working



Tax law changes have been designed to, in part, provide incentives to specific areas of the industry that have been perceived as weak, says Stephen Timms, energy minister.

on certain mature assets, some of the larger operators have yet to divest other assets that have not seen any development for years.

In 2004 the government will need to have a good strategy in place as to how it will be able to encourage brown-field development where only larger independents or the majors will be able to play a leading role. This will very probably be a point of friction between the industry and the government.

Investors from the U.S. and elsewhere looking to invest in North Sea projects will be concerned as to what the tax regime is likely to be for the whole of their expected investment period. Given past changes, it is unlikely investors will ever feel comfortable that there will not be further major changes to the regime in the future.

Abandonment issues

The abandonment issue is one of real concern as some of the sector's major fields near the end of their economic life. To date, only a number of small fields have been abandoned and most of these have used floating production facilities or have been linked by a subsea tie-back to another field.

Where existing infrastructure has been removed, the facilities have been on Southern Basin gas fields. The facilities have been removed by a simple crane lift operation.

Historically, tax relief for abandonment expenditure was available as a normal disposal of plant and machinery or under the abandonment allowance regime, which gave a 100% immediate deduction for the costs of demolition of plants and machinery for the purpose of closing an oil and gas field.

The Inland Revenue's interpretation of this legislation was strict, and the cost of "mothballing" assets for possible future use or of preparing an asset for reuse was not allowed. One consequence was that the assets could be more economic to sell than preserving or attempting to reuse them.

To address this, in 2001 the 100% immediate deduction was extended to all expenditure incurred in decommissioning a field provided:

- Expenditure incurred on decommissioning (explicitly defined to include mothballing and reuse costs) U.K. offshore infrastructure;

- Decommissioning complies with an approved abandonment program; and

- Plants and machinery are not to be replaced.

Where a company has discontinued its ring-fence activities (that is, has ceased oil and gas production) and incurs abandonment costs within three years of the cessation, the company can claim a 100% capital allowance for the spending in its final trading period.

While this enables businesses to receive a 100% balancing allowance for the final period of the company's trading period, the three-year time limit may be inadequate to guarantee effective

tive relief, particularly if the field has a common transport or terminal facility, in which case full abandonment cannot proceed until the last-user field ceases production.

Where a participator in a field meets another participant's abandonment costs under the term of an abandonment guarantee, that expenditure will generally qualify for relief as though the original participator had incurred it.

Where the company has ceased to trade, losses resulting from abandonment can be set off against profits of the trade in the preceding three years. Many in the industry have concerns that this period is inadequate, particularly as fields tend to be less profitable toward the end of their life and thus the losses available for carry-back can outweigh the profits available to be relief.

Access to infrastructure

The investment required to build the infrastructure needed to transport oil and gas from offshore fields is characterized by significant costs and irreversibility. This can lead to conflict between the efficient use of resources and the wish for greater competition.

The efficient use of resources requires no unnecessary duplication of infrastructure while greater competition requires alternative pipeline systems to be available to producers. Effective regulatory action can prevent the exploitation of local monopoly positions where competing pipelines do not exist.

The evolution of offshore infrastructure on the U.K. Continental Shelf (UKCS) has been characterized by companies developing pipelines for their sole use, followed by spare capacity progres-

Key Corporate Tax Allowances for Capital Costs

Stage	Nature of Costs	Tax Allowance
Concession acquisition	Geological and geophysical surveys	Research and development
	Cost of license	Mineral extraction
Exploration	Drilling costs	Research and development
Appraisal	Drilling and associated costs	Research and development
Development	Development wells	Mineral extraction/first year allowance
	Production facilities including platforms	Plant and machinery/first-year allowance
	Pipelines and onshore facilities	Plant and machinery/first-year allowance
Production	Additional facilities	Plant and machinery/first-year allowance
Abandonment	Demolition and production facilities	Demolition and abandonment allowances

sively being made available for use by third parties on payment of a tariff. Field-dedicated lines are economically viable when fields are relatively large but become less viable as fields get smaller.

There is scope for gains for all parties if the development of small fields is made viable by the owners allowing access to their existing infrastructure, thus gaining additional revenue from the new users. Some of these gains would be lost if monopolistic behavior were to deter the development of new small fields.

The more mature areas of the southern North Sea, with large amounts of part-empty infrastructure, offer good opportunities for pipe-on-pipe competition. In the central North Sea, there is less spare capacity and the additional complication of relatively small gas volumes associated with oil production.

There is more potential for commercial tension between the owners of infras-

tructure and the owners of third-party fields seeking access to that infrastructure. The scope for tension between non-proliferation of infrastructure offshore and competition creates a need for regulation.

The Secretary of State has the power, under the Petroleum Act 1998, to impose a solution to problems involving pipeline-sizing, connections or tariffs. These powers have, however, so far never been exercised.

Changing dynamics

For many the recent tax increase contributed to a change in strategy, with larger operating companies starting to scale back their North Sea operations to focus on other regions. In response, the government and the industry are working on initiatives to prolong the life of the North Sea, notably by encouraging exploration and further use of infrastructure. Insiders expect that the recent changes to North Sea taxation may not be the last, with future policy being driven by three potentially contradictory factors:

- The government's formal policy of being "guided not by short-term factors but by the need for a regime that raises a fair share of revenue and promotes long-term investment in the North Sea;"
- Declining revenues which may see the gradual withdrawal of major global players and their replacement by smaller, leaner but less-capitalized businesses unable to maintain the existing level of North Sea infrastructure;
- The U.K.'s economic position, and that of the global energy markets.

In 2004, the North Sea oil and gas sector remains a vibrant but evolving sector, which remains critical to the U.K.'s economic and taxation policies. As the North Sea oil and gas fields move into the later stages of their lives, tax changes remain likely. □

Main Elements of the Current Tax Regime

Royalty Tax, which is paid, as a condition of each oil production license, at 12% of the landed value of petroleum "won and saved," less an allowance for the cost of bringing the petroleum ashore and treating it.

Royalty is not payable for any field approved after March 31, 1982, and may be waived on production from older fields if it can be shown to be impeding activity. The Treasury has committed to a consultation of royalty with a view to abolishing it in the near future.

Petroleum Revenue Tax (PRT), which was introduced by the Oil Taxation Act 1975. PRT is a tax on profits related to separate geological and technically determined fields, charged on the difference between income and expenditure with allowances designed to ensure it bites only on the larger, more profitable fields.

A significant reform of PRT was introduced in the 1993 Finance Act to encourage further investment by allowing oil companies to keep more of their income. The rate of PRT charged on existing fields was reduced from 75% to 50% in July 1993 and PRT was abolished for fields approved after March 15, 1993.

Corporation Tax (CT), which is charged on the profits of oil and gas companies, in much the same way as any other industry. In the case of new fields, this is now the only tax on profits.

The main rate of CT is currently, at 30%, one of the lowest company tax rates in the world. Both royalty and PRT taxes are deductible in computing profits for CT purposes. Profits from upstream activities are ring-fenced so they cannot be reduced for CT purposes by any losses or relief arising from any other activity, including downstream operations.