

PETROLEUM REVIEW



THE INSTITUTE
OF PETROLEUM

June 1997

Cadman Lecture

Sir David Simon CBE,
recipient of the Cadman
Medal, gives a lecture in
memory of Lord Cadman

Germany

Forecourt emphasis on
non-fuel retailing

Italy

The Italian retail market
and ENI's role

Wholesaling

A wholesaler's perspective
on supplying UK forecourt
shops

Annual IP Introduction Courses 1997

The Institute of Petroleum's annual three-day non-residential general introduction courses to the oil industry have proved very successful and will be repeated again this June. Each course is self-contained but many participants will find it advantageous to attend both courses, in which case a special combined registration fee is available at a reduced rate.

The courses are particularly valuable for:

- Participants from within the oil industry who require a broader perspective of the industry's activities and the economic factors affecting its development
- Participants from financial and commercial companies, supply and service sectors and government organisations who require an informed and concise introduction to the economic and commercial background of the oil industry.

Introduction to Oil Industry Operations Course

London: Wednesday 18 – Friday 20 June 1997

This course provides a concise and informed introduction to operations, from the search for oil and gas to the delivery of products to different customers. Participants will gain an appreciation of the principal activities in the international upstream and downstream petroleum industry and an understanding of how these inter-relate, as well as an appreciation of the impact of external influences and the ways in which the industry is adapting to increase its competitiveness and to meet the many new challenges.

This is a self-contained course but is followed by:

Introduction to Petroleum Economics Course

London: Monday 23 - Wednesday 25 June 1997

This course is designed as an informed introduction to petroleum economics, concentrating on the structure of the oil industry, the geopolitics of oil and the working of the principal markets. The course is presented by a team of lecturers all of whom have considerable recent experience of the industry and are practised in teaching and lecturing on these subjects.

For copies of the programme and registration form, please contact:
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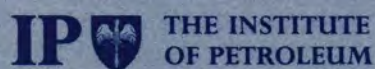
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COVER PHOTO

Sir David Simon CBE gave the Cadman
Lecture. Photo by Steve Ramsey

News in Brief

21 April

Amoco has made two further gas discoveries in its offshore North Sinai concession in Egypt's Nile Delta. The two wells further verify the Pliocene gas trend rapidly expanding on the eastern side of the Delta.

22 April

Total has initiated first-phase work on the Kharyaga field in Russia with the goal of producing 10,000 b/d by the first half of 1998.

Hardy Oil & Gas reports

that the second production well in the PY-3 field in block Cy-OS-90/1 in the Cauvery Basin off the southeast coast of India has tested at a flow rate of 5,300 b/d.

24 April

Chevron has announced that it has completed the sale of 10 percent of its interest in the Tengizchevroil project to Lukarco, a joint venture between Lukoil and Arco.

The Elf Exploration-

operated Flotta oil terminal has been awarded a Royal Society for the Prevention of Accidents (RoSPA) gold award for its occupational health and safety performance in 1996. It is the fourth gold award that the facility has received in consecutive years. Sullom Voe terminal also won a RoSPA gold award for the third year running.

28 April

Enterprise Oil and BP have agreed an asset swap involving interests in three North Sea fields. Under the terms of the agreement, Enterprise will receive licence interests including BP's 42.79 percent interest in the Pierce field in exchange for licences including the 24.05 stake in the Amethyst gas field and 13.50 percent holding in the Ravenspurn North gas field.

OIS International Inspection

plc has expanded its inspection capability with the inclusion of hull surveys for seagoing vessels following Lloyd's Register approval to measure the thickness of hull structures.

Total and Amoco have

started production on the Deep Jusepin field in Venezuela with an initial flow rate of 10,000 barrels of oil and 700,000 cubic metres of gas per day.

29 April

The Stolt Comex Seaway/McDermott ETPM West Inc consortium has secured a \$15-million contract for the installation work on Statoil's Connemara field development, west of Ireland. After the installation of production and umbilical risers for an extended well test, the main installation programme is for the FPSO mooring system, flexible flowlines, risers and a well control umbilical.

Statoil has announced

plans to demerge its Statoil Shipping & Maritime Technology business as a separate company. The new company is also to form a partnership with the Rasmussen group of Kristiansand in Norway.

Norsk Hydro has awarded

Kvaerner Installasjon a \$57-million contract for modification and hook-up at the Oseberg field centre. The contract includes the tie-in of Oseberg South and East and the hook-up of the new Oseberg D platform to the centre.

Chevron has announced a

crude oil discovery offshore Angola, its first find in the country's emerging deep water area. The new discovery, designated well 14-2X is the second of five wells planned in block 14 offshore Cabinda Province and tested at 7,500 b/d.

30 April

SOCO International plc is seeking a full listing on the London Stock Exchange.

Texaco North Sea UK

Company has completed arrangements with Korea Captain Company Ltd, a subsidiary of the Korea Petroleum Development Corporation, for the \$210-million acquisition of a 15 percent minority interest in the Captain field in the UK North Sea.

Shell Exploration has paid

Cairn Energy some \$130 million for a half share in the company's 75 percent interest in the Sangu field in Bangladesh. Shell is also to invest up to \$200 million in developing Cairn Energy's interests in Bangladesh as well as in India and neighbouring Asian countries.

1 May

Chevron Nigeria has begun production from its \$569-million Escravos gas project, reports the *Financial Times*.

Union Texas Petroleum

Holdings has agreed in principle to acquire a 30 percent working interest in an exploration joint venture in the Ghadames Basin in Algeria from Phillips Petroleum Company Algeria.

Australian oil company

Victoria Petroleum and subsidiary Kestrel Energy have each purchased a 50 percent interest in the onshore petroleum assets of the San Joaquin Basin project area in California from Ampolex.

Dana Petroleum has

exercised its option over 40 percent of the issued share capital of open joint stock company Yogan-neft for a consideration of \$4.25 million. This increases Dana's total working interest in the South Vat-Yoganskoye oilfield, which began production earlier this year, to 80 percent. The company has also exercised its option to buy 5 percent of the issued share capital of Evikhon for some \$6.25 million, bringing its total interest to 10 percent.

Saudi Methanol Company

is to construct its fourth methanol plant in Al-Jubail.

Esso Production Malaysia

Inc and co-venturer Petronas Carigali Sdn Bhd have made an oil discovery on block PM-9 located off the east coast of Peninsular Malaysia in the South China Sea.

2 May

Rust Kennedy & Donkin

has won a contract from the Oil & Pipelines Agency (OPA) to undertake a survey and design work and prepare specifications for the procurement of a new supervisory control and data acquisition system for a large part of OPA's oil products pipeline network in the United Kingdom. Known as the Government Pipeline and Storage System, its network of pipelines covers some 2,000 km.

Talisman Energy has

awarded a two-year contract to BJ Services Company of Aberdeen for pumping and cementing services for its North Sea mobile rig operations.

5 May

Chevron has begun

production from the North N'Dola oilfield in Area C located offshore the Republic of Angola. Production is expected to reach 20,000 b/d by the end of this year.

6 May

Repsol has discovered a

new gas and condensate field on the Khalda concession in the Western Desert, Egypt. It is the sixth discovery in the last eight months. The Falk West-1 well produced 55 million cubic feet of gas and 9,000 barrels of oil per day.

Hardy Oil & Gas'

exploration well on block WA 234P in the Carnarvon Basin offshore Western Australia has tested oil at a stabilised rate of 7,600 b/d. Following a recent farm-in agreement with current operator Mobil, Hardy will earn a 30 percent interest in the block and when the well has been completed will take over as operator.

News in Brief

A consortium comprising Apache, Shell and Repsol has successfully tested a discovery well in the North East Abu Gharadig concession in Egypt. The BW-1 well produced in excess of 800 b/d.

Energy Africa has acquired a 20 percent holding in a joint venture agreement to explore for oil and gas in blocks 17 and 18 offshore Durban. Other participants are: Phillips Petroleum Company (40 percent), PanCanadian Petroleum (Africa) Ltd (20 percent) and Sasol (20 percent).

7 May

Halliburton Energy Services has purchased a 26 percent interest in Petroleum Engineering Services of Aberdeen.

Chevron reports that it is to be awarded 25 percent stakes in three exploratory blocks offshore Western Australia. Two of the permits, W96-4 and W96-5, are located in the Browse Basin offshore north-west Australia while the third, W96-14, is located to the west of the gas-rich Gorgon/Chrysaor/Dionysus trend in the Carnarvon Basin.

Amerada Hess is to acquire interests in blocks 9/12a, 9/13 and 9/9d containing the currently producing Beryl, Nevis and Ness fields from BG plc and a 20 percent holding in blocks 30/11b and 30/12b containing the Halley and Appleton fields, which are currently being appraised, from Mobil. The company is also to acquire additional interests in the major transportation assets associated with the Beryl field, including the SAGE pipeline system and onshore terminal.

A Stolt Comex Seaway/ PetroJet consortium has secured an \$8-million contract for a coiled tubing flowline installation from the Gulf of Suez Petroleum Company. SCS has also secured two pipelay support contracts for the Shell Mallard and NAM L9 field developments in the North Sea.

Union Texas Petroleum Holdings Inc is to form a joint venture with Oman Oil Company Ltd to explore for, develop and produce oil and gas onshore Kazakhstan and offshore in the Kazakhstan sector of the Caspian Sea. Union Texas will act as operator, holding a 75 percent interest in the new venture.

Raytheon Engineers & Constructors has been awarded a \$13.6-million contract to upgrade Sasol Synthetic Fuels' production plants in Secunda, South Africa.

9 May

Coral, owned by Saudi businessman Mohammed Hussein Al-Amoudi, has acquired the total number of shares previously held by the Moroccan government in the country's two oil refineries. Coral now controls 67.7 percent of the Samir refinery (125,000 b/d capacity) and 73.9 percent of the Cherifienne facility which currently refines some 24,000 b/d.

Engine Control Systems has secured a contract to supply and fit its new AZ diesel catalysts to over 100 London Transport buses.

12 May

Sandvik Steel has secured a contract worth in excess of £2 million for the supply of stainless steel tubing to Statoil. The tubing will be used to inject carbon dioxide associated with gas production back down into a well on Sleipner West, thereby allowing the operator to avoid paying tax on CO₂ emissions levied by the Norwegian government under its environmental protection laws.

Kuwait Petroleum is to manufacture lubricants for Texaco at its Kiel, southern Antwerp plant, reports *Lloyd's List*. The new order will boost capacity up to 110,000 tonnes per year and requires the construction of a new plant and modernisation of existing facilities.

Greenenergy UK Limited has reached licensing agreements with Minster Fuels and British Fuels (Oils) Ltd to distribute and market its range of ultra low sulfur fuels in the United Kingdom.

13 May

Awilco, parent company of Golar Nor which is providing the FPSO for the Foinaven oilfield, reports that first oil could be delayed by up to four months following technical problems with the subsea manifold and five christmas trees.

Vikoma International Ltd has secured two contracts worth £3 million for the supply of oil pollution control equipment to Surgutneftegaz in Western Siberia and the UK Ministry of Defence.

The Oribi oilfield, South Africa's first offshore oil development, has come onstream with planned production estimated at 20,000 barrels per day.

The West Australian Petroleum consortium has sold the 420 km West Australian Natural Gas pipeline, together with petroleum assets in the Perth Basin, to US company CMS Energy.

Fluor Daniel has been awarded a contract by Saudi Yanbu Petrochemical Company to double the capacity of the company's petrochemicals complex in Yanbu, Saudi Arabia.

The Board of the Environment Agency has announced that it has agreed

in principle to proceed with criminal prosecution following the *Sea Empress* oil spill which occurred at Milford Haven, southwest Wales, in February 1996.

14 May

BG Exploration and Production has announced an oil discovery in UK block 13/24b, located in the outer Moray Firth area. The discovery well tested at a maximum flow rate in excess of 2,600 b/d.

Conoco (UK) Ltd, Texaco Britain Ltd and Total Oil Marine plc have signed a joint study agreement to evaluate systems for the collection, transportation and sale of natural gas from potential field developments in the Atlantic Margin area. The Aurora project will examine development options for subsea pipelines, potential gas landfall sites and delivery of gas to consumers.

15 May

Centrica has announced its first gas export contract to continental Europe. It will supply some 3 bcm of gas over seven years to German steel-maker Thyssen. Deliveries will begin once the Interconnector pipeline opens in 1998.

The Kuwait Investment Office has sold a 3 percent holding in British Petroleum for some £1.22 billion. It is left with a stake of 6.3 percent.

19 May

Phillips Petroleum has signed an agreement with the Qatar state oil company for a £750-million joint venture to produce ethylene and polyethylene.

News in Brief Service

Keep abreast of the latest developments, deals and contracts in the oil and gas industry around the globe with *Petroleum Review's* new *News in Brief Service* on the Internet.

Access the regularly updated information, listed in chronological order, from the IP Home Page.

URL: <http://www.petroleum.co.uk/petroleum/>

Belgian service station clean-up programme gathers speed

Antwerp-based remediation specialist Soils NV expects to handle twice the number of service station clean-up projects in 1997 compared with last year as Belgium and other EU member states continue to implement more and more stringent environmental protection measures.

In Belgium, for example, the Flanders Soil Decree – implemented in 1996 – imposes a set of onerous requirements for clean-up at service stations, while the 1995 Flemish VLAREM law requires a range of environmental protection measures such as isolation to prevent soil contamination. This can be provided by double-skin storage tanks and the use of water impermeable liners which capture leaked fuel from, say, overfilling, and contaminated water and channel it to an oil/water separator.

'Belgium has an unusually dense network of service stations,' stated Soils NV Managing Director Luc Ponnet. 'There are over 6,000 stations and around



60 percent of the sites are contaminated.' A combination of the new laws, refurbishment costs and rationalisation is expected to reduce this figure to around 4,200 over the next decade.

The industry, represented by the Belgian Petroleum Federation, and the government have reached an agreement giving service station owners 10 years to achieve full compliance with the new requirements at all sites. As a result Soils NV is experiencing a steady increase in demand for

clean-up services. Over half of its 25 mobile treatment plants are now deployed and the company plans to quadruple its number of mobile systems.

At present, the company is undertaking clean-up projects in Belgium and Luxembourg for Shell, Esso, Total, Texaco and Fina. According to Soils NV, it costs between BF5 to 25 million per site to carry out a clean-up and upgrade, a figure largely dependent on the size of the site and the extent of renovation and redevelopment, rather than the cost of decontamination.

Revised Frigg pipeline treaty

Final agreement on the terms of the revised Frigg pipeline treaty has cleared the way for the resumption of the large-scale export of Norwegian natural gas to the United Kingdom.

The deal will allow Norway to sell non-Frigg gas to the UK market via the Norwegian-owned Frigg pipeline and possibly to customers in third countries via interconnecting pipeline links. There is also the potential for UK gas producers to use spare capacity in the Frigg pipeline for gas from UK fields.

The two countries have also established a new framework agreement governing future cross-border pipelines, eliminating the need to draw up a separate treaty for each project as has been the case to date.

France's petroleum sector in 'deep crisis' according to trade association UFIP

Despite mediocre refinery margins, France's petroleum sector tabled profits of FF470 million last year following losses of FF888 million in 1995.

However, trade association Union Française des Industries Pétrolières (UFIP) says the improved results only serve 'to hide a deep crisis' afflicting the industry as a whole and downstream activities in particular.

'Distribution margins in France have remained among the lowest in Europe and in 1996, 637 service stations closed compared with the opening of 230 new outlets. This led to a loss of some 2,000 jobs.'

UFIP estimates that heavy French taxes levied on petroleum products only leave distributors with margins of less than 45 centimes/litre compared with a 50 centimes/litre average for the rest of Europe.

France's national network now stands at just under

18,000 service stations, following the closure of 29,000 outlets over the past 20 years and UFIP warns that a further 5,500 are under threat.

Its survey highlights the growing deficit of service stations in rural areas with 30 French départements, particularly in the centre and southwest of the country, only counting three outlets per 100 square kilometres.

According to UFIP, the decline can only be partly explained by the reorganisation of the network to adapt to lower level consumption by new vehicles and points the finger at fierce competition from the supermarkets.

Year on year, the supermarkets have eaten away at the refinery groups' share of France's petrol fuel distribution market and recently passed the 'symbolic' figure of 50 percent compared with less than 15 percent in 1984. This came from a stock of service stations representing only 23 percent of

the total number of outlets.

'Petrol is a "loss leader" product for supermarkets, their sole aim being to attract shoppers,' says UFIP Chairman Bernard Calvet.

He added that a state aid package of FF60 million, promised in 1997 to independent service station operators in economic difficulty but yet to be accorded, was 'peanuts'.

The aid package will be funded by the extension of a tax on supermarket and hypermarkets equipped with service stations.

'The aid package works out at FF20,000 a year for 3,000 service stations in rural areas – a level of support insufficient to guarantee their survival.'

UFIP has reiterated its demand to the French government for automotive fuels to be included in new commercial legislation to combat the practice of selling at a loss but so far the French government has

shown little inclination to move in this direction.

Meanwhile, on European Union affairs, UFIP has voiced its concern at European Parliament policy of 'raising the environmental stakes' – a reference to the recent adoption, on first reading, of an amendment reinforcing norms on automotive and heavy fuels from the year 2000.

Tougher standards will only improve air quality marginally, UFIP claims, but they would exact a very high price from refinery groups in Europe – the cost of the EU programme having risen from an initial \$13 billion over a 15-year period to just over \$68 billion, \$3.5 billion in France alone.

'There must be a rational approach to the whole question of improving the environment and public health protection with the definition of clear objectives and a methodology based on the principle of cost efficiency.'

Newsdesk

BP and Sonatrach launch In Salah Gas

British Petroleum and Sonatrach have established a joint marketing venture – known as In Salah Gas – to bring Algerian gas from the In Salah region to southern Europe.

The two companies have begun an exploration and appraisal programme to determine the extent of gas reserves in the region. Seven core gas fields have been found to date. A new 500-km pipeline will link the reserves and run north to Sonatrach's gas hub at Hassi R'Mel where an existing network of pipelines connects to Europe and to liquefaction

plants on the Algerian coast.

Costing in the region of \$3.5 billion, the project is expected to supply some 9-11 billion cubic metres of gas per year. First deliveries are expected in 2000.

The companies have also announced that the new venture will take over responsibility for an existing 4 billion cubic metres per year supply contract between Sonatrach and Italian power generating company Enel. Deliveries under this contract began at the end of 1996 and will continue to be met by Sonatrach until first gas production from In Salah.

Green light for Sedgwick and West Brae

The UK Department of Trade and Industry has given Enterprise Oil and Marathon Oil the go-ahead for the £100-million development of Sedgwick and West Brae in the North Sea.

The fields are to be jointly developed by a single production well on Sedgwick tied back to the West Brae subsea manifold. Comingled flow will be piped to the Marathon-operated Brae 'A' platform for processing and onward transportation through the Brae

and Forties pipeline systems.

Under the terms of the joint development agreement, production from the two fields will be allocated 67.5 percent to the Brae Group and 32.5 percent to the Sedgwick Group.

Reserves are estimated in excess of 40 million barrels of oil. First production is scheduled before the end of this year at an initial rate of 30,000 barrels per day (b/d) with average rates of 27,000 b/d expected next year.

Harmonisation on the forecourt

The International Forecourt Standards Forum (IFSF) continues to expand, with nine major international oil companies as members. Esso is the latest company to join this body which is striving to create common equipment and communications interconnectivity standards on forecourts.

Ian Nayler, IFSF President, regards the arrival of Esso as crucial. 'Esso strengthens our position as a standards body, which means we now cover a significant majority of the motor fuels retail market in Europe,' he said.

IFSF has links with over 100 registered interested parties who are developing forecourt products conforming to these interconnectivity standards. Gilbarco, Logitron, Schlumberger, Salzkoten and Tokheim have already produced 'Certificates

from the IFSF Dispenser Self Certification Test Tool'.

Implementation is gathering speed. There are now nine IFSF/Lon conformant sites – four in Portugal, three in Italy and two in Ireland. The companies involved are Shell, BP, Fina and AGIP.

In a further move to more widespread acceptance of its principles, IFSF has agreed to set up a dialogue with the European Petrol Station Interface (EPSI) group by exchanging information and ideas on equipment interconnectivity standards. While the objectives of the two groups are very similar, there are some differences – IFSF focuses on an international dimension and all standardization issues affecting retail outlets, while EPSI concentrates on forecourt equipment and the needs of its own members.

Tarn development plans unveiled

Plans to develop the Tarn oil discovery on Alaska's North Slope have been unveiled by Arco Alaska Inc and BP Exploration (Alaska) Inc.

Pending issuance of local, state and federal permits, development of the field – which is adjacent to the southwest corner of the Kuparuk River Unit, Alaska's second largest oilfield – will begin in early 1998.

The plan is for a one or

two drill site development with up to 50 wells and a 14 km pipeline connecting Tarn production to existing processing facilities in the Kuparuk field.

Initial production of 10,000 to 15,000 barrels of oil per day is scheduled for late 1998 or early 1999. Proven and potential reserves for the northern area of Tarn are estimated at 50 million barrels.

BG secures capacity in Caspian pipeline

BG Exploration & Production has become a shareholder in the restructured Caspian Pipeline Consortium (CPC) which is to build a pipeline to transport oil from western Kazakhstan to the Black Sea at Novorossiysk.

The first part of the system, known as the Initial Construction Project, will have a capacity of 28 million tonnes per year, all of which has been

allocated to CPC shareholders. BG Exploration & Production will be entitled to 3 million tonnes per year of capacity which will be used to transport condensate from the Karachaganak field in northwestern Kazakhstan. First oil is scheduled to flow in late 1999. Planned incremental expansions will increase total pipeline capacity to 67 million tonnes per year.

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New BP Chairman



Peter Sutherland, Chairman of Goldman Sachs International and Deputy Chairman of British Petroleum since 1995, has been appointed interim Chairman of BP following the resignation of Sir David Simon CBE to take up a position in the new government (see page 266).

Ship inspections

The Oil Companies International Marine Forum (OCIMF) is introducing a major revision to its programme for ship inspections in a bid to improve further oil tanker safety standards and prevent the pollution from vessels and at terminals.

The new uniform inspection protocol and report format for vessel inspections will complement the OCIMF Ship Inspection Report Programme, SIRE, which was introduced three and a half years ago. The key components of the revision are a vessel inspection questionnaire (VIQ) addressing issues relating to ship safety and pollution prevention, to be compiled by a ship inspector using a lap-top computer, and a vessel particulars questionnaire (VPQ), for completion by the tanker operator, dealing with ships' particulars and onboard documents which rarely, if ever, change.

Both VIQ and VPQ information will be retained on the SIRE database. The revision will not only increase the availability of detailed technical information about vessels but will also benefit the operators of those vessels by reducing the duplication of ship inspections and the amount of time spent on them.

UK forecourt sign businesses sold

UK service station sign supplier A C Edwards and Taskforce Installation and Maintenance were sold to Sign People Limited – headed by former A C Edwards' Group Sales & Marketing Director Peter Franklin and associate Andy

Schwartzkopff – in April in a seven figure deal.

Sign People plans to build on both the companies' existing strengths within the UK petroleum market while expanding pan-European and international activity.

Speedy turnaround for new tankers



F T Everard & Sons has taken delivery of two new coastal product tankers said to be amongst the cleanest such vessels in the world.

Built by Singmarine in Singapore, *Asperity* (see photo) and *Audacity* are single screw tankers designed for European coastal trade but with a worldwide capacity. They sport five Hempadur 1550 epoxy-coated cargo tanks of different

capacities, each of which is fitted with a variable speed deepwell pump with a capacity of 550 cubic metres per hour enabling typical turnaround times of just three hours.

All cargo and ballast operations are centrally controlled from the bridge to facilitate the high degree of pump and tank gauge control required for such a fast turnaround time.

Designs on the Philippines



London-based design consultants MTA Ltd recently completed a project to 're-image' Petron's service station network in the Philippines.

Although the design consultant works on projects

around the globe, it is currently focusing much attention on the Pacific Rim and plans to develop a regional base in Manila in the near future, according to Managing Director Maurice Acton.

Aussie native title

The Australian government has introduced a framework 10-point plan that sets a clear structure within which future consultations regarding native title can take place. This is a key issue for the Australian petroleum industry which has exploration and/or production titles over 18 percent of onshore Australia, much of which is over pastoral leases.

The Australian Petroleum Production & Exploration Association (APPEA) reports that it is to evaluate the plan with three objectives in mind. According to Executive Director Barry Jones, the petroleum industry needs (i) certainty of land title; (ii) efficient and effective processes for dealing with land titles; and (iii) to continue constructive and harmonious relations with aboriginal communities.

Indeed, APPEA has already called for clarification of a number of issues, including that of the relationship between the rights of pastoralists and native title holders in order to ensure an effective compensation process.

LR to certify Terra Nova FPSO

Lloyd's Register (LR) is to carry out certification of the first Canadian floating production, storage and offloading vessel (FPSO) offshore Newfoundland for the Terra Nova field.

Located some 35km south-east of the Hibernia field, Terra Nova is estimated to have some 300-400 million barrels of recoverable oil reserves in place in the Graben and East Flank fault blocks. First oil is due in 2001.

The FPSO will have a nominal production capacity of 125,000 barrels per day.

The project, which is being developed by the Grand Banks Alliance, is currently in the pre-sanction phase, with formal review by the Canada Newfoundland Offshore Petroleum Board followed by project sanction expected by early autumn this year.

Diary Dates



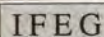
London Branch

'Annual Visit - The Royal Mail Sorting Office, Mount Pleasant'

Wednesday 18 June

The Annual Visit of the branch will be to the Royal Mail's Mount Pleasant Sorting Office in Clerkenwell. There will be a guided tour of the office, one of the largest in the world, commencing at 18.00. Numbers will be restricted to 20 visitors. A few places remain. Anyone wishing to attend should notify Mr J M Wood at the Institute as soon as possible in writing or by fax.

IP contact: Mr J M Wood



Information for Energy Group

'Visit to Institut Français du Pétrole, Paris'

Thursday 26 June

The IFP has kindly offered to provide lunch and will give us a tour of its library and information facilities.

The APEX fare to Paris costs £69.

RSAT International Ltd, courtesy of Ed Bell, is sponsoring taxis, and SW UK Ltd an evening boat trip on the Seine.

IP contacts: Catherine Pope, Catherine Cosgrove



Energy Economics Group

'Creating the Climate for Natural Gas Vehicles'

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By Fred Parker, Executive Director, Natural Gas Vehicle Association

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For Further Information

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CPS97022

Number of service stations and average volumes (January 1996)

	Total number of service stations	Equipped for unleaded gasoline distribution	Equipped for diesel fuel distribution	Equipped for LPG distribution		Self service stations	Hypermarkets Supermarkets outlets	Equipped for Stage I vapour recovery	Equipped for Stage II vapour recovery	Unmanned service stations			Average volume distributed by service stations (m ³ /year)		
				Total	Only for LPG					Equipped with automatic dispensers (1)	Completely unmanned service stations	Volume distributed (1000 m ³ /year)	Gasoline	Gasoline + (2)	Diesel (3)
Austria	3,522	100%	3,511	21		1,786	51%	45		44%			899	1,372	1,374
Belgium															
Denmark	2,647	100%	2,200	100		2,200	83%	470	70%	23%	750	600	944	1,275	1,342
Finland	1,841	100%	1,827			1,375	75%	92	30%	1%	1,375	466	1,287	1,678	1,681
France	18,046	92%	18,000	715		11,200	61%	4,194			1,900	250	1,107	2,169	2,194
Germany	17,957	100%	17,461		80		>93%	765	100%	34%	N/A	not for the public	2,144	2,842	2,862
Greece	6,987*	96%	6,740	21		3							530	872	884
Hungary	1,700		1,500	25		320	19%		5%	10%			1,000	2,000	2,000
Italy	28,200	96%	21,800	1,600		2,800	10%	50	99%		2,800**	N/A	828	1,204	1,314
Luxembourg	293	100%	293	11		285	97%		50%	50%			2,235	4,178	4,178
Netherlands	4,100	100%	4,000	2,100		2,675	65%	8	30%		950	50	1,300	1,907	1,922
Norway	2,400	100%	2,040	12		2,400	100%		50%	1%	2,000	80	897	1,173	1,173
Slovak Rep.	410		392			410	100%		2.5%				1,985	2,937	2,980
Spain	6,106***		5,819	44		878	14%	13	13%	2%	787		1,793	3,230	3,294
Sweden	3,614	100%	2,215	9		3,614		N/A	97%	90%	2,215	1,213	1,560	1,755	1,925
Switzerland	3,777	100%	2,435			3,385	90%		90%	79%	2,435		1,138	1,176	1,195
United Kingdom	16,244	100%	15,324			12,574	77%	823	19%	1%			(1,323)****		

(1) Unmanned automatic dispensers (credit card, cash, ...) in a traditional service station (S.S.), in operation when the S.S. is closed (nights, closing days, ...)

(2) Calculated by (diesel fuel + motor gasoline distributed by S.S.)/Total number of S.S.

(3) Calculated by diesel fuel distributed by S.S./Equipped S.S. + motor gasoline distributed by S.S./Equipped S.S.

*4,817 equipped for heating oil distribution

** Some of these service stations operate as unmanned service stations after normal business time

*** Data only for AOP companies. Total number of service stations: 6,400

**** Tonnes/Year N/A Not available

National market demand (thousand cubic metres per year)

	Total	Motor Gasolines		Distr. by Hyper/Super markets	Leaded Premium		Leaded Regular		Unleaded Super Premium (98 Ron)	Unleaded Premium (Eurosuper, 95 Ron)		Unleaded Regular		Unleaded Gasoline (% Total Gasoline)	Total	Diesel Fuel Distr. by S.S.	Distr. by Hyper/Super markets	LPG	
		Distr. by S.S.			Volume	Ron	Volume	Ron		Volume/%	Unleaded Gasoline	Volume	Ron					Total	Distr. by S.S.
Austria	3,187	3,166	45.5						651	1,503	47%	1,032	91	100%	3,332	1,667	18.5		
Belgium																			
Denmark	2,526	2,500	300						1,091	1,127	45%	308	92	100%	2,428	875	75	1	1
Finland	2,529	2,369							788	1,581	67%			100%	1,730	720			
France	20,729	20,369	10,259	10,319	97				8,151	2,079	20%			50%	27,064	19,564	9,145	46	46
Germany	40,179	38,500	3,800	2,193	98				2,184	20,356	54%	15,445	91	94.5%	31,387	12,540	800		
Greece	3,750	3,700		2,410	96	20	90		170	1,020	86%			33%	2,940	2,390		50 (Kt)	50 (Kt)
Hungary	1,700	1,700		340	98	510	92			595	73%	225	91	49%	1,700	765			
Italy	23,620	23,360	N/A	13,856	97					9,504	100%			41%	19,910	10,600	N/A	2,600*	2,500
Luxembourg	668	655		139	97.5				253	275	52%			81%		569		3.3 (Kt)	
Netherlands	5,359	5,329	30	876	98				800	3,683	82%			84%	2,504	2,490	14	1,481	1,473**
Norway	2,151			150	98				797	1,207	60%			93%	662				
Slovak Rep.	814	814													390	390			
Spain	11,971**	10,948	6	7,791	97				1,258	1,903	60%			29%	12,421**	8,772	8		
Sweden	5,763	5,535							2,565	3,198	55%			100%	3,119	810		N/A	N/A
Switzerland	4,800	4,300		796	98				300	3,714	93%			84%	1,400	140			
United Kingdom***	(22,000)	N/A	22%****	(8,160)	97				950	(13,900)	94%			63%	(13,500)	N/A	15%****		

* 270 Auto Methane

** Estimated

*** Figures between brackets are given in tonnes

**** % of retail sales

N/A Not available

Acknowledgement

Data supplied by UFIP, on behalf of national oil industry associations in Europe

Petrol forecourt retailing in Germany

By Winfried Lamberts,
Editor-in-Chief,
Dynamik im Handel

Although petrol stations have been selling auto accessories and a limited range of items for the car traveller for many years, such sales have been incidental to that of petrol. Now however, the non-petrol retailing segment of the service station has evolved from being the secondary focus to the primary focus of the business; station operators are now retailers first and petrol dispensers second.

The main reason why petrol station operators throughout Europe have had to learn to be retailers is the increasing cost of complying with stricter environmental legislation and falling margins on the sale of petrol. In parallel with these pressures, convenience store numbers have declined and consumers have become increasingly mobile. The new forecourt shop concept provides the product range of a convenience store with easy access for the modern car-borne consumer. The following article discusses the evolution of forecourt retailing in Germany.

Functional change

The first petrol station in the Federal Republic of Germany opened in 1922,

and the number of stations peaked at 46,700 in 1968. As a result of structural change, by January 1996 there were 17,957 service stations of which 17,632 were by the roadside and the remaining 325 attached to motorways.

There are three main pillars of business within petrol stations: petrol, the shop and the car-wash. Of course, the sale of petrol is still the core business in terms of the highest frequency of customers, while the significant turnover from a car wash cannot be ignored. Yet the biggest generator of growth are the shops within petrol stations. These 'convenience store' forecourt shops offer new product ranges and services.

Experts predict that petrol forecourt shops could well become the 'corner shop' of the future. Cigarettes, newspapers, soft drinks, beer, chocolate and also ready-made meals, stamps and dog food – nowadays the service station customer is supplied with all the important provisions, fast food and other daily products for which he/she would otherwise have to drive to the supermarket, restaurant or the post office. The large oil companies such as Aral, Esso and Shell have announced double-digit rates of growth for their shops since the beginning of the 1990s.

The main source of turnover for a service station operator is in 'after sales' business. There are several reasons for this: cars nowadays consume significantly less petrol, and the commission an operator of a service station earns per litre of petrol is decreasing; in 1965 it was 4.8 pfennig/litre, in 1985, 4.06 pfennig/litre and in 1994, 3.5 pfennig/litre. 'A lease-holder can't live off the petrol anymore, so we have to grant him a higher margin,' says Mr Thies J Korsmeier, a member of the Shell board of directors. Consequently the company partially compensated the lease-holder by creating the 'convenience shop' as a new source of revenue – and profited heavily from that as well.

Another reason for the functional change of service stations is that having turned away from the small village out-

let towards the multi-functional petrol pump with filling indicator and electronic price-calculator, this more sophisticated environment requires a new structure with a range of services that are capable of increasing the return on investment. Petrol stations offering auto parts and car wash have been standard for a long time; it is in the shop that the customer is supposed to generate the 'after sales' business: he/she follows a psychologically well-designed system of aisles passing freezers, drinks and newspaper shelves which have their designated places. This consequently enhances consumption.

The forecourt shops obviously profit from the fact that mobility plays a very important role in our society. Petrol can be sold 24 hours a day and to enable car travel to continue during the night, anything else the traveller might require is allowed to be sold around the clock: sweets, cigarettes, maps, drinks, and toiletries etc.

Shopping in a petrol forecourt avoids the stressful search for a parking space in the city and also the time spent queuing at supermarket checkouts. There are plenty of customers who are willing to pay for that kind of convenience. This is another reason why the petrol forecourt is being transformed from the classic 'filling station' to a multifunctional business. In addition, with many small corner shops closing down, forecourt shops have taken on the function of small corner shops in many regions.

Developments in Germany

Germany has been experiencing a decline in the number of petrol stations in recent years. The main reason for this decline is due to costly investments that must be made in order to comply with strict environmental legislation. By the end of 1997 for example, the surfaces of petrol stations must be fluid-tight; all wastes must be captured. The small operators have been particularly hard hit by the new measures. However, the enormous number of closures due to

Table 1: Roadside petrol stations in Germany

Aral	2,548
Shell	1,695
DEA	1,648
Esso	1,545
BP	1,403
Avia	915
Elf	769
Conoco	578
Agip	482
Fina	387
Westfalen	205
Total	201
HEM	182
BayWa	98
Calpam	95
Eller Montan	65
Q8/Markant	54
Statoil	46
Score	34
SVG	23
OMV	6
Freie (BFT)	1,390
Others (approx.)	3,263
Total	17,632

Source: Crude Oil Information Service (EID).

financially unaffordable environmental measures that experts predicted during 1995 did not take place. The petrol stations are likely to delay the necessary alterations until the last possible moment. In the former West Germany for example, only 34 percent of stations are fluid-tight compared with the former East Germany where the higher proportion of newly built petrol stations means that 71 percent already have this facility.

Number of service stations

The big five oil companies – Aral, Shell, DEA, Esso and BP between them own half of all service stations throughout Germany. With 2,548 stations Aral is the overall market leader (Table 1).

The number of independent petrol stations at the beginning of 1996 was

1,390; these are businesses which are associated with the Bundesverband Freie Tankstellen (BFT). There are 1,255 such stations in the federal states of the former West Germany and 135 in the new states of the former East Germany.

Under the 3,263 'others' listed in Table 1, are 645 supermarket stations in addition to many regionally operating petrol station companies.

From its regular survey, the Zentralverband des Tankstellen- und Garagenverbandes e.V (ZTG) has produced the following results among participating petrol stations (see Table 2): from 1985 to 1994 petrol sales increased by 50 percent (from 2,438,394 to 3,841,155 litres/year) and boosted by the popularity of car washes, the turnover from services has grown by more than 60 percent. More significantly however, shop turnover has increased four-fold. In 1994 the turnover of an average shop was over DM1 million compared to DM330,000 in 1985. This proportionally larger increase from shop sales compared to services and petrol is expected to continue in the future. In terms of product categories, tobacco products provide the greatest turnover for shops, followed by auto accessories, drinks and confectionery.

In 1995, when the turnover of all food retailers generally stagnated or even declined, German petrol forecourt shops turned over a total of approximately DM13 billion and they managed this from a comparatively smaller sales area, ie a 40-50 square metre forecourt generates the same turnover as a specialist retail store of 140 square metres.

Forecourt shops

Over 70 percent roadside petrol stations in the old states have a shop with a minimum sales floor area of 20 square metres. Today no petrol station opens without a shop and in the new states where there are many newly built petrol stations, 85 percent have a shop (Table 3). BP has the most extensive shop coverage at petrol stations in the old states (92 percent of its petrol

stations have a shop) followed by Shell (91 percent), Aral and Esso (both 89 percent).

In the new states, virtually all of the petrol stations owned by the big oil companies (apart from Elf) have shops (Table 3). Petrol station shops are on average 40 square metres in size and, according to Nielsen, 36 percent of petrol shops are larger than 40 square metres. These larger shops account for 62 percent of the total turnover of all forecourts. With the emphasis on larger shops, today more than 1,000 forecourt shops are between 80 and 150 square metres in size. This trend was confirmed by Johannes Derck, Managing Director of Aral Shop GmbH who explained that they no longer build anything under 100 square metres. And from a BTG (Federal Association of Petrol Stations and Garages) survey, about 50 percent of all operators questioned considered the optimum shop size to be between 100 and 120 square metres. With regard to medium-term profitability, the same survey found that 93.3 percent believed that of all areas of the petrol station business, the forecourt shop would hold the most potential for growth.

Product range

With analysts such as Roman Koidl and Wolfgang Maiwald predicting that petrol station operators in the future will operate more as retailers and less as specialised mechanics, forecourt shops must have an appropriate product range to meet consumer demand. The following should form the basic assortment for shops up to 80 square metres in size:

- Tobacco products
- Confectionery, drinks, ice-cream
- Frozen food
- Magazines
- Fast food
- Auto accessories
- Toiletries
- Household products
- Dairy products

For shop sizes of between 80 and 150 square metres, Jürgen Doetsch,

Table 2: Breakdown of petrol station income (DM)

Year	1985	1990	1993	1994
Service	95,249	127,904	145,904	157,277
Car Wash	41,863	69,311	87,857	87,254
Shop Turnover	329,967	682,790	919,587	1,009,785
Auto Accessories	109,478	114,954	117,582	108,442
Drinks	48,897	136,534	196,537	223,576
Tobacco Products	116,269	284,060	372,516	416,824
Maps/Newspapers	19,996	56,798	80,314	87,810
Confectionery	25,814	76,860	106,949	114,959
Other Products	9,513	13,503	23,384	58,174
Petrol Turnover	2,438,394 litres	3,565,356 litres	3,932,955 litres	3,841,155 litres
Commission	96,887	133,309	152,901	150,259

Source: ZTG – Zentralverband des Tankstellen-und Garagenverbandes e.V.

Managing Director Erich Doetsch Mineraloelhandels KG, suggests that the basic assortment should also include:

- Fax
- Photocopy machine
- Bank
- Post office
- Lottery
- Photo shop

Whatever the shop size, all will consist of several departments including tobacco products, soft drinks, beer, wine, sparkling wine, spirits, sweets, newspapers and auto parts. According to Mr Maiwald, food retailers and bakeries envy petrol forecourt operators because forecourt shops carry a basic assortment which represents perhaps only 20 percent of the whole possible range, but which makes 80 percent of the profit. Food retailers, on the other hand, have to carry the entire assortment.

Eighty percent of all customers today think of petrol forecourts when they think of buying charcoal. The consumer not only buys on impulse from a forecourt shop, he/she is also attracted by the convenience of the shop. A decisive factor then is often the right type and size of packaging, given the demand

for consumption while travelling.

The essential factors for a 24-hour forecourt shop, according to Mr Maiwald, are:

- A catchment area of approximately 12,000 customers
- Forty-eight percent of customers are within a 1.3 km radius of the shop.
- 150-250 square metre shop.
- 2,000 articles in the shop.
- Fifty percent of customers are pedestrians.
- 8,000-10,000 customer contacts per week.
- Approximately 20 percent of the turnover is made on Sundays.
- Advertising in the local press.
- Frozen food.
- Fast food offer for instant consumption.
- Carry only the Top 10 percent in a product group.
- Cooling facilities for wine and beer – catering for parties.
- Services such as a bank, post office, Lottery facilities and dry cleaning.
- Highly trained personnel.

Turnover by product group

Disregarding annual fluctuations, turnover from the product groups in a petrol forecourt shop consists of the following: about 40 percent of all turnover is generated from tobacco products, 21 percent from drinks, 13 percent from auto parts, 12 percent from confectionery, 9 percent from magazines and 5 percent from food and other items. Figures from Esso's Snack & Shop prove the growing importance of fast food and the bakery shop: in 1991 fast food and the bakery generated 7 percent of turnover; in 1995 it had doubled to 15 percent.

Distribution and supply

Lekkerland has supplied petrol stations for over 20 years and today earns about half of its total turnover of DM2.5 billion from this business. Shell, BP, Esso and Conoco/Jet work closely with Lekkerland.

Deutsche Shell AG and Lekkerland both hold 50 percent of Carissa. For small Shell shops with an area of 40 square metres, the basic assortment consists of about 180 products. Large shops carry about 500 products.

BP Oil Germany and Lekkerland both own 50 percent of FMH. Most BP shops are between 80 and 120 square metres in size and carry between 1,500 and 2,000 products. Apart from Carissa, FMH takes care of the whole 'after sales' business for Lekkerland, which besides food includes toiletries etc.

Interlog GmbH (Frechen) is a 100 percent affiliate of Lekkerland and supplies all Esso stations. Many Esso stations have large shops, up to 350 square metres, in which they display up to 3,000 products.

Lekkerland has an exclusive contract with Conoco/Jet; all forecourt shops belong to the Lekkerland customer base.

Three of the big five operators as well as the oil company with the largest petrol station network in the new five states, co-operate with Lekkerland. Aral, the market leader, manages its own shop business (Aral Shop GmbH) and DEA co-operates with Suegro.

Suegro Deutschland Handelsgesellschaft GmbH & Co.KG has also been in the petrol station business for

Table 3: Roadside petrol stations in Germany, January 1996 (previous year in brackets)

Brand/Company	Old States			New States		
	Number of Stations		Stations with Shop ¹	Number of Stations		Stations with Shop ¹
Aral	2,294	(2,367)	n/a	254	(239)	n/a
Shell	1,568	(1,576)	1,424	127	(113)	126
DEA	1,503	(1,578)	1,077	145	(128)	145
Esso	1,432	(1,493)	1,273	113	(98)	113
BP	1,331	(1,371)	1,200	72	(63)	72
Avia	842	(880)	393	73	(68)	66
Conoco (Jet)	531	(532)	371	47	(43)	43
Agip	422	(436)	350	60	(58)	59
Fina	371	(392)	330	16	(15)	15
Elf	303	(314)	250	466	(620)	351
Westfalen	200	(209)	142	5	(2)	5
Total	157	(171)	142	44	(41)	44
Calpam	94	(99)	48	1	(1)	1
HEM/Tamoil	98	(97)	65	84	(70)	82
BayWa	90	(87)	10	8	(6)	7
Eller Montan	65	(65)	14	-	-	-
Q8/Markant	54	(31)	3	-	-	-
Score	34	(29)	27	-	-	-
SVG	23	(28)	16	-	-	-
OMV	6	(5)	6	-	-	-
Statoil	-	-	-	46	(18)	46
Freie (BFT) ²	1,255	(1,232)	887	135	(123)	131
Others (Estimated)	2,989	(3,046)	1,016	274	(232)	124
Total	15,622	(16,038)	11,090³	1,970	(1,938)	1,684⁴

¹ Minimum sales floor of 20 sq m.

² There are 1,305 (1,282) BFT stations. The statistics in the table refer to a lower number of 1,255 (1,232) to avoid double counting as 50 BFT stations are affiliates of other companies.

³ Including Aral's estimated 2,046 stations with shops.

⁴ Including Aral's estimated 254 stations with shops.

Source: Crude Oil Information Service (EID)

20 years. The Suegro Shoptess Marketing Service is a 100 percent affiliate of Suegro and deals with those oil companies which are regionally organised. In 1994, Suegro turned over DM485 million in the petrol forecourt shop business. In addition, since January 1996, Suegro has been involved with motorway petrol stations through Spar Handels AG.

Most motorway petrol stations will in future be supplied with food by Spar

Handels AG and Suegro will manage the distribution process, thereby combining Suegro's experience of logistics with Spar's comprehensive in-store offer. Co-operation has been agreed between Spar/Suegro and the National Tank & Rast AG. (Tank & Rast is the successor of the Gesellschaft für Nebenbetriebe der Bundesautobahnen mbH GfN). The plan is to supply 294 motorway rest stations with a complete assortment of food items. A partner of

Tank & Rast is Shop Trading International GmbH & Co KG (STI) of which Spar and Suegro both hold 50 percent. Spar expects a turnover from STI of DM580 million for 1997 and a long-term annual turnover of more than DM1 billion.

Buyers' profile

From a Nielsen survey of petrol forecourt shops, the following customer

characteristics emerged:

- Some 71 percent of customers are men compared with only 29 percent of women.
- Over 22 percent of all households shop in forecourt shops. Smaller households are more frequent customers: 35 percent of all customers are from single person households; 28 percent from two person households; 19.2 percent from three person households and 17.7 percent live in a household of four or more.

In terms of customer age, forecourt shopping appeals quite evenly to all age groups. It is most popular amongst the 35-54 year age group (37.5 percent), followed by the under 35's (31.6 percent) and lastly the 55 years and over customer (30 percent).

The wealthier a customer is, the more likely they are to visit a forecourt shop: households that earn DM4,000 plus per month (28.2 percent visit forecourts); DM3,000-DM4,000 (23.8 percent); DM2,000-DM3,000 (18.6 percent); less than DM2,000 per month (9.4 percent).

The future

'One cannot talk about the petrol station operator. Convenience is an excellent model optimised by the localisation of selected stations, but it is certainly not for all,' says Roman Koidl. Correctly managed it could be the profit source of the future years.

Increased services characterise the market of the future: bank machines are on their way, photocopier machines and post office facilities will make petrol forecourt shops even more attractive places to shop. In the new states especially, fast-food restaurant chains such as Pizza-Hut, McDonald's and Burger King are monitoring the sale of hamburgers and fries in petrol stations to determine future expansion plans.

Since the sale of petrol is stagnating and the formerly dominating sale of auto accessories has decreased to only 10 percent of total petrol station sales, Mr Herbert Kirchhof, Petrol Station Director of Esso AG, regards the petrol forecourt shop as 'the only growing market we still have.' Esso has responded to this trend and now has 460 Snack & Shop forecourts with

a sales floor size of 130 square metres and a range of 3,000 articles. By the year 2000, they plan to have another 240 petrol stations bearing the Snack & Shop logo.

The recently approved longer opening hours for regular shops could reduce the advantage held by petrol forecourt operators. However, consumers still have to refill the petrol tank and with some households having a second or third car, more journeys will be made to the petrol station and once there, consumers will avail themselves of the easy car parking and the quick processing at the check-out.

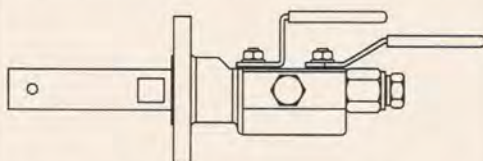
'In the 1980s our businesses were called "petrol stations", in 1985 they were "petrol stations with a shop", today they are "petrol stations and shops" and in the year 2000 they will be "convenience stores with a petrol station"', says petrol station entrepreneur Mr Doetsch. 'Our strength is our flexibility. We should and have to be more adjustable than any other industry.'

Acknowledgement

This article appeared first in *The European Retail Digest*, published by the Oxford Institute of Retail Management.

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The Italian oil market and ENI's role

By Davide Tabarelli

The gap between the Italian and European economies is huge despite recent progress towards achieving Maastricht targets. One area where the disparities stand out is the energy sector – the Italian oil and gas market being a particularly good example of a market almost completely isolated from the rest of Europe. Here, the margins on retail motor fuels improved in 1996 compared with the already high levels of 1995, while in other countries they dwindled to new lows, especially in the United Kingdom and France.

Furthermore, the high margins on gasoline may result in the Italian refining and non-retail sectors indefinitely postponing the search for solutions to the problems currently threatening their markets while in other European Union (EU) countries, refineries that are considerably more sophisticated than several in Italy have already been compelled to close or restructure their operations. While this situation has changed little over the last 10 years, recent complaints from the Antitrust Authority and the new left coalition government's commitment to reducing gasoline prices have modified the outlook.

It is important to remember that the ENI Group holds close to 50 percent of the Italian oil market and thus any decisions, or non-decisions, that it makes affect the whole structure of the country's domestic oil industry. Moreover, the Group is currently undergoing a modest restructuring programme as part of the privatisation process, the potential resulting changes of which may well have a great bearing on the future of this domestic sector.

Paradoxically, much of the fuss centres on oil product prices while the gas market – one of the fastest growing markets in Europe in terms of future gas consumption – does not receive the attention it deserves. Indeed, no change to ENI's monopolistic structure appears to be looming, whereas in other European countries the effects of fierce competition in this sector are already filtering through to the final gas consumer in the form of lower gas prices for example.

Lack of competition

Italian motor fuel margins – measured as the difference between pump prices net of taxes less Platt's quotation – are among the highest in Europe. The Antitrust Authority has been aware of this for several years. After its second investigation into the oil sector was completed in November 1996 (the first one was in 1993), it accused the Italian oil industry of inefficiency. Interestingly, besides criticising the anachronistic and Byzantine laws regulating the sector, the final document also states that the main reason for the lack of competition is the dominant position of ENI's companies, Agip Petroli and Italiana Petroli (IP), which hold around 50 percent of market share, coupled with their overwhelming control of the Italian logistical system. However, the Antitrust Authority emphasised that this dominant position has never resulted in 'abuse' against smaller competitors, since in the past the contrary has often been true with ENI being forced to

acquire oil activities, mainly refineries, abandoned by other private companies leaving the Italian market.

It is unlikely that Antitrust Authority recommendations in favour of a more streamlined company will result in any specific decision against ENI. Furthermore, the Italian government itself is the owner of ENI and is thus obviously not keen to dismantle its monopolistic position, thereby lowering the share value and potential revenues from the next flotation expected by the end of this summer.

The Authority is merely applying further pressure on ENI to downsize its dominant position, an aim which the top management of the company is struggling to pursue despite several snags including some internal opposition. Indicative of these difficulties is the sale by Agip Petroli to Kuwait Petroleum Italia (KPI) of 50 percent of the 160,000 barrel per day (b/d) Milazzo refinery in Sicily and some 350 service stations (with a market share of 1.5 percent) for around \$500 million. The first announcement of the sale was made on 1 September 1995 with a deadline for the final agreement by December of that year. Instead, agreement arrived exactly one year later on 28 December 1996 after long controversies over technical issues, especially environmental liabilities. The fact that Agip maintained a 50 percent share of the Milazzo refinery reflects an ingrained habit within ENI to hang on to control wherever possible. A more decisive initiative would have been the total sale of the plant together with a higher number of retail outlets.

Merging of operations

Another opportunity for ENI to downsize its dominant position was to sell Italiana Petroli to a foreign investor. Instead, however, its merger into Agip Petroli was announced on 19 March. With a motor fuel market share of 16 percent, IP owns 4,200 retail stations together with some logistical facilities

in the non-retail market. (The company's refineries were transferred to Agip Petroli at the end of the 1980s.)

IP was created in 1973 with the activities of Shell which had decided to abandon the Italian market, and since then it has been kept separate, waiting to be sold or merged into Agip Petroli. This move should have been made 20 years ago. It is yet another example of the difficulties involved in taking simple decisions for a greater integration of ENI operating companies. Indeed, several complaints have already been raised by the unions, the IP management and the local authorities in Genoa, where IP is based, that will inevitably delay the merger or even make it impossible.

The outright sale of IP, while desirable, was not feasible simply because it would have been very difficult to find an investor capable of entering the Italian oil market with an investment of \$2 billion and one also willing to accept the burden of buying refinery capacity, in this case sold by Agip Petroli. Only an oil producing country was in the position to take such a decision, thanks also to the sharp rise in oil revenues after the unexpected jump of oil prices in 1996. However, potential investors such as Saudi Arabia were not willing to take on big commitments downstream, while Kuwait preferred smaller investments around Europe. (Besides, the latter was already involved in Milazzo.) Libya, too, was another possible buyer thanks to the good relations already established with ENI, but political and financial problems made such an acquisition unfeasible.

Therefore, after 20 years of rumours about a sale, ENI is now going to merge its two oil companies in the downstream oil market in Italy and will end up owning 46 percent of the motor fuel retail market, 60 percent of Italian refinery capacity and more than 70 percent of logistical capacity.

What is strange is that this is happening soon after strong criticisms expressed by the Antitrust Authority about the group's dominant position being the main reason for the lack of competition in the domestic market. Notwithstanding these complaints, a downsizing of ENI refining capacity is

needed – because of the high costs of some of its plants and secondly because its market sales are equal to refinery production, whereas the experiences of the other main companies suggests that around one-third of sales should rely on external buying. This overcapacity has resulted in large losses, given the poor refining margins of recent years and the fact that several plants are not very sophisticated, while others suffer tough environmental limits.

Oversupplied market

Linked to refinery overcapacity is the constant surplus of non-motor fuel products, in particular distillates, on the domestic market. The oversupply of heating gasoil is further aggravated by the continued encroachment of gas into this sector. It is strange to see that whereas ENI supports gas penetration in the residential sector through its operating companies Snam and Italgas, at the same time it seems to neglect the negative effects on the oil and refinery system. As far as heavy fuel oil is concerned,

because of the tough environmental legislation, Enel, the world's largest fuel oil consumer, has switched from domestically produced high sulfur heavy fuel oil to imported low sulfur fuel oil, leaving the Italian refineries with an excess of heavy residues. A partial solution has been found through the subsidisation of gasification plants for power generation but only in refineries outside the ENI Group – even though Agip Petroli was the first to propose such a plant for its Venice refinery in the mid-1980s!

All these imbalances and high costs within the refining and non-retail oil sectors have tended to push up the prices and margins of the gasoline retail sector where, after liberalisation in September 1991, the oil companies have been free to set their prices without fearing fierce competition from hypermarkets or independents. An over-regulated market, with the freezing of new concessions since the 1970s, and the stronghold on the primary supply system by the oil companies, especially ENI, are the main barriers to entry in the domestic market and the reason for the

	Refining (1)		Domestic market distribution			
			Retail outlet	Non-retail outlet market		
			Gasoline (2)	Heating gasoil(3)	HSFO (3)	LSFO (3)
	\$/bbl	lira/kg				
1989	1.3	13	64	24	8	
1990	2.1	18	84	36	21	64
1991	3.2	29	81	57	21	62
1992	1.6	15	111	40	11	44
1993	2.1	25	124	36	15	26
1994	1.6	19	128	30	12	36
1995	1.2	14	163	28	8	28
1996	1.3	15	177	37	16	26

Change 96/91

%	-59%	-49%	120%	-35%	-26%	-58%
lira/kg	-1.9	-14.0	96.5	-19.9	-5.5	-35.6

(1) Brent refining margins complex.

(2) Pump price less Platt's, less retailer margin, less around 20 lira/kg for transport costs.

(3) Ex-refinery price less Platt's.

Italian oil industry margins (lire/kg)

ENI and other main companies' results (bn lira)

	1993	1994	1995	1996	Change 96/95 % bn lira	
ENI	419	3,213	4,327	4,450	3%	123
Other main companies (1) (estimated)						
AGIP SPA	1,201	1,850	2,000	2,700	35%	700
SNAM	127	972	887	1,080	22%	193
AGIP PETROLI	155	211	64	70	9%	6
ENICHEM	-2,668	-857	1,100	50	-95%	-1,050

(1) Results of single company, not of the sector

lack of competition. The ease with which the oil companies can raise gasoline prices has triggered a cross-subsidising mechanism from the retail sector to the non-retail and refinery sectors that is perpetuating the problems and delaying their solution. While the margin on retail gasoline sales from 1991 until 1996 more than doubled, those in refining and non-retail fell dramatically.

Government clampdown

Such a market condition is clearly convenient not only for Agip but also for the other oil companies. However, some recent events are threatening this cosy environment – in particular the decision taken by ENI on 27 March, a few days before Easter, to lower the gasoline prices on its largest retail stations with self-service facilities. The announcement was made by ENI Chief Executive Franco Bernabè in response to fierce attacks by the government and the Antitrust Authority against the oil companies for the high prices of gasoline at that time.

The government, given its concern about the possible consequences on inflation, exerted all its available power in order to do something that would lower gasoline prices. Indeed, once it was acknowledged that ENI, the dominant company on the Italian oil market, was owned by one of the ministries, namely the Treasury, the Prime Minister

did not hesitate to ask for a sharp reduction! The cut of 50 lira/litre (around 1.9 pence/litre) was quite significant considering that the oil company margin in 1996 was around 130 lira/litre. After a couple of weeks other oil companies followed suit.

The important point, however, is that self-service stations represent a modest 10 percent of the Italian retail network of around 28,000 outlets with sales less than 20 percent of the total.

The news was exaggerated by the press which encouraged the general perception of a *widespread* reduction in prices, not across just 10 percent of the network.

It is also too early to say that price competition, let alone a price war, has started, since lower prices were already being applied by other companies at self-service stations – but not at the same level.

Flotation of ENI shares

Apart from the implications for the downstream oil sector, the price cut news was important because it was the first time since the 1970s that ENI had been asked by the government to make a political decision in the oil sector. This kind of moral persuasion (or political interference) occurred just a couple of days before the announcement of the flotation of the third tranche of ENI shares by the end of this summer, ahead of the previous autumn deadline.

The former two flotations took place in November 1995 with a tranche of 15 percent raising 6,300 billion lira and in November 1996 with a tranche of 16 percent raising 8,800 billion lira. The next flotation should be for a further 15 percent with the government stake reducing to around 54 percent. It has already been made clear that the government will not go below 50 percent because of the strong opposition of the far left Communist Party, supporting the present coalition. The speed with which the government wants to sell another stake may be due to the need to avoid additional interference by this party. Until now the partial privatisation of ENI has been the most successful decision towards cutting the budget deficit, both for the present government and for the former one. After the next flotation the state might end up having raised almost 25,000 billion lira, much more than obtained by any other measures, budgets laws included.

The final word

For the third year in a row, ENI achieved a record net profit in 1996. On 19 March the company released figures that were slightly better than expected and still higher than the record profit of 1995 despite the poor figures in the chemical sector. The results confirmed the central role of gas in generating huge profits for Agip Spa thanks to domestic gas production, and for Snam as a result of its domestic gas sales. In contrast, the marginality of the domestic oil sector is again evident from the low profits of Agip Petroli which owns the refineries and the commercial downstream activities. This makes it easier to understand how ENI is quite willing to accept criticism on gasoline prices and take some tough decisions as long as domestic gas prices are not touched.

On 15 April the merger into ENI of Agip Spa, which controls Agip Petroli, was announced. This is an important step towards a more integrated company that should streamline the decision-making process – a move that is absolutely essential in order to accomplish unpleasant decisions such as the downsizing of ENI's refining capacity.

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The wholesaler's dilemma

**By Peter Barnes
and David King,
Palmer & Harvey McLane Ltd**

The forecourt business started to develop in retailing with cigarettes, confectionery, a few soft drinks, crisps, etc. By today most forecourt shops are full-blown convenience stores. I don't need to list the diversity of products. However, in terms of the wholesaler dilemma and the reality of current supply chain conditions, the forecourt sector has very definite demands of its supply route.

Forecourt demands

Obviously, the foremost of these is a reliable, consistent, cost effective and efficient source of supply. To that most fundamental set of requirements, I would add 'just-in-time' deliveries – crucial in enabling the forecourt operator to minimise stock holding and the capital tied up in it. That in turn reduces the cost of operating the business on a day-to-day basis. Just-in-time deliveries typically reduce stockholding to around 1.2 week's stock for a forecourt receiving one delivery a week; 0.6 of a week's stock for higher volume outlets on two deliveries a week. The day is approaching when some outlets will want three or four deliveries a week.

Another primary supply/delivery requirement is achieving the maximum volume of stock in the fewest number of deliveries. This not only means less disruption of the

primary shop function but reduced administration and accounts paperwork.

Equally important are delivery windows to suit the forecourt – at whatever hour of the day or night several times a week and meeting those delivery windows unfailingly.

Special needs

The realities of supply chain requirements of the forecourt sector also require consideration of the industry's particular business needs. For instance, their vast product offering and generally tiny stock-rooms mean supplying core lines in pack sizes to suit them. Having to stock 24 tins of something that only sells at a rate of four or five tins a week totally undermines the whole principle of just-in-time deliveries and seriously disadvantages the ability to operate the business successfully on the minimum capital.

These are some of the realities in terms of delivering the goods. But there is a whole raft of value-added services they have also come to expect:

- Meaningful, profit-boosting support and active assistance with business development
- Negotiating and providing special promotions
- Providing specialist business development consultants
- Providing merchandising assistance and expertise unbiased to one manufacturer or another
- Helping develop site specific planograms
- Providing expert merchandisers physically to go into outlets and not only re-merchandise them but train the staff there in better merchandising principles.

The list is as long and varied as the needs of the forecourt sector. It ranges from assistance with electronic point of sale (EPoS) solutions through to complete turnkey retail solutions through, for instance, our 'Your Store' symbol concept.

This detailed catalogue of value-added services is what the forecourt operator has come to accept as the norm from the delivered wholesale sector.

The dilemma

Some oil companies want a simple contract distribution service only, which our Connect Plus distribution service is specifically designed to provide. Others want the kind of value-added approach I have just outlined, while others have established their own shops groups. Some oil companies have their own retail expertise and resources – category managers and a strong field force – while others look to the wholesaler to help in these areas, either nationally or in regions where their network is sparse.

The major dilemma, therefore, in serving the needs of the forecourt sector is that the wholesaler very much needs an à la carte approach, a flexible approach. Other, more obvious, dilemmas are the self-evident fact that not all forecourts are equal – in size, demographics, volume of sales, product portfolio. However, they all have the same expectation of their supply route in terms of product range and service levels.

In short, to serve this industry and meet its needs, you cannot cherry-pick the best sites. While no distributor can survive simply on the small sites, the service must encompass sites in rural areas – in the Welsh valleys, in the glens of Scotland, as well as in the major conurbations. Nor can a wholesaler cherry-pick the products to supply. Tobacco, confectionery, crisps and soft drinks might account for over 60 percent of the sales of an average forecourt shop. But the low-volume grocery, health and home-care lines are absolutely vital to their business.

It is not an option to say, 'Look, these low-volume lines boggle up the economics of our high-volume handling operations, so we'd rather not carry those lines, if you don't mind.' The oil companies, and individual operators, would mind very much!

Logistic solutions

This is the reality of meeting the needs of the forecourt sector and also the needs of the manufacturers. The challenge posed by both partners – because it is a tripartite relationship in which we are all mutually dependent on each other – is to use our expertise in providing flexible, pragmatic and cost-effective logistics solutions.

Serving the forecourt sector has caused us to revolutionise every facet of our operation over the last decade or so. There are many examples I could provide of how these realities have caused us to revolutionise our business – the many millions invested in new branches; in updating the vehicle fleet; in investment in the most modern materials handling systems; developments in multi-pick; in IT systems; in the range of value-added support services. There has also been the enormous diversification in product range – into grocery, health and home care, chilled, frozen and ice cream and, more recently, alcohol. We have also had to innovate and take the initiative when manufacturers would not.

It is worth stressing that manufacturers need to take on board the reality of the forecourt sector – specifically in the area of recognising the diversity of size and type of outlet. The oil company corporate headquarters is certainly very important but it is unwise to forget about the independent sector, especially since it provides better margins and a national platform for your brands.

Small pack sizes

We had to innovate, when suppliers would not, through the range of over 130 'mini-paks' which we 'manufacture.' When suppliers would not respond and provide sensible pack sizes to suit forecourt needs, we took the initiative four years ago and installed shrink-wrapping machinery at our central warehouse. Basically, we cut manufacturers' outers in half and shrink-wrapped them.

At one point we had a range of well over 200 mini-paks. As more and more manufacturers have recognised the importance and the needs of the sector,



they have begun to look at pack sizes and we have been able to reduce our mini-pak range.

Manufacturers need to work with us, and the forecourt sector, in being more pro-active in responding to the realities of forecourt needs – not just in the area of smaller pack sizes but in other areas. The reality of supplying the forecourt sector means that the 80:20 rule has to be overcome. Some 80 percent of the 7,000-plus ambient lines in our product portfolio are slow moving, but vital to the forecourt and convenience sectors. They could therefore drag down our efficiency in the 20 percent of high-volume lines.

Central distribution

Setting up a central distribution depot in Coventry six years ago was the first step in meeting the challenge of providing the lowest unit cost handling for slow moving lines. However, a multi-million investment in the most advanced computer controlled automated sortation system anywhere in Europe has moved the wholesale industry to previously undreamed of levels of handling efficiency.

This processes some 6,000 outers of low-volume lines per hour which provides phenomenal efficiencies and

reduces all costs – warehousing, handling and picking – associated with low-volume lines to enable us to invest in, finance and operate it. It enables us to achieve better order fill from less stockholding and we deliver fresher stock into the system. Central sortation has also dramatically improved utilisation of warehouse space throughout our branch network and provided us, forecourts and suppliers with numerous other benefits.

This is the most graphic illustration of how wholesaling for the forecourt and convenience sectors has had to innovate and harness leading-edge technology in its aim of providing the lowest unit cost distribution route.

Current challenges

The forecourt sector is made up of a wide variety of outlets. I suppose one could almost apply the 80:20 rule – 20 percent of the sites are high-volume, frequently company-owned, advanced convenience outlets. The wholesaler's primary function is to find increasingly creative – and always cost-effective – ways of accommodating the diverse product range needs of the forecourt sector.

However, there are more global perspectives on what has been built up and

evolved through massive diversification and many many millions of pounds of investment. And, by the way, that process will continue.

For instance, we are currently investing £10 million in completely overhauling our IT systems with one single objective – to improve overall service levels. By achieving this single objective we will see improved accuracy, new advances in communication with manufacturers through greater compatibility with their IT systems, through EDI and an increased capability to provide our customers with what they want; what they need and what they have a right to demand from us.

Low margins

To attempt to look forward and predict the future role for wholesalers, one needs to take stock of developments in the forecourt sector over the last couple of years. In the petrol price wars between the oil companies and the supermarket chains, I don't think there have been any winners. Profitability has been driven out – for the supermarkets as well as the oil companies. Supermarkets have pulled back on their forecourt capital expenditure because the margin is not in the business and they are lucky if they are doing a bit better than breaking even on their petrol sales.

For the oil companies, the result has been to focus increasingly on retailing to recoup lost margin. But will the gains in retailing make up that lost margin? I doubt it, if you consider recent developments. Whereas the forecourt sector could premium price on the grounds that they were open when others were not, that has changed. Virtually all Tesco stores are now open until 10pm. Very recently we have seen the major supermarkets open a few stores 24 hours a day and, as has happened in America, that is likely to grow.

So, competitive pressures for the forecourt sector are increasing and, over the next 10 years, I think it is clear that retailing margins in the convenience sector are likely to decline. Some sites which are effectively an island within a catchment area will be able to maintain premium prices to a degree,

but the vast majority will not.

Probably because this trend is obvious to others, we have seen a flurry of joint ventures and tie-ups between oil companies and retail multiples. Let me quote the reason for these tie-ups from the *1997 UK Retail Marketing Survey by Petroleum Review*: 'Most oil companies have come to recognise that the considerable buying power, logistics network and merchandising skills that the supermarket operators possess are of great value.'

One has to ask if the expected value of the logistics network of a major supermarket chain can really provide the anticipated benefits to either party. Base the model on the top three sites in an oil company chain and you will get one feasibility result. But take that oil company's network in totality, without cherry picking the handful of suitable sites, and the result is likely to be very different.

One cannot deny that the major retailers have made tremendous progress in terms of economies of scale and multi-temperature logistics. But take the Tesco store at Sandhurst. It receives around 100 40-foot artic deliveries each week. That equates to 1,500 tonnes of product and probably in excess of 120,000 outlets! That doesn't bear comparison with a forecourt site that takes maybe less than 0.1 percent of the volume of product. The economics of the logistics solution simply are not comparable.

Take Tesco's Express forecourt site at Barnes, or at Thornton Heath. These are stocked using 'mother stores' almost as a cash-and-carry and then delivered in an urban lorry. This is because Tesco's high-volume logistics are not geared to the relatively small volumes of these outlets – which are still substantial compared with average forecourt sites. The major hurdle which the supermarkets have to overcome in entering the convenience sector is to ensure they do not dilute the economic benefits they get from their amazingly efficient high-volume warehouses. In a peak week, Tesco's Magor warehouse processes 2.3 million cases of grocery products. It would take the entire UK forecourt sector over six months, if not a year, and several thousand small-drop deliveries the length and breadth of the country, to turn over that volume of grocery product.

Of course there is the not insignificant factor presented by the composition of the forecourt industry. About 40 percent of forecourt sites in the United Kingdom are oil company owned. The rest are independents – entrepreneurs who manage and run their own sites, their own way, and that includes their choice of supplier.

Let me explain why that is significant. A few years ago, we lost the recommendation of one oil company, who opted for a different supply route. Two years later, we still retained 60 percent of that oil company's sites. Despite their insistence that their network switch to the new supply route, the large rump of independents stayed put.

In today's context and looking to the development of the sector into the new millennium, that experience highlights another factor. In an attempt to offset lost margin in petrol sales, oil companies have sufficient money to afford the frequently high capital cost of re-developing their sites. But what about the 60 percent of independents? Coupled with their loss of profits from fuel sales, as retailing margins decline because of later and later opening times of supermarkets and other competitive pressures, will they rush to spend money redeveloping their sites? Will they have confidence that they will achieve a reasonable return on that investment?

Through discussions I have been having at a number of oil company headquarters, it appears their objective is to achieve control of retailing from manufacturer, through the supply chain and control of the outlets. It is their belief that by achieving this control they can remove a lot of cost – from suppliers and manufacturers and also from the retailing end. It is not that I am biased towards the wholesale distribution route but I think I have already illustrated how the basic service elements we provide demonstrably capable of providing bespoke logistics solutions for individual oil companies. I think this is especially true when one considers the existence of a belief that there is a pot of money to be gained by buying direct from the manufacturer and using a different logistics channel. However, early experience has shown that the

benefit that this approach provides can prove illusory, rather than real, as one company discovered.

That is why I would suggest that, in buying terms, our £2.4-billion purchasing power is an asset to the sector, capable of providing concrete and certain financial benefits. More so, since we operate an open-book policy for our multiple and Connect Plus customers where they are fully au fait with buying prices, distribution cost per unit, etc.

So I have no doubt that many of the key issues in forecourt retailing into the new millennium are going to be fought on the logistics battlefield. The economics of forecourt retailing will not stand fat at any point in the supply chain between manufacturer and consumer.

From what I've outlined, there is no doubt that the wholesale industry is currently facing challenges in getting the oil companies to understand the value of the asset our industry provides them with.

Benefits

We offer tremendous economics provided by the shared user, shared fixed and variable costs foundation that underpins the viability of our whole business. Both areas benefit through density of distribution and efficient warehousing.

As I mentioned, our £2.4-billion annual turnover provides us with substantial purchasing power and economies of scale across the wide spectrum of product lines that the forecourt sector demands.

The whole nature of our business is geared to handling small individual orders. Moreover, we are specialists in multi-drop. Our network can cover the whole nation. We can hit any forecourt or convenience store, any day of the week, any time, within very tight delivery windows.

We do not seek to cherry-pick the better forecourt sites; we take the rough with the smooth. We don't seek to cherry-pick the preferable product ranges.

I have just outlined various elements of what the wholesaler brings to the tripartite relationship between manu-

facturer and oil company/forecourt outlet. Elements can be used to fashion a bespoke logistics solution that is lean, cost-effective and cost-efficient. They are elements that can be combined to provide a comprehensive solution for the majority of an oil company's supply



chain requirements. Because they are shared user, shared cost elements within our overall business, they are the most cost-effective available.

But to these elements can be added whatever additional service criteria an individual oil company regards as necessary or desirable. In that respect, I believe the oil companies are currently facing their own set of challenges. There seems to be no consistent view as to where the future lies in forecourt convenience retailing. Yes, everyone is unanimous that retailing must be developed on forecourt sites but some people suggest that it is largely borne out of a kneejerk reaction to loss of margin on fuel, rather than a clear vision of how the industry could and should be developed.

Some would say that there are grounds for thinking that the tie-ups and joint ventures with the supermar-

kets and others illustrate a degree of confusion in the market-place. Others see in these moves an acceptance that the job of developing the retailing side of their business is too difficult and should simply be handed over. My view is that they illustrate that oil companies recognise the need for site-specific and location-driven solutions.

Competition

Perhaps the oil sector should reappraise its view of the competition. Does it come from other oil companies? From dedicated convenience outlets? Or does it come from the major supermarkets as they increasingly encroach into their market-place?

Looking forward, should the oil companies begin to co-operate with each other and collectively face the real competitive threat? Should they develop their retailing potential through a vision of what is achievable? Develop that potential pro-actively to their own plan?

What is certain is that a key factor in how they perform in respect of developing their networks and their retailing activities will be the logistics solutions they employ.

The supply chain will not stand fat at any stage in it. The oil companies need to identify those logistics service criteria which are essential, as opposed to 'nice-to-have'. I would suggest they need to be ruthless about discarding the 'nice-to-haves' which cost a lot of money. Deciding which are the essential elements is clearly an oil company decision.

Through dialogue and our inherent flexibility and responsiveness, I have no doubt that we will find the best fit of new service elements and features to enable us to continue to play a key partnership role in providing the optimum distribution and logistics solutions which the forecourt sector is seeking, with the sole objective of adding value to their operations.

Acknowledgement

This article is based on a presentation to the Institute of Grocery Distribution's recent conference on forecourt retailing.

Letter to the Editor

Madam,

Greenpeace misinformation: the correct way ahead

With reference to the letter from Mr R K Smith Flnt Pet as published in March. While I am in agreement with Mr Smith's letter, in general, and would not condone Greenpeace's inaccuracies, the important factor is that Greenpeace is bringing to the public's attention, what politicians and accountants are doing to our planet.

Saying 'That the dinosaur cannot see

me now' is not the way to resolve problems. We have and have had, for many years, an engineering expertise for dismantling, recycling and reusing most items that are found in shallow and deep sea petroleum and gas platforms.

There is absolutely no reason for sinking a man-made object because it is financially viable. Money is of our creation, not planet earth's and throwing something away into a place where you cannot see it, does not resolve the problem, rather the opposite.

The petroleum and gas companies, as well as the politicians, have known that the life-cycle of these engineering

phenomenon was approximately 25 years. It is not and was not an unforeseeable problem. All the equipment on board will have been totally depreciated after seven years. Therefore, costing for decommissioning and removal over those other 18 years would not have been an accountancy problem.

What are the petroleum and gas companies' difficulties? As far as I can see, only greed.

Let us see that they do the correct thing, not dump, because it is financially expedient.

M G Fancourt Flnt Pet

'New' 1930s garage opens for business



A 'new' garage has opened at the National Motor Museum in Beaulieu, Hampshire. It was officially opened by HRH Prince Michael of Kent in April. The new feature, known as 'Motorworks', is the recreation of a typical country garage of the 1930s

and is one of the most detailed reconstructions ever attempted by a UK museum. It forms part of a 1930s street scene in the museum, featuring a pub, shops and vehicles of the period and provides an authentic glimpse into a bygone era.

Visitors can see, hear and discover the workings of the garage, compare tools used then with those of today and learn why a blacksmith's forge was needed in the servicing area.

As they eavesdrop on a conversation between the garage-owner and his son discussing a typical day, they can consider how the crashed 1925 Bullnose Morris on the forecourt is to be fixed!

A major feature within 'Motorworks', located above the 1930s garage, is an interactive workshop. Among the many 'hands-on' experiences to be sampled here, visitors can test their reactions to see if they are quick enough to stop a car accident, discover how suspension works, or set off a gas explosion as they learn about the principles on which motor cars work.

With the opening of 'Motorworks' the museum at Beaulieu looks set to become an even more popular destination for both motoring enthusiasts and tourists. 'Motorworks' has been jointly funded by the National Heritage Lottery Fund and by T&N plc, marking part of its celebrations for the centenary of the British motor industry.

Gang wars on the forecourt

By David Batey,
Management Consultant,
Ernst & Young Energy
Services

Some say it's over, some say it isn't. For those who say the petrol price war is over, read pain, not the war. At 60 pence per litre (ppl) for regular unleaded, the major oil companies and major supermarkets are now breaking even. In parts of the country, pricing below cost, at 56 ppl, continues. But for independents everywhere a price much less than 65 ppl means eventual bankruptcy, unless they have substantial sources of non-fuel income.

When everyone was losing money on petrol retailing last year, the story going the rounds was the sort-of-conspiracy one: oil majors were out to recover market share from the supermarket majors but the real casualties – targets, said some – in the cross-fire would be the middle ranking players and independent dealers. After the price war, so the theory goes, the survivors – major oil and major grocery – will establish fat margins in an uncluttered and accommodative new world. Inhabiting it will be about 10,000 service stations, down from over 16,000 at the beginning of the war; far fewer

competitors; and greater direct control as company ownership of sites rises above 50 percent. In short, this was to be a carve-up that would polarise market share to the strongest, who would in turn call a cease-fire when they had redrawn the map to their satisfaction.

Savage fighting

In the end, of course, this sort-of-conspiracy would work against customers faced with less choice, higher prices and ultimately less convenience. Despite its different spatial characteristics, France is often held up as the example of superstore excess, emptying city centres and killing so many rural service stations that a petrol run-out is a real risk in unfamiliar geography. Yet 10 years into their vicious war, the French market has seen no cease-fires: competition on price remains as savage as ever. Ernst & Young analysis suggests that the competitive environment post-restructuring will continue to benefit customers in the United Kingdom, both on price and on convenience.

This is because oil majors in particular have an interest in preserving a low-margin/high-volume petrol environment. Not only will this deter re-entry by smaller oil companies, it will, they hope, deter expansion by non-traditional players, such as supermarket chains, which were attracted to highish margins in the first place. But defence is only part of the story: an aggressive desire to emulate the American model is also behind the new thinking. As investment in image and offers has expanded to American proportions, so an intent to achieve American volumes has also taken root. In the past, European stations managed only about a third of the throughputs typical of American ones (European superstores were the exception, matching American volumes). The non-superstore gap is already narrowing and must narrow further if European petrol retailers are to survive on American margin sensitivities.

The other side of the coin – spatial convenience – is not likely to be traded off to the same extent as in France: we may well respect and applaud the granting of £50,000 of lottery cash to save a service station in the Scottish Highlands. But rescues such as these will be exceptions. Britain's tilted population distribution, dominant conurbations and dense motorway network are more suited to distribution and retailing efficiency than the vastness of France, with its evenly woven fabric of modestly sized city states and towns – none, by design, more than a day's walk from its nearest neighbour.

Service station closures will be grievous to those who derive livelihoods from them. UK refineries, on the other hand, cause grief whether open, closed, or somewhere in between – and there seems no escape from solutions that are each differently devilish. And this is one of the other principal drivers of continued competitiveness in the UK market. As long as there is surplus refining capacity, cost of product will be constrained and retailers will enjoy keen competition among suppliers. Current overcapacity (and wrong-capacity) will take years to correct, even without decision-making lead times akin to chess rather than football. This time neither supply squeezes (nor crude oil price shocks) can provide retail relief for major oil companies, as they have in the past.

Perhaps as important as defence and aggression in their fuel business is the imperative among oil companies to increase the share of non-fuel income generated by their networks. Most have a back-of-the-envelope aim to raise that proportion from about 25 percent today to 35 percent early in the new millennium. Because they are chucking so much money at this ambition, they can only fail if they deter consumers from coming on to the forecourt in the first place. So 'street prices' for fuel must be competitive. And once in the shop, customers must spend



more than the £1-2 that their 'dwell time' in the payment queue has typically generated over the past 20 years. It is those forecourt shops that now need a 'good sweating'. In striving towards offer relevance and higher space productivity, the oil majors may well succeed, after all, in finally changing customer perceptions of petrol forecourts.

More partners

A hitherto unimaginable array of trading formats among the major oil companies now seems likely. For some years yet these will derive from experimental partnerships with supermarket chains,

fast-food chains and convenience store groups. One or two oil majors may decide, along with their partners, that they can ride several horses at the same time, contracting different offer partnerships for different locations. Others will opt for one kind of partnership only (either with grocers or with fast-food merchants).

To some extent, oil companies are simply joining the superstores in accelerating 'offer push' – a momentum that began in the 1970s. At the time some oil company executives doubted the wisdom of starting down that route, believing instead that a 'gas and go' format was the most robust, lowest-risk one to follow in Europe. Recent public reaction to trials with unmanned stations – lukewarm to hostile – suggest that backtracking to basics will be difficult to pull off, having raised customer expectations so far. Experimentation with second-tier offers – the petrol retailing equivalent of bank cash machines – will continue but they will gain a place only once existing decks have been cleared. For the moment, such is the competitive pace of decision-making in adding new or modified non-fuel offers, the imperative is to out-innovate, if not out-sophisticate, the competition. High investment in facilities is here to stay, as are tight margins on fuel; consolation, and remuneration, lie in opportunistic introduction and management of non-fuel product lines.

Less distress

All this is good news for consumers: they get well-lit forecourts and welcoming emporia; they enjoy competitive pricing to offset rising fuel taxes; and they can choose their station according to preferred added convenience – a car wash, a pizza, or the best range of groceries. Because the latest attractions are for the first time sensory (burgers, doughnuts, pizzas) service stations may, for the first time ever, become alluring as well as necessary. Latest research indicates that these offers are succeeding in attracting customers who are not there to buy fuel as well. But fuel will remain a primary draw. Suggestions that the importance



of petrol purchase can be cut to '10 per cent of the reason for the trip' are laughable, particularly if our outlet numbers dip below 10,000: this is a bit like suggesting that only 10 per cent of the reason for going to a railway station is to catch a train. Moreover, only oil companies can make a difference to fuel quality, whether environmental or performance-related; mocked for their efforts to brand 'a commodity', they are nonetheless the formulators upon whom consumers and governments rely.

Aside from self-imposed margin ceilings, there are two other areas that oil companies need to address if they are going to protect their investment in

retailing. Non-fuel items such as cigarettes, which are as price-sensitive as fuel, need to be priced with the same sensitivity, not at the primitive levels currently prevalent. Otherwise, any goodwill won on the forecourt is simply thrown away in the shop.

Curbing promiscuity


The other area is the art of making non-oil friends. While they are catching up with superstores in conventional retail marketing skills, oil companies are threatened by the ground-breaking moves superstores are making to bind customers into networks, or webs.

A few years from now, a Tesco customer may also, by virtue of Tesco's partnerships, have an account with the Royal Bank of Scotland, a mortgage and an insurance policy or two with Direct Line and earn extra Clubcard points at B&Q. Actually, this is a higher-risk strategy than its architects appear to realise: if Direct Line fails to settle

this customer's claim, or if the customer disapproves of Tesco's manners towards mange-tout growers, the whole house of cards collapses. The strategy is being pursued in order to curb perceived customer promiscuity: in fact customers these days are not so much promiscuous as professionally ruthless in their granting of favours. Direct Line is the biter bit and bleeding at the moment, while recent mortgage lender results indicate how coolly customers can deal with switch-deterrent paperwork.

Nonetheless, such emerging webs will characterise retail and service landscapes for many years to come – at least until they are somehow found to be anti-competitive and we start at the beginning (again). Hence the need to lead or be part of the gangs creating powerful and professional webs; and the need to eliminate any weak links. On the groceries and banking side, Sainsbury is the furthest advanced after Tesco. In groceries and petrol, Safeway

and BP are the clear leaders, with huge potential for adding services on a pretty clean sheet of paper. Rivalry between networks will consist in drawing a disaffected customer into an entire web, while he or she is planning termination of the unsatisfactory one. Ill-conceived or badly co-ordinated networks will perish in expensive acrimony.

Back in the 1970s supermarkets were plotting their move from raffish high street stalls to out-of-town temples for exotic produce and 'total site exploitation' as they discovered, first, the money-printing possibilities of car wash and then the easy cleanliness of sweets and cigarettes compared with oil and tyre changes. Both species have enjoyed good times in their chosen step-outs; both have adjusted to threats to their territories. As they now choose gangs and vie for leadership of those gangs, they recognise that the prize is custom volume that derives from 'massive' marketing. For us plain possums, the customers, the prize is better deals. 


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Power, competitiveness and responsibility

By Sir David Simon CBE

He said in part:

Lord Cadman was a towering figure in BP. At the time of his death in 1941 he was still chairman of what was then the Anglo Persian Oil company – subsequently BP. He had been 14 years in the chair, a daunting thought for this generation of incumbents.

He can be said to have shaped the business through the 1920s and 1930s and had a tremendous impact on our company particularly in the Middle East and, of course, on the whole international market.

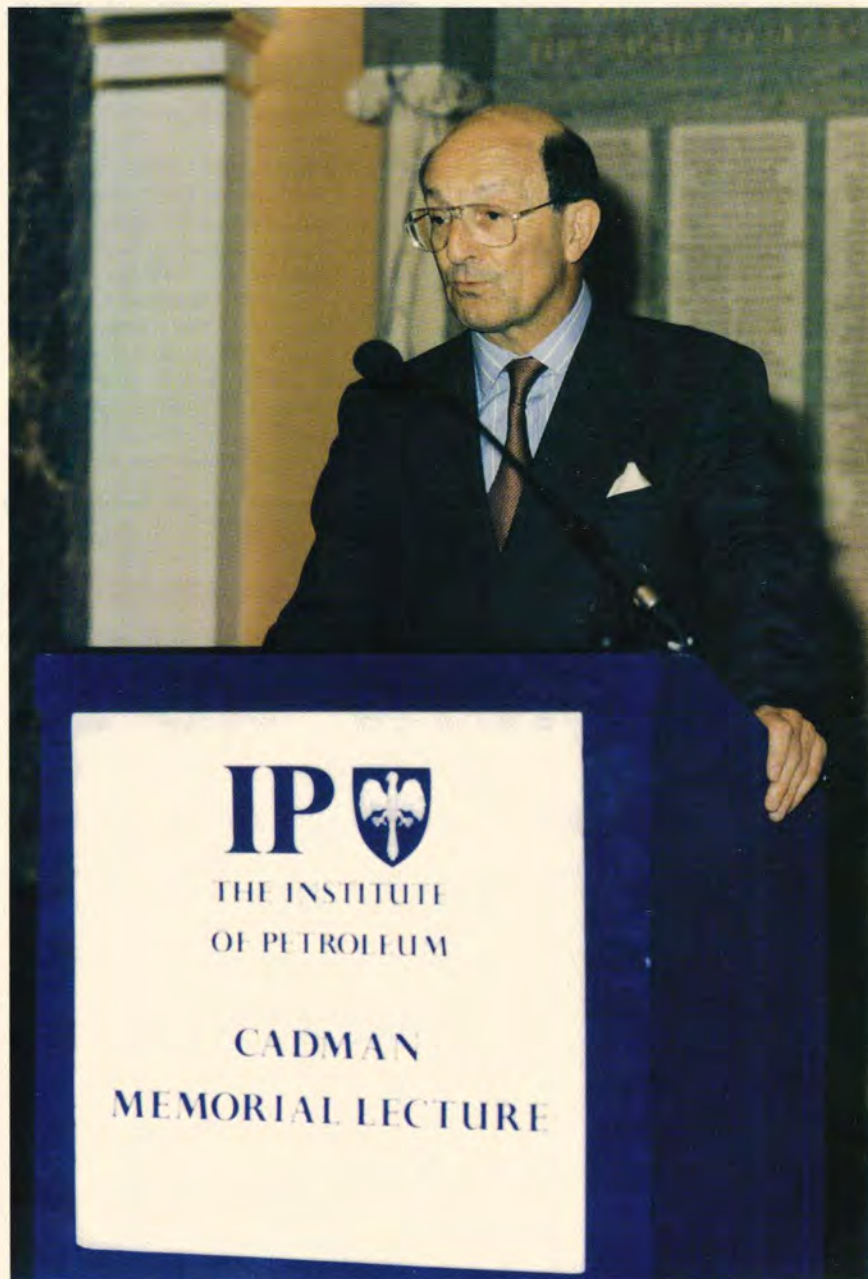
So to deliver this lecture, named in his honour, is a daunting challenge. It is perhaps a sign of the changes in the industry that someone who has been schooled more in language, thought and communication than in technology, science and engineering should be privileged to comment on its current shape and outlook.

When a BP Chairman last delivered this lecture in October 1989, Mr Gorbachev was General Secretary of the Communist Party of the Soviet Union, Nelson Mandela was in prison, Iraq was exporting over 3 million barrels of oil a day and the price of oil was \$18 per barrel.

Eight years on what has changed? Some of the changes are obvious and visible.

Exactly 10 days after Sir Peter Walters delivered that lecture the Berlin Wall came down, triggering a process of change in international relations and politics which still has not been played out to the full.

The dominant trend of the times has been a liberalisation of economic relationships and the removal of many of the barriers which previously existed to open flows of trade and investment.



Sir David Simon CBE received the Cadman Medal and gave the Cadman Memorial Lecture on 29 April while he was still Chairman of The British Petroleum Company plc. Two days later a general election was held and a Labour government returned to power with a large majority. Having been asked immediately to join the new government of Mr Tony Blair, Sir David subsequently resigned from BP and was appointed UK Minister for Trade and Competitiveness with a seat in the House of Lords.

Increased competitiveness

The main drive has been to increased competitiveness within the industry. That has meant not just improved returns on capital but also increases in productivity per employee. And it has meant that companies do not just look to their own performance – to be successful they constantly test their achievement against that of their peers. Benchmarking was not a word that entered my vocabulary in my first 25 years in the industry. Now it is a daily preoccupation.

Liberalisation of markets is not only changing our language but importantly it is changing the pattern of both supply and demand, and the industry has benefited on both counts.

One key consequence of liberalisation and competition has been the opening of a whole set of new business opportunities. Upstream the international industry is now operating in areas closed off a decade ago. It is a new chapter in a long book. That new chapter has brought new challenges – in Azerbaijan, Vietnam, Angola, onshore China. And also in many parts of the OPEC world where we and others are now working in partnership with the state companies in places such as Kuwait, Venezuela and Algeria in ways unimaginable even a decade ago.

Changing pattern of demand

Economic liberalisation has also affected the pattern of demand. In 1989 one barrel in seven of the world's consumption went to Asia. Now it is one in four and the reason is that the latent needs of large populations are being transformed into effective demand by policies which are encouraging trade and enterprise.

Attention always focuses on Asia but in Latin America as well there has been a process of development which is transforming the prospects of one country after another. A decade ago several Latin American countries were routinely described as being vulnerable to collapse under the pressure of accu-

mulated debt. Now they are achieving sustained growth and are becoming a significant part of the international economy.

Liberalisation

Liberalisation is also changing the structure of the markets in which we operate. The pattern of market participation is taking new shapes, with new owners, and the competitive map is being redrawn.

The best illustration of this is a local example. A decade ago, gas supply in the United Kingdom was a state monopoly. That has changed, though the process of change is not yet complete. The business is open, more genuinely competitive and less narrowly national in character. The Interconnector will take gas to the Continent and the European Union is pursuing the desirable goal of an open European gas market.

The availability of gas from numerous sources will reduce any remaining concern about the security of supply, while at the same time giving consumers an element of choice which can only be good for European competitiveness as a whole.

Within this mosaic of change it may seem that the only thing which has not changed is price of oil – \$18 in 1989; a little higher at almost \$21 so far this year. But of course that is an optical illusion. The price has changed. We have seen great volatility and in real terms prices are today 10 percent lower than in 1989.

There was a time when a fall in oil prices was assumed to be balanced by a rise in downstream margins. Some economists even used that theory to justify the integration of the industry. Sadly it has not happened that way in the last few years. Downstream margins have fallen as well. In Europe, margins in 1995 were the lowest in the decade.

And yet I would say it has been a remarkably successful period for the industry as a whole. Performance has improved beyond anything we could have reasonably expected in 1989 – particularly if we had known the future trend of prices and margins. The industry's average return on capital

employed in the 1980s was not much more than 12 percent. That is the figure for the majors. In the last two years that average has risen to 15 percent, and there is every sign that this can be maintained. This is not just a cyclical phenomenon. It is a structural shift which reflects significant changes both in technology and in management capacity in the broadest sense.

The focus on performance has not always been comfortable. The best estimate is that the majors alone have reduced their staff numbers by 190,000 since 1990 – a 32 percent fall. In our case the figure is more than 50 percent. This has been underpinned by a focus on the core business of hydrocarbons and a turning away from the temptations of diversification. It has been enhanced by the dynamism of the IT revolution.

Technology has been of key significance – particularly in the exploration and production sector – which in this country alone spends some £5 billion a year:

- The technology of deep water development has allowed us to open up the Gulf of Mexico and the West of Shetland areas.
- The technology of reservoir management and of subsea engineering
- The advances in seismic analysis which permit a much tighter targeting of exploration activity and the technology which now permits extended directional drilling – including the ability to steer the drill bit in real time from a distant computer screen.

The result has been both an increase in recovery factors and a reduction in unit costs – not just for large fields but for small ones as well. The best way to illustrate that is to look at the United Kingdom, which is now enjoying the third wave of activity in the North Sea. The first was the initial discoveries in the 1970s. Then the average size of a new development was almost 1 billion barrels. The second was in the 1980s with a set of smaller developments – with an average size of 180 million barrels. The third wave is a combination of enhanced recovery schemes from existing reservoirs and

the development of fields many of which would have been considered too small for commercial production 20 or even 10 years ago – including fields of 10 million barrels or less.

The result is that finding and development costs in the UKCS have fallen by \$8/barrel since 1990. That has been enough – in combination with a creative and responsive tax regime – to sustain both exploration and development activity. Production looks set to increase for at least another two years and the UKCS should still be producing as much as 2 million barrels of oil per day even in 15 years' time.

Technology and cost control have enhanced performance but the improvements we have seen across the industry have also been about management.

Competition

The challenge now is to sustain performance in a very competitive environment.

For the industry as a whole there is every opportunity for growth. There are new resources in places such as the Caspian and the deeper waters of West Africa and the Gulf of Mexico.

There are new markets as prosperity spreads further in Asia and Latin America. Although OECD growth continues at or just below the level of 2 percent per annum, other areas are doing much better. By the end of the century more than half the world's economic activity will be located in areas which a decade ago we thought of as the Third World.

And there are new business prospects as the old regulatory framework and the old barriers between the public and private sector are eroded. But there will be few privileged market positions upstream or downstream, because competition for access and for the best market positions will be intense. And that competition will take place in a market-place where prices and margins remain uncertain and potentially volatile.

Demand for both oil and gas is increasing in response to the potent combination of population growth and rising living standards. But there

is no shortage of supply. Our geologists' best estimate is that of the world's recoverable reserves of hydrocarbons, 20 percent have been found and developed, 45 percent have been identified but not yet developed and some 35 percent still remain to be found.

Likely challenges

There is plenty of scope for supply to be developed to meet increasing demand but prices and margins will be determined by decisions on the pace and location of development and those decisions are essentially political in nature.

The challenge for the industry is to seize the opportunity offered by growth, without losing hold of the disciplined grip on performance which has been so hard won.

All that makes an interesting story but it is not the whole story. The process of liberalisation which has affected so many things over the last decade is not just about the opening of specific markets and the removal of particular trade barriers. It is marked also by a shift of power.

Some people, encouraged by media commentators, interpret the removal of barriers as a transfer of power from government to the private sector and in particular to the large, multinational companies – of which the oil companies are the archetypal pantomime villains.

But free markets do not make firms all powerful. If anything, their strongest effect is through the mechanism of choice which distributes power.

We have to understand that we operate in a context where our success is determined by the choices and actions of others. Power, if it means anything, means the power to pursue our business. The ability to act without undue constraint. To grow value with public support rather than against the grain of social judgements.

The first group with whom we have to work and whose support we need are our shareholders who have become a very positive force. They expect performance to be competitive against the standards set by others and they also

expect delivery against targets and strategies explained openly and clearly. We are judged by our track record and by our delivery against our stated goals.

We are long-term businesses but that does not make us immune to a test which is applied year by year; quarter by quarter. And we are judged against the same standards which would apply to any company in any sector. This is a changed perspective from even 10 years ago.

Financial performance then is one parameter.

The second force which sets the framework in which we operate is the force of public authority – the governments with which we do business. It has become a cliché to say that governments have lost power because of the globalisation of markets, that governments can no longer shift tax rates because they find themselves competing for investment, that the financial markets set national economic policy.

Of course there is an element of truth in that. Sovereignty is at best partial in a modern open world economy.

But governments are still extremely powerful. They set the framework within which business is done. In most countries in the world – including in different ways both the United Kingdom and the United States – they own the mineral rights. They set the regulatory environment and the pattern of incentives which shape activity.

And outside their own boundaries – for instance through the European Union and agencies such as the IMF and the WTO – they help to set the pattern of trading relationships and the financial and monetary framework and they define the space within which business can operate in ways which very much affect the competitiveness of individual companies.

As companies we have to match our aspirations to those of the governments with which we work. In many areas – in OPEC for instance – that means the development of a partnership through a state company and it involves more than just delivering a project on time and on budget, and then paying your taxes. It also means



enhancing the process of national development through employment, training, community development and technology transfer.

The necessity of developing mutually advantageous relationships with governments is matched by the need to ensure that you are part of the communities in which you work.

The new areas which are opening up as a result of liberalisation and political change offer great opportunities and potentially very high rewards. But they also pose risks because in each area we have to learn new ways of working and developing relationships outside our own culture.

So relationships with shareholders, with governments and with local communities – as authorities and as citizens – are all important constraints on the power of a multinational company which wants to achieve sustained commercial success. Each can shape, assist or thwart the performance of the commercial

enterprise. Each, in the last analysis has the clear capacity to veto continuing operations.

And there are other powerful forces to contend with as well. The most visible are the NGOs and pressure groups which are an intermediary force – with no direct democratic legitimacy – but with the ability to compete for attention and support from those who have real effective commercial power – consumers who are also citizens.

They are an intermediary force and companies, particularly large, highly visible multinationals, are an intermediary target.

But we cannot ignore the reality of a civil society. Pressure groups do exist and they are effective in changing public opinion and therefore in setting the climate in which we operate. If we do not agree with their views, we have to engage in the process of debate, argue the case and demonstrate that what we do and the way we do it is acceptable, and should be

accepted by society as a whole.

To be defensive and to refuse to engage is to lose the argument and to confirm every popular prejudice about the seemingly secretive and arrogant nature of the oil companies.

Supreme challenge

Here, of course, the challenge for industry and for major players is to work in partnership on issues of an ethical nature while continuing to compete in an economic sense. This is the context in which companies must operate. It is no use sacrificing one element of those expectations for another. Sustainability depends on achievement on all fronts simultaneously and continuously.

The fundamental point is that liberalisation has brought freedom of choice and companies must realise that it is not they alone who have that freedom. Doing business depends on the choice of others to do business

Sir David Simon (left) receives the Cadman Medal from Mr David Setchell, IP President and Managing Director, Gulf Oil (Great Britain) Ltd. The ceremony and the lecture took place in the Gibson Hall in the City of London. In the evening a celebratory dinner was held at the Tallow Chandlers Hall.

with us. In closed, protected markets there is no choice. But in a open, liberalised, global market the people you deal with do have a choice and are not afraid to exercise it.

BP is a large and a relatively successful company. But it represents perhaps 0.001 percent of world economic activity. Our business is shaped by the world around us, not the other way round.

It all seems very different from John Cadman's time when three men (Cadman, Teagle, Detterding) could meet in a Scottish castle and divide up the world market. Or when one man representing not only his company but also effectively a great imperial power could negotiate a deal with another man, the Shah of Persia, who represented a nation of 20 million people.

To be successful on a sustained basis, a company must operate within all these parameters. What is acceptable today may not be acceptable tomorrow. How then can companies cope with this set of pressures? I believe the right way is through the process of governance.

Governance

By that I do not just mean the technical issues of corporate structures and procedures which have been debated over the last few years – the work of Cadbury and Greenbury. Those structures are important to ensure that companies are run properly but governance means something more than that. Governance is about the way in which individuals are motivated and guided. Good governance comes from within.

Self-regulation is not just a process and systems challenge. It is a challenge to individuals.

The roles of the Board and of the non-executive directors are important but the role of executive managers is even more important.

Role of people

But good governance is not just about a neat set of words – it is about people. And that is the dimension which I think will shape the industry in the future.

The role of people in the industry is one of the most fascinating and misunderstood elements of the last decade.

Downsizing created the illusion, internally and externally, that the company was all powerful in relation to its staff. That we had returned to a world of hire and fire. That is quite untrue.

In fact over the decade I think I have seen an almost complete redefinition of the relationships which exist within the company. Companies are not democracies but we have come a long way from the military culture of the post-war world. It is no longer a matter of issuing orders and expecting them to be obeyed without question.

Nor is it a matter of carrots and sticks. Carrots and sticks are for donkeys. Providing the inducement of pay and bonuses and urging the donkey to work harder to earn the carrot and to avoid the stick of dismissal or unemployment is no longer effective.

Our performance and our standards lie in the hands not of a chairman and members of a board but of all the people who work for us.

Almost without exception they could choose to work elsewhere. They are highly employable individuals. As an industry we need exceptional people. People who are mobile, who are motivated, and who have a wide and sympathetic understanding of the world around them. People with the ability to deal with individuals from many different cultures – as equals.

To me, governance is about creating the structure within which that creativity can develop. Governance is often seen as a restrictive force – a policing mechanism – an element that is certainly present. But it should also be a liberating force – establishing the space and the clarity of understanding which enables every individual to deliver to their full potential.

Looking ahead I suspect that the edge in a liberalised global market will rest with the companies which manage to attract and retain those individuals who have the ability to operate at the interface between power, competitiveness and responsibility. Individuals who have the quality of judgement.

Conclusion

Competitiveness and responsibility are standards set externally. For the industry, and for most companies, the stan-

dards of universal, global competitiveness which the market sets are relatively recent phenomena but they have been accepted and we are beginning to understand how to deliver against them.

Standards of responsibility are much less clear. Most companies have their standards but many now find themselves operating in a range of different cultures where standards are different and against competitors whose own points of reference do not always match the liberal, Anglo-Saxon model. Responsibility now sits alongside competitiveness and if you seek sustainability you must deliver on both.

What about 'Power'?

I defined power earlier as simply the ability to create the space in which to pursue your business activity. That means being competitive and being responsible. If you are not trusted on the basis of a track record, you will rapidly find yourself constrained by every form of regulation and scrutiny. At all times, and particularly perhaps at times of success, the ability to judge and recognise the limits on your freedom of operation is crucial.

That judgement, and therefore the real power of any large company, lies within. Not at the top but throughout the company. Power lies with individuals, working to a common agenda, and that is what governance has to be about. An agenda where responsibility is accepted by a common definition. It is a complex world, with competitiveness, responsibility and power inextricably interlinked. It is a very different world from the 1920s and 1930s when John Cadman was in office. It poses a very different set of challenges for the leaders of this industry – the challenge of motivating some of the most talented and creative people in the world and the challenge of leading companies in a world of uncertainty and ambiguity in which how you do something is as important as what you do.

These are very different challenges but they are challenges John Cadman would have relished.



Stepping on the gas in the UK fuel retail sector

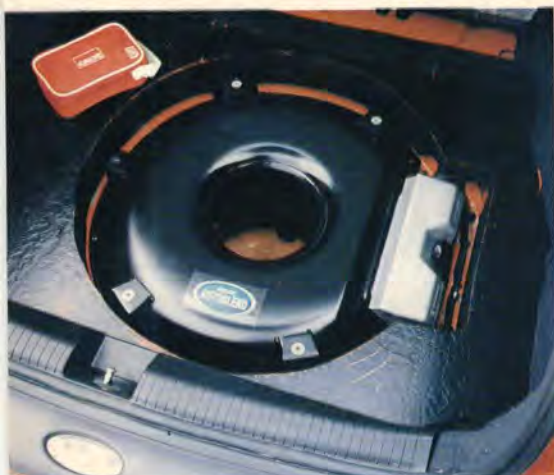
By Kim Jackson

Jet and Calor Gas have joined forces to promote the benefits of liquefied petroleum gas (LPG) as an efficient and reliable alternative to petrol and diesel automotive fuels in the United Kingdom. While the companies state that the core target market for the LPG autofuel is centrally refuelled fleets with their own storage, ie the public transport sector – bus companies and mini-bus operators – together with taxi cabs and light commercial van fleet operators, they plan to heighten general awareness of the product with the addition of LPG dispensing pumps at a number of selected Jet-branded service station forecourts across the country.



Former Energy Minister Richard Page (centre) unveils a polesign highlighting the new Autogas LPG fuel. With him are, left to right: Dave Blakemore, Jet General Manager – Speciality Fuels Marketing; Steve Theede, Managing Director and Chief Executive Officer, Conoco Ltd; John Harris, Chief Executive, Calor Gas; and Gideon Overwater, National Sales Development Manager, Calor Gas

In dual fuel conversions, an additional fuel tank is fitted, often in the space occupied by a spare wheel



A total of four outlets have been selected initially – in Bradford, Leeds, Birmingham and London – the first of which, Bradford, is due to begin retailing LPG this month. The sites were picked primarily for their location in large urban concentrations with high levels of car use and associated pollution. It was also felt that a spread of sites across the country would provide the widest possible cross-section of customers.

Little additional equipment will be required on the forecourt, the dispensing pump and tank being the main additions. Pipework from the pump will run through existing ducting, while the whole LPG system interfaces with the existing forecourt systems at the Jet outlets. The only problem envisaged is perhaps at sites where space is at a premium, such as in London, where there may not be enough room to place an above-ground storage tank. This would require an underground tank to be installed – a more costly procedure both in terms of time and money.

Marketed as 'Autogas', the LPG fuel will retail at just 39 pence per litre – compared with 59.9 pence per litre for premium unleaded petrol and 57.9 pence per litre of diesel. David Hepworth, Manager LPG, Jet, is keen to stress that the price is not an introductory one designed to make people convert that will then be increased

after a short while. 'This price is meant to be competitive but is not a two-week wonder,' he said. While Mr Hepworth accepts that Jet and Calor Gas cannot expect too much financial reward at this early stage, he states that the consumer must, however, 'appreciate that the storage, distribution in truck terms, handling on site etc of LPG is more expensive than conventional fuels and in the long run we will have to be able to make a decent margin capable of covering all costs and creating a profit'.

While the retail sites link-up between Jet and Calor Gas is indeed a new development, the relationship between the two companies is long-standing. Jet has been one of Calor Gas' main suppliers of gas, supplying both butane and propane from the Conoco Humber refinery for some time. The companies also share gas storage in two nearby underground caverns with a combined storage capacity in excess of 120,000 tonnes of product. Jet has also recently taken over much of Calor's trading function, buying product for both companies.

As already indicated, there are two types of LPG – butane and propane. Butane vaporises only at temperatures above 0°C, whereas propane can

be used and stored at temperatures down to -47°C. For this reason, propane is the gas selected for autofuel in the United Kingdom, although other countries use butane, such as in South Korea, or a combination of the two. However, the prospect of utilising a blend of propane and butane in the United Kingdom is being researched by Jet and Calor Gas 'in a bid to find the best product in the long term', according to Mr Hepworth.

Following the political agenda

Jet and Calor Gas' decision to extend the commercial availability of LPG follows recent government moves aimed at reducing harmful vehicle emissions and improving air quality. Such measures include the reduction of duty on 'green' fuels such as LPG and compressed natural gas in last November's budget, while duty on petrol and diesel was increased. A reduced vehicle excise duty (VED) for lorries and buses fitted with particulate emissions traps or converted to the use of alternative fuels was also proposed by the Chancellor of the Exchequer in a bid to encourage the switch from diesel and petrol to 'cleaner' forms of fuel.

	LPG	Premium unleaded
Pump price	39p/litre	59.9p/litre
Cost/mile (assuming 23mpg=5.1mpl)	7.64p/mile	11.74p/mile
+20 % energy loss using LPG instead of unleaded. Therefore true cost/mile	9.17p/mile	11.74p/mile
Engine conversion cost	£1,100	Nil
At 20,000 miles/yr cost amortised over four years, cost/yr therefore	£275	Nil
Conversion cost/mile	1.38p/mile	Nil
Running cost/mile	10.55p/mile	11.74p/mile
Saving per mile using LPG	1.19p/mile	
Cost saving per year using LPG	£238.00	

Retail running costs – a comparison between LPG and premium unleaded petrol

Although political power has recently changed hands in the United Kingdom, it appears likely that the new Blair government, too, does plan to be proactive regarding the promotion of alternative fuels and the development of related engine technology. Concrete plans, however, have yet to be detailed and a number of interested parties, such as the Freight Transport Association and the LP Gas Association, are calling for continued government support.

Such support is necessary if the United Kingdom is to achieve the same large-scale use and environmental benefit that other European countries are already achieving from the use of LPG. For example, at present there are just 1,500 vehicles running on some 2,000 tonnes of LPG per year in the United Kingdom, compared with over one million vehicles in Italy consuming 1.2 million tonnes of LPG annually, and 500,000 vehicles in the Netherlands using some 750,000 tonnes of LPG per year. These figures reflect the levels of incentive found in the three countries: in the United Kingdom, taxation incentives are relatively modest, while the Netherlands has a particularly advantageous taxation and pricing regime. Although the taxation regime in Italy is not so generous as that found in the Netherlands, uptake of 'green' fuels is higher because vehicles running on conventional fuels are banned from many of the major cities on certain days whereas those powered by alternative fuels have unrestricted access.

The French and German governments, too, have actively supported the alternative fuels sector, slashing duties on such fuels at the end of 1995. France cut its duty by 69 percent, from 388 to 122 Ecu/tonne, while Germany reduced duty by 59 percent, from 315 to 128 Ecu/tonne. The United Kingdom on the other hand is still at 250 Ecu/tonne. The French alternative fuels market, in particular, is booming, increasing at a rate of 30 percent per year. Indeed, by the end of 2003, it is expected that French demand for LPG will have reached a minimum of 400,000 tonnes/year.

The German market for LPG, however,

together with some other European countries, is slightly slower because the main promotional push is behind compressed natural gas (CNG). This is primarily for political reasons as there is a financial incentive if the government owns the country's natural gas business, has a stake in it or if the gas is produced entirely at home. The United States is another good example of the differential in duty paid on primarily domestically produced CNG and LPG, some of which is imported – federal tax per 10,000 miles travelled on CNG is just \$37 compared with \$167 for LPG.

It is perhaps worth pointing out at this juncture that the United Kingdom is particularly well placed to meet future demand for LPG – a fact unlikely to be overlooked by the Chancellor of the Exchequer! The country is a net exporter of LPG by a very big margin and will be more than capable of supplying the estimated 150-350,000 tonnes per year throughput in 2003.

'We are absolutely delighted with the performance, economy and general good press that we are getting from our four LPG-powered transit vans – so much so that we are considering purchasing another vehicle in the near future.'

John Davison, Head of Contract Services, Ryedale District Council, North Yorkshire

LPG versus CNG

As *Petroleum Review* readers will have noticed, when the topic of alternative fuels is addressed most media attention focuses on CNG. While CNG is indeed a more environmentally friendly option

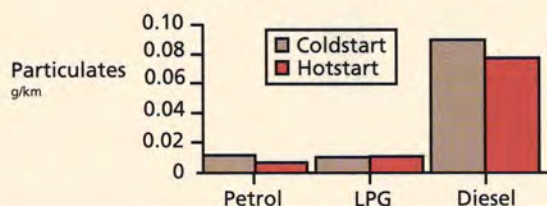
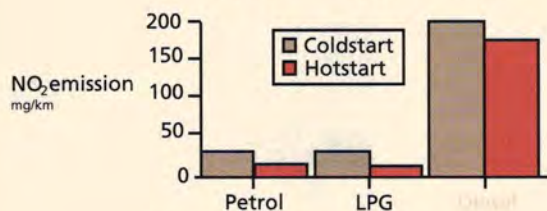
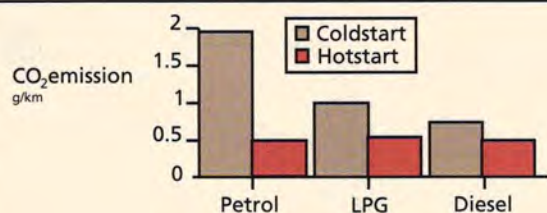
The two fuel tanks in a converted LPG vehicle have separate refuelling points



than petrol or diesel, LPG is a more effective alternative in many applications for a number of reasons:

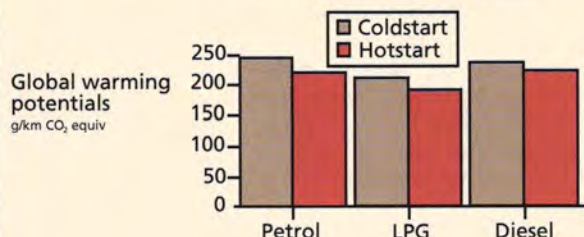
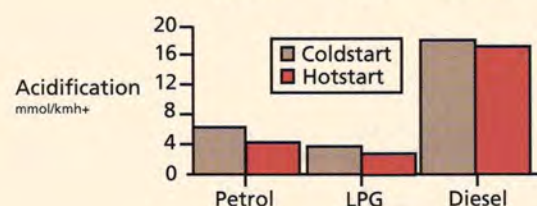
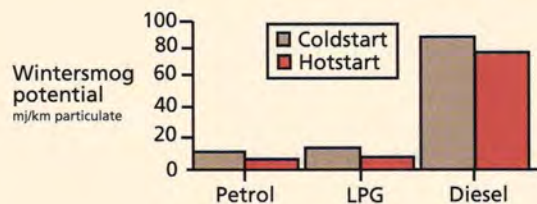
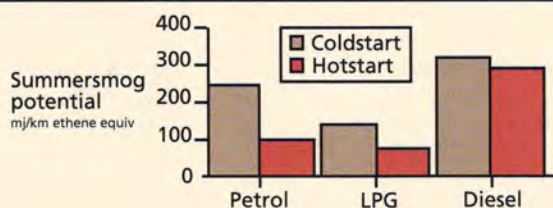
- Firstly, vehicles converting to CNG need a heavier, thicker skinned tank than is required with LPG because the gas is stored at a very high pressure – over 2,000 pounds per square inch. On a bus this can be equivalent to the weight of approximately 12 passengers.
- Secondly, CNG storage is also more expensive as the required gas compression results in higher electricity bills. Furthermore, the cost of installing a fast-fill CNG storage is in the region of £250,000, compared with £15,000 for LPG, because the latter has no need for compressors, other auxiliary equipment or dedicated multiple overnight refuelling bays.
- LPG has also been shown to have a greater range than CNG allowing a vehicle to travel further without refuelling.

However, motorists converting vehicles to either CNG or LPG would benefit not only from lower prices at the pump but also more economical running costs and improved engine performance as the clean burning fuels contribute to less engine wear and tear.



The environmental effects of LPG

The bar charts here summarise the direct toxic effects of LPG, petrol and diesel under both coldstart and hotstart conditions. They indicate, for example, that LPG emits half the amount of carbon monoxide emitted from the vehicle tailpipe under coldstart situations when compared with petrol while emitting substantially less nitrogen dioxide (NO₂) and particulates than diesel. Furthermore, when regional effects and global warming potential of the fuels are taken into consideration, LPG performs better overall than either petrol or diesel.



Converting to LPG

To run on LPG, vehicles must first be converted. Petrol engines are best suited to conversion which costs in the region of £1,000 for a car, £1,200 for a van and £5,500-£6,500 for a bus. For the average family motorist, the pay-back period would be four years; for a city centre taxi it would be two years.

The most common motor car conversion arrangement is a dual fuel system in which the LPG tank is mounted in the boot, often in the space occupied by the spare tyre. In the case of commercial vehicles, the tank is generally installed in or underneath the freight

compartment. A dashboard-mounted switch allows the driver to select either fuel. It also offers the reassurance that, if the vehicle runs out of LPG, there is a conventional petrol back-up. Safety is of paramount importance and tanks have an automatic shut-off valve to limit filling to 80 percent and a pressure relief valve. Refuelling is pretty much identical to that of a conventional vehicle, using a pump, hose and nozzle. There are, however, no evaporation losses or spills.

An additional bonus for those choosing to convert their engines is that the conversion kit may be moved from one vehicle to another when an owner sells

and buys a new one, thus reducing the costs of conversion of the next vehicle.

Diesel engines are also suitable for conversion but because of the absence of spark ignition in such engines, a more complex, and thus more costly, arrangement is necessary.

The road ahead

According to Mr Hepworth, while the industry is grateful for incentives the government has given so far, they have not produced sufficient interest to stimulate the market. He believes that the UK government needs to drop its LPG price to the French level

of 122 Ecu/tonne, which is also broadly speaking the EC minimum, if the United Kingdom is to make any 'serious inroads' to this developing market.

'More interest also needs to be shown by the engine manufacturers,' he continued. 'Currently there is only one company, DAF of the Netherlands, which produces a dedicated LPG engine for the UK market. There is also a very good conversion of a Cummins diesel engine that has been licensed by the US company to Powertorque in Coventry, which has subsequently converted a number of Ensign buses. However, the market is gathering momentum and hopefully Cummins will bring its own dedicated LPG engine into the country quite soon. Other manufacturers are also beginning to express an interest.'

Furthermore, at present, and unlike on the Continent, it is not possible in the United Kingdom to buy a brand new car already converted to LPG. In Holland for example, Vialle, one of the

'We are very conscious of our impact on central London's environment and want to run as clean an operation as possible. Our four LPG-powered London Pride sightseeing buses are the best way that we have found of minimising the impact of our business with the technology available today. We are very happy with the buses and have two more currently under construction.'

Brian Longley, Engineering Director, Ensign Bus Company

main conversion specialists used by Jet, converts a range of makes of car directly off the production ramp. The conversions are approved by the manufacturer and carry stickers reflecting this.

'This is something we must get to grips with in the United Kingdom,' stressed Mr Hepworth. 'We must get the UK vehicle manufacturers to accept that LPG as a fuel for automotive use is going to happen and is going to stay. We need them either fitting dedicated engines or approving a factory fitted conversion done either on site or by an approved converter and carrying the manufacturer's stamp or seal of approval. To date, they have had some reservations about warranties etc, but in light of the Dutch experience that LPG powered vehicles require less servicing, less oil changes and last longer than conventionally powered ones, things are beginning to change.'

Only time, and perhaps our lungs, will tell!

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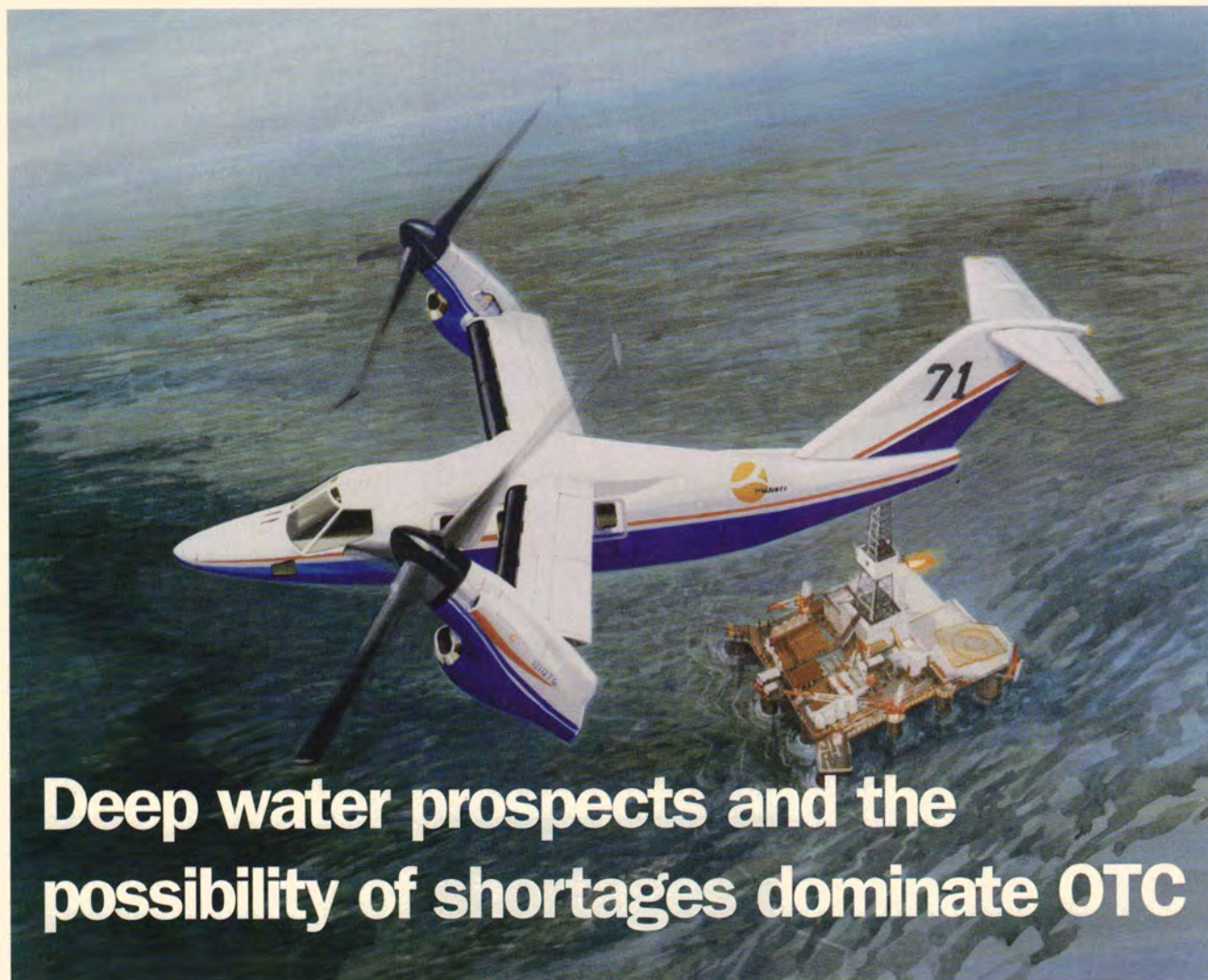
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Deep water prospects and the possibility of shortages dominate OTC

By Philip Algar

An optimistic mood characterised the 1997 Offshore Technology Conference, held last month in Houston, as participants considered new areas and the application of novel technology. Some 43,394 people, from over 80 countries, visited the exhibition and conference, compared with 36,424 last year. Some 270 papers were presented at 49 sessions.

Strong crude oil prices are unlikely to persist but senior upstream personnel remain optimistic because they know that efficiency improvements, innovative technology and the availability of new areas imply reasonable margins, although shortages of rigs and personnel could develop. Cost cutting remains important but the emphasis is now on new prospects, especially in deep water, and technology.

OTC has acquired a deserved reputation for persuading energy ministers and leading offshore executives to present papers. Their collective views

offered an interesting insight into the future although some commenced by acknowledging that the US offshore sector was celebrating its 50th anniversary. Commercial oil was found on 4 October 1947 off the Louisiana coast in 19 feet of water.

Many presentations were concerned with deep water activity, so the Gulf of Mexico, now regarded as a key area, having been the 'dead sea' only a few years ago, was scrutinised. Robert Rose, Chairman of the National Ocean Industries Association and Chief Executive Officer of Diamond Offshore Drilling, pointed out that the Gulf of Mexico Outer Continental Shelf accounts for 15 and 26 percent, respectively, of total US crude oil and natural gas production. Over the last 50 years, the US Gulf of Mexico has produced 11 billion barrels of crude oil and 130 trillion cubic feet of gas.

The US scene: shortages ahead?

The possibility that progress, especially in the Gulf of Mexico, could be undermined by a shortage of rigs and skilled personnel was exercised by some speakers but others suggested that this was essentially an American problem. Nevertheless, if it develops, it would inevitably affect drilling elsewhere. Mr Rose contended that there was a significant shortage of deep water rigs and another 16 might be needed. The cost of building a new deep water semi-submersible or drillship was \$250-300 million and day rates were approaching the level required to justify new builds but the lead time could be three years.

William Heagney, President of Transocean Offshore Drilling, suggested that to justify the \$235 million costs of converting a rig to function in deep water, a daily rate of up to \$175,000, some \$25,000 above current rates, would be necessary. However, to justify building a new deep water rig, which could cost about \$300 million, daily rates would have to reach \$200,000.

Jon Thompson, President of Exxon Exploration Company, optimistic on deep water prospects, notwithstanding the substantial requirements for technology,

capital and personnel, argued that the main shortage would be of rigs for deep water development drilling. There were sufficient rigs to carry out exploration.

Deep water basins could contain about 10 percent of the world's hydrocarbon potential. Production from deep water provinces averaged 1 million barrels per day (b/d) last year and this rate could treble by 2000, with the main contributions coming from the United Kingdom, Norway, the US Gulf of Mexico, Brazil and West Africa. In the next five years, up to 40 deep water projects could come onstream around the world. Less than 1,000 wildcats have been drilled in deep water but some 36 billion barrels of oil equivalent have been found.

By 2010, when global oil demand might have increased by more than a third, two-thirds of the world's oil could come from new sources: the contribution from deep water could be 6 million b/d but much would be determined by fiscal factors, technology and the sector's ability to reduce costs. Mr Thompson thought that the most difficult challenge would be the staffing problem.

James Bryan, Senior Vice-President of Operations, Dresser Industries, and Chairman of the Petroleum Equipment Suppliers Association, agreed that more qualified people were desperately needed: 'Financial strength, state of the art services and advanced technologies are certainly critical to our success. But, without enough qualified people, a key variable in the formula for future growth and profitability will be missing.' Skilled workers, particularly the technicians and engineering personnel who had left the industry, had found alternative employment. Since 1992, the total number of engineers graduating annually had fallen by 18 percent to 96,000. From 1992 to 1993, the number of new petroleum engineers had plunged by 65 percent and only 111 graduated in 1996.

There was no immediate solution but 'We must have very active sponsorship and recruitment programmes ... and improved incentive programmes that are competitive with other industries.' Stuart McGill, Executive Vice President of Exxon Company International, conceded that 'The damage that we've done to

ourselves as a career industry is the single biggest barrier that we've got.'

Frederico Pena, the new US Energy Secretary of State, forecast that in the next 15 years, US net oil imports could account for 60 percent of domestic demand. By 2000, OPEC could account for more than half of total US petroleum imports. Without action, OPEC's share could steadily increase after 2000, perhaps to about 57 percent by 2015. The Persian Gulf share of US imports from OPEC could increase from about 41 percent in 1995 to more than 50 percent in 2015. 'America must understand the risk of a growing dependence on petroleum sources that are largely outside our control,' he added.

Repeating predecessors' comments, he argued that the United States must increase domestic energy production, expand the use of natural gas and diversify oil import origins to reduce dependence on insecure sources of foreign oil.

Here and there

Charles Furey, Minister of Industry, Trade and Technology in Newfoundland, said that the Hibernia field, 30 km east of St Johns, the largest Grand Banks discovery thus far, contains more than 615 million barrels of oil and one trillion cubic feet of gas. First oil is planned for December and peak production of 135,000 b/d could be attained in 2000. The Hibernia project was a catalyst for the development of Terra Nova, where output could peak at 125,000 b/d, Whiterose and Hebron. By 2004, Mr Furey expects the province to be producing about 400,000 b/d of light oil, which would represent about 36 percent of Canada's 1995 crude oil production of 1.1 million b/d.

Nourlan Balgimbayev, President of the newly formed Kasakoil, the state company of Kazakhstan, was very bullish. Oil reserves are more than three billion tonnes but this estimate could rise by a factor of five as new discoveries, especially in the Caspian, are made. Some \$200 billion would be required to bring these fields onstream and as Kazakhstan, having invested some \$2 billion, lacks such funds, western capital is needed. Contracts with overseas



companies, involving investment of about \$42 billion, are being discussed.

Overseas groups account for more than the country's current output of 540,000 b/d. More than 80 potentially producing structures have been located in the Caspian Sea, following a three-year, 26,000km² seismic shoot undertaken by the national company and six overseas groups. They should be able to sustain peak output of some 2 million b/d. Production sharing agreements are being considered. Kazakhstan was planning to produce 3 to 3.4 million b/d by early in the next century, thus becoming the sixth largest oil producer in the world.

According to Antonio Carlos Agostini, Director of Exploration and Production, Petrobras, the company would soon finish the subsea completion of the Marlim south-3 well, in the Campos Basin, at a record water depth of 5,607 feet. Production was planned for June. Petrobras expected to go deeper next year, when developing the new giant Concador field in the northern part of the Campos Basin, where

water depth was about 6,561 feet.

Mr Agostini said that almost 1,000 different proposals had been received since Petrobras indicated that it was looking for private enterprise partners as the group's monopoly was ending. When the new legislation is effective, Petrobras will have to compete for new upstream concessions. Negotiations have already begun with some potential domestic and overseas partners.

Petrobras offered around 150 of its upstream projects for partnerships and received more than 150 reciprocal proposals in major deep water projects around the world. The group was keen to expand international activities. Brazil, currently producing 900,000 b/d, intends to raise this level to 1.2 million b/d and 1.6 million b/d, respectively, in 1998 and 2001.

Because of the change of government, the British delegation was led by Sir Ian Wood of the John Wood Group and Chairman of the OSO Advisory Board, who said that UK suppliers to the global upstream and downstream markets had secured business which, last

year, was worth \$6 billion, of which \$2 billion was in the upstream sector. The global offshore market is thought to be worth some \$50 billion a year. The combined target for this year was \$8 billion but this would only represent a share of up to 5 percent. 'Considering that the UKCS has been at the cutting edge of technology for the last 20 years, our expectations should be higher,' he said. Last year recorded significant progress in the development and exploitation of UK offshore technology. 'In a number of key areas, UK capability is second to none but we don't always get this message across with our gold-plated international image which tends to see us damned with rich praise,' he added.

The Norwegian Energy Minister, Ranveig Froiland, remarking that current production was 3.2 million b/d, with output expected to peak at 3.7 million b/d by the turn of the century. This latter figure was 300,000 b/d more than previously forecast and was due to cost-cutting and higher recovery rates, achieved by new technology, which now stood at 50 percent for oilfields and to 75 percent for gas fields.

Exhibition

The number of exhibitors increased from 1,424 to 1,518, of which 423 were companies from outside the United States. Not all the booths showed new technology. Some companies, such as Shell Midstream, were seeking to reduce costs by offering to share group facilities in the Gulf. Britain was well represented and its 98 companies constituted the biggest overseas contingent.

Away from the more traditional upstream equipment and services, Bell Boeing attracted considerable attention with a modest mock-up of 'the world's first civil tiltrotor'. The publicity describes this as 'a 21st-century aircraft that combines the take-off, hover and landing qualities of a helicopter with the high speed, range and efficiency of a turboprop aircraft that will change aviation support in energy resource development.' Speeds twice as fast and ranges twice as far as conventional helicopters are claimed and the first flight is scheduled for 1999.

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'Upbeat on the downstream'

By Dr Rolf Stomberg,
Chief Executive Officer, BP Oil
and Managing Director, BP

Those of us who work in the downstream sector of the oil industry face a paradox. We are the shop-window of the oil industry. To the general public, we are the oil industry. For most people, their only real contact with oil companies is when buying petrol at service stations. There is nothing that could disrupt their lives in practical terms more quickly or dramatically than if petrol supplies were for any reason to be threatened.

So, if ever there were an essential public service, it is our industry. We enable the emergency services to operate. We get people to work. We help goods reach the consumer. We allow people to travel independently, whether it be for pleasure, leisure or necessity.

And yet... this also is the part of the business which is under pressure. It is a difficult area in which to make money. Competition is intense. Many of our markets are both mature and oversupplied. That does not mean that the situation is hopeless, by any means. You have only to look at other industries similarly described to demonstrate how successful companies and businesses can make healthy profits against a less than healthy background.

Let us look, for example, at the paper, steel and glass industries which are enjoying average returns of 14.8 per-



cent, 10.4 percent and 7.9 percent respectively. But within this average, the best in class are earning returns of 28.5 percent, 24.9 percent and 19.5 percent but those at the bottom of the pack are actually losing money.

So, some companies are doing 'very nicely, thank you' in mature, over-supplied industries. The same can apply to the downstream industry, for those who are 'best in class'. That is why, incidentally, I am upbeat. The downstream industry is a good place to be, if you are well positioned and have gone through the necessary pain to come out on top – though, it is also true to say that downstream investments are generally more closely bunched in return terms.

But I do not want to minimise the difficulties, either. Ironically, one of the industry's problems is its growing efficiency. 'Capacity creep' is the jargon

term. Thanks to de-bottlenecking and technical advance, worldwide refining capacity is increasing each year by the equivalent of five typical American refineries. And that is on top of any new refineries which may be built.

For many companies, therefore, it is a struggle to survive, let alone flourish. We may be an essential public service but it is a service which many want to keep for themselves while denying it to others. Even Greenpeace whose ultimate aim is 'to eliminate the chemical, oil and coal industries' is one of BP's customers.

Why, then, am I an optimist about the downstream industry? It is because I believe that there is a growing global demand for our products. And because I am confident that this growing demand can be satisfied profitably, and in an environmentally responsible fashion.

Nor am I apologetic about what we do. I happen to believe that our industry liberates and improves the daily lives of millions of people. Those are my reasons for being in the game, and wanting to win it.

This, then, is essentially the ground I wish to cover here.

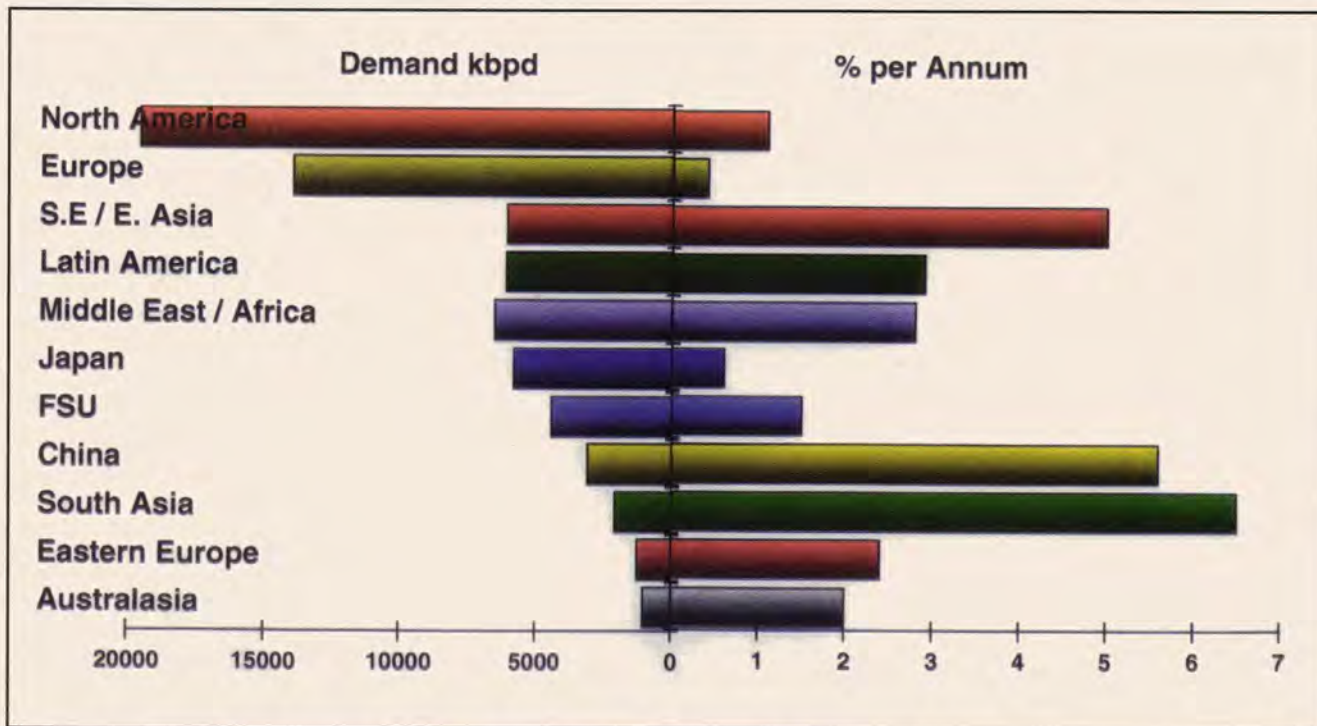
To start with the global position, **Figure 1** demonstrates that there is considerable growth potential but that it is highly concentrated. China and South Asia are the parts of the world with the greatest potential, with the rest of East and South-East Asia performing very well too. But in terms of absolute demand, clearly North America and OECD Europe, despite their modest growth, retain their significance.

Within the emerging economies we can identify, as we can in Europe, 'hot spots' where demand growth is particularly rapid and significant. For example, China's coastal provinces are growing at twice the rate of the rest of China, while within India, growth is very high in individual cities.

Figure 2 looks at the same data in a different way and ranks each part of the world by projected-growth rates, linked to the incremental demand in thousands of barrels per day by the year

Dr Rolf Stomberg

Figure 1: Oil demand 1995/demand growth 1995 – 2005



2005. Here, one can see plainly that the bulk of the incremental demand facing the downstream oil industry – 75 percent in fact – is to be found in the emerging economies. Growth here is some 4 percent per annum, compared with an average of less than 1 percent per annum for the OECD. Despite this, however, the United States is still expected to account for 12 percent of world incremental demand, while the OECD is still expected to account for around 20 percent.

It is worth looking at the European picture in a little more detail. Growth is high in many of the countries of Central Europe. Poland has the biggest potential, with GDP growth running for the past five years at some 7 percent per annum, although, as with India, there is a big difference between the growth rates in towns and rural areas. But the Czech Republic is also enjoying high growth – about 5 percent. Hungary less so, which is in the grip of an austerity campaign. And if we look at Europe as a whole, it is possible to identify the 'hot spots' to which I referred previously in the context of South Asia (see **Figure 3**).

Figure 4 shows a corridor of population density – more than 200 people in every two kilometres – which runs from the United Kingdom, through southern Poland, the Czech Republic, Hungary and then into the Ukraine.

These are the statistics. How each company responds to the opportunities they present is obviously a matter of fine commercial judgement. But I think it is clear that there is considerable growth around, even if it is not evenly spread and even though it derives from different sources.

At this juncture I also ought to say something, in the context of the figures I've just given, on the impact of the motor car debate upon our industry's prospects. Could all these figures be reversed by government policies aimed against private car ownership and use?

A large part of the global growth in demand that we expect does not derive from existing car owners, or even from wealthier families wishing to own more than one car. Rather, it is because there are still large areas of the world where car ownership is an aspiration, rather than a fact. And the determination to

transform this aspiration into fact should not be underestimated.

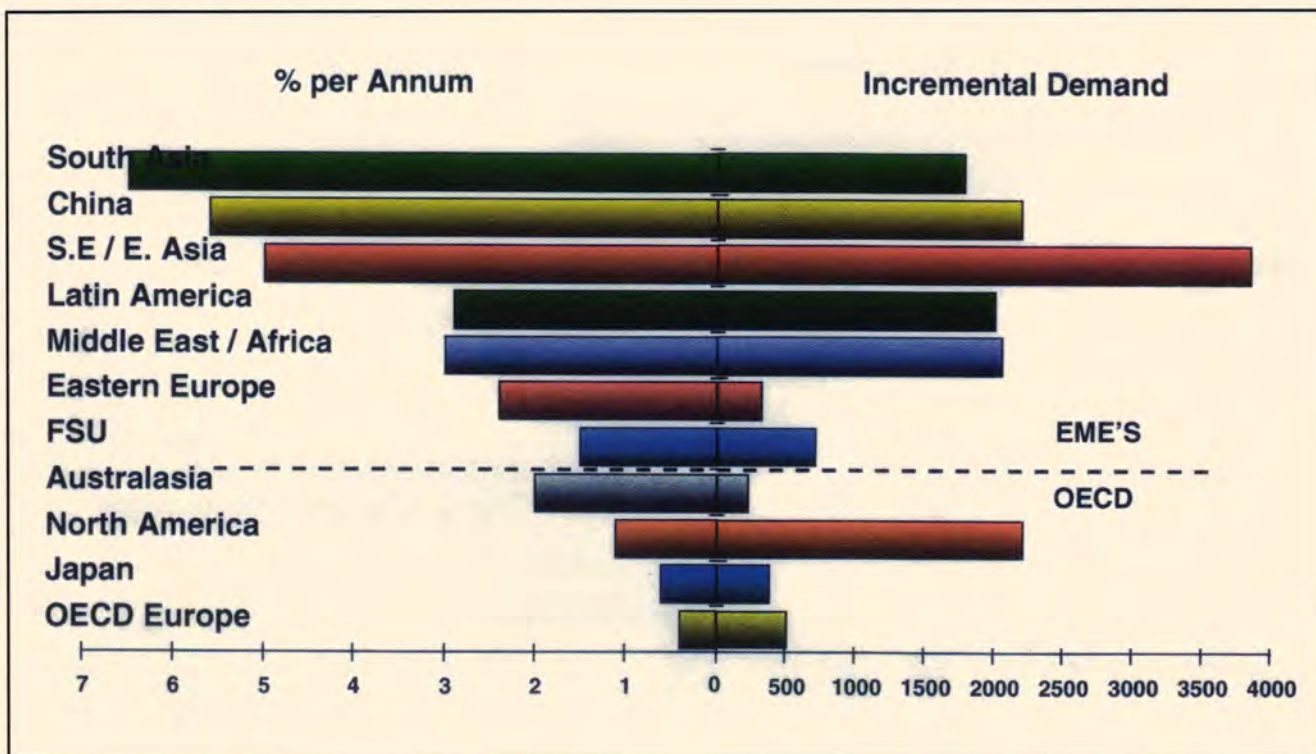
An anti-car policy of almost draconian and global proportions would be needed for current trends to be reversed significantly. (It is worth remembering that, even in Western Europe, there are considerable variations. Car ownership in the United Kingdom, for example, is still lower than in France, Sweden, or Germany, let alone the United States).

If I were to enter this area in any detail, I would end up delivering a speech on transport rather than the downstream oil industry. In reality, it is very difficult to separate the two. To be 'upbeat on the downstream' without taking transport policy into account would be a little foolish. But for today's purposes, I shall confine myself to a few basic points.

Demand factors

First, attempts to formulate policies which deal with road congestion should not be interpreted as threatening the downstream oil industry. We claim no particular expertise on the matter of

Figure 2: Oil demand growth 1995-1996



transport policy. Some place emphasis on market mechanisms, like road pricing. Others prefer a more interventionist approach with much greater importance allocated to public transport.

The only two points I wish to underline are, first, that we must be one of the few industries which sees no conflict of interest in helping our customers to use less of our product. We are neither opposed to greater efficiency in fuel consumption, nor to less use in total. And I might add in passing that our industry's efficiency is, like many others, impaired by road congestion. So, when it comes to improving traffic-flows, we are all on the same side.

But the second point is that anything advanced economies succeed in doing to discourage road use is likely be offset by the aspirations of all those individuals who, either in Europe or elsewhere, still strive towards owning a car. That is why policies which may do a great deal to alleviate the problems of congestion locally will not necessarily affect overall demand in the longer term.

Profitability

If I am correct in being 'upbeat' on demand, the next question is whether it is possible for an environmentally responsible company to make money out of satisfying it.

Here it is very difficult to generalise. I am confining my remarks in the main to the situation in Europe but we should not forget that many of the exciting prospects in our industry are to be found elsewhere.

The short answer to my question is that it is possible for some companies to make money in downstream Europe but it is not possible for everyone to do so. One of the key challenges facing any oil company operating downstream is to decide where it stands relative to the rest of the competition and what possibilities exist to improve this position.

Refining plans

My own company is currently in the process of closing or disposing of four refineries, and upgrading three others. By the end of the decade, we plan to

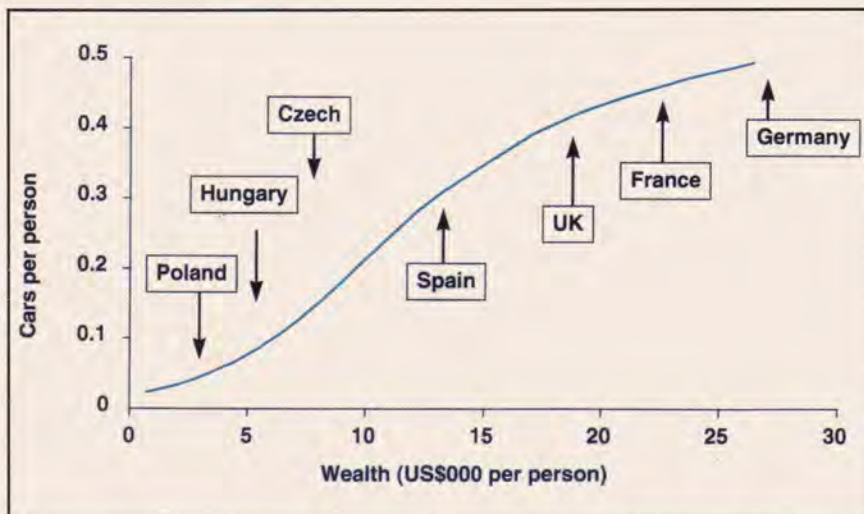
have refineries which are second to none, with no under-performers. This is achieved through investment and disposal. We expect to achieve world-class operational performance for our entire portfolio. In the United Kingdom, the Grangemouth upgrade is substantially completed already.

The reality facing us all, however, is that the problem of refinery over-capacity cannot be addressed by a single company alone. In the past seven years, the European refining industry has closed five refineries. But total capacity has still increased by 300,000 barrels per day. Even now, we estimate that surplus refining capacity remains at some 500,000 barrels per day.

Of course, it is not just a question of quantity. Quality is an important factor as well and new investment is still necessary to ensure that Europe's refineries are efficient and equipped with the latest technology.

Figure 5 summarises this aspect of the problem. Despite a structural surplus, the present shape of the barrel in terms of incremental supply fails to

Figure 3: Growth in demand



meet its equivalent in terms of demand. A projected deficit of some 4.1 million barrels per day can be identified, which necessitates the current and projected upgrading projects summarised in the diagram. It is estimated that, in global terms, average yearly additions in terms of residue upgrading capacity of some 820,000 barrels per day will take place between 1995 and the year 2,000.

Platform for growth

But structural surplus capacity remains a real issue for the industry. No company wishing to be a serious player in downstream refining can remain a spectator on this issue. This leads me into the marketing dimension, and in particular to the joint venture between BP and Mobil.

I am not saying that what BP and Mobil has done is necessarily appropriate for every company. It is only working out successfully for ourselves because we are two companies with a similar philosophy, with complementary assets and with distinctive skills. It is our way of addressing the new market realities. And the only certainty is that these market realities cannot be ducked.

The re-branding of Mobil's forecourts is now well underway with over 100 achieved in the United Kingdom alone. By the end of this year, over 8,500 sites throughout the length and breadth of Europe will sport the BP livery. It means

that, in the countries where we operate, the BP brand will have some 12 percent market share in fuels and BP and Mobil together will enjoy 18 percent market share in lubes (see **Figure 6**). The joint venture is also planned to deliver cost savings and other benefits of over \$500 million per year.

But its real importance is that it provides us with a platform for growth. This joint venture allows us to pursue our marketing strategy with greater energy and conviction. It is not giving any secrets away to highlight the competitive importance of owning advantaged facilities, on advantaged real estate within advantaged networks. In our own markets, we see the potential for significant upgrades and new builds.

The link with other forecourt activities is also crucial, and always has been. At the very start of my remarks, I argued our business was about providing an essential product. It is not a luxury – despite government attempts to make it so, through taxation.

But there is not much fun in shopping for petrol, which is why from even the early days the downstream industry was mindful of the three 'F's – Fuelling, Fixing and Feeding. It is just that nowadays we must be even better at it, particularly as the motorist no longer has to go to a service station specifically for the purpose of buying petrol. 'Filling up the car' can be part of your regular weekly 'shop' at the supermarket.

That is why all of us in the industry are devising new ways of attracting customers back into our service stations. Some examples for BP include our BP Express Offer and the pilot scheme we are currently carrying out in the United Kingdom with the supermarket chain Safeway. At five test sites, we are combining our expertise in petrol retailing and logistics with their corresponding knowledge and skills in the retailing of consumer goods.

These projects will increase the value of our real estate; and it will provide better and wider services to our customers through combining our strengths. We have every confidence that this pilot scheme will lead to a partnership involving 100 sites throughout the United Kingdom.

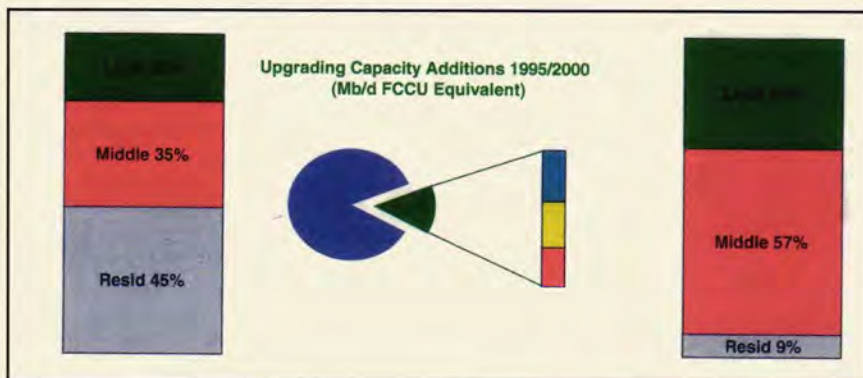
Environmental focus

Up to now, I have said nothing about governments nor about the environment. But both are valid considerations for anyone who wishes to be 'upbeat' about the downstream. I asked a moment ago whether it was possible for 'an environmentally responsible company' to make money out of the downstream. I now want to focus on this environmental dimension.

It is impossible to separate environmental from commercial considerations. If the downstream oil industry is perceived by its customers as being indifferent to the environment, it will damage us commercially and reputationally. The whole of the oil industry, and not just the downstream, would suffer. So, there is a commercial imperative to address the environmental issues responsibly and effectively. And I am not forgetting all the other reasons – the views of our shareholders, the attitudes of our staff, our relationships with our partners – why the environment matters.

Of course, it matters in both a global and local context and the oil industry needs to take very seriously the genuine and understandable concern over global warming in particular. This is a global issue, calling for a global response and involving every facet of society, including industry.

Figure 4: World residue upgrading requirement



Vehicle maintenance

There is little doubt which measure would produce the most significant and rapid improvement in air quality throughout Europe. It does not involve any fuel reformulation, refinery upgrading or engine design. It is merely a question of ensuring better and regular maintenance of existing vehicles on the road.

An old or badly maintained vehicle can cause up to 15 times as much traffic pollution as a well-maintained modern counterpart. That is why an effective vehicle inspection and maintenance programme would have enormous environmental benefits.

Equally, better public transport and traffic management would reduce the congestion, and therefore the environmental disadvantages, of road transport.

But of course things can be, and are

being done on the technical side as well, and the European Commission's Auto-Oil programme, which is backed by the oil and motor industries, is indicative of this desire.

In terms of local air quality – as distinct from global warming and CO₂ emissions – the question is not whether, but how, this problem is solved. Already, today's new petrol cars emit about a tenth of the carbon monoxide, hydrocarbons and oxides of nitrogen of a new petrol car bought in 1970. Similar reductions are being achieved with heavy goods vehicles. Air quality has been improving, is improving and will continue to improve well into the next decade.

The problem we face today is that each new control measure yields less benefit than its predecessor, and at an increasing cost. A more focused approach is therefore needed, which is

what the Auto-Oil programme seeks to provide. Last year, the European Commission agreed a strategy for the year 2000 which included, amongst other measures, more stringent petrol and diesel fuel specifications. These were accepted by the industry, and will be implemented. They will achieve significant reductions by 2010 in terms of particulates, nitrogen oxides, ozone precursors, benzene and carbon monoxide.

But there is already pressure to introduce further measures in 2005 which really do run the risk of damaging Europe's competitiveness and jeopardising jobs for no discernible environmental benefit.

They also pose a threat to Europe's security of supply.

A growing dependence on OPEC crude production is forecast between now and the year 2005. OPEC's desire to increase its sales of refined product is also apparent. Refining capacity in the Middle East will have increased by 940,000 barrels per day by the year 2000. By then, the Middle East will have the equivalent of 40 percent of Europe's refining capacity.

So, Europe's refineries are also part of global competition. They will find it increasingly hard to compete if further costly investments are required in order to improve fuels which, by that time, will already be satisfying the EC air quality standards. The only practical consequence could be to increase Europe's dependence upon the Middle East for its refined product.

Conclusion

This has been a whistle-stop tour of the downstream oil industry. Let me summarise why I am upbeat, but not complacent.

First, ours is an essential industry for which there is growing demand. People do not wish to lose the freedom and independence which only a car can give. And there are many people who still look forward to enjoying this freedom for the first time.

This paper is based on an address given to the IP Energy Economics Group in March.



Figure 5: Joint ventures in Europe

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Technical Report

REFINING AND MARKETING

The report identifying a new calculation procedure in the Area Classification Code has been approved and will be published. The required amendment of the existing Code (Part 15) is scheduled to be substantially complete by the end of the year.

The draft technical guidance to replace HS(G)41 has now been amended to take account of the comments received from last year's consultation exercise. Consideration is being given to further industry review. The Institute together with other industry bodies has been involved in the first review of the new HSE draft guidance for service station operators. This will be issued shortly for general consultation, together with the draft of the new regulations.

The working group on Environmental Risk Assessment (Underground Storage) at Service Stations has reached agreement on the assessment procedure; members of the Retail Panel will carry out trials shortly at selected sites.

A review of worldwide incident data for fires in tanks fitted with internal floating roofs has been implemented to check on the safety performance of alternative means of venting.

A service station has been identified for the monitoring of Stage 1b, and subsequently Stage 2, vapour recovery facilities with a view to determining remaining emissions and the interaction of the two systems.

The final outstanding points on Guidelines for the Control of Hazards Arising from Static Electricity will be resolved in the near future.

The report on Risk Assessment for Access to the Top of Road Tankers has been edited for issue as an IP publication.

Agreement has been reached with PRA, AUKOI and UKPIA on the principles of an IP service station oil spill and other incident reporting database to be set up this year.

HEALTH

The guidelines on Medical Standards for Fitness to Wear Respiratory Protective Equipment has been published.

The Occupational and Environmental Sub-Committee organised a special meeting/workshop aimed at improving communications on health matters with physicians involved in the industry on a part-time basis. It was agreed that an annual workshop would be beneficial.

The considered views of academic and industry expert epidemiologists were solicited by the IP study Steering Group on the value of possible future epidemiological studies which would utilise the IP database of refinery and oil distribution workers.

TEST METHOD STANDARDIZATION

The target publication date of the 1998 IP Test Methods book has been moved from March to January 1998.

The IP-funded round-robin for ISO 8754/IP 336 (determination of sulfur content – energy-dispersive X-ray fluorescence method) has now been completed. IP 355 (calculation of net specific energy of aviation turbine fuels, using hydrogen content data) was submitted as an ISO new work item last year.

Five more bitumen test methods have now been released for CEN enquiry within CEN/TC 19 and are available for public comment. These consist of test methods for the determination of efflux time, settling tendency, mixing stability with cement, penetration power of bitumen emulsions and pH of bitumen emulsions.

IP panel members formed the UK delegation to Berlin for the recent meeting of the Joint ISO TC28/TC35 Working Group for Flash Point methods revising existing ISO flash point test methods and developing new international flash point standards which can be called up in storage and transportation regulations and fuel specifications.

PETROLEUM MEASUREMENT

The second edition of *Petroleum Measurement Manual, Part VII, Density, Sediment and Water: Section 2: Continuous Density Measurement*, is awaiting revision of some drawings before publication.

PMM Part X, Meter Proving, Section 8: Guidance for the Calibration of Additive Injection Systems on Road-Loading Gantries was published last month.

UPSTREAM

The Institute has continued to manage pro-actively the UK input to international standardization through ISO/TC 67. Lead UK experts are being appointed for each work item on the programme and the associated review networks implemented which will encourage wider input to draft standards. The process is intended to be informal and by correspondence to compensate for the falling attendances at regular BSI committee meetings.

Internal administrative efficiency has been improved as a result of the development of a computerised system for the recording of all BSI PSE 17 document information enabling cross-referencing of documents by BSI number or ISO/CEN numbers.

An international standards 'liaison matrix' has been compiled on a work item basis to identify other ISO, CEN and BSI committees interested in the standards being developed within ISO/TC 67. It is hoped that these liaisons will accelerate the process and facilitate ISO and CEN voting procedures.

The second draft Strategic Policy Statement was agreed at the February AG 3 meeting in Brussels at which the Institute was represented. This will be used as a communication tool to increase industry awareness and involvement with developing international standards.

The Institute has become the custodian of the CRINE Functional Specifications and Common Working Practices with responsibility to administer and maintain them. The Institute will also publish the Standard Contracts due to be launched later this month.

MICROBIOLOGY

The results of the project to compare two media used in the method for the detection and quantification of sulfate reducing bacteria are being analysed.

ENVIRONMENT

Two IP-funded research projects have been approved and will be conducted by AEA Technology. These are a leaching test for material contaminated with oil and the bioremediation of mudflats.

Work is continuing on the production of the following documents:

- A Protocol for Estimating Non-Methane VOC Emissions from Refineries and Marketing and Distribution
- Retail Site Environmental Risk Assessment
- The Investigation and Remediation of Contaminated Retail Sites
- A Sector Application Guide for Environmental Management Systems for the Storage, Distribution and Retailing of Main Fuel products.

John Hayes
Technical Director

Forthcoming Events

June

3rd-4th

Birmingham:
'International Seminar on Equipping the Forecourt – Opportunities in Central Europe' and 'International Conference on Revolution on the Forecourt – or just Evolution?'
Details: Pauline Ashby, The Institute of Petroleum.

9th-13th

Aberdeen: 'Oil Spill Management'.
Details: Oil Spill Response Ltd, Lower William Street, Southampton SO14 5QE.
Tel: 01703 331551
Fax: 01703 331972

11th-12th

Bath: 'Combustion and Emissions Control'.
Details: Louise Collins, The Institute of Energy, 18 Devonshire Street, London W1N 2AU.
Tel: 0171 580 0008
Fax: 0171 580 4420

11-12-13th or 18-19-20th

Henley-on-Thames:
'Valuing International Exploration and Production Deals'.
Details: Langham Oil Conferences Ltd, 37 Main Street, Queniborough, Leicester LE7 3DB.
Tel: 01509 881022
Fax: 01509 881576

12th-13th

Rueil-Malmaison, France: 'Oil Markets Over the Next Two Decades'.
Details: Babs Howd, DRI/McGraw-Hill, Wimbledon Bridge House, 1 Hartfield Road, Wimbledon, London SW19 3RU.
Tel: 0181 543 1234
Fax: 0181 545 6248

16th-17th

Aberdeen: 'Improving Drilling Efficiency'.
Details: ICM Marketing Ltd, 5 Cavendish Square, London W1M 0BX.
Tel: 0171 436 5735
Fax: 0171 436 5741

16th-20th

Singapore: 'Improved Bulk Liquid Measurement'.
Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrers, Essex CM3 5WU.
Tel: 01245 328340
Fax: 01245 323429

17th-18th

Houston: 'Gas Pipeline Capacity '97'.
Details: AIC Conferences Inc, 50 Broad Street, 19th Floor, New York, NY 10004, USA.
Tel: +1 212 952 1899
Fax: +1 212 248 7374

17th-19th

Mauritius: 'Sub-Saharan Oil and Minerals'.
Details: Europe Energy Environment Ltd, Roxburgh House, 24 Third Avenue, Parktown North, Johannesburg, South Africa.
Tel: +27 11 442 3230
Fax: +27 11 442 4198

18th-20th

'Oil Industry Operations Course'.
Details: Pauline Ashby, The Institute of Petroleum

18th-20th

Aberdeen:
'Decommissioning Projects and Techniques'.
Details: The Bookings Department, IBC UK Conferences Ltd, 57-61 Mortimer Street, London W1N 8JX.
Tel: 0171 453 2106
Fax: 0171 453 2058

18th-20th

Cannes: 'Multiphase '97: How deep? How far? How soon?'.
Details: Catherine Cox, British Hydromechanics Research Group Ltd, The Fluid Engineering Centre, Cranfield, Bedfordshire MK43 0AJ.
Tel: 01234 750422
Fax: 01234 750074

19th-20th

Portugal: '1997 European Oil Refining Conference and Exhibition'.
Details: Edward Bradfield, WEFA Energy, Mappin House, Winsley Street, London W1N 7AR.
Tel: 0171 631 0757
Fax: 0171 631 0754

23rd-24th

Austria: 'The Automotive Industry in Central & Eastern Europe'.
Details: Business Seminars International Ltd, Sussex House, High Street, Battle, East Sussex TN33 0AL.
Tel: 0171 490 3774
Fax: 01424 773334

23rd-25th

'Petroleum Economics Course'.
Details: Pauline Ashby, The Institute of Petroleum

24th-25th

Houston: 'Knowledge Management in the Oil and Gas Industry'.
Details: Alex Daniels, First Conferences, 85 Clerkenwell Road, London EC1R 5AR.
Tel: 0171 404 7722
Fax: 0171 404 7733

24th-11th July

Rueil-Malmaison, France: 'Petroleum Management – Executive Session'.
Details: R A Baker, IFP/ENSPM, 232 avenue Napoléon Bonaparte, 92506 Rueil-Malmaison, France.
Tel: +33 1 47 52 71 36
Fax: +33 1 47 52 70 66

25th-26th

Aberdeen: 'Advances in Riser Technologies'.
Details: IBC Technical Services, 57-61 Mortimer Street, London W1N 8JX.
Tel: 0171 637 4383
Fax: 0171 631 3214

26th

London: '1st HCB Chemical Logistics Conference'.
Details: The Conference Secretary, HCB Chemical Logistics '97, 8th Floor, 29 Bressenden Place, London SW1E 5DR.
Tel: 0171 931 0516
Fax: 0171 976 4013

26th-27th

Aberdeen: 'Optimisation of Gas Condensate Fields'.
Details: The Bookings Department, IBC UK Conferences Ltd, 57-61 Mortimer Street, London W1N 8JX.
Tel: 0171 453 2106
Fax: 0171 453 2058

26th-27th

Newcastle upon Tyne:
'Marine Propulsion: Turbinia and Beyond'.
Details: The Institute of Marine Engineers, The Memorial Building, 76 Mark Lane, London EC3R 7JN.
Tel: 0171 481 8493
Fax: 0171 488 1854

30th-3rd July

Leeds: Diesel Particulates and NO_x Emissions – Engine Emissions Measurement.
Details: Jamie Strachan, Department of Fuel and Energy, University of Leeds, Leeds LS2 9JT.
Tel: 0113 233 2494
Fax: 0113 233 2511

July

3rd

London: 'Focus on Fouling: Profit from Best Practice'.
Details: Pascale Hicklin, HFTS Head Office, 392.7 Harwell, Didcot, Oxon OX11 0RA.
Tel: 01235 432908
Fax: 01235 831981

Technology News

Spreading the message to service station customers while refuelling

Gilbarco has unveiled a new means by which service station operators can retail advertising space to third parties or enhance their own corporate image and brand loyalty.

InfoScreen™ comprises a monitor integrated into the fuel pump dispenser which enables both video and sound display of brand advertising and product merchandising.

Safety announcements and travel information can

also be displayed while, once suitably interfaced, it is also possible to have interactive customer dialogue.

Information is transmitted to the screen via terrestrial or European satellite broadcast or may be supplied on tape or disk.

The company has also recently developed a new budget priced pump, G-line, specifically aimed at the smaller petrol retailer and commercial outlets.



A pump-mounted monitor can display a range of information

Upgraded rollerblind price indicators

A new generation of rollerblind price indication systems featuring improved gears, a new optical wide-beam detection system and improved system software has been developed by LumiTronic Industries of the Netherlands. More than a few hundred of the new display systems have been installed at Shell and Fina outlets in Europe since being launched on the market late last year.

The company has also augmented its product portfolio with a version capable of displaying characters up to 540mm in height – previous models were only capable of handling characters of

250mm and 380mm – as well as a new low-cost, semi-automatic rollerblind system.



A new generation of signage

A window on petrol automation systems

A Microsoft Windows NT-based version of the Edacom 90 petrol automation system has recently been launched on the UK market by ICL Edacom.

Modular in design, the system supports all the sales functions required on a petrol forecourt and can be tailored to meet specific site needs. For example, a large site with multiple paypoints can opt for an unlimited number of PC-based point of sale (POS) terminals and touch screen monitors with or without an integrated pump controller, all linked to one back office system.

Alternatively, a small site

with limited space can choose a complete system comprising POS function with some back office applications together with an integrated pump controller, all installed on one standard PC with an optional touch screen monitor.



Windows NT model

New products in the pipeline

PetroTechnik has augmented its portfolio of UPP underground service station pipework products with a range of tank manhole chambers and installation seals.

A double containment system for suction and

pressure systems and three- and four-inch offset fills has also been recently developed. The system provides an uninterrupted interstitial space in a service station's pipework network which can be tested to 1 bar with a simple retest facility.

Taking a shine to the vehicle wash

Foambrite is a new cleaning material developed by Ryko International as an alternative to brush and cloth washes. Manufactured from copolymer, the soft and pliable material is highly resistant to chemicals and exhibits a tolerance to ultra violet light, thereby extending the systems working lifetime.

Not only does the new material provide a thorough clean, it also enhances the shine on a vehicle's surface to create a 'gloss' effect, states the manufacturer.

Indeed, tests are currently being undertaken in the United States to quantify this gloss effect.

Unlike conventional cleaning materials, Foambrite does not soak up water thus allowing the car wash on-board dryer to work more effectively as the rollover cleaner does not drip back.

Neither does it facilitate the location of small particles within its fibres. This helps to protect the vehicle surface from unwanted scratches.

New fuel credit card launched

Harpur Card Services made its first venture into the UK consumer credit market with the launch of Total Great Britain Ltd's Energy Plus Card in April. The new credit card replaces Total's 4-Court Plus card.

The card incorporates a number of new features designed to assist the oil company's marketing activities,

including a breakdown of purchases into product categories.

The system also allows the oil company to extend its loyalty scheme to award Tops points not just on fuel but on other product purchases too if it chooses. Points are redeemed and exchanged for Boots and Marks & Spencer vouchers under the scheme.

Technology News

Super-speed fuel dispensing pump

A new high speed fuel pump designed to deliver diesel/gas oil products at speeds of more than 100 litres per minute has been developed by Avery Berkel Forecourt Services.

Suitable for connection to both aboveground and underground storage tanks, the new pump incorporates all the features of the company's existing range of standard and high-flow electronic fuel pumps, including a heavy-duty automatic nozzle to avoid spillage, an illuminated register for high visibility night-time operations, full air separation for accuracy of measure and a direct signal output to fuel monitors

which eliminates the need for the supply and fitting of costly pulse mechanisms.



High speed fuel pump

Fuel storage tank monitoring systems

WRA Environmental of Richmond, Virginia offers a number of precision fuel storage tank inventory management and leak detection monitoring systems – a number of which will allow US petroleum marketers to comply with Environment Protection Agency (EPA) underground storage tank (UST) and aboveground storage tank (AST) requirements due to be implemented in 1998.

The WRA SIRA™ system, for example, allows a client to meet EPA requirements for the monthly monitoring of tanks and lines, by conducting a comprehensive analysis of product inventory records to detect leaks from tank

systems, without incurring the cost and disruption of installing equipment on-site.

PetroNetwork™, meanwhile, automatically retrieves product inventory data from a population of UST and AST sites to consolidate compliance reporting and precision inventory management functions on a host computer at company headquarters. Such a system simplifies inventory management, while streamlining compliance monitoring and optimising wetstock management, states the company.

While WRA's products are geared towards the US and Canadian markets, the systems can be adapted for use elsewhere.

Watertight cover



Skipton-based Fibrelite has upgraded its portfolio of composite access covers. A number of watertight flat covers together with multi-duct covering systems are available for a wide range of petroleum and other applications.

Downhole data acquisition technology

The Expro Group has unveiled two new data acquisition technologies aimed at improving the recovery of downhole data at high temperature and pressure conditions.

The EXstream downhole memory flow meter is designed for use in temporary completions, such as drill stem and production tests, and provides a range of downhole flow measurements in addition to the traditional bottom hole pressure recorded during tests. No sealing mechanism is required, while the flexibility of the wireline retrievable insert allows flow meter performance to be modified during a test if well parameters or test

objectives change.

The system can also be tailored so that it is the only source of flow data for small footprint well tests, and for tests where it is impossible to get full test separation and metering systems on to the well site.

Work is currently underway to extend fluid type capabilities and to develop a model suitable for deployment in production wells.

ExalHOT383, meanwhile, is a new memory pressure gauge designed for use in very high temperature oil and gas wells – up to 195°C – for up to 30 days at a time.

The gauge provides 200,000 data sets memory capacity and a fully programmable data sampling logic.

Portable sat phone

A new generation of light, compact and relatively inexpensive, portable satellite phone has been developed by Kudos Technology. Unlike conventional mobile phones, the new units can operate from internal batteries and are totally independent of any local infrastructure. Fax and data transmission are also possible.



Personal satellite phone

A window on the tank storage world

SiteGlass is a new low-cost storage tank management system designed to operate on a PC. Developed by TM Technology, the system can connect to any of the company's tank gauging systems, either on-site using dedicated cables or off-site using a dial-up modem.

Current tank contents are displayed in a window. Data on

a range of parameters and units – such as level, volume, mass, density, temperature, pressure, alarm state and tank capacity – are listed in columns.

Multiple versions of SiteGlass can be run on a company network, allowing many users to access tank data at the same time, while automatic logging and/or printing of data at pre-set times of the day is possible.

Fast on-line credit authorisation

Paknet, the Vodafone Public Data Network, provides a data communications network that is widely used for fast credit and debit card authorisations from the point of sale.

Petrol retailers are increasingly using the network as part of an on-line authorisation system to take advantage of

improved rates from banks, to accept Electron and Solo cards, to provide purchase with cashback facilities and to handle outdoor payment terminals, states Vodafone.

Paknet is also suitable for other point of sale communications such as loyalty cards and price change information.

Technology News

Forecourt sign refurbishment paint job

Forecourt operators and retail outlets are increasingly opting for sign refurbishment services as a cost effective alternative to investment in new signage, states Parkersell Forecourt Services.

A 'start-to-finish' sign refurbishment service is offered. Old signage is initially stripped down to compo-

nent level and a full evaluation of repairs and parts requirements given. Old panels are prepared to receive the priming coat in the paint spray facility, before being dried. They return for application of the finishing paint coat before decals and a lacquer coat are applied.



Multilateral drilling first for industry

Norsk Hydro and Halliburton Energy Services recently completed a project representing the oil and gas industry's first application of multiple re-entry multilaterals from a single offshore platform. The project has provided access to some 40 million barrels of recoverable oil reserves from six 7-inch horizontal mono-bores in three platform slots on the Oseberg C facility in the Norwegian North Sea.

The three wells were completed using Halliburton's Multilateral System 3000 which provides full lateral liner connectivity, a hydraulically isolated lateral junction and full bore lateral re-entry access with a single casing-size reduction.

'Multilateral technology has enabled us to produce considerably more oil in certain fields, at far lower cost per barrel, than in the past,' said Johan Mikkelsen, Senior Vice President, Norsk Hydro Drilling Department. 'We anticipate expanded use of this technology for improving the economics of

future developments.'

Indeed, the two companies are already planning to advance the application to subsea field developments where the 'economic benefits could easily surpass those of fixed platform developments', according to Mr Mikkelsen. Such benefits would be realised through savings in subsea wellheads, upper well bores, pipelines and control systems. A subsea multilateral well is scheduled for the middle of this year in the Troll oilfield from the floating rig *Polar Pioneer*.

The companies are also exploring advanced reservoir control through intelligent completion technology and plans are being developed for remote-control assemblies to be installed in future multilateral wells that will enable the adjustment of downhole chokes while maintaining production. This technology will enable real-time monitoring and measurement of multiple reservoir parameters.

At-a-glance picture of forecourt activity

Wayne Dresser officially launches its KCU45s kiosk control unit this month. An enhanced version of its predecessor the KCU45, the unit provides an at-a-glance picture of forecourt activity and is year 2000 compatible.

The system interfaces with all main suppliers of point of sale and wet stock management systems and is available with a choice of monitors.

The company provides a range of IT forecourt control products including ISM Nucleus, a combined pump control and point of sale unit



Kiosk control unit

and the 9000 Series petrol pump with integrated payment terminal.

Looking to the new millennium

UK software house IT-Map has developed IT-Map 2000 to help organisations in the oil industry plan and prepare for year 2000 compliance and beyond. Many IT systems which do not handle four figure year dates may fail and cause business chaos with the beginning of the new millennium.

The system incorporates

inventory, auditing, impact analysis and modelling tools to enable companies to build an accurate picture of their IT resources together with the costs of making them year 2000 compliant.

The system also ensures that any new year 2000 compliant applications that are installed will still interact with existing and external IT systems.

Correction: Please note that Saladin's information repository system designed for the energy supply and trading industry, as outlined in the April issue, is marketed under the name 'EnergyServer'.

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WRA Environmental	+1 401 846 4747
Fibrelite	01756 799773
Expro Group	01224 723601
Kudos Technology	0181 746 1995
TM Technology	01423 886644
Vodafone	01635 33251
Parkersell Forecourt Services	01489 788822
Wayne Dresser	01875 822500
Halliburton Energy Services	+1 713 624 2000
IT-Map	01582 454454

Institute News

NEW MEMBERS

Captain M C Andrews, Milford Haven Port Authority
Mr P A Aspden, Blackburn
Mr A G Bacchus, Farnham
Mr D P Bailey, Mobil Services Company Limited
Dr P C A Bailey, New Zealand
Captain R R Bailey, Clydeport Operations Limited
Mr W Braun, Smit Tak BV
Dr C A Brown, HSBC Investment Bank
Ms J Bugler, IMCA
Mr D M Burbidge, USA
Ms J E Cambers, Offshore Technology Management Limited
Mr C A Catt, Leamington Spa
Captain N H Chandler, Associated British Ports
Mr R Clegg, Poole
Mr P Conner, Aberdeenshire
Mr A V Drew, Hatfield
Mr G R Evans, Epsom
Mr N T Ezeani, Linland (UK) Limited
Mr P Fockens, Andersen Consulting
Mr E J Foster, Marine Navigation Company Limited
Mr S R Fudge, Kvaerner Oil & Gas Limited
Mr R Gooden, Orion Networks Systems
Mr S H Hallam, Cameron McKenna
Mr M E Heslop, Sunbury-on-Thames
Mr R E Higgs, Norwich
Mr F L W Hodges, Leigh-on-Sea
Mr I Ibrahim, MTA Design Limited
Ms O Jagdzianca, Lukoil Baltija
Captain N Jeffery, Solent Towage Limited
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Mr S Kolomicevs, Lukoil Baltija
Mr B Lager, National Maritime Administration
Mr P Lewington, ERM Energy

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Captain A Rebello, Certispec Services Inc
Mr G L Round, Valetmatic Limited
Mr J O Scarrott, Isle of Wight
Mr S P Shelford, Huntingdon
Captain D Siganakis, Olympic Agencies (UK) Limited
Mr M J Smith, Arthur Andersen & Company

AROUND THE BRANCHES

Shetlands

10 June: Visit to Shetland Towage to tour new generation tugs supplied for Sullom Voe Harbour Operations

London

18 June: Annual Visit: The Royal Mail Sorting Office, Mount Pleasant

Midlands

18 June: Tour of Severn Trent's sewage treatment plant at Minworth



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London

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- Plays a vital role in self-regulation across the industry.

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Qualifications:

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TOTAL



Ramco Energy plc Ramco Oil & Gas Ltd

Information Officer

A Dorking based company active in Azerbaijan and the FSU countries urgently needs advice and analysis of Chemical and Petroleum Engineering data, published in FSU.

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UK Deliveries into Consumption (tonnes)

Products	†Mar 1996	*Mar 1997	†Jan-Mar 1996	*Jan-Mar 1997	% Change
Naphtha/LDF	316,419	113,885	812,433	429,558	-47
ATF - Kerosene	584,558	632,627	1,736,882	1,810,213	4
Petrol	1,872,541	1,873,502	5,241,370	5,286,970	1
of which unleaded	1,261,067	1,320,936	3,528,351	3,703,035	5
of which Super unleaded	70,855	49,732	197,660	136,016	-31
Premium unleaded	1,190,212	1,271,204	3,330,691	3,567,019	7
Burning Oil	356,722	302,251	1,146,281	1,110,010	-3
Derv Fuel	1,194,897	1,247,003	3,427,673	3,585,943	5
Gas/Diesel Oil	721,335	646,005	2,254,697	2,099,376	-7
Fuel Oil	586,032	431,691	1,871,664	1,578,211	-16
Lubricating Oil	68,890	73,002	213,079	215,398	1
Other Products	743,381	657,917	2,195,049	2,061,475	-6
Total above	6,444,775	5,977,883	18,899,128	18,177,154	-4
Refinery Consumption	551,677	534,675	1,634,471	1,621,927	-1
Total all products	6,996,452	6,512,558	20,533,599	19,799,081	-4

† Revised with adjustments *preliminary

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