

OPEC bulletin

11-12/06



143rd
EXTRA
ORDINARY
CONFERENCE



14 December 2006
Abuja - Nigeria

Dateline Doha :
OPEC reviews production

A special date for Nigeria

At the OPEC Secretariat, there never seems to be a dull moment. We move from one major event to the next, each with the potential of making a huge impact on our Member Countries and the world at large.

The weeks after the September Ministerial Conference in Vienna were indeed quite interesting. Speculation was rife as to what OPEC would do as the price of crude oil continued to plunge as a result of many factors, chief among which was excess supply in the market. Will the Organization cut production? If so, by how many barrels per day?

After weeks of informal Ministerial consultation, Member Countries finally met in the Qatari capital Doha on October 19–20, where they agreed to take steps to align the market with the fundamentals of supply and demand.

With those decisions, we welcome you to the OPEC Bulletin for December, a month that, for Nigeria, the 11th Member of the Organization, is indeed special as it prepares to host the 143rd (Extraordinary) Meeting of the OPEC Conference.

Two things make this event special for Nigeria. First, it holds the Presidency of OPEC and, second, it is hosting the Meeting just for the second time in the 35 years it has been a Member of the Organization.

That is why our focus in this edition is on Nigeria, a country that has fascinated many people over the years and is rightly called the 'Giant of Africa'.

We have dug up a lot of information on the country, its people and why it now sees itself as no longer just the 'Giant of Africa', but also, the 'Heart of Africa'.

But before Abuja and Doha, there was Riyadh, Saudi Arabia, where the First International Conference on the Clean Development Mechanism (CDM) took place. This was followed by the equally as important OPEC-EU Roundtable on Carbon Capture and Storage (CCS).

Both topical issues attracted a high level of OPEC representation and are comprehensively covered in the Bulletin.

At OPEC, the thinking is futuristic. The concern is not just about having oil for here and now, but how to make sure that the resource is well managed and continues to be available to meet the ever-increasing need for cleaner and affordable energy supplies, especially for the developing countries, in the challenging years ahead.

This underscores the importance the Organization attaches to research and development issues.

And so for three days (October 31–November 2) Research and Development Institutions from Member Countries met in Isla Margarita, Venezuela for their 2nd Annual Meeting. What did they discuss? Who was there, and who was represented? Find out as you flip through the publication.

Also in this edition is an interview with Ivan Orellana, Venezuelan Governor for OPEC, and coverage of the Annual Oil and Money Conference in London, where Dr Shokri Ghanem, Chairman of the People's Committee, the National Oil Corporation (NOC), of Libya, gave a keynote address and was also conferred with the *Petroleum Executive of the Year* award. We then have comments from Mohammed Barkindo, Acting for the OPEC Secretary General, and Kofi Annan, the outgoing Secretary-General of the United Nations, concerning climate change. These are followed by the usual spotlight on our sister Organization, the OPEC Fund, and finally the Market Review.

As you read through, one thing is certain — in this latest edition, we have ensured that you have stories and reports that are interesting enough to keep you occupied during the Christmas and New Year celebrations. We'll see you in 2007.

Happy Christmas and a prosperous New Year to all our readers!



The Abuja City Gate.

Conference Notes 4



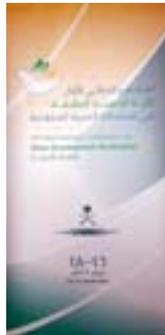
OPEC Ministers meet in Qatar — cut production by 1.2m b/d

Country Profile 14



‘Heart of Africa’ beckons as Nigeria prepares to host 143rd (Extraordinary) OPEC Conference

Dialogue 32



Realising the potential of the CDM



OPEC, the EU and carbon capture and storage (p38)



R&D – the way forward (p42)

Interview 52



Venezuela repaying “debt to Africa” by fostering trade and energy development



Cover
The smiling face of Nigeria, which is preparing for its second-ever OPEC Conference (see *Country Profile on Nigeria* pp14–31). Photo: Shutterstock.

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Membership and aims

OPEC is a permanent, intergovernmental Organization, established in Baghdad, September 10–14, 1960, by IR Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. Its objective is to coordinate and unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry. The Organization now comprises 11 Members: Qatar joined in 1961; Indonesia and SP Libyan AJ (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); and Nigeria (1971). Ecuador joined the Organization in 1973 and left in 1992; Gabon joined in 1975 and left in 1995.

Climate Change 54



OPEC ASG discusses climate change with UK delegation

As the global climate changes, Kofi Annan asks: "Can we?" (p56)

Conference Report 58 ^{27th} Oil & Money Examining the end of cheap oil



Dr Shokri Ghanem conferred with major international award (p59)

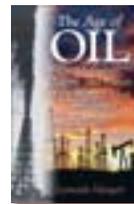
Is the era of cheap oil really over? (p60)

ASEAN 64



Fuelling the future ...
ASEAN ministers stress importance of energy security for enhancing economic growth

Book Review 70



The challenge of understanding the global oil market

OPEC Fund News 72



Fund helps farmers in Cuba boost crop output

IFAD President urges OPEC MCs to step up funding for alleviation of rural poverty (p76)

Market Review 78

Noticeboard 110

OPEC Publications 112

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The OPEC Bulletin welcomes original contributions on the technical, financial and environmental aspects of all stages of the energy industry, including letters for publication, research reports and project descriptions with supporting illustrations and photographs.

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OPEC Consultative Meeting

Dateline Doha:

**OPEC Ministers meet in Qatar
to address oil price fall**

Production cut of 1.2m b/d seen as essential for stabilizing the market

OPEC Member Countries have decided to reduce their crude oil production in a bid to bring global oil supply more in line with actual demand.

A Consultative Meeting of the OPEC Conference, held in Doha, Qatar, on October 19–20, agreed to reduce total output from the Organization, excluding Iraq, by 1.2 million barrels/day, effective November 1.

The action followed concern expressed by the Heads of Delegation of OPEC Member Countries that global crude oil supplies were well in excess of demand, as the above-average level of crude oil stocks in OECD countries demonstrated.

They observed that the oversupply situation and imbalance in supply and demand fundamentals had destabilized the market.

“In the light of the foregoing, and in order to ensure market stability, the Conference decided to reduce production by an amount of 1.2m b/d — from current production of about 27.5m b/d, to 26.3m b/d, effective November 1, 2006,” said a communiqué issued at the end of the Ministerial talks.

The Ministers said this interim arrangement would be reviewed at the Extraordinary Meeting of the OPEC Conference, scheduled to be held in Abuja, Nigeria, on December 14.

The communiqué stated that, in the interim, the Conference had requested the OPEC Secretariat in Vienna to continue closely monitoring the market.

Iranian Minister of Petroleum, Sayed Kazem Vaziri Hamaneh, was quoted as saying after the Meeting that



Above: United Arab Emirates Minister of Energy, Mohamed Bin Dhaen Al Hamli, who as Alternate Conference President, chaired the deliberations in Doha.

Left: The venue of the OPEC Consultative Meeting, The Ritz-Carlton Doha.

Right: Dr Chakib Khelil, Algerian Minister of Energy and Mines.



Below: Sheikh Ali Jarrah Al-Sabah, Kuwaiti Minister of Energy.



the aim of the cut was to stabilize the oil market. It was not a question of underpinning oil prices — an actual floor for oil prices had not been discussed by the Ministers.

The Consultative Meeting, convened under the Chairmanship of the Alternate President of the Conference, Mohammed Bin Dhaen Al Hamli, Minister of Energy of the United Arab Emirates (UAE), re-emphasized the Organization’s “unswerving and repeatedly-proven commitment” to providing adequate supplies of petroleum to consuming nations.

Member Countries also reaffirmed their determination to continue with their investments in capacity expansion, and pledged their continuing commitment to stabilize the market.

“Having reflected on the oil market situation, in particular forecasts for the fourth quarter of 2006 and the year 2007, the Conference observed that actions taken by OPEC in recent years have contributed to stability in the oil market, to the benefit of producers and consumers alike, and have demonstrated OPEC’s success in assuring adequate supplies to consumers,” said the communiqué.

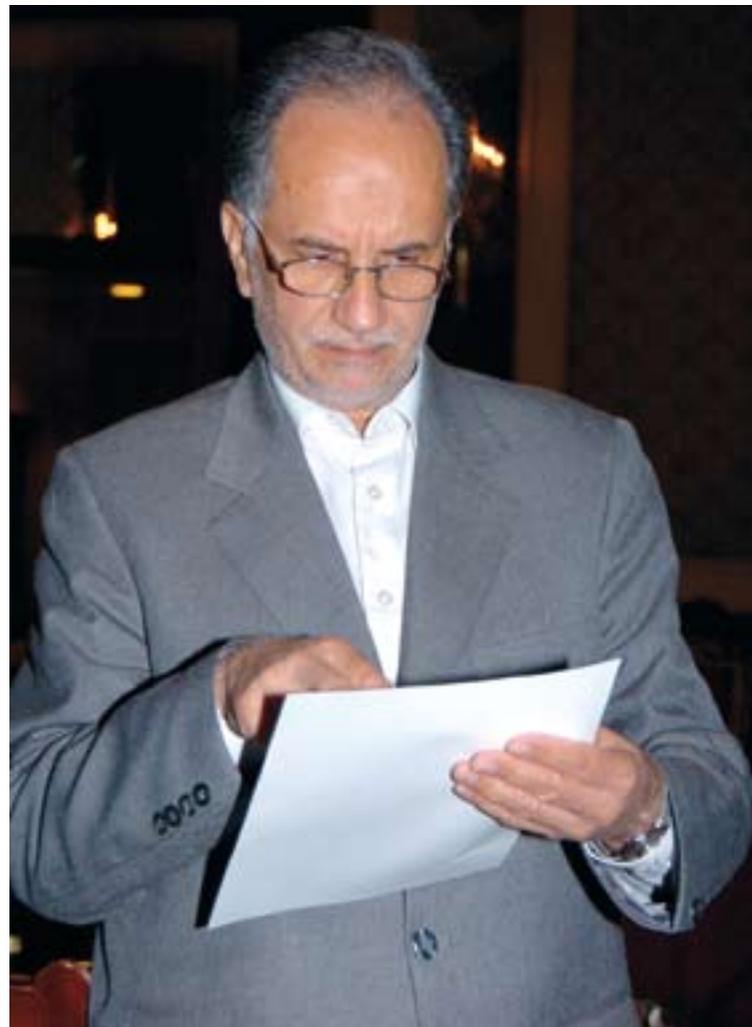
It is the first time in almost two years that the Organization has taken steps to officially reduce production. But after reviewing current and short-term supply and



Left: Ali I Naimi, Minister of Petroleum & Mineral Resources of Saudi Arabia.



Right: Dr Shokri M Ghanem (r), Chairman of the People's Committee, the National Oil Corporation of Libya of the Socialist People's Libyan Arab Jamahiriya; with Mahmoud Al Hosani from the UAE delegation.



Mohammed S Barkindo, Acting for the OPEC Secretary General. Sayed Kazem Vaziri Hamaneh, Iranian Minister of Petroleum.

demand fundamentals and the situation with stock levels, OPEC Ministers felt compelled to act sooner rather than later to correct the imbalance.

The warning signs from a sustained period of oversupply have been manifested in the market over the past few months with prices falling quite considerably.

Admittedly, the easing of geopolitical tensions in the Middle East has contributed to the price fall, but purely from a supply and demand standpoint, the fact that there are excess supplies in the market cannot be ignored.

OPEC, for some time, has been warning of a possible price crash if this oversupply situation was left unchecked.

It was the reason why, at its Ministerial Conference in Vienna in September, the Organization's Ministers called on non-OPEC producers to rein in production.

OPEC's cut of 1.2m b/d was actually 200,000 b/d more than initially expected, and some Ministers, includ-

ing Saudi Arabian Minister of Petroleum and Mineral Resources, Ali I Naimi, hinted that a further reduction could be agreed at the OPEC Conference in Nigeria, if market fundamentals so warranted.

The overriding concern for OPEC and its Members is how to ensure that the market remains in balance. Member Countries have seen in past years just how serious an issue a glutted oil market can be for stability.

It was primarily because of acute oversupply that prices crashed to under \$10/b, first in July 1986 and then again in December 1998. On both occasions, OPEC acted too late in trying to correct the supply and demand imbalance and paid heavily as a result of lost revenues over the ensuing months.

But as leading market analysts are quick to point out today, OPEC has learned from the lessons of the past and now tends to act much more quickly — and certainly to

greater effect — to head off potential problems before they actually materialise.

In the current oil market situation, the alarm bells have been sounding throughout the summer. As a result of a sustained period of higher crude production, which was in response to a sudden increase in demand, coupled with fears over insufficient output capacity, crude oil stocks today are well above their five-year average.

In addition to the swollen inventories, demand for OPEC's crude oil is now forecast to fall next year, at a time when supplies from non-OPEC producers are set to rise markedly.

Smoother landing

But perhaps the most important indicator of the precariousness of the situation is the fall in crude oil prices. They have slumped by around 25 per cent since the middle of summer.

As one analyst put it, OPEC's thinking is that by removing some of the excess market supply now, it will pave the way for a smoother landing next year if, as predicted, demand falls and non-OPEC supply rises.

"This action shows the determination of OPEC," commented one analyst from Tokyo. "They obviously wanted to send a message to the market."

Ahead of the Meeting, Algerian Minister of Energy

and Mines, Dr Chakib Khelil, stressed that the agreement reached by the Ministers had to be credible, in order to stem a "tremendous reversal" in oil prices.

He added that a price between \$50 and \$60/b seemed to be acceptable to both producers and consumers. And even though the OPEC Reference Basket was in this range at the time of the Meeting, Khelil explained that it was important for OPEC to "move at the right time" in order to maintain market equilibrium.

The main issue discussed by the Ministers at the Consultative talks was the extent of the production cut and what criteria should be used in determining the implementation of the reduction.

Various proposals were tabled, including cutting from the official ceiling of 28m b/d (excluding Iraq), reducing from current output of around 27.5m b/d, or from average production over a set period, such as the last three months, or one year. It was eventually agreed to make the cut from current production.

OPEC had actually taken steps to stop the slide in oil prices with six of its Members — Algeria, Kuwait, Libya, Nigeria Saudi Arabia and Venezuela — announcing voluntary production cuts in early October.

The Organization has also reiterated to producers outside OPEC the importance of showing output restraint in support of oil market stability.

Below are the figures agreed for the production cuts of OPEC Member Countries (with the exception of Iraq, which did not attend the meeting), effective November 1, 2006:

	decrease (b/d)	official quota (m b/d)
Algeria	59,000	0.894
Indonesia	39,000	1.451
IR Iran	176,000	4.110
Kuwait	100,000	2.247
SP Libyan AJ	72,000	1.500
Nigeria	100,000	2.306
Qatar	35,000	0.726
Saudi Arabia	380,000	9.099
United Arab Emirates	101,000	2.444
Venezuela	138,000	3.223
Total	1,200,000	28.000



Abdullah bin Hamad Al Attiyah, Second Deputy Prime Minister, Minister of Energy and Industry of Qatar.



Ali Obaid Al Yabhouni, the UAE's ad hoc Governor for OPEC and National Representative.

OPEC also pointed to the dangers of falling oil prices in its Monthly Oil Market Report for October.

It said uncertainties about global economic prospects, slowing demand growth, rebounding non-OPEC supply and high stock levels had triggered a strong bearish sentiment in the market.

“This has led to some concern that the downward momentum might persist, causing prices to overshoot and fall below levels justified by fundamentals,” it commented.

This, said the report, would pose a challenge to the market as “past experience has shown that it is in the long-term interest of both producers and consumers to maintain prices at levels that both support healthy economic growth, as well as encourage much-needed investment to ensure sufficient capacity to meet future demand, particularly in an industry with long lead-times, high financial risks and in an environment of rising costs.”

The report pointed out that even before the recent price decline, a consensus had been building within OPEC of the need to adopt a proactive response to the changing market circumstances.

“In attempting to bring supply in line with fundamentals, voluntary downward adjustments in output were

Pictured after the end of the Meeting, Dr Edmund Maduabebe Daukoru (r), President of the OPEC Conference and Nigerian Minister of State for Petroleum Resources; and Mohammed S Barkindo, Acting for the OPEC Secretary (l); with Aminu Baba-Kusa (c).



Abdulla H Salatt, Qatari Governor for OPEC and Senior Advisor to the Minister.

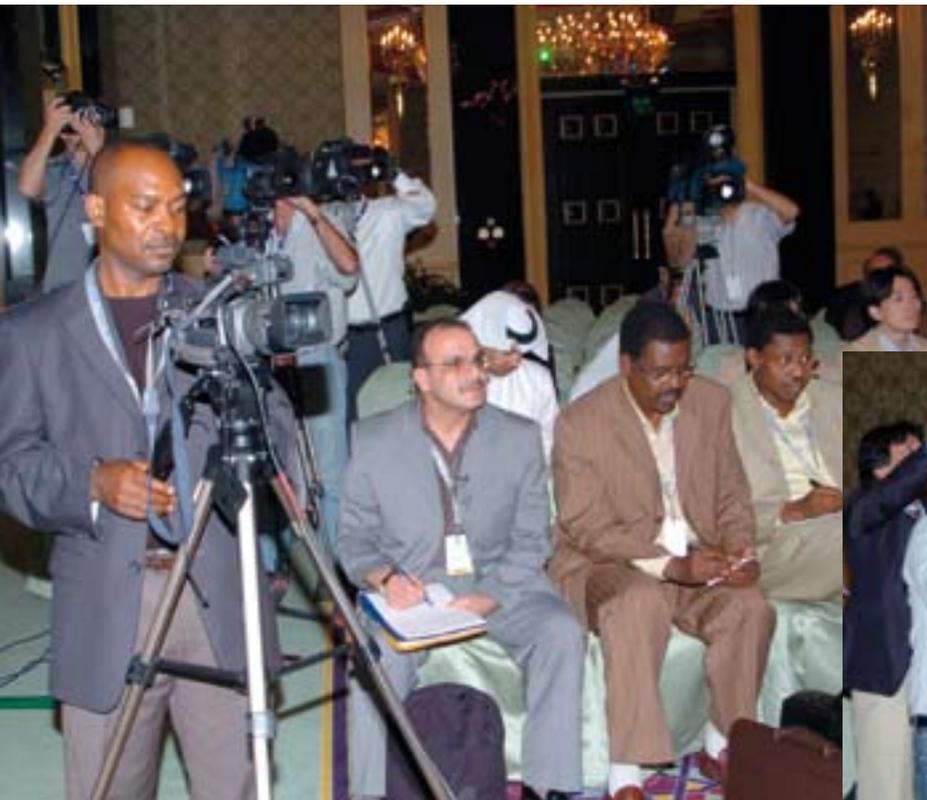


Rafael Ramirez, Venezuela's Minister of Energy & Petroleum.

OPEC Consultative Meeting



Ms Ammuna Lawan Ali, Nigerian Governor for OPEC and Permanent Secretary at the Nigerian Ministry of Petroleum Resources.



Capturing the delights of the conference venue ...





an option left to the discretion of individual Member Countries,” the report noted. This action was later carried out by six Member Countries.

In its review of oil market developments, the report revised down world oil demand growth in 2006 by 100,000 b/d to 1.0m b/d. The revision came as preliminary data showed that warm weather, higher oil prices and relatively lower natural gas prices had softened oil demand, particularly in the OECD countries.

The world oil demand growth forecast for 2007 remained unchanged at a moderate rate of 1.3m b/d, or 1.5 per cent higher than this year. ❄️

Dr Maizar Rahman, Indonesian Governor for OPEC, Chairman of the OPEC Board of Governors, who headed his country's delegation.

Below: Conducting the press conference are (from l-r): Dr Hasan M Qabazard, Director of OPEC's Research Division; Mohamed Bin Dhaen Al Hamli, Alternate Conference President; Mohammed S Barkindo, Acting for the OPEC Secretary General; and Dr Omar Farouk Ibrahim, Head of OPEC's PR & Information Department.





On December 14, 2006, Nigeria will host the 143rd (Extraordinary) Meeting of the Organization of the Petroleum Exporting Countries (OPEC).

For the country's authorities and people, the occasion will be, without doubt, one of the most significant events in recent times, coming 35 years after the West African nation joined OPEC.

Angela Agoawike, Senior Editorial Coordinator in the OPEC Secretariat's Public Relations & Information Department, looks ahead to the Meeting. She also traces the country's origins, describes why it joined OPEC and reveals some of the highlights visitors can expect from their stay in Abuja, the country's young and vibrant capital.

Above: Nigeria's President Olusegun Obasanjo, who will give the welcoming address to the 143rd (Extraordinary) Meeting of the OPEC Conference.
Right: Resplendent colour of the Benin people at the Abuja 2006 Carnival.

Sannu da Zuwa! Ekabo! Nnoo! Welcome!

'Heart of Africa' Beckons

Nigeria prepares to host
143rd OPEC Conference





Alhaji Shettima Ali Monguno was Nigeria's Petroleum Resources Minister when the country joined OPEC.



Chief M O Feyide, OPEC Secretary General from 1975-76.



Mallam Yahaya Dikko, OPEC Conference President in 1983.

The 143rd (Extraordinary) Meeting

of the OPEC Conference will be considered by most as another business-as-usual round of Ministerial talks for the 46-year-old oil producers' Organization, but to the people and authorities of Nigeria, it represents an historic milestone that carries immense importance for the country's prestige and international standing.

The fact is that since joining OPEC three-and-half decades ago, Nigeria has always been an active and fully committed Member and has taken its responsibilities within the group very seriously. Now, only for the second time in almost 35 years, it has the opportunity to play Ministerial host to an OPEC Conference and the organizers are leaving no stone unturned to ensure that the occasion will be memorable and forever stand out in the record books.

Make no mistake, this is a very proud nation and it views its involvement in OPEC as one of the pillars of its economic structure. For this reason alone, the country feels extremely privileged to be able to welcome OPEC Member Countries and their energy ministers to such an

important meeting, particularly during the present and interesting period of change that appears to have gripped the oil industry.

Most importantly, the convening of the Conference in Abuja will offer Nigeria the opportunity to show its ten sister OPEC Members just how Africa's number one oil nation and the sixth largest producer in the world has put its oil wealth to good use in moving the country forward.

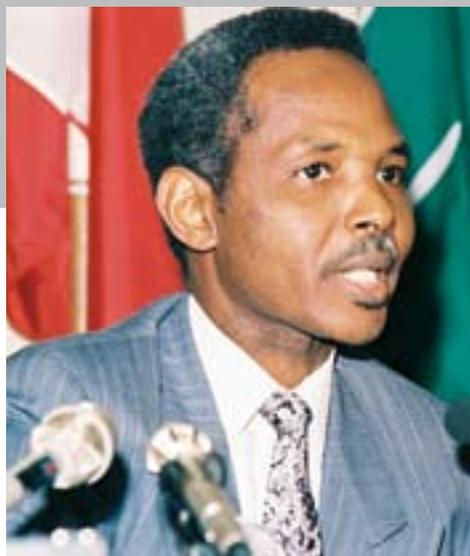
That oil, upon which the country relies heavily, was discovered in 1956 in Oloibiri, located in present day Bayelsa State. The discovery of the precious natural resource was a turning point for the country and led to a transformation of its economic fortunes.

Over the years, the petroleum industry has played a tremendous role in supporting the expansion of the political and economic power of the African nation. And in accounting for over 98 per cent of all foreign exchange earnings, crude oil has been — and still is — at the heart of the country's development.

Having hosted other major international meetings and



Professor Jibril Aminu, OPEC Conference President in 1994.



During a distinguished career with OPEC, former Petroleum Resources Minister, Dr Rilwanu Lukman, has been both Secretary General of OPEC and Conference President.



Current OPEC Conference President and Nigeria's Minister of State for Petroleum Resources, Dr Edmund Maduabebe Daukoru.

events, such as the Commonwealth Heads of Government meeting, the FIFA-U-21 World Cup, the 8th AllAfrica Games and the Africa Cup of Nations competition, among others, the OPEC Meeting will present Nigeria with the next opportunity to showcase its beauty, its rich cultural heritage, its diversity, welcoming nature and friendly people.

Regional powerhouse

After 46 years of self-rule, having gained political independence from Britain in 1960, Nigeria today stands as a country regarded as the regional powerhouse on the African continent. In this period, which can be considered as the country's formative years, Nigeria has been governed more by the military, and it was during one of these regimes — under General Yakubu Gowon, (Rtd) — that the decision to join the Organization of the Petroleum Exporting Countries was made.

The country's Petroleum Minister at that time was Alhaji Shettima Ali Monguno. He became OPEC Conference President in November 1972, when the 31st Meeting of the Conference was held in Lagos. Monguno held the

Presidency until the 33rd (Extraordinary) Meeting, which convened in Vienna in May 1973.

Commenting on the decision in a recent interview, Monguno said: "The decision was also taken because we knew we were not getting much from our hydrocarbon potentials. General Gowon decided that we needed controlling shares in the oil companies operating at the time to make some progress."

He said that just before Nigeria joined OPEC in 1971, oil companies operating in the country had applied for the renewal of their operating licences.

"Thinking that we were planning to join OPEC, I deliberately held on to their applications and refused to grant the renewal until we returned from our first OPEC Meeting after we joined the Organization. OPEC fortunately agreed to encourage us to go back and negotiate with those oil companies when I told the Meeting of our plans."

Monguno said the government then invited the oil companies to new negotiations "and that was how we agreed on joint-venture operations then under the Nigeria National Oil Company. This later metamorphosed into the NNPC."

Nationalization

He stressed: “I can safely tell you that but for the backing from OPEC, and General Gowon agreeing to the extent of nationalization, we wouldn’t have got the agreement for us to take controlling shares in the oil companies. We signed the agreement in 1973.”

What can be surmised is that at that particular time in the history of the country, the reason behind the decision to join OPEC was not unconnected with the principles captured in Article 2 of the Organization’s Statute, which states that:

- The principal aim of the Organization shall be the coordination and unification of the petroleum policies of Member Countries and the determination of the best means for safeguarding interests, individually and collectively.
- The Organization shall devise ways and means of ensuring stabilization of prices in international oil markets with a view to eliminating harmful and unnecessary fluctuations.
- Due regard shall be given at all times to the interests of the producing nations and to the necessity of securing a steady income to the producing countries; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on their capital to those investing in the petroleum industry.

These aims and objectives were drawn up following the individual experiences of the oil-producing nations, who, until OPEC’s formation, were predominantly in the hands of the major international oil companies (IOCs), who developed the oil resources these countries possessed and decided what share of the production the respective governments should receive.

The big corporations dictated prices at which oil should be sold, decisions that were taken unilaterally

without prior consultation with the countries who actually owned the oil. This action was in total disregard of the United Nations Solemn Declaration that gave sovereignty over natural resources to countries in which they existed.

Therefore, for Nigeria, a country freshly emerging from colonial rule and recovering from a bitter civil war, closing ranks with other developing oil-producing nations to protect its vital resource, was indeed a very attractive option, and one that was taken up willingly by the country’s rulers as a means of defeating the monopolistic attitude of the big oil companies.

Certainly, the country has, in many ways, contributed to the growth and consolidation of OPEC through its numerous ideas and proposals, as well as through the deployment of key personnel to the Organization’s Secretariat in Vienna.



Of particular note, the country has produced three Secretary Generals, namely Chief M O Feyide, Dr Rilwanu Lukman and the present incumbent, Dr Edmund Maduabebe Daukoru. In fact it has the singular privilege of having produced OPEC’s longest-serving Secretary General — Dr Lukman. There have also been five Conference Presidents — Lukman, along with Monguno, Mallam Yahaya Dikko, Professor Jibril Aminu, as well as the 2006 President, Dr Daukoru.

Apart from these distinguished officers, the country’s nationals have also had the privilege of serving in other high-level capacities at the Secretariat in Vienna.

Several oil industry professionals from the nation’s

national oil company, the NNPC, have at one time or the other, served as National Representatives to OPEC, among them, the present Acting for the Secretary General, Mohammed SBarkindo. Presently, the National Representative is Joe Ibe, NNPC's General Manager in London. The country's OPEC Governor is Ms Amuna Lawan Ali, Permanent Secretary in the country's Ministry of Petroleum Resources, in Abuja.

With all these dignitaries in mind, it is somewhat surprising that over the 35 years of its OPEC Membership, Nigeria has hosted the Organization's Conference only once.

And it is for this reason that the Nigerian authorities will be doing all in their power to



A woman walks along an oil pipeline in Nigeria's oil-rich Delta region.



An NNPC mega service station in Abuja.

ensure that the occasion proves to be an exciting experience for the country, its people and the visiting delegates.

An oil tanker discharges its cargo at the Atlascove jetty near Lagos.





Over the years, Nigeria has tended to fascinate those that have come into contact with the country in whatever capacity. Visiting the nation is a unique experience and one that evokes feelings bordering on the exotic. With its amazing diversity, abundant natural resources, and the fact that the country is acknowledged as the biggest black nation on the planet, Nigeria has aroused the curiosity of businessmen and tourists alike.

So, the question is — what is so unique about this country and its people?

Well, with a population that comprises over 250 ethnic groups, Nigeria is indeed a study in diversity.

The country ... the people ... the fascination ...



The country is located above the equator and is one of the few nations on earth richly blessed with four vegetation belts, ranging from the mangrove swamps, the rain forests and the woodland savannah to the northern savannahs.

Surrounded mainly by French speaking countries, Nigeria is bordered in the north by the Republics of Niger and Chad, in the east by Cameroon, in the south by the Atlantic Ocean and in the west by the Republic of Benin.

Today, the country is democratically governed and, at the same time, undergoing social, economic and political reforms.

Nigeria occupies a land area of 351,649 square miles (910,771 sq km), a total area of 356,669 sq miles (923,768 sq km), with a population estimate of about 140 million (a population census was held early this year but the result has not yet been released).

Since 1991, its political capital has been Abuja. Before then, it was the coastal city of Lagos which has a population of about 20 million and today remains the commercial nerve centre of Nigeria. Other major cities in the country include: Kano and Kaduna in the north, Ibadan in the west, and Enugu and Port Harcourt in the east.

In terms of economic importance, while Lagos serves as the commercial capital, Port Harcourt, otherwise called the Garden City, and located in the country's Niger Delta region, has emerged as a very important city because of

the increase in the activities of oil companies and corporations there.

Nigeria is blessed with abundant natural resources, both solid and mineral, while most parts of the country have the benefit of rich soil and good rainfall which has allowed the agricultural industry to prosper. About 80 per cent of the land is cultivatable.

It also has year-round warm temperatures, except for the Middle Belt region, where temperatures can fall to the lower 20's.

With more than 250 vibrant ethnic groups and different religious affiliations, it begs the question whether or not Nigerians are an accommodating people. Well, the simple answer is that they are warm, intelligent, friendly, outgoing, boisterous and ingenious, qualities that they bring to bear on their everyday lives and business activities.

Also, as a well travelled people, they have brought back to their country influence from around the world, which they mix with the Nigerian way of life to get a blend of urbanity and tradition that produces a character uniquely Nigerian.

Intellectually, the country has produced many scholars, some of whom have become icons in their various fields of endeavour. Just to name a few: Philip Emeagwali, the United States-based computer genius; Wole Soyinka, a Professor of Literature and Africa's first Nobel Laureate; Professor Chinua Achebe, author of the

Left: The Durbar, usually staged for dignitaries or important occasions in Northern Nigeria, here pictured at the Abuja Carnival.

Below: The bustling metropolis of Lagos.





Boat regatta celebrated by the people of the Niger Delta. They also made an appearance at the Abuja Carnival.

award winning *'Things Fall Apart'*, which has also been translated into many different languages across the globe.

The country is also home to former Commonwealth Secretary General, Chief Emeka Anyaoku; renowned Afro beat king, the late Fela Anikulapo Kuti; Seal and Sade Adu, as well as contemporary musicians, who are international award winners: Tu Face Idibia, Femi Anikulapo Kuti, Lagbaja, and Sonny Ade, among others.

And, as the country's Ministry of Information boasts, it is no exaggeration to say that music of every genre — highlife, kalango, apala, juju, afrobeat, egwu ogene, gospel, jazz, hip hop, reggae, R&B and soul — are a way of life for each and every Nigerian.

If sport is one's area of interest, then Nigeria has also carved a niche for itself as being the first African nation to defeat all South American football giants — Brazil, Mexico and Argentina — in one tournament to lift the Olympic Soccer Gold medal in Atlanta in 1994. The country's football stars are well-known everywhere, playing in major football leagues across the world. They include Nwankwo Kanu, Austin Jayjay Okocha and Garuba Lawal, among others.

For movie-lovers, the country's young but growing film industry, more popularly known as Nollywood, has become a major force and influence in Africa generally and the West African sub-region in particular. After Hollywood and Bollywood, Nollywood is acknowledged as the third-largest movie industry in the world and boasts films in the three main Nigerian languages of Hausa, Igbo and Yoruba, with Efik movies now hitting the market too.

Just like its ethnic diversity, Nigeria has a rich blend of culture, each one peculiar to the numerous ethnic groups. Whether in or outside the country, Nigerians love to celebrate these festivals and there are indeed many of them: Mmawu, boat regattas, the Kwaghir puppet festival, the Durbar, the Argungu fishing festival and motor rally, as well as the Eyo masquerade. Most importantly, the Osun-Oshogbo festival has been designated a UNESCO World Heritage event.

As with any country possessing large, over-populated cities, such as Lagos, there will always be some concern over security. The trick, therefore, is to know where to go and where not to go at any given time. However, for Abuja, host city for the 14^{3rd} (Extraordinary) OPEC Conference, it



A skyline view of Nigeria's commercial capital, Lagos.

is already well prepared for such high level events. The city has played host to numerous world leaders at one time or the other and will do its utmost to ensure that the OPEC Meeting goes smoothly.

But with all this optimism, its outgoing attitude and fullness of life, the tag of being a country that is 'unsafe' and corrupt are two elements that have combined to give Nigeria a poor image internationally.

However, the administration of President Olusegun Obasanjo is fully mindful of the country's international reputation, deserved or not, and is actively taking steps to improve the situation.

It has launched a campaign for Nigeria's image management and economic progression. According to the Federal Ministry of Information and National Orientation, in a message on its website, "the project is primarily designed to promote Nigeria's national brand assets, but will also tackle many of the negative issues confronting the nation."

There is no doubt that these will include the twin issues of bribery and corruption, which have eaten deep into the country's fabric, and for which President Obasanjo

has been working tirelessly to drastically reduce or completely eradicate.

The image campaign, which positions Nigeria as the 'Heart of Africa', will also promote world businesses, the country's products, its people, sports, culture and cities. It will also showcase and buttress Nigeria's pivotal role in Africa's political, social and economic development.



In session ... Nigeria's National Assembly.

Nigeria:

History of a unique land & people

The area today known as Nigeria has had an eventful and interesting history. According to historical records, backed by recent archeological findings, the area was already inhabited as early as 9,000 BC at a place called Iwo-Eleru in the south-west and perhaps earlier, at Ugwuella-Uturu Okigwe, in the south-east, whose inhabitants had no central system of governance. They were highly Republican and regarded as stateless.

Also, more than 2,000 years ago, the Nok culture flourished in the present Plateau state in the Middle Belt area and local inhabitants worked in iron and produced sophisticated terracotta sculpture.

In the northern cities of Kano and Katsina, records dating back to about 1,000 AD speak of a people with knowledge of, and involved in, vast trading activities. In the centuries that followed, these Hausa kingdoms and the Bornu empire prospered as important terminals of north-south trade between the North African Berbers and the forest



people who exchanged slaves, ivory and kola nuts for salt, glass beads, coral, cloth, weapons, brass rods, and cowrie shells, which were used as currency.

In the south-west, the Yoruba Kingdom of Oyo had existed at around 1,400, and was at its height from the 17th to 19th century, just as the south central part boasted the Kingdom of Benin about the 15th and 16th century. The Kingdom had developed an efficient army; an elaborate ceremonial court; and artisans whose works in ivory, wood, bronze, and brass are prized throughout the world today.

In the 17th through to the 19th century, European traders established coastal ports for the increasing traffic in slaves destined for the Americas.

By 1906, Nigeria was under the control of Britain, which divided the country into the Colony and Protectorates of southern and northern Nigeria, respectively. In 1914, the two regions were amalgamated and the Colony and Protectorate of Nigeria was established.

The united territories under the name Nigeria, gained independence from the United Kingdom on October 1, 1960, as a federation of three regions — northern, western and eastern, under a constitution that provided for a parliamentary form of government.

Under the constitution, each of the three regions was self-governing, but only to a certain extent, as exclusive powers over defense and security, foreign relations, commercial and fiscal policies were vested in the central government. In October 1963, Nigeria became a republic with the name, the Federal Republic of Nigeria. It also promulgated a new constitution. A fourth region (the mid-west) was created from the western region.

On January 15, 1966, a group of army officers overthrew the government, thereby opening a flood gate of what was to become a feature in the country's history — military coups.

The federal military government that assumed power under General Johnson Thomas Umunnakwe Aguiyi-Ironsi was unable to quiet tensions and the result was a counter coup in July of the same year, which produced General Yakubu Gowon as Head of State.

The continued unrest led to a declaration of the State of Biafra in May 1967 by Lt Col Chukwuemeka Odimegwu Ojukwu, the military governor of the eastern region and a bloody civil war that lasted for 30 months.

With the end of the civil war, the government faced the daunting task of rebuilding the nation through the three R-programme — reconstruction, rehabilitation and reconciliation.

Throughout its history, Nigeria has lived with 12 suc-

cessful and failed coups with the military having ruled for at least 29 of the 46 years of the country's independence.

Since General Gowon, other heads of state and Presidents have included Gen Murtala Ramat Mohammed (1975–1976), Lt General Olusegun Obasanjo (1976–1979), Alhaji Shehu Usman Aliyu Shagari (1979–1983 — elected civilian President), Major General Muhammadu Buhari (1983–1985), General Ibrahim Babangida (1985–1993), Chief Ernest Shonekan (1993), General Sani Abacha (1993–1999), General Abdussalam Abubakar (1998–1999), and Chief Olusegun Obasanjo (1999 to date).

Unique features of these administrations were that for the Obasanjo regime it promised to hand over to elected civilians and did so in 1979; Buhari's regime tried and sentenced politicians to various jail terms for corrupt practices, while Babangida encouraged debates on national issues, though the outcomes were not always translated or infused in his eventual policies.

The military regime under President Babangida introduced two political parties, the Social Democratic Party (SDP), and the National Republican Convention (NRC), with which every Nigerian interested in politics was supposed to register.

With these two parties, national elections were organized in 1992 under a novel practice known as Option A4. Though the elections were widely perceived as free and fair, they were nonetheless annulled and the country became a centre for mass rallies, riots and demonstrations, resulting in loss of life and property.

The pressure brought to bear on President Babangida by the country's media and human rights groups, backed by a strong international response, forced him to 'step aside' in August 1993, but not before he had put in place, an Interim National Government (ING) with businessman, Chief Ernest Shonekan, then Chairman of UACN Plc, as Chairman, and General Sani Abacha, the only soldier in the cabinet, as Minister of Defense.

The ING was declared illegal by the country's high court and was removed by General Abacha, who announced himself as the new Head of State and Commander-in-Chief of the country's armed forces.

The regime of General Abacha was accused of human rights violations by the international community and the country's media and civil society groups. Opponents of the military government fled into exile, where they continued to campaign for sanctions against the government.

On June 8, 1998, General Abacha died of cardiac arrest and another soldier, General Abdussalam Abubakar, was



The Federal Secretariat in Abuja.



A Conoil petrol tanker drives by the NNPC's headquarters in Abuja.

appointed Head of State by the apex ruling body — the Supreme Military Council.

Abubakar released all those jailed or sentenced to death by the Abacha Administration, including today's President, Olusegun Obasanjo.

There was intense pressure on the country's new Head of State to hand over the reins of governance to elected representatives of the people.

A constitution was produced and for the elections nine parties were granted provisional registration with three fulfilling the requirements to field candidates. The parties were the People's Democratic Party (PDP), which is now the ruling party; the All People's Party (APP, now the All Nigerian People Party); and the Alliance for Democracy (AD).

Former military head of state Olusegun Obasanjo, admired for returning the federal government to civilian rule in 1979, ran as a civilian candidate and won the Presidential election.

The PRC promulgated a new constitution before the May 29, 1999 inauguration of the new civilian President. The constitution included provisions for a bicameral legislature, the National Assembly consisting of a 360-member House of Representatives and a 109-member Senate.

The emergence of democracy in Nigeria on this date ended 16 years of consecutive military rule. President

Obasanjo took over a country that faced many problems, including a demoralized bureaucracy and collapsed infrastructure.

The President retired hundreds of military officers holding political positions, established a panel to investigate human rights violations, released people held without charge, and rescinded numerous questionable licences and contracts left by the previous regimes. The government also moved to recover millions of dollars in funds stashed in overseas accounts.

Nigeria's record of respect for human rights has improved significantly under the President Obasanjo administration.

In his second term, Obasanjo has faced the daunting task of rebuilding the country's economy. In support of this effort, the government's privatization policy, which actually began during the President's first term, has been made more aggressive, with at least 25 enterprises in which the government had controlling shares being sold off to private investors.

The government is also committed to ensuring that foreign investments, which took flight under the various military regimes, especially under the late General Sani Abacha, make a comeback. So far, this effort has yielded tremendous results as Nigeria has indeed become a destination point in Africa for companies and businesses looking to invest their money.

To help it achieve the much sought-after transformation of the country and economy, the government rolled out a comprehensive plan called the National Economic Empowerment Development Strategy (NEEDS), which has been supported by international organizations.

Essentially, this core reform programme of the government is anchored on reforms in the following areas – local government, NNPC reform; and policy and programme monitoring and reform of the National Statistics and Data Collection Policy.

So far, the government's liberalization of the country's oil sector, backed by the policy of higher local content, has witnessed increased activities in the sector, despite the ongoing unrest in the country's oil rich Niger Delta region, where militants have been fighting for more control of the nation's oil wealth.

The fact that the OPEC Conference has been scheduled for Abuja could, therefore, be seen as part of the administration's efforts to further sell Nigeria to the international community and investors, especially in the oil sector.

Visiting Nigeria?

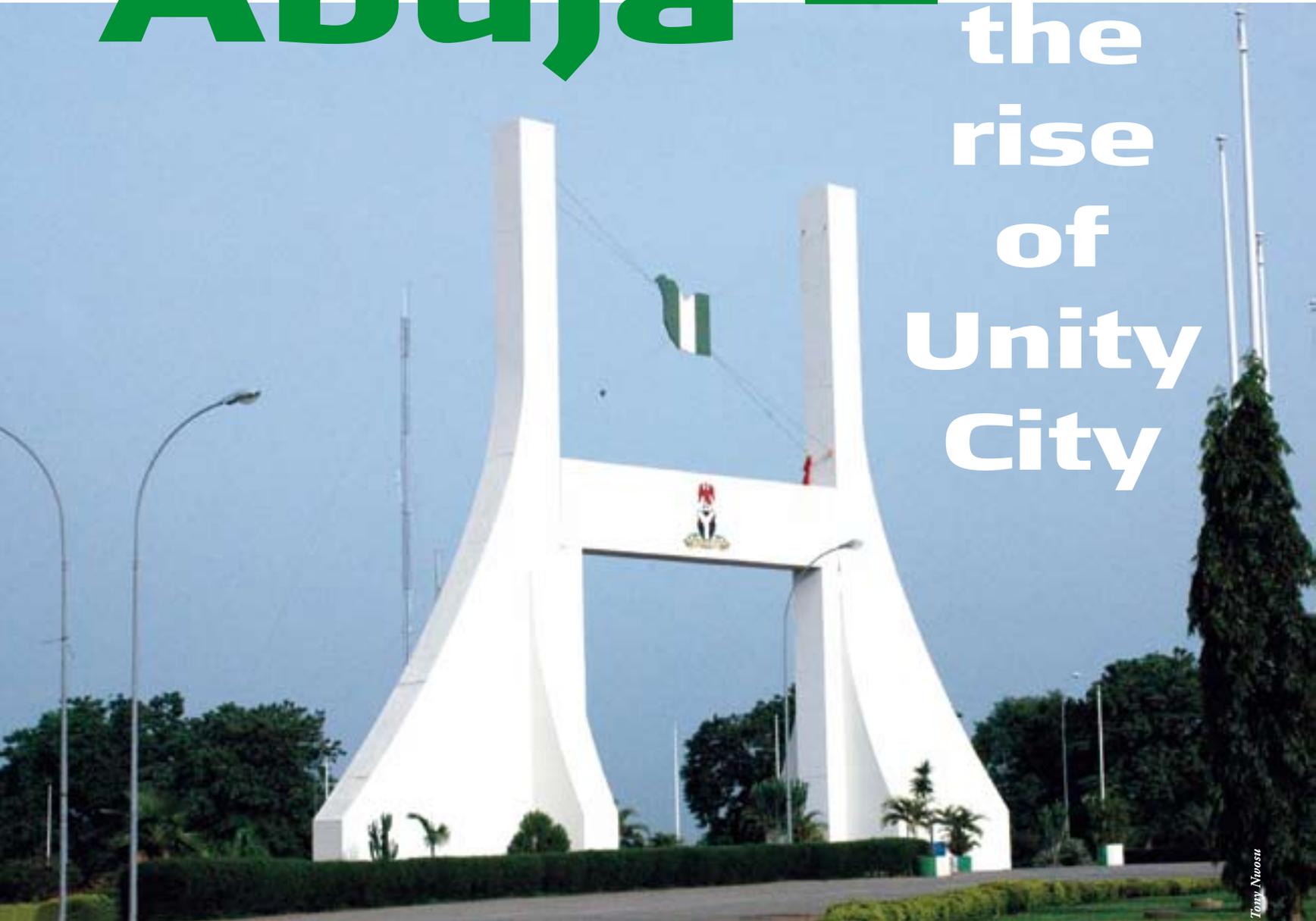
What to expect

► For guests and journalists who will be in Abuja, Nigeria for the 143rd (Extraordinary) Meeting of the OPEC Conference, there is really so much awaiting them – from the warmth of the people to the many tourist attractions across the country.

► Within easy reach is the now famous Obudu Cattle Ranch Resort in Cross River State, described by CNN's Jeff Koinange as a mixture of Dubai and Switzerland in the middle of nowhere; the Ikogosi Warm Springs in Ekiti State – a natural warm spring that flows and mixes with cold water issuing from another spring; the Owu Falls – located in Kwara State and said to be the steepest natural waterfall in West Africa; the Niger-Benue Confluence, where the Rivers Niger and Benue join at Lokoja, can be toured on available boats, on canoes, or viewed from a nearby hill for that panoramic effect. There is also the Yankari Games Reserve and the Wikki Warm Springs, which retain the same warmth all year round, the Jos Wildlife park, and various beautiful beaches.

Abuja

the rise of Unity City



Tommy Nwosu

Any first time visitor to Abuja, Nigeria's Federal Capital Territory, also known as the Unity City, will marvel at the sheer beauty of it. A picturesque city surrounded by hills, rock formations and so much greenery, Abuja has indeed become one of the most beautiful cities in Africa, and Nigeria's only truly planned city.

It is located at the centre of Nigeria, and has a land area of 8,000 square kilometres. It is bordered in the north by Kaduna State, in the west by Niger State, the east and south-east by Nasarawa State, and in the south-west by Kogi State.

Abuja experiences diverse weather conditions, varying from hot and humid to cold and dry. It also has the country's two main seasons — the rainy season, which begins from April and ends in October, followed by the dry season, which encompasses December, the time when delegates and guests will be in the city for the OPEC Conference.

The decision to relocate the federal capital from Lagos to Abuja can be traced back to 1975 when General Murtala Mohammed came to power.



Tony Nwosu

It was essentially felt that Lagos had become too unwieldy to continue serving as the nation's political capital. It was overpopulated, resulting in endless traffic jams, with slums emerging in various parts of the city. Also, with Lagos sitting on the coast, it is home to the nation's most viable sea ports, just as the busiest airport in the country, the Murtala Mohammed International Airport, is located there.

Above: The imposing Zuma Rock is one of the main tourist attractions in Abuja.

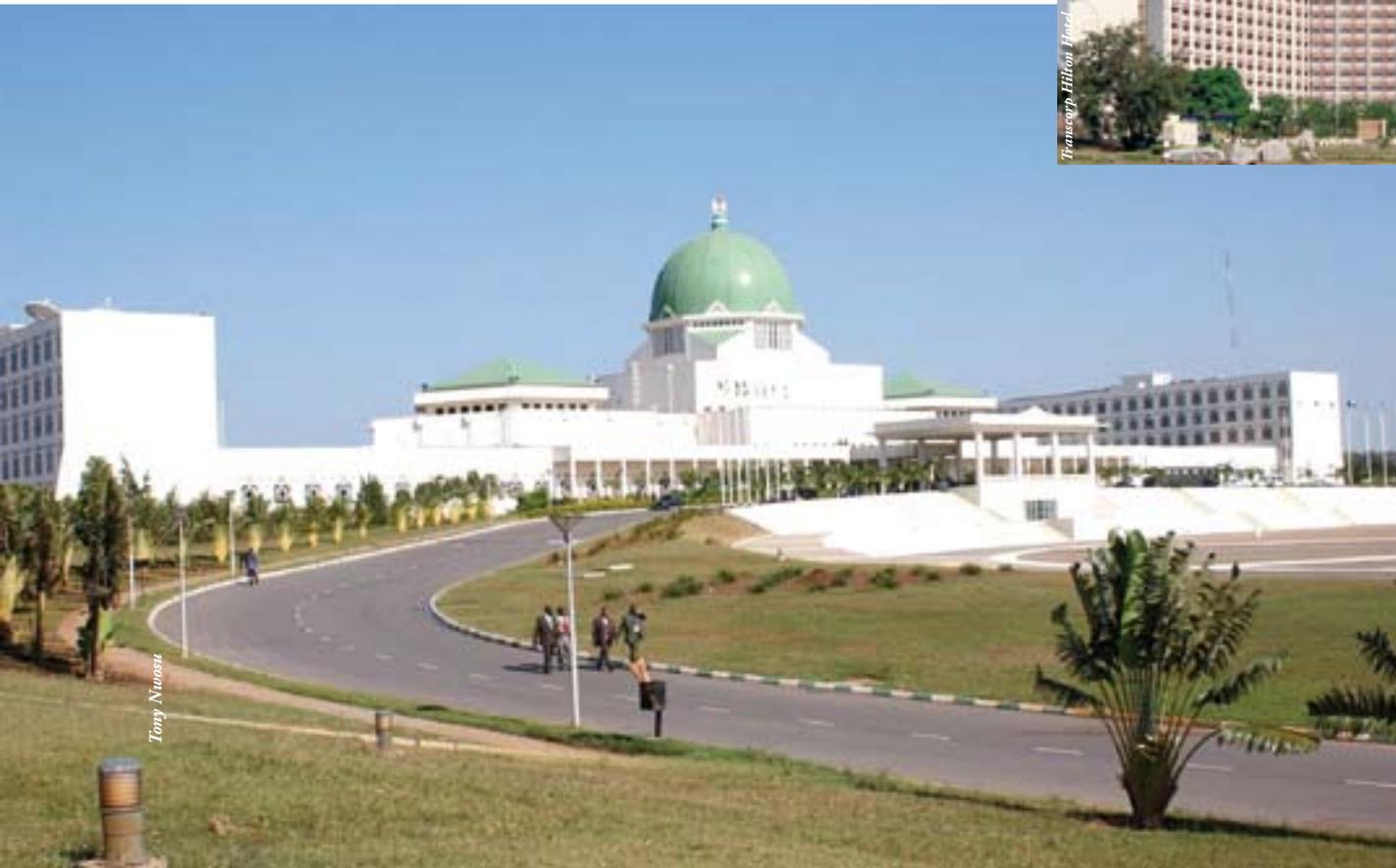
Left: Entering Abuja — the landmark City Gate.

Right: The venue of the OPEC Conference, the Transcorp Hilton Hotel in Abuja.

Below: The National Assembly complex in the Nigerian capital.



Transcorp Hilton Hotel



Tony Nwosu

Country Profile: Nigeria



Abuja's International Conference Centre.



Added to this was the fact that the city shared boundaries with other independent nations, making it vulnerable to external aggression. Moreover, Lagos was also the capital of Lagos State, a situation that brought about administrative friction between the state and federal governments.

All these factors brought pressure to bear on the government to find a solution to the problem of Lagos continuing as the country's political capital.

And so, on August 9, 1975, the government set up the Justice Akinola Aguda panel to "examine the dual roles of Lagos as both federal and state capitals and advise on the desirability or otherwise of Lagos retaining that role."

At the end of the exercise, the panel recommended the retention of Lagos as the capital of Lagos State and a relocation of the federal capital. Abuja was chosen because of its centrality to all parts of the country. Development of the city was expected to take a minimum of 15 years. The Shagari government began construction of the new federal capital. During the regime of Ibrahim Babangida, the construction efforts heightened, culminating in the movement of the seat of federal government there in December 1992.

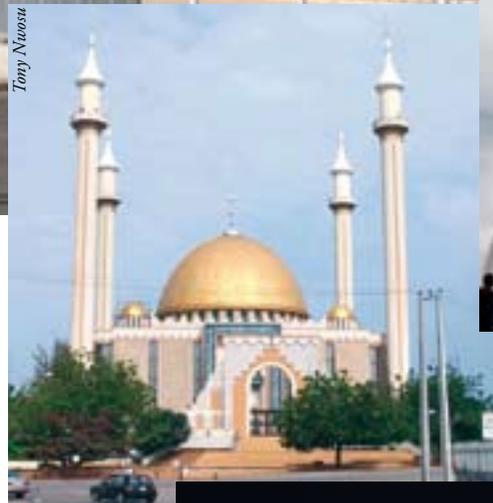
Today, Nigeria's seat of power — the Aso Rock (State House), the National Assembly and the Judiciary Complex — are all located in the exclusive Three Arms Zone in



A feat of modern architecture — the National Arts Theatre in Lagos.



Flying the flag for Nigeria — the new national stadium in Abuja, which was completed in 2003.



Left is the Nigerian National Mosque and above the National Ecumenical Centre cathedral.

Asokoro. There is also the ultra-modern International Conference Centre at Garki. All these complexes are considered architectural masterpieces.

Other attractions include Zuma Rock, Strabag Hills, Usuma Dam, Usuma River, Jabi River, Gurara River, Gurara Falls, Abuja Love Garden, Abuja Amusement Park, Abuja Zoological Park, IBB Golf Centre, National Ecumenical Centre, National Mosque, ECOWAS Secretariat, National Women Development Centre, Ushafa Pottery Centre, Ladi Kwali Pottery Centre, Giri Pottery Centre and the Millennium Park, not forgetting the gigantic Abuja Stadium, which is the first structure you see as you enter Abuja through the City Gate.

The OPEC Conference will be held at the exclusive 670-room Transcorp Hilton Hotel, which is located in the capital and about 40 minutes from the Nnamdi Azikiwe International Airport.



The Unity Fountain is another important landmark in Abuja.



Realising the potential of the CDM

The First International Conference of the Clean Development Mechanism (CDM), which was held in Riyadh, Saudi Arabia in September, witnessed attendees discussing the critical issues impacting on the CDM today. The key focus was on its potential role in supporting the ultimate goals of the Kyoto Protocol — to reduce emissions and support sustainable development. **James Griffin** reports.



Dr Mohammed Al-Sabban, Conference Chairman and Senior Economic Adviser to Saudi Arabia's Petroleum and Mineral Resources Minister.



Salman bin Abdul Aziz Al Saud, Governor of Riyadh.

In December 1997, the Kyoto Protocol that commits developed countries and countries with economies in transition (Annex I Parties) to achieve quantified emissions reduction targets was adopted. It also established three flexible mechanisms to assist Annex I Parties in meeting their targets: an Emissions Trading System (ETS); Joint Implementation (JI); and the CDM.

It was the CDM that brought more than 300 participants, representing governments, international organizations, industrial, financial and legal entities, and research institutions to Riyadh, Saudi Arabia, for the First International Conference on the CDM from September 19–20.

The theme of the Conference ‘*The Kyoto Protocol and Saudi Arabia: (from) observation (to) acceptance (and) fast implementation*’, created a platform for both speakers and delegates to deliberate on and discuss the complexities and difficulties currently associated with the CDM. It also offered the opportunity to further comprehend the potential economic, social and environmental benefits of the mechanism.

Dr Mohammed Al-Sabban, Conference Chairman and Senior Economic Adviser to Saudi Arabia's Petroleum and Mineral Resources Minister, Ali I Naimi, elaborated on this further, stressing the importance of “understanding how the CDM could be beneficial in achieving ‘win-win-win’ projects — a win for the investor, a win for the country hosting the project and a win for the environment.”

The comment underlines the inclusive potential of the CDM, which was established to allow Annex I Parties to invest in project activities in developing countries (non-Annex I Parties) and to use the Certified Emission Reductions (CERs) accrued from the year 2000 onwards to comply with their obligations during the first commitment period.

On paper, it is easy to appreciate the ‘win-win-win’ potential for the CDM, but the question many are asking today is whether the initiative is currently meeting its original expectations. To put this into context, it is important to review the founding of the CDM.



Left: Yvo de Boer, UNFCCC Executive Secretary, one of the speakers of the event, stressed that the conference was "important and timely".

Below: Mohammed S Barkindo, Acting for the OPEC Secretary General, who provided the keynote conference speech.



Ali I Naimi, Saudi Arabian Minister of Petroleum & Mineral Resources, talking to delegates.



The origins of the CDM

The origins of the CDM can be traced back to a 1997 proposal from OPEC Member Countries for a 'Compensation Fund' to be established to counter the adverse impacts arising from the implementation of response measures by Annex I countries on developing countries. The proposal was in accordance with Article 4.8 (h) of the United Nations Framework Convention on Climate Change (UNFCCC), but it never received widespread support from developed country Parties.

The follow-up concept came from a Brazilian proposal in June 1997 that called for Annex I Parties to be subject to a financial penalty if they did not comply with their quantified commitments under the Protocol. Again, however, the concept proved unpalatable to developed country Parties, due to the contentious issue of financial penalties for non-compliance, as well as the notion of compensating oil-exporting countries.

The idea of a penalty for lack of compliance by Annex I Parties was thus transformed into a 'mechanism for investment'. This formed the basis from which the CDM was born in the early hours of the last day of COP3 in Kyoto. The CDM, as defined under Article 12 of the Kyoto Protocol, has three key objectives: to assist non-Annex I countries in achieving sustainable development; to contribute to the ultimate goal of the convention, to stabilise emissions into the atmosphere; and assist Annex I countries to comply with their emission reduction commitments at the least possible cost.

The deal for developing countries was the opportunity to access much-needed investment, capacity-building and technology transfer.

In his keynote speech to the conference, Mohammed S Barkindo, OPEC's Acting for the Secretary General, said: "This would pave the way for these countries to explore cleaner, more environmentally friendly ways to develop, while continuing to further the advancement of the three pillars of sustainable development, namely economic growth, social progress, and environmental protection, at both the local and global level."

For Annex I industrialised countries, the arrangement would allow them to lower the cost of meeting their quantified emission reductions by making emissions cuts outside their own borders. These two elements combined would in turn help stabilise emission levels.

Barkindo stressed, however, that today it was patently obvious that the three key objectives of the CDM, as originally envisaged, had not gone to plan. "Initially

lauded as the basis for the future development of the Kyoto Protocol and deemed significant as it brought together the interests of countries of the North and countries of the South, it has remained a mechanism with potential," he said.

Barkindo added that it was critical for the mechanism to ensure that the partnership between the North and the South worked to impart new ways to deliver and consume energy.

The issue of potential was also implicitly underlined by Yvo de Boer, UNFCCC Executive Secretary, who stressed that the conference was both "important and timely" as the CDM was "still very much in the learning phase", though he did expect to see CDM projects escalate significantly going forward.

He indicated that the key priorities for realising the potential of the CDM included strengthening capacity-building for developing countries; expanding the geographical distribution of projects; providing a roadmap for the management of the Adaptation Fund — at the recent COP12/MOP2 meeting in Nairobi, there was an agreement on the basic conditions and principles of administering the fund — established to finance concrete adaptation projects and programmes in developing countries that were Parties to the Kyoto Protocol and financed with a share of proceeds from the CDM; and, creating more long-term certainty for the future expansion of the international carbon market.

Regional CDM variances

According to the CDM Executive Board, the number of registered CDM project activities in 2005/06 increased significantly. Its Chairman, Jose Domingos Miguez, said it was estimated that there would be 1.2 billion CERs by 2012 from projects currently in the CDM pipeline.

These figures are certainly positive, but on a regional basis, large differentials are apparent. The imbalance can be viewed dramatically in the CDM project activities for 2005/06. In Latin America, the number has risen by more than 1,000 per cent and in the Asia-Pacific region by 1,500 per cent. However, in Africa the figure is only 150 per cent.

Barkindo underlined the non-performance of the CDM in some parts of the world, particularly Africa, and stressed that the CDM needed "to make inroads into every sinew of the developing world." He added that capacity-building and appropriate investment were critical to bringing many people out of poverty and the associated energy

19-21
September1st International Conference on
Clean Development Mechanism
in Saudi Arabia

الدولى الأول
لتنمية النظيفة
مملكة العربية السعودية

Dr Mohammed Al-Sabban (c), Conference Chairman and Senior Economic Adviser to Saudi Arabia's Petroleum and Mineral Resources Minister, opens the conference; Mohammed S Barkindo (l), Acting for the OPEC Secretary General; and Yvo de Boer (r), UNFCCC Executive Secretary.

poverty. The very first UN Millennium Development Goal stresses the critical importance of reducing by half those living in poverty by 2012.

Geographical and sectoral variances were also apparent in the presentation from Lasse Ringius, the CDM Operations Team Leader at the World Bank. He acknowledged that Africa had a low involvement in World Bank CDM projects and that hydrofluorocarbon (HFC) emission reduction projects made up 53 per cent of the Bank's CDM portfolio. Ringius stressed, however, that the Bank had no priorities in terms of countries and it aimed to facilitate a portfolio of various projects across the world to ensure that carbon finance contributed to sustainable development, beyond its contribution to global environmental efforts.

Dr John Kilani, Lead Environment Engineer (Sustainable Development Projects) with Qatar Petroleum, also pointed out that there was a low-level of participation in Gulf Cooperation Council (GCC) countries. He believed that the reasons for this included the CDM's complexity, a low awareness of the mechanism within the region, its potential impact on institutional, policy and legal frameworks and the anticipated project lead times. He said a GCC framework must facilitate effective participation, build on well-established business models and previous experience, enhance the role of CDM stakeholders, and foster regional collaboration.

Nevertheless, presenters from both Saudi Arabia and the United Arab Emirates (UAE) emphasised that significant steps were being made to push forward the CDM in their respective countries.

Al-Sabban described the conference as a milestone for Saudi Arabia and the GCC and said the Kingdom's CDM policies were clearly stated and there would be proactive implementation of the mechanism. He also emphasised the importance of good leadership and outlined several recommendations, including: developing a legal and structural framework of the Saudi Arabian Designated National Authority (DNA) as soon as possible; appointing a national steering committee that included private sector members; organizing practical workshops on the CDM, in partnership with the UNFCCC; and installing an award system for leading CDM projects.

Majed Al-Mansuri, from the UAE's Environment Agency, discussed his country's DNA, including its structure, composition and function, and the role of its Executive Committee.

Involvement of all Parties

Al-Sabban also stressed that public-private cooperation was imperative in putting both the necessary frameworks in place and in the development of CDM projects.

The public-private sector topic was, in fact, discussed by a number of speakers, with Paul Soffe, Associate Director at EcoSecurities, highlighting the role of public and private entities in creating good CDM projects and providing the example of the Chinese public sector in this regard. He said that the public sector needed to encourage media coverage and address negative publicity regarding the CDM, and that given the right business

signals, the private sector could engage in providing new technologies and applications.

The importance of partnership was further underlined by a number of speakers who highlighted the increased proliferation of what is termed 'unilateral CDM'. The actual figures were presented by Miguez, from the CDM Executive Board, who stated that 44 per cent of all registered projects were under the title 'unilateral CDM'. This type of CDM project meant that the Project Design Document (PDD) was submitted without an Annex I investor.

Yet in this type of project the host country takes more responsibility in providing the necessary capacity-building and will thus be faced with higher costs. This is particularly true for the smaller, less-developed countries not seen as attractive CDM suppliers, which results in a lack of capacity-building activity by foreign donors.

The downward price risk can also be a significant problem for owners of 'unilateral CDM' projects. While foreign (co-)developers facing a domestic greenhouse gas constraint will always profit from any deal that is lower than their marginal abatement cost at home, the unilateral seller will face the full brunt of the price decrease.

Barkindo maintained that this was not how the CDM was envisaged to work, as, put simply, 'unilateral CDM' was an opportunity for private-sector initiatives to participate in the emissions trading market at their own risk. He posed the question: "Where is the technology transfer, capacity-building or partnership in this?"

An evolutionary process

'Potential' was the word many speakers used to describe the CDM, but a phrase also heard regularly was "learning from doing", which was viewed as extremely critical to the process. As with any mechanism of this nature, there is much learning involved and this will no doubt be an evolutionary process. This covers not only the broad challenges highlighted here, but also more niche adjustments and developments highlighted by a number of speakers.

Future challenges for the CDM Executive Board, such as managing an increasing case load, operational supervision, clarifying terms and concepts, and improving procedures, as well as the importance of including new project activities under the CDM, were a specific emphasis.

With regard to the inclusion of new project activities, there was widespread recognition of the need to include carbon capture and storage (CCS). This was stressed by Naimi, who said that solutions such as solar, wind, nuclear or hydropower, may contribute to CO₂ emission

reductions, but they could not meet the increasing global demand for energy.

He added: "Meanwhile, CCS focuses on developing technological solutions to reduce CO₂ emissions associated with the combustion of fossil fuels. This approach allows the world to continue utilising reliable, available and affordable fossil fuels, while addressing concerns regarding CO₂ emissions."

Harry Audus, General Manager of the International Energy Agency (IEA) Greenhouse Gas R&D Programme, underlined that the CDM could in fact be an important mechanism for contributing to the establishment of CCS as a major option for emissions reduction and that, while there were several issues that must be addressed, these did not appear to be any potential "show stoppers". However, at the Nairobi climate change meeting a proposal to allow CDM funds for CCS projects was deferred. *(For further information, see the review on page 38 of the EU-OPEC Carbon Capture & Storage Roundtable held back-to-back with this Conference.)*

The way forward

The Conference offered a firm commitment to the CDM process, but there was recognition that many challenges lay ahead, all of which needed to be addressed effectively, and the latent potential turned into real projects and benefits on the ground for all.

There was also acknowledgement that all this must take into account both the current and post-2012 period, as uncertainty vis-à-vis this second phase was putting some constraints on the development of CDM projects.

Barkindo concluded: "It should be recognised that all three Kyoto mechanisms, emissions trading, joint implementation, and the CDM, are integral to the Protocol's success. The flaws of the CDM must be corrected in order to prevent the whole Protocol from becoming flawed. We all need to think long and hard and turn this thinking into concrete actions, if we are going to take both the CDM and the overall Kyoto framework forward."

The benefits and potential of the CDM are plain to see, but the mechanism needs to meet the objectives of both developed and developing country Parties. Partnership between countries of the North and countries of the South was a cornerstone of the Kyoto agreement, specifically in regard to CDM, and it is important that this partnership is fully realised for the Protocol to move forward, both today and in the future.

Photos on pages 32–36 courtesy of Saudi Aramco.





New technology comes to the fore in the quest for a cleaner environment

OPEC, the EU and carbon capture and storage

The issue of carbon capture and storage (CCS) is high on the agenda of governments and international organizations the world over. Against this background, OPEC and the European Union (EU) held a Roundtable on CCS in Saudi Arabia in September. The OPEC Bulletin's **James Griffin** reports from Riyadh on a technology that has the potential to considerably reduce CO₂ emissions and, at the same time, enhance global energy security.



Dr Majid A Al-Moneef, Saudi Arabian Governor for OPEC and Chairman of the Roundtable.

Today, we live in a world where demand for energy continues to rise. It is also a world where environmental protection is receiving more attention, particularly in the light of the possible future implications to the well-being of the planet. Given these specifics, both OPEC and the European Union (EU), consider that it is both realistic and beneficial to promote cleaner fossil fuel technologies. With this focus in mind and as part of the EU-OPEC Energy Dialogue work programme for 2006, delegates — from the OPEC Secretariat and Member Countries, the European Commission, individual EU governments, as well as other governments and international organizations — gathered in Riyadh, Saudi Arabia, for the EU-OPEC Roundtable on CCS.

The event was held on September 21, back-to-back with the First International Conference on the Clean Development Mechanism (CDM) [see page 32] and pursuant to the generous invitation of the Government of the Kingdom of Saudi Arabia. The Roundtable focused on updating participants on the latest developments in technology and costs, as well as policies, regulations and frameworks related to CCS, and on discussing the potential role for the EU-OPEC Energy Dialogue in its promotion, including through large demonstration projects.

Roundtable Chairman was Dr Majid A Al-Moneef, Saudi Arabia's Governor for OPEC, who stated in his introduction: "Carbon capture technologies from stationary sources, which account for over half of CO₂ emissions,

and carbon storage technologies, especially in geologic formations, stand as the most promising technologies to reduce CO₂ emissions, while allowing the continued use of fossil fuels." Al-Moneef's comment was supported by Dr Hasan M Qabazard, OPEC's Director of Research, who added in his opening remarks that the technology could also be used in conjunction with CO₂ enhanced oil recovery (EOR), which offered a 'win-win' opportunity, by not only storing CO₂, but also increasing oil reserves in mature fields.

In his opening remarks for the EU, Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission, stated that the EC was directing a lot of effort towards technologies for zero emission fossil fuel power generation, particularly clean coal technologies, as in all the EU's future energy scenarios fossil fuels would remain the primary energy source. In fact, he stressed, taking into account anticipated future energy demand and climate change, "the continued use of fossil fuels, without CCS, is simply not sustainable."

Moreover, these opening pointers were reiterated by numerous speakers throughout the day, underlining a genuine commitment to environmental protection, the future use of fossil fuels to advance socio-economic development and CCS as an important component in tackling the problem of rising CO₂ concentrations in the earth's atmosphere. With these issues to the fore, the focus was on enhancing avenues of dialogue and making sure that



words turn into concrete actions, a key motivation for the Roundtable.

This was stressed by Mohammed Hamel, Head of OPEC's Energy Studies Department and Chairman of Session 1, who stated that the OPEC Long-Term Strategy underlined that international collaborative efforts were needed to develop large-scale demonstration projects. These types of initiatives are also a key component of the EU Energy Green Paper. The focus is on leveraging these projects to drive down project costs and build confidence in the operation and monitoring of such installations.

The benefits of CCS

When talk turns to CCS technologies, the first questions many ask are: what are the benefits of CCS and is the technology available today? Putting it succinctly, and taking into account the general Roundtable consensus: CCS technology is available today on an industrial scale, and the potential benefits, both in terms of CO₂ mitigation and EOR, are huge.

Elaborating further on the potential benefits, Dr Leo Meyer, Head, Technical Support Unit of Working Group III, Intergovernmental Panel on Climate Change (IPCC), said in his keynote address that though "CCS was no silver bullet it had the potential to meet 15–55 per cent of the global CO₂ mitigation effort by 2100." Striking figures that would make any policy advisor, business leader, as well as the general public, sit up and take note. Meyer added that there were also plenty of potential storage sites — the technical potential of CO₂ geological storage was likely to exceed 2,000 gigatonnes alone and as a comparison, the EU's Emissions Trading Scheme

From top:
Dr Hasan M Qabazard, Director of OPEC's Research Division.

Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission.

Mohamed Hamel, Head of OPEC's Energy Studies Department.

Dr Leo Meyer, Head, Technical Support Unit of Working Group III, Intergovernmental Panel on Climate Change (IPCC).

covered about 2 gigatonnes of CO₂ per year. There was, he stressed, also a good correlation between the major sources of CO₂ and potential geological storage sites.

A number of projects were showcased that underlined the availability of CCS technology today. They included Sonatrach's In Salah project in Algeria, the first industrial-scale carbon capture and geological storage operation, as well as the Sleipner and Snøhvit LNG projects in Norway. Alongside these were applications in refineries, such as the BP Carson Hydrogen Power Project in California, an industrial-scale demonstration of hydrogen manufacture from petroleum coke with CCS and new CCS projects linked to EOR, including BP's Peterhead Hydrogen Project in Scotland and the Halten CO₂ Project in Norway.

It was the CCS projects associated with EOR that provided some of the main talking points. Meyer stressed that CCS technologies were at different levels of maturity, with one of the most mature and economically viable applications being EOR. Going forward, there was a clear vision that CCS with EOR presented enormous potential, with representatives from a broad remit of countries, organizations and companies highlighting the significant benefits. Saudi Arabia underlined the value-add of expanding global recoverable oil reserves for both producers and consumers; the UAE highlighted the benefits it saw from recovering CO₂ streams from refinery installations and injecting them into sour oil reservoirs; and representatives from the Australian Government, Statoil and BP all added their voice to the plethora of advantages associated with EOR.

Though research figures may vary and every oil field has its own characteristics, it is believed EOR can potentially recover an additional six to 15 per cent of the original oil in place, and thereby increase total production from an oil reservoir by ten to 30 per cent. Place these figures alongside the potential for CCS in terms of CO₂ mitigation and the significant benefits are plain to see.

Ways to move forward

Costs

There is widespread recognition that though the potential benefits of CCS are huge, there are still a number of issues that need to be addressed. These then need to be effectively communicated to a wider audience to help pave the way for the future expansion of CCS technology. Top of the list of issues for many speakers was the setting up of enabling conditions for the widespread deployment

of CCS projects, and in particular to the cost of CO₂ capture, as the main cost influencer.

According to Meyer, however, it has generally believed that the cost of building and operating capture systems would reduce over time as a result of further research, technological development and economies of scale. "Over the next decade, the cost of capture could be reduced by 20–30 per cent, and more should be achievable by new technologies that are still in the research or demonstration phase," he said. This view was supported by Harry Audus, General Manager, IEA Greenhouse Gas R&D Programme, who underlined the importance of further demonstration projects, the need for a roadmap for commercial application, and that though CCS costs may be large, "they are not excessive".

A further key point related to costs was highlighted by Iain Wright, CO₂ Project Manager, BP Group Technology. He underlined the importance of projects being cost-competitive, with specific reference to BP's Carson Project in California, which to be competitive "needs access to the new environmental policy frameworks being put in place in California" and eventually for wider deployment in other states, policy frameworks at the Federal level.

Given an overview of all the presentations, there was a general consensus that in addressing the problem of reducing costs, opportunities exist in four core areas: access to a cheap CO₂ source; use of CCS as a means for EOR; the development of a stable and sustainable energy and environmental policy framework; and, the benefits associated with the sale of emissions certificates.

Policy and legal frameworks

The implications of sound policy and legal frameworks were a key element of many presentations, not only in terms of cost, but also with regard to the quicker deployment of projects. Tania Constable, General Manager, Resources Development Branch, Department of Industry, Tourism and Resources, Australia, said: "Policies, particularly legal and regulatory regimes, need to be developed so that countries are 'storage ready' ... and these regulatory regimes need to be robust, while providing flexibility to allow the distinctive characteristics of different projects to be taken into account." Ms Constable added that it was also important to have frameworks in place that allowed for both political and technical cooperation, highlighting the specific importance of country-to-country technology transfer in terms of skills, training, CCS project knowledge and the integration of best practices.

International policy frameworks also provided much discussion, with numerous references being made to the Kyoto Protocol and the CDM. An opportunity exists today to have CCS projects recognised for their contribution in reducing greenhouse gas emissions by having them included as a CDM project activity, though a decision on this was deferred at the recent COP12/Mop2 meeting in Nairobi. Both OPEC and the EU representatives expressed their wish to see CCS projects have such recognition.

On the technical side, two prominent concerns related to seepage of CO₂ from geological storage sites and long-term liability. From the viewpoint of seepage, most CCS experts now agree that appropriately selected sites are unlikely to 'seep' injected CO₂ into the atmosphere. Meyer noted that an IPCC special report suggested that geological storage was 'very likely' (90–99 per cent) to result in 99 per cent of CO₂ being retained over 100 years, and was 'likely' (66–90 per cent) to result in 99 per cent of it being retained over 1,000 years. The key question for many in the future development of CCS is that of post-abandonment liability and who takes long-term responsibility for the integrity of the storage site.

Public acceptance

All this leads into the matter of public perception and acceptance of CCS, which Ole Flagstad, Principal Research Engineer, DNV Research, said "needs to be improved". The goal is to communicate effectively the benefits of CCS, both from the environment and energy security viewpoints, and address effectively any concerns the public may have through confidence building.

The EU-OPEC Dialogue

Both OPEC and the EU stressed that CCS technology was a high priority and that it had significant potential in meeting both CO₂ mitigation efforts and the expected increase in energy use. In his closing remarks, Qabazard stressed the importance of a global shared approach to these issues "and this very much underlines the significance of the Roundtable between OPEC and the EU." This theme was reiterated by Stathis Peteves from the European Commission's Joint Research Centre, who highlighted the need for transitioning from discussion to concrete action and said the establishment of a new EU-OPEC technology centre was a step in this direction. As well as the possibility of a technology centre, further co-operation was also sought in ensuring the eligibility of CCS under the CDM and in jointly exploring the possibility of a large-scale demonstration project in an OPEC Member Country.

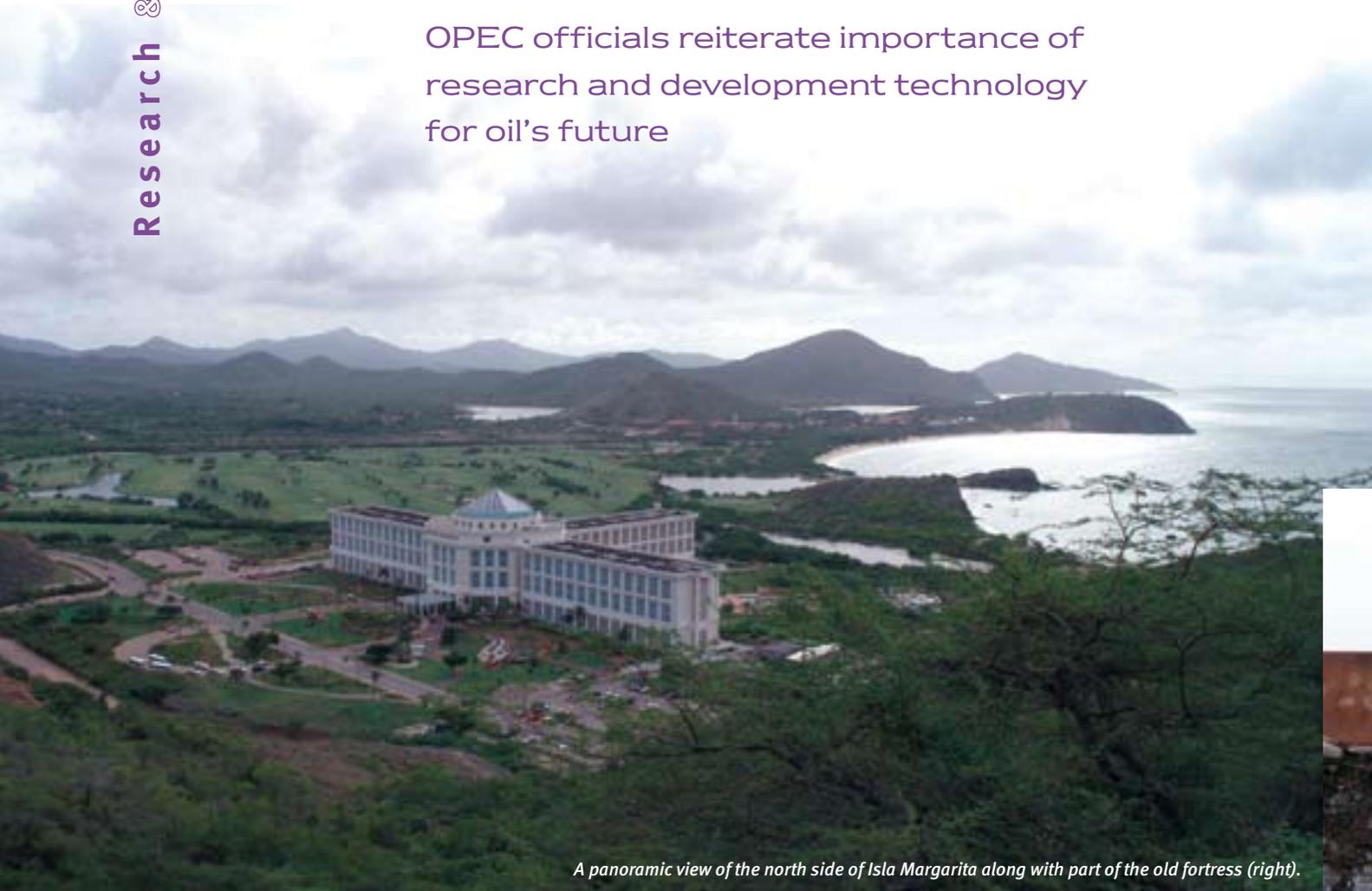
It needs to be remembered that CCS technology, with EOR too, is available today and it benefits both consumers and producers alike. That is not to say there are not some concerns, but the advantages it brings, in terms of environmental protection and meeting future energy demand, make it an important widescale technological option worth striving for.



Photos on pages 39–40 courtesy of Saudi Aramco.

R&D – the way forward

OPEC officials reiterate importance of research and development technology for oil's future



A panoramic view of the north side of Isla Margarita along with part of the old fortress (right).

With more and more industry experts now holding the conviction that the key to extending the life of the oil industry lies in technological development, OPEC continues to look at ways and means of enhancing science and technology cooperation among its Members. At the second meeting of the Organization's research and development institutions, held in Venezuela, Member Country experts reviewed progress made in this direction and discussed how best to expand the initiative.

OPEC Member Countries, with the assistance of the Organization's Secretariat in Vienna, are continuing with their efforts to strengthen cooperation in science and technology development, related to oil and energy issues.

The 2nd Annual Meeting of Officials of Petroleum Research & Development Institutions in Member Countries, held in Isla Margarita, Venezuela from October 31 to November 2, proved to be a successful and meaningful follow-up to the first round of talks held in Qatar in May last year.

The Venezuelan deliberations were viewed as a "golden opportunity" to take stock of the situation, discuss progress made since the first meeting and, most importantly, identify areas for improvement and take decisions on how to move forward as all sides continue to work together to develop common and joint approaches to research and development (R&D) opportunities.

Ivan Orellana, Venezuela's Governor for OPEC, was elected Chairman of the meeting with Prof Reyadh Almehaideb, of the United Arab Emirates, elected Alternate Chairman.

Rafael Ramirez, Venezuela's Minister of Energy and Petroleum, who welcomed delegates to the talks, emphasized the importance of the initiative for both OPEC and Venezuela.

It was an institution where different cultures and different customs sat together and discussed "the most important activities of our planet — an institution that exists upon the political will of our Heads of State."

Ramirez pointed out that the country's oil development activities dated back 80 years and, during that time, the country had always been looking for the best means to develop the resource for the benefit of its people.

He stated that, in recent history, this goal had led to a great deal of political pressure and even a *coup d'état*.

"However, one can certainly say that, at this moment in time, Venezuela, as a sovereign country, has rescued the management and operation of its main natural resource," commented Ramirez.

Technological independence

The Minister conceded that the country could not say it was a sovereign state on a technological level. "I think this is a problem common to all OPEC Member Countries."

He explained that it was the large energy consumers and main industrialised countries that were managing oil development technology.

"Technology and science cannot be neutral — they should have a political and strategic purpose. Now we



Rafael Ramirez, Venezuelan Energy and Petroleum Minister (c), seen with Ivan Orellana, Venezuelan Governor for OPEC (to his right) and Hercilio Rivas, President of INTEVEP (l).

"I think we have to be critical and acknowledge that we have not made that much progress in this area."

– Ramirez

Speaking on Venezuela's R&D experiences, he said for his government, as well as the people of Venezuela, OPEC was one of the world's most important institutions — an institution where 11 Member Countries met with a common objective.

are striving to achieve our technological independence and that is why we are taking significant steps in that direction in Venezuela," noted Ramirez.

"After the events of the sabotage of our industry in 2002–03, we have recovered and are in full operation now.



Rafael Ramirez, Venezuelan Energy and Petroleum Minister, who welcomed delegates (assembled above) to the meeting.



we have to aim all these at production treatment and conversion of heavy and extra-heavy crude oil,” commented the Minister.

“We have all the processes aimed at the production of clean fuels, enhanced oil recovery, and drilling fluids. However, we do believe that our research lines should also be related to the reality of our country. That is why today our institution is open to the people.

“We have promoted the motto of developing science that will be useful for the people — for the poor people of the country — to increase our industrial capacity and that of agriculture and food production, and to improve the use of energy and optimize our processes,” he declared.

Ramirez stated that INTEVEP, which the delegates toured at the end of their meeting, was previously a closed centre and was just devoted to oil activities. Now it was open to society at large, with the purpose of putting all its technological and scientific capacity to the good use of the country. That, in turn, would serve as a technological platform for the development of other non-oil sectors.

He pointed out that some 80 per cent of the input required for Venezuela’s exploration and production activities came from abroad — mainly the United States.

“But now we are implementing a plan to diversify our technological investment to create international alliances and to strengthen our industrial capacity,” he explained.

“In Venezuela, we will be manufacturing rigs or drills with the Chinese. We will build ships with Brazil. We are

And our technological branch — INTEVEP — is stronger than ever.”

He revealed that this institution had more than 1,200 employees, including some 500 engineers and other professionals, 370 technicians, 32 pilot plants, and 16,000 square metres of laboratories.

It also had 1,154 patents and many other important technological products in research and development areas.

Open to the people

“But all this would be worth nothing if we did not aim at guaranteeing our security and our technological development. We have been analyzing and studying these strategic lines of our research and, of course, due to the nature, the characteristics of our oil and the conditions,

setting up mixed companies for well services with the Chinese. And we are rebuilding our industrial networks, to provide more jobs for our people,” he said.

The Minister said that INTEVEP’s operations would go hand-in-hand with all these industrial initiatives. It had the responsibility of working together with both private and public entities and in all activities.

“We are creating, on a massive scale, small-sized companies that will provide services to the oil industry, because we have decided to stop being an extracting mining company. We will also cease being a company that buys everything it needs from abroad. We have land, we have water, we have people to develop our country and that is the strategic task that has been assigned to INTEVEP,” he affirmed.

Ramirez reminded delegates that at the OPEC Summit in Venezuela in 2000, the Organization’s Heads of State and Government had agreed to work together to make progress in the area of science and technology and to also enter into agreements in this area.

“I think we have to be critical and acknowledge that we have not made that much progress in this area. And these meetings should serve as the moment when we should reach certain agreements towards working in this area in the future,” he maintained.

Technological problems

“You must be aware of the fact that technological problems are common to all our countries, and are the same problems. To a great extent, we all depend on outside suppliers for our activities. Everything related to software, the programmes that will allow us to handle our activities, the goods and services, come from abroad,” he noted.

The Minister said Venezuela was determined to establish more mechanisms for enhancing cooperation initiatives among other OPEC Member Countries, including exchange of officials, and setting up internships, so that “our brothers from Indonesia, Algeria and other countries can work or study here with us and we will be able to send young Venezuelan people to your countries to learn about your experiences.”

He explained that Venezuela was already doing this in its own geopolitical area. “We are receiving hundreds of Bolivian citizens to train in the area of gas, and we are sharing with Cuba our experiences in the production of heavy crude oil. We have joint programmes set up with India in the production of heavy crude oil, and we are building at least four refineries abroad — in Central America,



the Caribbean and South America — where we are using our own technology of heavy crude oil conversion.”

Ramirez said, in the past, this type of technology was always blocked by international interests. “Now we are using this technology and are also making it available to our brothers. That is why we would like to reach an agreement to have more exchanges in that sense.

“We would like this to be an opportunity for you to speak with our PDVSA personnel about all these opportunities and experiences we are having,” he added.

Heading the Secretariat’s delegation, Dr Hasan M Qabazard, Director of the OPEC Research Division, outlined the brief history of the talks, stating that the meetings had their origin in the Solemn Declaration of the OPEC Summit in 2000, where Heads of State and Government had expressed a desire to establish links between Member Country research institutions.

Following this mandate, a directive was issued to the Secretariat by the OPEC Board of Governors stating that cooperation in R&D should be focused on key long-term strategic technological research areas. The strengthening of collaboration among Member Countries also formed an integral part of the Secretariat’s Medium-Term Programme.

A Brainstorming Meeting on Cooperation in R&D was then held in Vienna in April 2004, where a number of clear objectives were laid out. These focused on the development and encouragement of technologies that support the demand and utilization of oil; addressing positively, consumers’ concerns regarding the environment; and promoting sustainable demand for OPEC oil.

Rafael Ramirez (c), with Dr Hasan M Qabazard (l), Director of the OPEC Secretariat’s Research Division, and Ivan Orellana (r), Venezuelan Governor for OPEC.



Prof Reyadh Almehaideb of the United Arab Emirates delegation.



The Indonesian delegation (l to r), Dr Oberlin Sidjabat, Tunggal M Sc, and Dr Ego Syahril.



From Algeria, Mrs Schahrazed Boutira (c) with Mrs Djamila Djellas (l).



Kuwaiti delegates at the talks (l-r) Dr Meena Marafie, Fahad A Nouri, and Fuad A Al-Mohammed.

“To meet these objectives, working groups were set up in a number of key technological research areas,” said Qabazard.

At the first meeting, in Qatar in May 2005, established working groups on GTL, clean fuels, carbon management and EOR started to formulate their work programmes, while the OPEC Secretariat was asked to continue developing a legal framework agreement for R&D cooperation.

It was also stipulated that the Secretariat should play a stronger and more proactive role, other than just facilitator, including establishing a new organizational unit. It was also recommended to expand the scope of the proposed OPEC Research Institute to cover cooperation in R&D.

Eighteen months on, Qabazard said the second meeting was looking forward to hearing how the work of the respective groups had progressed.

“In fact, I very much hope that the next two days will allow all of us to reaffirm, and in some instances perhaps refocus, on what we want to achieve through collaboration,” he said in his opening remarks.

“I cannot stress strongly enough the importance of turning our words and deliberations into actions,” he added.

Breakthrough technologies

Qabazard stressed that R&D and technological advances were what fuelled and drove the industry forward. As an Organization of 11 sovereign states and with nearly 80 per cent of proven global crude reserves, OPEC needed to be at the fulcrum of these advancements.

“Such collaboration allows us to not only benefit as individual Member Countries, but also as a forward-thinking Organization in an increasingly energy-interdependent world,” he affirmed.

“It needs to be remembered that technological development not only extends and enhances the earning power of our petroleum resources,” he added.

In stressing the importance of technological development, he said that looking back 40 years or so, none of the world’s offshore oil was, at that time, classified as conventional, simply because it was not economically recoverable.

However, in the past two decades, advances in areas such as drilling and 3-D and 4-D sub-surface imaging had had a dramatic effect on upstream activity, leading to large discoveries, particularly in deepwater areas.

“The application of these breakthrough upstream technologies has contributed to significant hydrocarbon resource additions, increased exploration success,

improved economics and reduced costs and expanded access to new frontier areas,” he explained.

Qabazard said that, moving to the present day, carbon capture and storage (CCS) was proving to be an extremely promising technological option that, in conjunction with enhanced oil recovery (EOR), offered a ‘win-win’ cost-effective opportunity by not only storing CO₂ — particularly important as the industry continually sought ways to produce oil that was cleaner and more efficient than ever before — but also increasing oil reserves in mature fields.

Stronger R&D linkages

It was believed that EOR could potentially recover an additional six to 15 per cent of the original oil in place, and, thereby, boost total production from an oil reservoir by ten to 30 per cent “figures that would make anyone in the industry sit up and take note,” he said.

Qabazard stressed that the key in all this was collaboration as a means to understand the needs and roles of OPEC Member Country research institutions and their parent companies in this process.

“This will allow us to build stronger R&D linkages between our Member Countries and put in place a constructive and well documented path with designated actions and goals. I also hope that we are able to examine the current facilitator role of the OPEC Secretariat and determine how we can work together to make this more effective,” he affirmed.

“We need to prepare ourselves well for the future by becoming more effective and efficient, particularly in terms of R&D and technological advancement. I cannot emphasize enough that the potential benefits are huge. So I hope we all make the most of this important gathering and participate fully in the events and discussions,” he added.

Over the two days of talks, presentations covering a variety of R&D topics were made by Member Countries and by the Secretariat.

The Algerian delegation gave an account of the work of the national oil company, Sonatrach’s Research and Development Centre Division, highlighting the centre’s history, organization, capabilities and activities.

It said the centre conducted research and development work and provided services in both upstream and downstream. Current projects included research on EOR technologies, tight reservoir technologies and protection of the environment.

The presentation also described the progress of the



From Qatar, Ismail A Abdulla Al-Emadi (l) and Reda Ali.

centre’s joint initiative with BP and Statoil on carbon capture and storage (the In Salah gas project).

Two presentations were given by the Indonesian delegation. The first, on ‘Carbon capture and storage — salient issues and required actions’, highlighted issues pertaining to whether CCS projects could be considered as CDM project activities. The paper focused on the geological storage of CO₂ and identified issues and actions required that needed to be carried out under different time frames.

The second presentation, on ‘Study of refinery ways to turn sour crude into sweet crude’, described a proposed study in support of the clean fuel technology R&D programme, with a focus on sulphur reduction in crude oil, including the sweetening of sour crude, biodesulphurization and residue hydrotreating.

The report offered an implementation plan for the study, whereby one Member Country could take the lead in coordinating, planning, organizing and reporting on such a programme. Alternatively, each Member Country could conduct separate studies, with the results being shared.

The Qatari Delegation also made two presentations. The first, on ‘GTL as an environmentally friendly fuel’, provided a lifecycle assessment (LCA) of GTL, based on three independent studies. The LCA recognized several stakeholders and attempted to address the concerns of GTL producers, policymakers, society in general, automotive manufacturers and fleet operators.

The presentation concluded that GTL’s greenhouse gas performance was close to that of existing systems. However, it had a clear advantage in other environmental concerns. GTL, which provided a new source of transport energy, could easily and cheaply be incorporated into existing use patterns, it added.

The second presentation, entitled, ‘Strategic partic-

ipation by OPEC in the clean development mechanism (CDM)', sought to explain some of the intricacies involved in all phases of CDM projects and the resulting certified emission reductions (CERs).

It reported on the status of CDM implementation and discussed ways of ensuring active participation of OPEC Member Countries in the process. The presentation emphasized that Qatar was willing to share its knowledge and expertise in the CDM with other interested Member Countries.

Two presentations were made by the Venezuelan delegation. The first focused on the role of PDVSA and INTEVEP in supporting social development in Venezuela.

Share experiences

It said the goal was to strengthen the technological basis for creating social production enterprises through local technological development and financing. This would create jobs, improve the environment and promote competitive enterprises in Venezuela.

Other activities included education programmes, which had eliminated illiteracy, and infrastructure construction projects, it stated.

The second presentation highlighted the technologies used in reservoir characterization of the offshore gas fields and Orinoco heavy oil.

It said that for offshore gas, the primary technology used was 3-D seismic and the integration of the seismic

data with wire-line and core data. In the heavy oil area, INTEVEP had devised the Magna Reserva Project, a unique programme with objectives to accurately determine reserves and develop technology using visiting experts from several national oil companies, as well as international oil companies that were not currently operating in the area.

This, said the presentation, would give INTEVEP access to a wider variety of technologies, including different types of EOR processes, to be used to maximize recovery from these assets and to certify the reserves. It added that INTEVEP was keen to share its experiences with these technologies with other OPEC Member Countries.

A presentation by Saudi Arabia on 'Interaction with the National Oil Company (NOC) Forum' offered detailed background information to the initiative and recommended that participating OPEC Member Countries should fully leverage this collaborative route to address suitable R&D needs.

It noted that the NOC Forum was founded in 2001 as a common platform for discussing solutions and best practices in the operation and management of the NOCs. Three working groups were established — on the *environment*, focussing on CO₂ management, regulations, spill response and waste management; on *natural gas*, to discuss technology and market issues; and on *technology*, working on clean fuels, heavy oil reservoir management, and EOR.



Omar S Abdul-Hamid of the Saudi Arabian delegation.



The Libyan delegation comprised Dr Mohamed Etayari (l) and Dr Mohamed Elgarni.



Delegates listen to a presentation on carbon capture and storage.

INTEVEP is keen to share its technological experiences with OPEC Member Countries.

The presentation noted that there was an overlap of some of the focus areas of the NOC Forum and the strategic areas for OPEC Member Country R&D cooperation, and at the appropriate time it would be beneficial to discuss the areas of common interest with the Forum through OPEC NOCs.

The OPEC Secretariat made a total of four presentations over the two days. The introductory address outlined the context of R&D collaboration, briefly described the outcome of previous meetings and highlighted the agreed areas of cooperation. It updated the meeting on the activities held since the first meeting of R&D officials, provided the Secretariat's assessment of the progress made and identified areas for improvement in moving the initiative forward.

The second presentation, on 'Possible interaction with the Forum of NOCs', offered a brief background of the NOC Forum, and gave the Secretariat's view of potential interaction, emphasizing that it was possible through individual countries' NOCs, but not OPEC as a whole.

It stressed that interaction could complement, but not substitute, intra-OPEC collaboration.



From the Venezuelan delegation are Hercilio Rivas and Ms Mariete De Brito.



Part of the OPEC Secretariat team – Dr Hasan M Qabazard (l), Mohamed Hamel, Head of the Energy Studies Department, and Anne Rechbach, also of Energy Studies.

“We need to prepare ourselves well for the future by becoming more effective and efficient.”

– Qabazard

The presentation urged NOCs in Member Countries, as well as R&D institutions, to capitalize on their participation in the Forum.

The third Secretariat presentation was on the ‘Status of OPEC Membership in the IEA Greenhouse Gas R&D Programme’. This presented an overview of the terms of OPEC’s membership in the programme and listed the 2007 studies as prioritized by members of the programme.

In addition to listing the recent activities of the Secretariat and informing delegates of the procedure for the dissemination of reports and studies of the programme, the presentation outlined the steps required to identify and execute OPEC-defined studies or activities and proposed a mechanism for this.

R&D collaboration

As a follow-up, the presentation recommended that the Carbon Management Working Group consider the Secretariat’s proposal for identifying specific OPEC-defined studies or activities within the IEA GHG Programme and that the meeting discuss potential studies or activities for 2007.

The final Secretariat presentation, entitled ‘The way forward — elements for discussion’ addressed several areas requiring the consideration of the meeting.

It suggested that there might be a need to revisit the

agreed areas of R&D collaboration in terms of prioritizing Member Country participation and/or leadership.

It also stressed the need for a more stable management and coordination structure for the collaboration, in order to ensure continuity, accountability and a sense of ownership.

In addition, the presentation addressed the issue of funding, which, it maintained, should be defined on a case-by-case basis within each project agreement. It also looked at the legal arrangements, which, it said, should be developed by the country leaders of the respective working groups, and improving communication, which should be expanded to include OPEC National Representatives, with extensive use of the OPEC Intranet Forum.

The presentation finally stressed the importance of enhancing exchange of personnel and experiences, linking this to the recommendations of the OPEC Long-Term Strategy.

The various working groups, some of which were reconstituted to include other Member Countries, met and gave progress reports on their activities.

At the invitation of the host country, the delegates also paid a visit to the INTEVEP R&D centre. Participants were given the option of touring either the upstream or the downstream research facilities, with special provisions made available to delegates who wished to see facilities within both areas.

Conclusions and recommendations >

In reiterating the strategic importance of cooperation for enhancing understanding on research and development issues among OPEC Member Countries, the meeting reached the following conclusions and recommendations:

- > It was decided to continue with the same focus areas as previously agreed and to reconstitute some of the working groups to allow participation by other Members.
- > The Meeting endorsed the Secretariat's proposed mechanism for identifying specific OPEC-defined studies within the IEA Greenhouse Gas Programme.
- > Delegates agreed that there is a need to ensure continuity, planning and progress monitoring. To this end, the Meeting decided upon a structure for R&D collaboration, including annual meetings of R&D officials, a steering committee, which will consult regularly to monitor progress, prepare the annual work programme and report to the annual meetings. It was decided that working groups should define their own work programmes, projects, terms of reference, legal documents, and resources, etc. The Meeting decided that a governance document should be developed by the Steering Committee before the end of January 2007 defining the roles and responsibilities of each component of the above structure.
- > On the issue of funding, the Meeting agreed to the principle that it should be defined on a case-by-case basis within each project collaboration agreement. Further, it was recommended that the Secretariat may consider the possibility of contributing to the funding of some projects, where feasible.
- > The Meeting agreed that customized legal agreements specific to each working group should be developed by the lead countries in cooperation with the other participating states.
- > The Secretariat was requested to address all its correspondence related to the R&D collaboration to the focal persons, with copies to OPEC National Representatives.
- > The Meeting affirmed its desire for the Secretariat to maintain the OPEC Intranet Forum and requested that it post all presentations and reports of the annual meeting on the forum. In addition, the steering committee and working groups should post the minutes of their meetings on the Forum, as well as distributing them to all participants. All members of the Forum are encouraged to post documents they consider of interest to other Members.
- > The Meeting considered the exchange of personnel and experiences to be very important, this being one of the elements of the OPEC Long-Term Strategy. In this regard, Venezuela expressed its willingness to host and fund visits of scientists from Member Countries to the facilities of INTEVEP. Venezuela is also willing to share its GTL technology with others. Qatar also expressed a willingness to share its own experiences with large-scale GTL projects.
- > Qatar and Venezuela expressed an interest in technologies related to the clean burning of oil and natural gas. Qatar informed participants that they are considering hosting a UN-led workshop in February 2007 to showcase these technologies. All Member Countries will be invited to attend this workshop.
- > Regarding interaction with the NOC Forum, the meeting agreed that, while the focus should continue to be on research and development collaboration among OPEC Member Countries, R&D activities within the forum could be taken into account to benefit from synergies and ensure efficient use of resources.
- > It was agreed that the next Annual Meeting of Officials of Petroleum R&D Institutions in Member Countries will be held in Vienna, Austria, in October 2007. 🌐

Venezuela repaying “debt to Africa” by fostering trade and energy development



In an interview with Ivan Orellana (I), Governor for OPEC of the Bolivarian Republic of Venezuela, the OPEC Bulletin's Edward Pearcey looks at the nation's determination to repay its debt to Africa by increasing trade, enhancing cooperation, and fostering energy and economic development.

Ivan A Orellana, Venezuela's Governor for OPEC, knows better than most the contribution people of African origin make to Venezuela. "My brother is married to a woman of African origin, so my family has a personal connection to this issue," he said. "I'm sure that almost every family in Venezuela has some African blood — and that is why we are embarking upon these projects."

The projects referred to will initially incorporate an assessment of investment opportunities for Venezuelan companies in Africa to develop refinery infrastructure. There is also a stated desire to share with African nations the experiences and policies associated with social development. Countries already involved in this project include Mali, Mauritania, Côte d'Ivoire, Liberia, Sierra Leone, Ghana, Angola and Cape Verde.

The second phase of the dialogue will concern investment opportunities in hydrocarbons production — both onshore and offshore. "We are willing to embrace projects in this part of the world," said Orellana, while commenting that Venezuela's knowledge of transporting resources to refineries in its own Latin American region could now be applied to Africa.

In a recent visit to the Côte d'Ivoire, Orellana reported how Venezuelan President Hugo Chávez would like to strengthen cooperation with Africa, bring the continent closer to Latin America and give this movement a new orientation, especially since, in the past, no real cooperation existed between most African states and Venezuela.

Orellana has also visited Mauritania for bilateral discussions, in particular regarding petroleum, commerce and economic matters. He also took the opportunity to "express Venezuela's solidarity with our friends, the Mauritanian people, as well as to strengthen the existing friendship between Venezuela and Africa." Previous announcements made by President Chavez in Angola, have also seen Venezuela offer to supply petroleum technology and the benefit of its experience to Africa's second largest petroleum producer.

"Africa is particularly important for us," said Orellana, "because we feel we owe it something. In the past, people were transported from Africa to Latin America for slav-

ery. Now we want to try and reverse that by helping these people economically," he said.

This process is also part of a wider strategy. One of the main objectives of Venezuela's foreign policy is to develop links with regions of the world with which it never previously had relations. "First of all," said Orellana, "we have attempted integration within our own continent, Latin America. Now we are looking at Africa. We in Venezuela are ready and willing to share our experiences and policies, with regard to social development, with developing countries."

Last year also saw the start of a movement by Venezuela to forge closer diplomatic ties with Africa, with talk of the introduction of a "new diplomatic map" whereby 18 embassies would cover the entire continent.

Orellana was keen to point out that this whole process was not simply about generating more profits, but part of a "complementary process", one consequence of which was the opening up of new markets for Venezuelan products, via increased trade.

On a more practical level, this process would enable African countries to save money during the construction of refining facilities, which in turn would help local populations gain access to cheaper oil. "The final price for oil products that people pay at the pump has many components, and we are looking to lower the frontiers of the price for those people," said Orellana.

He pointed out that because of the high cost of oil for these countries there was a need to help the poorest people in the world, essentially because "we operate within the philosophy of solidarity between peoples and nations." ■■



Venezuela's President Hugo Chávez (l) and Angolan President Jose Eduardo Dos Santos, during a welcoming ceremony in Luanda, Angola, on August 31, 2006.

One of the main objectives of Venezuela's foreign policy is to develop links with regions of the world with which it never previously had relations.



Barkindo discusses climate change with UK delegation

Questions Stern Review as “lacking in foundation”

On November 3, 2006 the United Kingdom’s new Ambassador to Austria and Permanent Representative to the Vienna-based International Organizations, **John MacGregor**, led a delegation on a courtesy visit to the OPEC Secretariat, where they were received by the Acting for the Secretary General, **Mohammed Barkindo**. Also in the Ambassador’s team were Lord Howell, Deputy Leader of the Opposition in the House of Lords and Opposition Foreign Affairs Spokesman, Olivia Preston of the British Embassy in Vienna, and Dr Carole Nakhle, Special Energy Adviser.

Report by Angela Agoawike, Senior Editorial Coordinator.

The visit came barely four days after the British government released its Stern Review on the Economics of Climate Change, the conclusions of which Barkindo promptly questioned, describing them as lacking foundation in science or economics. His views naturally provided the two sides a timely opportunity to review each other’s positions on the topical issue of climate change.

The report, the product of a comprehensive study that the British government commissioned Sir Nicholas Stern, a former Chief Economist and Senior Vice President of the

World Bank, to undertake, warns, among other things, that the global economy stands the risk of contraction in the range of 5–20 per cent if no action is taken to address the effects of climate change, whereby temperatures are forecast to rise by 5° Celcius (9° Fahrenheit) in the next 100 years.

On the day the report was released, Barkindo, on a visit to the Russian Federation, told a conference of international energy experts in Moscow that “we find some of the so-called initiatives of the rich industrialised countries, who are supposed to take the lead in combating climate change, rather alarming.”

He noted that climate change had become over-politicized, to the extent that such doomsday scenarios and apocalyptic projections had become almost a permanent feature in presentations of some of the negotiating parties to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

Barkindo argued that climatology was a science and that reliable, factual, undeniable, truthful and honest scientific results could only be achieved when scientific studies were insulated from politics. He suggested that the timing of the release of the Stern Review — on the eve of the 12th Conference of the Parties to the UNFCCC in Nairobi, Kenya — was carefully planned to influence the deliberations of the two-week meeting.

“Although these are reports prepared by consultants, the temptation is always there to smuggle this type of report into the official negotiating documents,” Barkindo explained.

Tracing the negotiations on climate change under both the UNFCCC and the Kyoto Protocol, which had been “on



Group picture (l-r): Dr Omar Farouk Ibrahim, Head of OPEC's PR & Information Department; Olivia Preston of the British Embassy in Vienna; Lord Howell, Deputy Leader of the Opposition in the House of Lords and Opposition Foreign Affairs Spokesman; Dr Carole Nakhle, Special Energy Adviser; John MacGregor, the United Kingdom's new Ambassador to Austria and Permanent Representative to the Vienna-based International Organizations; Mohammed Barkindo, Acting for the OPEC Secretary General; Abdullah Al-Shameri, Head of OPEC's Office of the Secretary General.

Pictured left: John MacGregor (l) with Mohammed Barkindo.

for a long time”, he said that “all organizations, including OPEC, have taken various positions on various issues. We are familiar with some of the strategies and tactics of some of our negotiating partners in this process.”

Barkindo pointed out that while OPEC was not taking its commitment to the protection of the environment lightly, especially considering its commitment to and investment in various activities of the Clean Development Mechanism (CDM), the Kyoto Protocol and the UNFCCC, “it would be unexpected of us to remain indifferent to some of the sweeping conclusions of the (Stern) report, like the conclusion that the global economy stands the risk of contraction in the range of 5–20 per cent if action is not taken now.”

Continuing, he said: “We are also familiar with models that point to the contrary. To suggest that temperatures would rise by 5°C in the next 100 years, when throughout the last century the most aggressive number being bandied around is 0.6°C, seems also to be out of place.”

Barkindo stressed that OPEC Member Countries and other nations in the South were still struggling with development issues, which included access to clean water, basic healthcare, and industrialization, among others.

If the report was to be adhered to, then, of course, these countries would have to jettison any plans for future development as most of the measures to combat climate change were more targeted at developing countries, he stated.

But this situation, said Barkindo, should not be so. “The industrialised countries who have greenhouse gas emissions under the Kyoto protocol are failing to meet

their commitments to developing countries, who would not only be impacted upon by the effects of climate change, but also by the negative impacts of their policies in mitigating the greenhouse effect.

“The core principle of the UNFCCC, which is that of common but differentiated responsibilities and respective capacities, is not a slogan, it is a core principle that is also a commitment on the side of both parties — rich and poor,” stressed Barkindo.

Unfortunately, he said, most developing countries could barely afford to live above the poverty line and to even exist at all. They had to exploit their respective environments, especially in the face of a lack of alternatives.

This, maintained Barkindo, was where the developed countries had to come in, by meeting the targets set for them by the Kyoto Protocol.

“The provision of adequate technology and financial resources by industrialised countries to developing countries in combating climate change is a commitment that is non-negotiable. Therefore, their success or failure in meeting the Kyoto targets would also be judged in part by the comprehensiveness and timely fulfillment of these core commitments of the developed countries,” Barkindo added.

Lord Howell informed Barkindo that the British government took its responsibility on climate change seriously and this had informed its decision to commission the Stern Review.

He also expressed concern about the use of energy as a political weapon, asking if Iran, a Member Country of OPEC, would use its crude oil to gain political leverage, given the situation regarding the impasse on its nuclear development.

Barkindo assured Lord Howell that Iran did not intend to use its oil in this manner, an assurance that had been given to him directly by the Iranian Petroleum Minister soon after news reports carrying the threat had emerged.

Barkindo urged Britain to work hard with other international actors to find a lasting solution to the problems confronting the world, adding that it was in the interests of everyone — producers, consumers, developed and developing countries alike — to have a world with less tension. ■■

As the global climate changes, Kofi Annan asks:

A few days after Mohammed Barkindo, Acting for the OPEC Secretary General, expressed concern about the timing of the release of the Stern Review, which he said was meant to influence the deliberations of the latest United Nations Conference on Climate Change, UN Secretary-General, Kofi Annan (*pictured*), who completes his term of office at the end of this year, offered the following strong opinion on global warming, in which he puts the case for the developing countries.



If there was any remaining doubt about the urgent need to combat climate change, two reports issued recently should make the world sit up and take notice.

First, according to the latest data submitted to the United Nations, the greenhouse gas emissions of the major industrialised countries continue to increase.

Second, a study by the former chief economist of the World Bank, the United Kingdom's Sir Nicholas Stern, has called climate change "the greatest and widest-ranging market failure ever seen," with the potential to shrink the global economy by up to 20 per cent and to cause economic and social disruption on a par with the two World Wars and the Great Depression.

The scientific consensus, already clear and incontrovertible, is today moving towards the more alarmed end of the spectrum. Many scientists, long known for their caution, are now saying that warming has reached dire levels, generating feedback loops that will take us perilously close to a point of no return.

A similar shift may also be taking place among economists, with some formerly circumspect analysts saying it will cost far less to cut emissions now than to adapt to

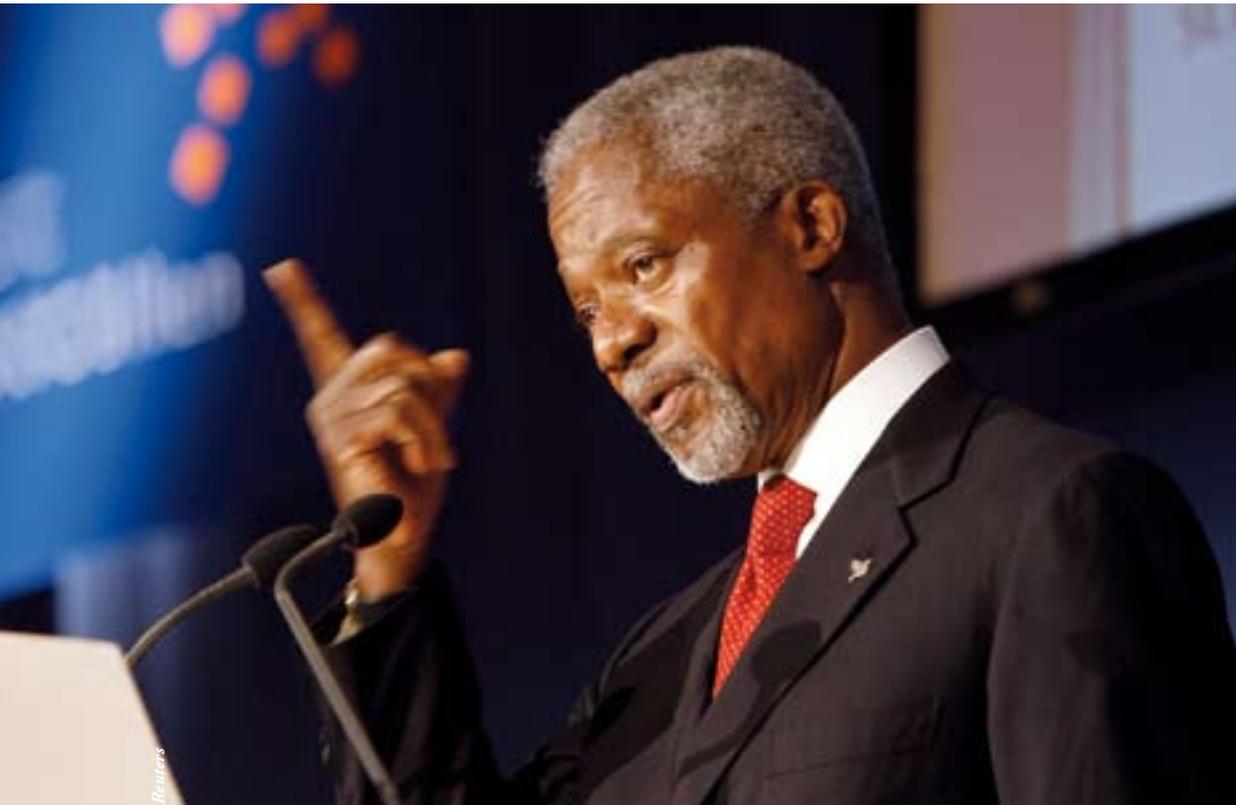
the consequences later. Insurers, meanwhile, have been paying out more and more each year to compensate for extreme weather events.

And growing numbers of corporate and industry leaders have been voicing concern about climate change as a business risk. The few skeptics who continue trying to sow doubt should be seen for what they are — out of step, out of arguments and just about out of time.

The stakes were high indeed at the major UN climate change conference, held recently in Nairobi. Climate change has profound implications for virtually all aspects of human well-being — from jobs and health to food security and peace within and among nations.

Yet too often, climate change is seen as an environmental problem when it should be part of the broader development and economic agenda. Until we acknowledge the all-encompassing nature of the threat, our response will fall short.

Environment ministers have been striving valiantly to mobilize international action. But too many of their counterparts — energy, finance, transport and industry ministers, even defense and foreign secretaries — have been missing from the debate.



Climate change should be their concern as well. The barriers that have kept them apart must be broken down so that they can, in an integrated way, think about how to 'green' the massive investments in energy supply that will be needed to meet burgeoning global demand over the next 30 years.

Doom-and-gloom scenarios meant to shock people into action often end up having the opposite effect, and so it has been at times with climate change.

We must focus not only on the perils, but also on the opportunities associated with climate change. Carbon markets have reached a volume of \$30 billion this year, but their potential remains largely unexploited.

The Kyoto Protocol is now fully operational, including a Clean Development Mechanism (CDM), which could generate \$100bn for developing countries.

The Stern Review suggests that markets for low-carbon energy products are likely to be worth at least \$500bn per year by 2050. Even today, it is baffling that readily available energy-efficient technologies and know-how are not used more often — a win-win approach that produces less pollution, less warming, more electricity and more output.

Low emissions need not mean low growth or stifling a country's development aspirations. And the savings

can buy time for solar, wind and other alternative energy sources to be developed and made more cost-effective.

Efforts to prevent future emissions must not be allowed to obscure the need to adapt to climate change, which will be an enormous undertaking because of the massive carbon accumulations to date.

The world's poorest countries, many of them in Africa, are least able to cope with this burden — which they had little role in creating — and will need international help if they are not to be further thwarted in their efforts to reach the Millennium Development Goals.

But there is still time for all our societies to change course. We must not fear the voters, or underestimate their willingness to make large investments and long-term changes.

People are yearning to do what it takes to address this threat and move to a safer and sounder model of development. More and more businesses are eager to do more, and only await the right incentives.

The Nairobi conference was seen as a perfect opportunity for the world's political echelon to send a clear, credible signal that they take climate change seriously.

The question is not whether climate change is happening, but whether, in the face of this emergency, we ourselves can change fast enough.



27th Oil & Money Conference attracts over 700 participants

Examining the end of cheap oil

The recent 2006 Oil & Money conference in London sought to discuss the opportunities surrounding the end of so-called cheap oil. **Edward Pearcey** reports from the event.

Some of the most important figures in the global energy sector, and over 700 general participants from 52 countries, convened at the annual Oil and Money Conference in London in mid-September to assess the state of the global petroleum market.

There is general agreement that, for the oil industry at least, the geopolitical environment is becoming more challenging, primarily because of continuing strong demand from developing countries, problems in the refining sector, and a lack of investment in key engineering and technical personnel.

The general consensus is that we have entered a new oil era, with new oil supplies becoming more costly to develop, thus leading to more challenges ahead. It was precisely these issues that speakers such as Claude Mandil, Executive Director of the International Energy Agency (IEA), Guy Caruso, Administrator of the United States Energy Information Administration (EIA), and Dr Shokri Ghanem, Chairman of the People's Committee, the National Oil Corporation (NOC) of Libya, sought to address.

Indeed, the conference highlight was the Petroleum Executive of the Year Award given to Dr Ghanem, a former Director of the Research Division at the OPEC Secretariat in Vienna (*see opposite*).

Much of the conference focused on such factors as capacity constraints, rising costs, and geopolitical risks, with a strong consensus around the need for reasonable prices.

Participants also discussed the high profits of international oil companies and the challenges they face in accessing, and later exploiting and developing petroleum reserves.

Concerns were expressed that conventional oil supplies are facing growth challenges and that the industry will reach a plateau of supplies



Mark Albers, President, Exxon Mobil Development Company, who gave a Corporate keynote speech on the link between energy and development.

in the indeterminate future, raising questions about how fast non-conventional liquid fuels can be developed and at what cost.

Another area of concern surrounded the dwindling number of highly trained engineers and other technical staff available to the industry, but it was considered that a shortage of new graduates was more a regional problem, particularly in North America and the Middle East.

It was widely felt that demand growth, rising costs, and

capacity constraints would require massive investments in the coming years on a scale the industry has never before seen. While the conference was agreed that the money exists to make these investments and the resources are there to be developed, delegates stressed that creating the appropriate investment climate, mobilizing the equipment, and undertaking the complex and large-scale projects required meeting enormous challenges.

Energy security was another increasingly important issue that delegates addressed. For Europeans, security of Russian gas supplies via Ukraine was said to be getting better, but it was considered that Belarus volumes could present serious risks this winter.

Meanwhile, it was said that politically popular concepts like energy independence were increasingly counter-



Antoine Rostand, Global Managing Director, Schlumberger Business Consulting, who commented upon the need for more graduates to enter the petroleum industry.

productive and misleading in a world that was becoming more interdependent. Delegates agreed that bolstering free trade was one of the best avenues towards attaining energy security.

Another strong point tabled by speakers was that geopolitics in the Middle East pose some very serious challenges in the coming months. Risks of a military conflict between the United States and Iran over Tehran's nuclear programme remained and could come to a head in the next six months. In Iraq, oil was at the centre of much of the smuggling and corruption that was feeding internal unrest and the move towards political fragmentation, speakers argued.

Speaker presentations for the conference are available for downloading at: www.energyintel.com/om/speakers.asp. Special issues of the International Oil Daily for Oil & Money 2006 are also available to download.

Dr Shokri Ghanem conferred with major international award



A highlight of the 2006 Oil & Money Conference was the Petroleum Executive of the Year Award, this year given to **Dr Shokri Ghanem**, Chairman of the People's Committee, The National Oil Corporation (NOC) of Libya.

After a confidential selection process involving his peers and associates, Dr Shokri Ghanem, Chairman of the People's Committee, the National Oil Corporation (NOC) of Libya, was honoured with the title of Petroleum Executive of the Year for 2006. The award was given in recognition of his strong leadership in revitalizing the Libyan petroleum industry, as well as his encouragement of the expansion of international investment activities.

The award took place during a special banquet at Claridge's Hotel in London on September 19, and was a major element of the annual Oil & Money Conference, convened by the International Herald Tribune and Energy Intelligence.

"The process by which the winner of this award is selected is particularly noteworthy and assures that the selection is fully representative of the views of the industry," said Raja Sidawi, Chairman of Energy Intelligence.

Nominations for the award were solicited from chief executive officers and other senior managers of over 100 of the world's largest oil and gas firms. The nominations were then reviewed by a representative group of senior oil executives, who made the final selection.

Previous winners include Saudi Aramco's Abdallah Jum'ah, Lee Raymond of ExxonMobil, James J Mulva of ConocoPhillips, Total's Thierry Desmarest, and British Petroleum's Lord Browne of Madingley.

Ghanem, born in Tripoli in 1942, received a bachelor's degree from the University of Libya at Benghazi in 1963, and worked in government for the next 14 years, including positions at the NOC and the Oil Ministry.

Then, after acquiring numerous educational qualifications, he spent eight years in Vienna from 1993 as Director of the Research Division at the OPEC Secretariat. In 2001, Ghanem returned to Libya to serve as Secretary of the General People's Committee for Economy and Trade, and in 2003 was named Secretary of the General People's Committee, or Prime Minister, a position he held for three years.

He was subsequently credited with liberalizing the Libyan economy and accelerating the opening up of the country to international petroleum investment. Earlier this year, Ghanem was named Chairman of the People's Committee, the National Oil Corporation (NOC) of Libya, with full responsibility for all petroleum sector policies and operations. (See Dr Ghanem's speech to the conference on the following page).

27th Oil & Money



As current thinking over 'peak oil' continues to stir debate the winner of the 2006 Petroleum Executive of the Year Award asks ...

Is the era of cheap oil really over?



Dr Shokri Ghanem, Chairman of the People's Committee, the National Oil Corporation (NOC) of Libya, was guest of honour at this year's Oil and Money Conference. Not only did he win the 2006 Petroleum Executive of the Year Award, he also gave this thought-provoking address on the 'peak oil' theory and the possible end of cheap oil. His speech also described Libya's efforts at developing its domestic oil industry with the increasing help of foreign partners.

As you are all aware, during the past few years, oil prices have been rising steadily, with some volatility from time to time. Since 2002, OPEC's Member Countries have increased production by about 4.5 million barrels per day in an effort to stabilize markets. Despite OPEC's efforts, oil prices continued to increase, reaching unprecedented levels.

The rising price of oil

When oil prices went over \$50/b, many analysts predicted a slowdown of the world economy and even recession, higher inflation, and rising unemployment. To the dismay of many, none of these predictions came to fruition. The world economy acted as if it was immune to this surge in oil prices and sailed on seemingly unaffected. Even the fragile economies of the world's developing nations did not suffer the devastating consequences that many analysts had predicted.

When oil prices were heading towards \$70/b, analysts again predicted not only a slowdown of the world economy, but deep recession with grave consequences and hardship for all nations, developing as well as developed. Instead, demand for oil continued to rise, despite the fact that oil prices surpassed the \$70/b mark, and predictions of even higher growth rates of the global economy in 2006 were voiced.

Not only do many analysts now think that oil prices will remain high in the near term, some even advocate that \$70/b oil is still cheap, and even suggest the prospects of \$100/b oil. They argue that comparing recent oil prices in real terms with oil prices in the past indicates that the price has yet to hit again the \$90/b peak price recorded back in 1980. So, for some, \$100/b oil may still be cheap after all and, as such, the world economy can cope with this price.

Having said that, I would like to turn now to the fundamental question: what is keeping the oil price high? The simple answer to this question should be first and foremost strong world oil demand. We can see this growing demand evident in China, India, and the United States, coupled with dwindling spare production and less economically viable recoverable reservoir capacities. Other factors, such as a lack of refining capacity, geopolitical uncertainties, market speculation, and natural disasters are also important. Under the current circumstances the geopolitical problems are the most important of these factors, simply because of the uncertainties and supply disruptions that are created.

Furthermore, serious concerns exist about future

supply-demand imbalances. Some analysts are raising doubts about the collective abilities of the oil-exporting countries in general, and the OPEC Countries in particular, to deliver the increasing volumes of oil needed in the future to the world's biggest and fastest-growing economies, namely the US and the OECD, China, and India.

The question of 'peak oil'

The question of peak oil output, which once was the concern of few individuals, has become a concern of some countries, as well as several organizations. Despite the fact that many are unhappy with Hubbert's peak oil predictions, his 1970 peak oil theory for the US turned out to be quite accurate, and for many, particularly the pessimists, his end-of-the-century peak oil predictions for the world also proved to be correct.

However, while some of the more pessimistic oil specialists are declaring that peak oil has already been passed, or at best is here now, others believe it is not going to arrive before 2010. Some optimists give the world a little more breathing space — that is to say up to 2020, and perhaps even up to 2030. However, all in all, most would appear to agree that peak oil output is not very far away for all of us. It could take place sometime within the next decade or so, which in fact means that there is not much time left for a world economy to be driven largely by oil.

Furthermore, under any of these scenarios, and since peak oil output is not about the time at which oil will run out, but the time at which production can no longer be increased to cope with increased demand, it seems the only way the oil price can go is up.

This conclusion seems to be in line with the view held by the peak oil output advocates who argue that the ongoing oil price rises are mainly due to supply-demand imbalances. This is because we are at, or near, the production peak of world oil, if not on the downward slope of Hubbert's peak curve. This is not to deny the role of other factors (such as geopolitical), but only to stress the importance of supply and demand for crude oil as the prime factor in determining the price of the commodity.

Supply and demand

Tied very closely to the issue of rising oil prices is also the supply-demand imbalance for petroleum products. The product issue is arising because of global shortages in refined petroleum products capacity. Lack of capacity means that existing refineries are not able to cope with increased demand, particularly demand for light refined

Since 2002, OPEC's Member Countries have increased production by about 4.5 million barrels per day in an effort to stabilize markets.

What is keeping the oil price high? The simple answer to this question should be first and foremost strong world oil demand.

products for the transportation sector. In addition, refiners are also not as able to handle the increasingly more sour crude mixes being supplied by the producers to the oil refining market.

The uncertainties, risks and need for investments surrounding refinery expansion and upgrading, both globally and in the US in particular, are also important factors in making the overall energy market situation tighter. Oil-producing countries try all they can to alleviate the oil market imbalances by using most of this spare capacity. This has also led to aggravating the situation further and to increased escalation of the oil price by giving the clear sign that there is not much more oil output capacity available to meet future increases in demand, or any shortages of supply.

Attempts to put more recently discovered oil fields into production, to improve recovery levels from existing oil fields, and to resort to unconventional oil resources, such as heavy oil, bitumen and tar sands, may help reduce oil prices rising as much in the short term, but in the longer term these measures alone will not be able to keep up with increased global demand, and consequently the price increases will continue.

The future of oil prices

Some analysts now say that nothing short of a major worldwide economic recession in the major consuming markets can turn down the price of oil. So, what can we conclude from this? First, it is highly likely that \$20/b or even \$30/b oil is a thing of the past.

Second, if current supply-demand imbalances, both for crude oil and refined petroleum products, persist — and there is no reason for this situation not to persist — then one can only conclude that a return to \$40–50/b seems quite unlikely. Even though there are some who would still disagree and would hope to see the price of oil falling — even below \$40/b — they also say that the history of the oil industry is characterized by volatile changes in price.

Third, \$70/b plus oil may be quite likely if the world economy continues to grow at the rates experienced in 2004 and 2005. These rates may cause demand for oil to increase proportionally and it may even start to exceed available supply.

If the tensions seen in so many areas of the world, especially the Middle East, are not reduced and disrupt some supplies, a noticeable gap in supply and demand will occur earlier than the revised Hubbert-type analysis would suggest. From what we see currently, tension

is increasing, especially in some oil-producing regions, affecting more nations, while the world economy is still growing at the higher rates. These two factors lead many to believe that this is the beginning of the end of the era of cheap oil.

Based on the previous conclusions, although there are, of course, some negative consequences of persistent high oil prices and the end of the era of cheap oil, there are also a number of positive consequences, or more appropriately ‘opportunities’ that arise. High oil prices can lead to, first and foremost, more aggressive exploration and production policies by the major international oil companies, as well as the national governments of the oil-producing countries. However, the pursuit of such policies entails monumental financial commitment of the type required by truly enlarged exploration and production programmes.

Equally true, high oil prices make enhanced oil recovery methods more economical and stimulate interest in revisiting ageing reservoirs. This would contribute to increasing the total supply of oil in the short term. High oil prices also help to continue to improve petroleum engineering practices, aimed at recovering most of the oil from existing reservoirs, as well as improve the feasibility of recovering more of the oil from the deeper offshore waters in some parts of the world.

Higher oil prices would also help bring more natural gas to the energy market in the form of liquefied natural gas (LNG) supplies from areas that have abundant gas reserves and are distant from the energy-consuming markets. Natural gas can be converted to hydrocarbon liquids suitable for the transportation sector, using gas-to-liquids technology. Also, under the high oil price scenario, clean coal technology can be more competitive, particularly where technology can convert coal to liquid fuels for use by the transportation sector.

Another positive aspect of high oil prices would be to bring more non-conventional crude oil resources into the market, such as the tar sands in Canada, the heavy oil or bitumen in Venezuela, and the oil shale in the US. As an example, due to improved economics and higher oil prices, Canada’s production of synthetic oil from tar sands has grown significantly in the past few years. Tar sands production now represents about half of Canada’s total crude oil production, or about one million barrels of oil equivalent a day (boe/d). Subject to the prevailing oil price, it is expected that production will triple and even quadruple by the year 2020.

However, for Canada to realize this potential serious

obstacles must be overcome, such as the huge investment costs involved. Tremendous quantities of energy and water are required to process the tar sands. There are also manpower requirements, as well as environmental concerns related to CO₂ emissions and land reclamation. The same types of issues are associated with the recovery of large deposits of heavy oil bitumen in Venezuela, as well as for the huge oil shale resources in the US. As the price of oil rises, these resources become more attractive and may in the long run contribute more significantly to total world oil supply.

To put matters in a proper perspective to assess the significance of non-conventional crude oil resources, it is worth noting here that, according to some estimates, the world has the potential for over twice the supply of heavy oil and bitumen than it does conventional oil. By not including hydrocarbons in oil shale, some estimates claim there are eight to nine trillion barrels of heavy oil and bitumen in place worldwide, of which potentially 900 billion barrels of oil are commercially exploitable with today's technology.

Canadians estimate their bitumen resources to be around 175bn boe, which can be processed with today's technology. This would make Canada second only to Saudi Arabia in proven oil reserves in the world. However, this figure remains controversial and more cautious estimates suggest that in the order of 17bn b may be recoverable. But at what price.

Renewables and nuclear

As for renewable energy sources, such as solar, wind, geothermal, etc, high oil prices can encourage their development considerably. The contributions of renewable energy sources to the world's energy mix could rise significantly to levels that can help in easing the impact of future oil supply-demand imbalances.

However, in order to make progress, the technology-based developed countries must invest seriously in renewable energy technologies and sources and encourage their utilization and conversion programmes, not only by their own economies, but by the economies of the developing countries. The developed countries must assist the developing countries, both financially and technically, in their efforts to use more renewable energy sources and to not waste energy. Many energy analysts are relying more and more on the contribution of renewable energy sources and energy-saving methods as the way forward.

Last, but not least, a word or two about the impact of oil prices on nuclear energy. Certainly the nuclear indus-

try will benefit from the end of cheap oil. However, the future of nuclear energy as an alternative energy source for supplying electrical power generation and heating is not only an economic issue — it also raises environmental, social and political issues.

Therefore, while nuclear energy can and does play an important role as an alternative energy source in power and heat generation, its use is also a matter of severe political and location constraints, less than offsetting specific oil supply-demand imbalances. Furthermore, nuclear energy's use club is not open to all nations. Therefore, its utilization will be limited only to those allowed to join this exclusive club and having the abilities to operate these facilities and deal with decommissioning and waste.

The efforts of Libya

So, many oil-producing countries are doing, or trying to do their part in improving the oil supply situation. My country, Libya, which started exporting oil in late 1961, in less than one decade to 1970 was able to produce more than 3.5m b/d of crude. The exports then decreased due to sanctions and a boycott, which my country was subject to for political reasons. Consequently, our production went down to less than half of what used to be produced.

This, in fact, means that there is now still much potential in Libya for more discovery and development. We have solved a number of problems and Libya is open again to more foreign companies to participate in these improvements. Recently, Libya encouraged more than 30 companies to operate in the country after winning exploration blocks, through two rounds of open bidding and competitive procedures. Some of these companies have started their seismic and drilling works, and some of them were able to make new discoveries.

Now the third open bid round for exploration has been announced, and judging from the expressions of interest shown by the companies to participate in this third round, Libya looks forward to another successful outcome. We believe that with the planning and incentives now on offer, Libya's production capacity will again reach 2m b/d by mid 2007 and then 3m b/d by the year 2010.

It is not only the oil production potential of the country as an important source of hydrocarbons that makes international oil companies interested in Libya, but also its proximity to the European markets, which gives it an added economic advantage. We hope to help to delay slightly the Hubbert peak output production date with the help of the organizations investing in Libya. 

We have solved a number of problems and Libya is open again to more foreign companies to participate in these improvements.



Fuelling the future ...

ASEAN ministers stress importance of energy security for enhancing economic growth



In December, the Association of Southeast Asian Nations (ASEAN), in which OPEC's Indonesia plays an influential role, will hold its 12th Summit in Cebu City, the Philippines.

Energy security will be high on the agenda as the Association's members seek to draw up a charter that embodies the fundamental principles, goals, objectives and structure of ASEAN cooperation capable of meeting the needs of the Community in the years ahead.

In this article, the *OPEC Bulletin* looks at the success of the Association and just how important regular energy supplies are to the future welfare of this vibrant group of developing countries, as seen through the eyes of ASEAN energy ministers, who met in Laos in the summer.

When the Association of Southeast Asian Nations (ASEAN) was established just over 39 years ago, few envisaged the scope and intensity of development growth its members would enjoy in the years that followed. At the formation of this new community of nations — on August 8, 1967 — in Thailand’s capital, the Bangkok Declaration carried a specific mandate: to accelerate economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership. These intrinsic goals were endorsed by the group’s five founding members — Indonesia, Malaysia, the Philippines, Singapore and Thailand — and on all three fronts remarkable progress has been achieved — none more so than in economic expansion.

ASEAN now has ten members. Brunei Darussalam joined the Association on January 8, 1984, Vietnam became the seventh member on July 28, 1995, while Laos and Myanmar were admitted into ASEAN on July 23, 1997. Cambodia was the last to sign up to the Community on April 30, 1999. The expansion means that, today, the ASEAN region has a population of over 500 million, covers a total area of 4.5m square kilometres and has a combined gross domestic product (GDP) of over \$ 800 billion. Total annual trade is fast approaching \$1 trillion. Little wonder United Nations Secretary General, Kofi Annan, had the foresight in 2000 to describe ASEAN as being “not only a well-functioning, indispensable reality ... but a real force to be reckoned with far beyond the region.”

The Asian financial crisis in 1997 proved to be the first real test for the Association, with two of its members — Thailand, where the crisis erupted, and Indonesia — hit particularly hard. In the decade before that eventful year, things were moving along at an impressive pace with ASEAN GDP growth rates achieving levels above and beyond all expectations. According to the ASEAN Statistical Year Book for 2005, economic growth in the region between 1990 and 1995 averaged 7.3 per cent. This was also the figure achieved in 1996, but the financial crisis, which developed mid-year, caused growth to fall to 4.14 per cent in 1997. In 1998, it contracted by an alarming 7.14 per cent as the full impact of the crisis was felt. The following year saw growth recovering to 3.58



First ASEAN Summit, Bali, Indonesia, February 23–24, 1976.

per cent with a further improvement to 5.85 per cent in 2000. But the financial crash was not all that came to test ASEAN’s mettle. The region also had to contend with the economic fallout from terrorist attacks and the outbreaks of Severe Acute Respiratory Syndrome (SARS) and bird flu. However, as Singapore’s Prime Minister, Lee Hsien Loong, said, while commenting on the Association at a conference in 2004, when he was still deputy premier: “ASEAN took quite a few hard punches in those few years. But although it might have been bruised, it was far from being knocked out. Economic growth has been strong in many countries, exports are growing and stock markets are up ... ASEAN is now back on its feet and up and running again.” In that year, ASEAN economic growth was once again at an impressive 6.3 per cent.

Economic performance

Moving forward to the present day, the effects of the Asian crisis are over, although governments in the region will always be mindful of the fact that one’s good fortune can literally change overnight. However, the global economic



Indonesian Minister of Energy and Mineral Resources, Dr Purnomo Yusgiantoro.

“All of us here appreciate the importance of energy security, which today is fast becoming one of the most discussed issues in ministerial circles the world over.”

that over the years Saudi Arabia — the world’s top producer, exporter and the country having the most reserves globally — has consistently been its main supplier of crude oil. Other OPEC Members, the United Arab Emirates (UAE), Qatar and Iran also figure prominently. However, against this favourable picture, there is one worrying trend — the rise in commodity prices, especially oil. In the last two years, record crude prices have been seen the world over as a combina-

environment appears broadly supportive of the ASEAN region achieving commendable GDP growth of 5.5 per cent in 2006, similar to that achieved last year. In fact, estimates of ASEAN’s economic performance arrived at by the OPEC Secretariat in Vienna see a level of growth around five per cent being sustained for the next 20 years, barring any surprises. And, as with all expanding economies, for this level of growth to be sustainable and successfully achieved, sufficient and secure supplies of energy will be of paramount importance. The good news for ASEAN is

tion of factors, mostly outside OPEC’s influence, have artificially inflated prices to levels well above those justified by the market fundamentals of supply and demand. And these high prices are not expected to fall considerably in the near term.

Although ASEAN economies have, so far, been resilient and adjusted relatively well to the higher prices, experts say that a further prolonged surge would be difficult to manage. The possibility of another price spike can never be ruled out and such an event could elevate



Laos’ Prime Minister Bouasone Bouphavanh.



The ASEAN headquarters in Jakarta, inaugurated on May 9, 1981.

inflation and reduce economic growth, both regionally and globally. That would inevitably threaten a derailment of the economic expansion plans of ASEAN countries.

Energy efficiency

Of course, such is the astuteness of ASEAN, member countries are already acting to reduce energy dependence and, as large energy importers, lessen their vulnerability to oil supply disruptions. Several countries have taken the bold but necessary step of reducing fuel subsidies so as to bring domestic prices closer to global levels, but at the same time taking measures to protect the socially vulnerable against undue hardship. This overall effort has encouraged firms and individuals to make adjustments, thus bringing about fuel conservation. And the authorities are still looking to do more, such as introducing measures to encourage further energy efficiency and to develop alternative energy sources, which would help countries supplement their energy supplies.

But, for the foreseeable future, oil and gas will continue to form the major source of energy imports for these countries, which means that energy security will be a hot topic for discussion at the ASEAN Summit in December. It was in this context that the 24th meeting of ASEAN Energy Ministers, held in Vientiane, Laos in July, stressed the need for devising an effective strategy for ensuring an “efficient, competitive and sustainable energy future” for the Association and its members.

During a busy meeting, the ministers exchanged views on the best strategic direction to take and discussed what measures could be introduced to bring about such a strategy. They expressed concern over the adverse impact of the volatility of world oil prices and said that it was vital that investments in energy production and infrastructural development continued to be made so that a secure, adequate and stable supply of energy could be relied upon at all times.

Laos Prime Minister, Bouasone Bouphavanh, in his opening speech to the meeting, highlighted just how the rapid pace of economic growth in the ASEAN region required an adequate energy supply. He stressed that the energy development agenda deserved far more attention, considering that the surge in oil prices affected socio-economic development and the living conditions of the Community’s people. The premier expressed hope that trade and investment cooperation among ASEAN member countries, as well as dialogue with partners in the field of energy, would increase in the future.



United Nations Secretary General, Kofi Annan, has described ASEAN as being “not only a well-functioning, indispensable reality ... but a real force to be reckoned with far beyond the region.”

During their talks, the ministers concurred that global energy security was the shared responsibility of both producers and consumers. They affirmed that security of demand should go hand-in-hand with security of supply and that transparency and exchange of energy data were important for market predictability and stability. In this regard, the ministers said they welcomed any constructive dialogue and cooperation on energy-related issues with OPEC.

The issue of security of demand was highlighted by Indonesian Minister of Energy and Mineral Resources, Dr Purnomo Yusgiantoro. In a speech prepared by the OPEC Secretariat, he told his fellow ASEAN ministers: “All of us here appreciate the importance of energy security, which today is fast becoming one of the most discussed issues in ministerial circles the world over. Its local, regional and global significance specifically plays out in the fact that energy is a central cog in the three pillars of sustainable development, namely economic growth, social development and environmental protection.

“For ASEAN, as well as OPEC, for whom I am speaking on behalf of today, this statement is very much integral to today, tomorrow and any future timeframe. Both are developing-country organizations, both were established around 40 years ago, and both have a particular focus on helping their Members and other developing nations pursue the goals of sustainable development.”

Yusgiantoro stressed that OPEC, which was very much in support of these sustainable development goals, attached great importance to the responsibilities it saw in being a provider of energy, namely working to ensure

a stable, secure and well-managed oil sector. It also recognized that oil could impact upon prospects for the economic and social progress of developing nations, such as ASEAN and OPEC Members. Thus, the Organization remained unwavering in its commitment to stabilize the market at prices fair to both consumers and producers alike.

Shared responsibility

Yusgiantoro, who was President of the OPEC Conference in 2004–05, maintained that in the short, medium and long term, the way forward was through dialogue and cooperation, adding that the Organization placed great credence on the issue of shared responsibility. The most recent result of this was the establishment, last year, of energy dialogues between OPEC and, respectively, the European Union, China and Russia. In Asia, it also attended and presented its views at the 7th Asia-Pacific Economic Cooperation (APEC) Energy Ministers' Meeting last year, as well as the Roundtable of Asian Oil and Gas Ministers. It is now in talks for a more formal dialogue with APEC.

Elsewhere, said Yusgiantoro, in April, in Doha, Qatar, ASEAN members Brunei, Indonesia, Malaysia, the Philippines, Thailand and Vietnam took part in the 10th International Energy Forum (IEF), which again brought together leading oil producers and consumers.

“OPEC recognizes the importance of the ASEAN region, with Indonesia being an OPEC Member, the region having around 500 million energy consumers, and the Association itself consisting solely of developing countries, as OPEC does too,” he stated. “Although no formal energy dialogue with the ASEAN group exists, OPEC welcome’s any constructive dialogue and cooperation on energy-related issues.”

Yusgiantoro said energy security was critically important in helping developing nations pursue the goals of sustainable development. He stressed that the international community should never lose sight of the fact that 1.1 billion people were currently living on less than \$1 a day and 1.6bn people currently lacked access to modern energy services.

“Thus, the focus must remain firmly on alleviating, and eventually eradicating poverty, and the directly associated concern of energy poverty in developing countries,” he added.

Yusgiantoro’s views were echoed by other energy ministers at the meeting who spoke of the fundamental need of ASEAN member countries to secure reliable, adequate

and affordable energy supplies which were essential for strong and sustainable economic growth and competitiveness. They said it was also important to note that in line with “the rhythm” of expanding economic growth, ASEAN countries would require increasing energy supplies as their industries and services consumed more power. The ministers affirmed the priority importance of maintaining energy stability since high crude oil prices brought clear risks to sustained economic growth. They said ASEAN members should strive to stay resilient and address the challenges of soaring oil prices by making continuous efforts to reduce dependency on imported energy, particularly oil, finding more efficient ways to generate and use energy, embrace renewable energy, and put in place measures for improving their response to emergencies and heighten their capacity to deal with high oil prices and potential supply disruptions.

Renewable energy sources

They voiced the view that ASEAN’s reliance on external sources for oil would have implications on security of energy supply. It was therefore important to initiate improvements in energy efficiency and to increase the contribution to the energy mix by renewable energy sources. The ministers called for further expanding renewable energy by strengthening an efficient support system for their utilization, increasing research and development activities towards technological innovation and creating policies to support their development by the private sector. They also agreed to strengthen the development of such renewables as hydropower, biomass and biofuels and to promote power trade cooperation within the ASEAN community. The ministers particularly recognized the emergence of biofuels as one of the alternatives to reduce ASEAN’s fossil fuel consumption. They stressed the need for closer cooperation in promoting biofuel production and use. There was also a consensus for strengthening cooperation in the coal sector, but importantly taking environmental concerns into account.

The ministers praised the “good efforts” of the ASEAN Centre for Energy (ACE), which, they stated, had been very active in providing technical assistance to various ASEAN energy sub-sector networks, project preparation, coordination, facilitation and also in forging technical and financial collaborative partnerships with ASEAN dialogue partners and other international and regional organizations in the implementation of the ASEAN Plan of Action for Energy Cooperation (APAEC). The plan, which was

launched in 2004 and runs until 2009, is being implemented by ASEAN's specialist energy organizations.

ACE, an intergovernmental organization, took over the responsibilities of the ASEAN-EC Energy Management Training and Research Centre (AEEMTRC) in January 1999. With its headquarters in Jakarta, Indonesia, ACE, which is guided by a governing council, is seen as a catalyst for the economic growth and development of the ASEAN region. It strives to initiate, coordinate and facilitate regional, as well as joint and collective activities, on energy. Since its establishment, ACE has been instrumental in preparing APAEC, whose major programmes include a trans-energy network, comprising an ASEAN power grid and a trans-ASEAN gas pipeline. It also oversees the promotion of coal and clean coal technology, energy efficiency and conservation, new and renewable energy development and energy policy and environmental analysis.

In 1997, to mark the 30th anniversary of the Community, ASEAN heads of state and government launched 'ASEAN Vision 2020', which charted a new direction for the Association through the first two decades of the 21st century. Under this plan, the community's goal is to create a stable, prosperous and highly competitive economic bloc in which there is a free flow of goods, services, investment and a more conducive flow of capital, equitable economic development and reduced poverty and socio-economic disparities. In moving towards the formation of an ASEAN Economic Community, the Association has agreed to institute new mechanisms and measures to strengthen the implementation of its existing economic initiatives, including strengthening the ASEAN Free Trade Area (AFTA), the ASEAN Framework Agreement on Services (AFAS) and the ASEAN Investment Area (AIA);

Launched in 1992, AFTA is already in place with tariffs on many goods considerably reduced. It aims to promote the region's competitive advantage as a single production unit. The elimination of tariff and non-tariff barriers among member countries is expected to promote greater economic efficiency, productivity, and competitiveness.

ASEAN continues to develop cooperative relations with numerous dialogue partners and consistent with its resolve to enhance cooperation with other developing regions, it maintains contact with other intergovernmental organizations. Bilateral trading arrangements have been or are being forged between ASEAN members and many countries, including China, Japan and Korea. These arrangements will serve as the building blocks of an East Asian Free Trade Area as a long-term goal. 



at a glance

The Association of Southeast Asian Nations or ASEAN was established on August 8, 1967 in Bangkok by the five original Member Countries, namely, Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Brunei Darussalam joined on January 8, 1984, Vietnam on July 28, 1995, Lao PDR and Myanmar on July 23, 1997, and Cambodia on April 30, 1999.

The ASEAN region has a population of about 500 million, a total area of 4.5m square kilometres, a combined gross domestic product of over \$800 billion, and a total trade of about \$900bn.

Objectives

The ASEAN Declaration states that the aims and purposes of the Association are:

1. to accelerate economic growth, social progress and cultural development in the region; and
2. to promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries in the region and adherence to the principles of the United Nations Charter.

ASEAN Vision 2020, adopted by the ASEAN Leaders on the 30th Anniversary of ASEAN, agreed on a shared vision of ASEAN as a concert of Southeast Asian nations, outward looking, living in peace, stability and prosperity, bonded together in partnership in dynamic development and in a community of caring societies.

In 2003, ASEAN Leaders resolved that an ASEAN Community shall be established comprising three pillars, namely, ASEAN Security Community, ASEAN Economic Community and ASEAN Socio-Cultural Community.



Brunei Darussalam



Cambodia



Indonesia



Laos



Malaysia



Myanmar



Philippines



Singapore



Thailand

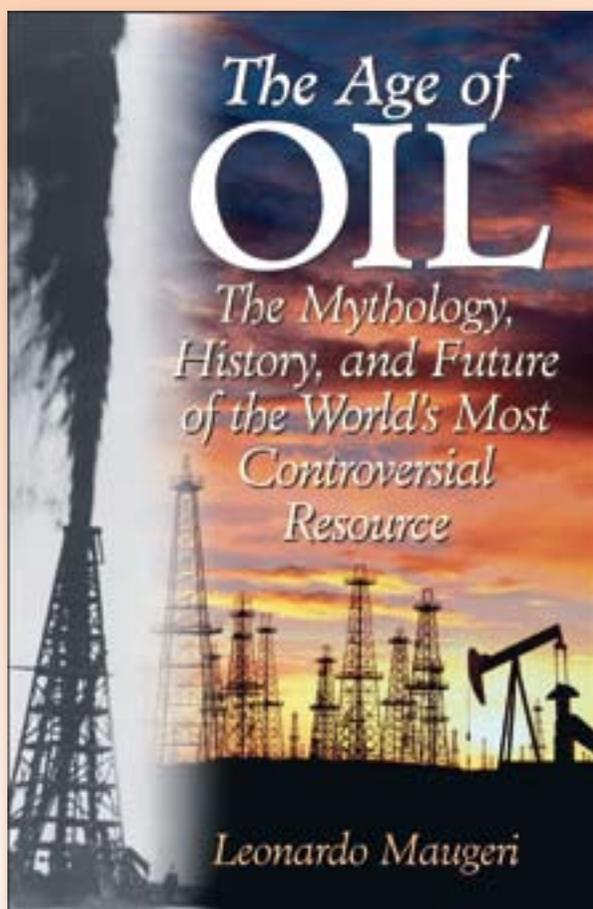


Vietnam

The challenge of understanding the global oil market

The Age of Oil: The Mythology, History, and Future of the World's Most Controversial Resource is the title of a new book written by internationally renowned oil and gas expert Leonardo Maugeri. In this exclusive interview with the OPEC Bulletin's James Griffin, Maugeri, a senior executive with the Italian energy giant Eni, talks about his new offering, which traces the colourful path of the oil industry — from the time of John D Rockefeller to the present day.

The industry tends to over-dramatise and complicate what is happening now and often fails to take into account past events.



The Age of Oil: The Mythology, History, and Future of the World's Most Controversial Resource.
By Leonardo Maugeri,
Group Senior Vice President of Strategies and Development at Eni.
Published by Praeger, US, 2006; 360pp; ISBN 0-275-99008-7.

“Understanding the oil market is challenging and making reasonable forecasts is almost impossible,” says Maugeri at the very start of the interview. Events over the past 40 years are certainly borne out by this statement. In fact, one needs look no further than the past three years for evidence.

Most analysts were surprised by the extent and nature of the oil price rises from 2004 onwards and one would guess many have been similarly taken aback by the recent significant dip in prices.

It is in the context of industry understanding and forecasting that Leonardo Maugeri sets out on his journey to describe the history of oil and explain the basic fundamentals of oil production. In his book, he delivers his own perspective on the oil sector by leveraging his insider's knowledge to underline what he sees as the ever-present cyclical nature of the industry, and to help clear up some of the common industry misconceptions and myths.

Maugeri stresses that, on occasion, the industry needs to take a step back and not be completely absorbed in

the present. “The industry tends to over-dramatise and complicate what is happening now and often fails to take into account past events,” he says. In the short-term, it is difficult for any of us to be “little more than speculators”; it is the medium- and long-term, and with an appreciation and understanding of the past, where more rational assessments can be made, he argues.

Today, Maugeri believes that supply is tight because two decades of very low prices discouraged exploration, the development of new fields and the building of new refineries. This led to a fall in global spare production capacity. However, he claims that since 2002 the industry has been undergoing a significant shift, with the major producing countries and the international oil companies feeling more confident about investing in exploration, development and refining.

Maugeri stresses that this investment boom needs time to filter through as oilfield development takes a number of years and the previous two decades have also left the industry with a serious shortage of experienced and skilled personnel. Nevertheless, he believes that “between roughly 2010 and 2012, there is a good chance that spare production capacity will be between seven to ten per cent of demand.”

What Maugeri emphasizes in his book is the wholly cyclical nature of the oil industry. The obvious industry goal, as Maugeri states, is to learn from previous cycles. For producing countries, it is not difficult to recall the significant capacity investments made prior to the ‘counter shock’ of the mid-1980s. This left many producers with large levels of spare capacity and, as already mentioned, prices tumbled as a result.

The concept of cycles also plays out in the recurrent fears about oil shortages. Maugeri pours cold water on those who argue that oil reserves are dwindling and stresses that pessimism and doomsday industry predictions have come and gone at least three times in the 20th century. He recalls that as far back as World War I it was believed that the United States, the main producer at the time, would run out of oil in a few years.

Maugeri believes that pessimistic predictions are “more sexy” for journalists and publishers, especially during periods when prices are moving upwards. “In 1999, when prices were low, if one had made waves about the impending exhaustion of oil resources, everyone would have considered you a fool — but in the past couple of years the concept has gained traction,” he points out.

In fact, he explains one of the main reasons for writing the book was the plethora of commentaries stating that the world was running out of oil. However, as these topics were the ‘flavour of the month’, his views were not deemed to be the ‘in thing’ by a number of publishers. Thankfully, he did eventually find a publisher.

Maugeri states that it is not a “best-seller” he wants, more a “long-seller”. “I hope my book is still relevant for many years and decades to come and that it will contribute to a better knowledge and understanding of the realities and complexities of the oil industry.” His statement at the beginning of the interview that “understanding the oil market is challenging” still holds true, but this book has certainly made understanding much easier.

About the author

Leonardo Maugeri is Group Senior Vice President, Strategies and Development, for the Italian energy company Eni, and a member of the company’s Executive Committee. Maugeri is the author of two books and numerous articles on energy, which have appeared in numerous publications, including Newsweek, Foreign Affairs, Science, and the Wall Street Journal.





Irrigation goes electric

OPEC Fund financing helps farmers in Cuba boost crop output

This article by **Linda Cechura**, Information Assistant at the OPEC Fund for International Development, looks at how technological change and Fund financing is making all the difference to a group of rural farmers in Cuba, who, for years, have been struggling to harvest their crops using antiquated irrigation equipment. In fact, the overwhelming success of a first project, described here, has led to the OPEC Fund signing another loan for \$10 million to extend the scheme to one of the largest food production areas in the country – Havana province.

As the long, graceful boom of the irrigation system came closer, Felipe Garcia Diaz, 43, was greeted first by a breath of cool, damp air and then by a cloud of fine spray. He watched the first droplets trickle off the foliage and hit the ground, setting off little puffs of dust. He saw the red soil darken as it soaked up the welcome moisture. With their leaves freed of the dust, the potato plants already looked fresher and healthier. Felipe gazed across the field and smiled: “These are the first potatoes we’ve planted since our cooperative got the new electric pivots,” he said. “And this time, with a little luck, we’re going to have a good harvest!”

Farmers are often sceptical of change and new technology, but it didn’t take much to convince Felipe and the other campesinos on the state farms and agricultural cooperatives in Cuba’s rural Ciego de Avila province that it would be a good idea to replace the aging Soviet-built ‘Fregat’ irrigation equipment standing in their fields with modern, electrically powered, centre-pivot systems. After all, more than half of the *Fregats* were over 20 years old, double the operational lifespan for such equipment.

“The old *Fregats* have caused us nothing but trouble and delays for a long time now,” Felipe pointed out. “The flow of spare parts dried up when the ‘special period’ started back in 1990, and ever since we’ve had to beg, borrow and improvise to keep these rusty old things running. It takes all our time and energy to squeeze something out of them, and sooner or later, even our most talented mechanics are forced to give up.”

Felipe explained that most of the large farms in the area used to produce three irrigated crops a year, but for about eight years now, they had been lucky to bring in two harvests. Mostly, they could only manage one. Why? Because even when the old *Fregats* were working, they could not get sufficient supplies of diesel.

“Seed potatoes must be imported, too, you know, but that investment is simply wasted, if the fields are not irrigated. It is not just the money, mind you, it is the lost work! It is so frustrating to put all that effort into planting and weeding, and then watch a promising crop get stunted for lack of irrigation.”

Felipe stressed that the old *Fregats* had many other flaws, too. Besides being unreliable and expensive to operate, they were ‘diesel-guzzling stinkers’ that polluted the air more than irrigated the crops. And since they were high-pressure sprinklers, the *Fregats* threw a lot of water around, causing soil compaction and erosion.

Happily, the *Fregats* will soon be history. In 2001, the Cuban Ministry of Agriculture responded to the irri-

gation crisis by launching the National Plan for Electrification. According to this high-level directive, all the old diesel-driven irrigation systems were to be replaced by electric-centre pivots within ten years.

The plan was motivated by many objectives: Electric irrigation systems would help Cuba reduce its dependency on imported diesel, conserve its water resources, increase irrigation efficiency and provide insurance against erratic rainfall or drought. Most importantly, by helping to stabilize agricultural output, the new systems would boost productivity in several essential food crops.

The plan called for 900 irrigation systems to be replaced — a tall order for a country with limited foreign currency reserves and no access to international capital markets. Moreover, the nation was still struggling to recover from the abrupt loss of its trade with the former socialist bloc countries, as well as contend with rock-bottom sugar prices, the effects of Hurricane Michelle — not to mention four decades of United States economic sanctions.

Encouraged by the atmosphere of friendly cooperation that characterized its first project with the OPEC Fund in 2002, Cuba turned to the institution for additional financial assistance. And in June 2003, the Fund responded by approving a \$10 million loan to co-finance a project that would modernize irrigation capacity at 18 agricultural enterprises in two predominantly rural provinces — Matanzas and Ciego de Avila.

Restoring irrigation capacity in these provinces was high on the government’s agenda. Both are key agricultural areas where deep, well-drained, friable soils and large, flat fields provide ideal conditions for large-scale irrigated cultivation of a wide variety of crops. These provinces have 22 per cent of Cuba’s total area under irrigation and the country’s highest concentration of overhead irrigation systems. Together, they contribute around a quarter of all vegetables and grains produced in the country. Most important, 80 per cent of their combined irrigated area is dedicated to Cuba’s main staple — the potato.



Agricultural crop output is now 30 per cent higher following the introduction of the new irrigation system.





before ...

The old Soviet-built 'Fregat' irrigation equipment (left) makes way for the electrically-powered centre-pivot system, which is transforming farming in Cuba.



... after

Argetio Gonzalez Marrell

Boosting productivity

Both provinces are also near large consumer markets, a distinct advantage in a country determined to minimize transport and distribution costs. Boosting productivity in Matanzas is regarded as particularly desirable because of its proximity to Havana, which, with 2.2 million inhabitants, is Cuba's largest market.

During the early 1990s, investments in new irrigation systems ceased completely and maintenance began to lag for lack of spare parts. As the old *Fregats* became more and more unreliable, the amount of land actually irrigated dwindled. By 2002, the *Fregat*-irrigated area in Matanzas and Ciego de Avila provinces had shrunk from 10,900 hectares to 6,000 ha, a 45 per cent decrease, despite the heroic efforts of local farm mechanics. The *Fregats* systems, once a source of pride, had become a liability.

Project implementation got underway in late summer 2003. Many of the small civil works were carried out by work crews on the recipient farms directly and thanks to their skilled and enthusiastic support, the project was completed almost a year ahead of schedule. In all, 110 electrically driven, centre-pivot systems, with all the necessary pumps, transformers, motors and instrument panels, were assembled and brought on-line. In addition, wells and water pipes were overhauled and repaired, 47

km of electric lines were laid, service sheds built, and seven sub-stations installed. In all, 4,380 ha of prime agricultural land can now be cultivated to full advantage in Matanzas and Ciego de Avila.

More economical

The new centre pivots offer a long list of impressive features and refinements, from a hydro-module that regulates the flow rate to special tires that prevent rutting. Robust and dependable, the new systems are easier and more economical to operate and maintain than their predecessors. They distribute water with superior uniformity and can be used to apply plant nutrients or pesticides simultaneously. They need less time and fewer workers to get the job done. In short, the new systems are worthy representatives of the kind of advanced irrigation technology that other farmers take for granted.

For potato farmers in Idaho, the centre-pivot systems now gracing the fields at Felipe's cooperative are nothing special, just "industry standard," but for Felipe and his fellow workers, they are "simply beautiful" and represent a major change in their everyday lives and expectations, a hint that years of hardship and rationing may be coming to an end. "Next year our potato yield is going to top everything you ever saw," said Felipe, with great optimism.

Cuban minister praises success of agricultural scheme

Project boosting output by 30 per cent — energy costs cut by same amount



Cuba's Minister of Foreign Investment and Economic Cooperation, Marta Lomas Morales (*pictured above*), spoke about the success of the project on a recent visit to the OPEC Fund's headquarters in Vienna, where she signed a loan for the second phase of the irrigation scheme. In an interview for the Fund's Newsletter, she stressed just how the institution's support was helping the country realize some of its most important goals.

"This new loan consolidates the work that Cuba has been doing with the OPEC Fund over the past four years. It is a relationship we value highly and one that has shown us what a fine example the Fund is of international cooperation," she said.

The minister said that due to the success of the first phase of the scheme, there were strong arguments for replicating the irrigation project in Havana province — one of the largest food production areas in the country. "Thereafter, our intention is to continue and install these systems countrywide to complete our programme," she added.

The minister pointed out that agriculture was one of the main sectors in the Cuban economy, primarily because it was responsible for safeguarding the nutritional status of the population.

"We have worked hard to transform the sector over the years. Before the revolution, Cuba was best known for the production of tobacco, sugar and coffee. Post revolution, our aim has been to diversify the sector with the purpose of catering to our people's nutritional needs," she affirmed.

Like agriculture, she said, energy was a top priority for the country. "The electricity situation is probably the main chal-

lenge facing the country — if not the entire world — today. The OPEC Fund is our partner in tackling this as well. With the Fund's support we are presently replacing Havana's 60-year-old electricity network."

Speaking on the first phase of the irrigation scheme, the minister said that altogether they had acquired 110 new systems, which were now fully operational and working without interruption.

"The results are impressive; from the perspective of energy savings, from the standpoint of the increase in agricultural productivity and from the environmental aspect," she professed.

The minister said the equipment substituted had an average consumption of 2,500 metric tons of diesel fuel per year, which was no longer required and last year alone represented \$1.2 million in savings.

"The new systems are electrically driven but are highly efficient and providing substantial savings in energy, with total electricity costs reduced by more than one-third. Equally important are the water savings — consumption here has been cut by about 20 per cent — while agricultural yields have risen by about 30 per cent."

The minister said that with regard to the environment, the new systems were much less aggressive, so less damaging to the soil quality. She said her country believed strongly in the development aid approach adopted by the OPEC Fund. Support to Cuba through the projects they wanted to pursue had been given absolutely without question or conditions.

"We only wish that other financial institutions and country donors would follow the OPEC Fund's example," she added.

IFAD President urges all OPEC MCs to step up funding for alleviation of rural poverty



The International Fund for Agricultural Development (IFAD) would like to see its longstanding ties with OPEC Member Countries strengthened in support of its pursuit of the eradication of rural poverty in developing states.

IFAD President, Lennart Bage (*pictured*), in an interview held during a recent visit to the Vienna-based OPEC Fund for International Development, said he hoped his institution could secure more financial resources from OPEC Countries. Asked whether he thought it was fair to expect a greater contribution from Members of the Organization, given that oil prices today were higher than ever before in nominative terms, he replied “absolutely”.

Said Bage: “It (financing) has been forthcoming from some, but it has been uneven. Some OPEC Countries have been very generous and increased their contributions significantly, for example Qatar and Venezuela. Others have increased only marginally ... there are big differences

among the OPEC group. But for us it is very important to strengthen our collaboration with the OPEC Countries.”

IFAD, a specialized agency of the United Nations and dedicated to eradicating rural poverty, was created in response to the world food crisis that devastated many developing countries in the mid-1970s. Through concessional loans and grants, it works with rural poor people, governments, donors, non-governmental organizations and other partners to develop and finance programmes and projects that ensure the rural poor have secure access to the assets they need to overcome poverty.

The move to set up IFAD was informed by the recognition by the international community that a global alliance with shared goals was needed to eradicate poverty and hunger. Two years later, in 1976, the OPEC Fund was established with the mandate to provide financial support to non-OPEC developing countries to aid their social and economic advancement. The creation of both institutions in the same period reflected broad acknowledgement that partnerships were key to addressing urgent global problems.

The relationship between the Rome-based IFAD and OPEC goes way back to before IFAD actually started operations in 1978. OPEC Member Countries were the motivating force behind the Fund’s formation in 1974. In fact, they contributed almost one-half of the initial resources of \$1 billion and were given equal voting rights.

Commitment

Bage, who visited the OPEC Fund to sign a grant agreement involving marine resources management in the Red Sea, stressed that it was interesting that at the OPEC Summit in Caracas in 2000 the final declaration included a commitment by the Organization’s Heads of State and government to continue strengthening support for IFAD and the OPEC Fund. “I would like to see this partnership strengthened. I would like to see a stronger involvement

and a greater contribution from all countries, not least the OPEC Countries,” he said in the interview.

Bage pointed out that IFAD still had a very strong OPEC identity. “When IFAD was conceived, it was the mid-1970s when you had high oil prices and a lot of resources available for development in OPEC Member Countries. Developing countries with no oil resources of their own were paying much higher oil prices — that’s the other side of the coin,” he said.

Bage noted that IFAD was conceived as a mechanism to pool resources among countries. “That was a beautiful idea and one that came to fruition. OPEC is still very much part of that. It plays a strong role,” he said. Before he came to the institution in February 2001, all IFAD Presidents had been from OPEC Member Countries.

Funding

However, in terms of funding, Bage explained that OPEC’s contributions to IFAD had fallen over the years. He said: “The initial funding in the late 1970s was almost 50:50, but then when we had so-called replenishment negotiations in the 1980s, the OPEC Countries went down significantly.”

Of the initial resources of \$1 billion, OPEC Countries pledged \$435.5 million, OECD countries \$569m and developing countries \$20.6m. And then during the first replenishment of IFAD’s resources in 1982, OPEC Countries injected a further \$425.6m.

Said Bage: “The share between the OECD and OPEC/ other developing countries has since changed in proportion rather markedly. In the late 1980s and 1990s roughly 80 per cent of new resources came from the OECD with about 20 per cent coming from OPEC/other developing countries. Over the last two replenishments that has increased a bit. Several OPEC Countries have increased significantly their funding. Others remain at the same level as before.”

Asked about IFAD’s cooperation with the OPEC Fund, Bage said it already had a strong track record, but he had the impression that both sides wanted to strengthen relations further. “We have already strengthened it in many ways — intellectually, in terms of sharing concrete technical-specific experience. And, we have had delegations



IFAD aid — an extension worker teaches farmers how to make butter using modern machinery.

from the OPEC Fund to IFAD and vice-versa for discussion of technical issues and also co-financing. We look to this as one of the partnerships we would like to reinforce and make even more comprehensive,” he added

Also attending the interview from IFAD, Dr Mona Bishay, Director, Near East and North Africa Division, pointed out that historically the OPEC Fund had co-financed a large number of projects with IFAD. However, over the past two to three years the rate of co-financing had increased in terms of the number of projects and also in terms of the share of OPEC co-financing in the total package.

“This has been going very well and recently — this is a breakthrough actually — the grant agreement that the IFAD President has signed today is the first instance that the OPEC Fund has co-financed a grant rather than a loan. And we are very much hoping that this is the beginning of a tradition that could be established,” she added.

Today, IFAD still remains the only major multilateral development finance organization in which OPEC and other developing countries hold a majority of the votes.

Since starting operations in 1978, IFAD has invested more than \$9bn in over 700 programmes and projects that have reached more than 300 million rural poor people. In that period it has received total donor investment of around \$25bn, which means that for every dollar IFAD invested, it was able to mobilize almost two dollars in additional resources.

As for the OPEC Fund, its commitment to development financing since its inception amounts to more than \$8bn. This is for well over 1,200 programmes and projects. So far, 119 countries in all developing regions of the world have benefited from its financing.

The OPEC Fund is the largest co-financier of IFAD-sponsored programmes and projects after the World Bank. However, cooperation between IFAD and the OPEC Fund goes much further than just financing development programmes and projects in some of the poorest and most vulnerable communities in developing countries. The two sides also share a common belief that rural poor people must be empowered to lead their own development if poverty is to be eradicated. ■■

This section includes highlights from the OPEC Monthly Oil Market Reports (MOMR) for October and November published by the Research Division of the Secretariat, containing up-to-date analysis, additional information, graphs and tables. The publication may be downloaded in PDF format from our Web site (www.opec.org), provided OPEC is credited as the source for any usage.

Crude oil price movements

October

OPEC Reference Basket¹

The market remained bearish in September. Easing Mideast geopolitical tensions at a time when many eastern marketers were engaged in the APPEC conference in Singapore limited trade activities. Moreover, the narrowing Brent/Dubai EFS spread attracted the flow of western crude into Asia, while the healthy stockpile of winter fuel in the Northern Hemisphere amid waning demand for gasoline helped the bearish sentiment. The return of some disrupted output in the Gulf of Mexico, as well as from Nigeria, instilled calm in the marketplace. In the first week of the month, the OPEC Reference Basket (ORB) dropped by \$2.25, or 3.4 per cent, to average \$63.14 a barrel.

In the second week, the market remained calm as weak refining margins prompted slower procurement amid ample supply. OPEC's decision to keep output steady at a time of reduced geopolitical concerns enhanced market bearishness. Additional capacity from a Mideast major and the softer demand outlook amid healthy

winter fuel supply pushed prices lower. The ORB declined by more than five per cent in three days with the weekly average down by \$3.60/b, or nearly six per cent, to settle at \$59.54/b, the first time the ORB had been below \$60/b since March.

The market was a little firmer in the third week, due to concern over heating oil supply amid tight October deliveries from the North Sea. Nevertheless, the bullish momentum was short-lived amid an unexpected distillate stock-build in the United States at a time when refinery run rates were reduced in Japan, South Korea and Singapore, weakening demand for crude oil. Hence, the ORB dropped by 4.5 per cent in one day on September 20. Slowing US economic growth was seen easing demand. Thus, the ORB's weekly average was down by \$2.38, or four per cent, to settle at \$57.16/b. Moreover, receding fears about this year's Atlantic hurricane season in the US and concern over slowing economic growth amid ample OPEC supply outweighed any concern about a supply shortfall.

Early in the fourth week, the ORB fell by over two per cent. However, a perception of rising Asian demand amid concern that fall-

ing prices might trigger tighter OPEC output revived bullish momentum, which pushed the ORB nearly three per cent higher. The weekly average of the ORB slipped by 81¢, or 1.4 per cent, to settle at \$56.35/b.

On a monthly basis, the ORB averaged \$59.34/b, representing a substantial drop of \$10/b, or 14 per cent. Reduced tensions in the Mideast geopolitical arena and ample supply were the main factors behind the drop. Steady OPEC output amid lower refinery rates in Asia halting demand growth also exerted downward pressure on the petroleum complex amid healthy winter fuel supply. In the first two weeks of October, the ORB closed lower to average \$55.23/b.

US market

The US domestic market emerged on a bullish note in September with the delayed return of Canada's Terra Nova offshore oil field from maintenance, while the US market was closed for the Labour Day holiday. The bullishness, however, was short-lived and US sour crude differentials came under mounting pressure from plentiful supplies. Outages at Citgo's Lake Charles refinery and lower demand amid news

1. An average of Saharan Blend (Algeria), Minas (Indonesia), Iran Heavy (IR Iran), Basra Light (Iraq), Kuwait Export (Kuwait), Es Sider (SP Libyan AJ), Bonny Light (Nigeria), Qatar Marine (Qatar), Arab Light (Saudi Arabia), Murban (United Arab Emirates) and BCF-17 (Bachaquero, Venezuela).

of growing product levels supported the weak market sentiment. US benchmark crude WTI's first weekly average dropped a hefty \$2.23, or over three per cent, to settle at \$68.33/b, with the spread over WTS expanding by 25¢ to \$4.98/b, the widest weekly average since the end of July. In the second week, thin refinery demand for light/sweet crude amid the perception of higher-than-planned refinery maintenance prompted poor refinery margins with the westward flow of North Sea barrels pushing differentials to their lowest level that month. WTI's weekly average was down \$3.81, or nearly six per cent, to settle at \$64.52/b with the WTS discount down by 21¢ to \$4.77/b. Hence, the sweet/sour differential widened with the WTI/WTS spread gaining 13¢ to \$4.90/b at a time when WTI decreased by a hefty \$2.53, or almost four per cent. In the final week of the month, speculation about an OPEC cut in production at a time of an unconfirmed report of an output reduction by Venezuela and pipeline problems in Alaska helped sour crude process to firm. As a result, the WTI/WTS spread narrowed by 11¢ to \$4.79/b in the fourth week, yet WTI was 60¢, or almost one per cent lower, to settle at \$61.39/b. On a monthly basis, WTI averaged \$64/b for a drop of some \$13, or 12 per cent, with the premium to WTS at \$4.85/b, an increase of 66¢ over the previous month.

North Sea market

Falling refining margins saw the North Sea crude market weaken at the start of the month, although low differentials attracted some buyers. Hence, North Sea crudes resumed some strength on improved refining margins. This was further supported as the market shifted to October barrels amid unsold September cargoes which were clearing at lower differentials in the first week of the month. In the second week, poor gasoline margins amid ample supplies continued to pressure the grade. Buyers remained on the sidelines as sellers set differentials higher amid lower regional October supplies. Differentials firmed in the second week on emerging demand amid tight supply. In the third week, the market began firmer, but this was short-lived amid weakening refining mar-

Table A: Monthly average spot quotations for OPEC's Reference Basket and selected crudes including differentials

	Sep 06	Oct 06	Oct/Sep	2005	2006
OPEC Reference Basket	59.34	54.97	-4.37	50.47	61.95
Arab Light ¹	59.72	55.64	-4.08	49.91	61.98
Basrah Light	56.40	51.53	-4.87	48.45	58.80
BCF-17	50.96	46.99	-3.97	40.40	52.85
Bonny Light ¹	63.87	58.75	-5.12	55.41	67.74
Es Sider	61.54	56.20	-5.34	52.07	64.21
Iran Heavy	57.14	53.27	-3.88	47.67	60.14
Kuwait Export	56.75	53.02	-3.73	47.19	59.72
Marine	60.90	57.15	-3.75	50.08	63.50
Minas ¹	63.32	54.87	-8.44	54.09	66.33
Murban	65.01	61.04	-3.97	53.79	66.86
Saharan Blend ¹	63.27	58.55	-4.72	54.30	66.93
Other crudes					
Dubai ¹	59.82	56.36	-3.46	48.84	62.30
Isthmus ¹	57.18	52.46	-4.73	50.17	60.82
Tia Juana Light ¹	52.35	48.05	-4.30	45.96	55.44
Brent	61.71	57.80	-3.92	54.21	66.06
West Texas Intermediate	64.00	58.82	-5.18	56.12	67.14
Differentials					
WTI/Brent	2.29	1.03	-1.26	1.92	1.08
Brent/Dubai	1.89	1.44	-0.46	5.37	6.32

Note: As of the third week of June 2005, the price is calculated according to the current Basket methodology that came into effect as of June 16, 2005. BCF-17 data available as of March 1, 2005.

1. Old Basket components: Arab Light, Bonny Light, Dubai, Isthmus, Minas, Saharan Blend and T J Light.

Source: Platt's, direct communication and Secretariat's assessments.

gins amid the perception of ample supply on the flow of Mediterranean and West African crude into the region. Hence, sellers reduced differentials, yet buyers stood on the sidelines with the prospect of pressuring prices for a further fall. Moreover, ongoing refinery maintenance eased the market in the fourth week. Brent's monthly September average fell by \$11.40, or more than 15 per cent compared with the previous month, to settle at \$61.71/b.

Mediterranean market

The Mediterranean market emerged on a weaker note amid poor refining margins. Moreover, a rise in price differentials by a Mideast major helped the grade to firm. The weekly average of the Brent/Urals spread narrowed by 59¢ to \$2.62/b. In the second week, Urals firmed as refiners stockpiled to meet winter demand. Furthermore, technical problems cut planned pumping through the Baku-Ceyhan pipeline for the second consecutive month,

supporting market sentiment amid cleared September barrels. The Brent/Urals spread firmed with the weekly average 50¢ narrower at \$2.12/b. However, in the third week, a drop in refining margins for Urals reached a point where other regional grades became more lucrative, pushing the Brent/Urals spread wider to \$2.39/b. The prospect of tighter October Urals supply once again supported refining margins in the fourth week. The perception that OPEC might rein in output also gave a boost to the grade. The Brent/Urals spread narrowed by 47¢ to \$1.92/b. The monthly average for Urals was \$59.48/b, down \$9.02, or 13 per cent, from the August average. The Brent/Urals spread averaged by \$2.24/b, compared with \$4.68 in August, the lowest monthly average in ten months.

Middle Eastern market

The Middle East market came under pressure from the opening arbitrage opportunity for West African crude eastbound as the Brent/

Dubai spread narrowed to \$1.36/b. Moreover, high product inventories in Japan amid a weak fuel oil crack spread supported the weak market sentiment in Asia. In the first week of the month, November Oman emerged on a weaker note when it was assessed at an 8¢ discount to MOG amid unsold October barrels, which were clearing at a 20¢ discount. In the second week, refining margins remained weak amid ample supply.

Reduced demand supported the bearish market sentiment with November Oman clearing at a 15–22¢ discount to MOG, which steepened further later in the week to a 30¢ discount amid China reselling some cargoes as the Brent/Dubai spread remained attractive at \$1.43/b, inspiring the flow of rival western grades. Oman continued to weaken on plentiful supply at a time when some Asian refiners reduced run rates. November Oman traded at a 35–40¢ discount to MOG.

November

OPEC Reference Basket

The market was in a volatile mood in October. While some OPEC Members reduced output in an attempt to stem a sharp downward trend in prices, ample supply outweighed expectations for a possible OPEC production cut. In the first week of the month, the ORB dropped by \$1.01, or nearly two per cent, to average \$55.32/b.

In the second week, the prospect of lower OPEC output amid healthy European winter demand, as refineries returned from maintenance, supported a bullish sentiment in the marketplace. Nonetheless, steady supply from the Middle East to Asia led to prices easing further, with output from West Africa also contributing to the situation amid the report of an OPEC cut on the horizon and outages from Norway. The ORB's weekly average dropped by a marginal 47¢, or less than one per cent, to settle at \$54.85/b. The bullish market sentiment was sustained in the third week ahead of the OPEC Consultative Meeting in Doha, which assessed excess oil output in the market. A cold snap in the United States and outages in the North

Sea helped the market firm. Nevertheless, weak economic indicators in the US amid ample supply prevented a further rally. The ORB rose by 43¢, or nearly one per cent, in the third week – the first rise in ten weeks – when it averaged \$55.28/b.

The fourth week proved to be bearish with questions being asked about the implementation of OPEC's production cut. The ORB plunged by nearly three per cent on October 23. Nevertheless, the bearishness was short-lived as OPEC started to apply the Doha decision and cut production by 1.2 million barrels/day. The strong market sentiment was supported by a surprise drop in US crude oil stocks, and the ORB surged by well over four per cent in two days. Yet, fund profit-taking saw the downward movement return. The ORB closed the last day of the month at \$53.37/b, marking the lowest daily figure so far this year. For the week, it averaged \$54.76/b, dropping by 52¢, or by almost one per cent.

In monthly terms, the ORB moved lower on ample global supply and easing tensions in the Middle East as OPEC had yet to implement its production cut. The ORB fell by a hefty \$4.37, or 7.4 per cent, to average \$54.97/b, the lowest monthly average so far this year. In the first two weeks of November, the ORB stabilized as OPEC implemented the Doha decision. Supply concerns in the US downstream and the Middle East upstream, as well as anxiety over Nigeria, also provided support for the market. Hence, in the first two weeks of the month the ORB averaged \$55.74/b and stood at \$55.19/b on November 14.

US market

The US cash crude market was underpinned by anticipation of an OPEC output cut, which supported the sour grades amid fears of a possible supply disruption from Nigeria. The WTI/WTS weekly average was 55¢ narrower at \$4.15/b, the narrowest in eight weeks, at a time of weakening refining margins. In the second week, a temporary shutdown in the North Sea amid emerging seasonal refinery turnarounds in the US supported light sweet grades. The WTI/WTS weekly spread widened by 30¢ to \$4.45/b.

In the third week, the widened contango spread prompted a buying spree in the US domestic crude market ahead of the expiry of futures contracts. Thus, the sweet/sour spread expanded by a hefty 88¢ to \$5.33/b. In the fourth week, the announced OPEC output cut was balanced by a covering of short positions amid more prompt moves in the sour market. Thus, the WTI/WTS spread widened to well over \$6/b when the weekly average increased by another 14¢ to \$5.47/b. In the final days of the month, the spread was \$4.80/b as the OPEC cutback neared. WTI's monthly average was 57¢ wider at \$59.50/b with the spread over WTI 15¢ narrower at \$4.68/b.

North Sea market

Lingering October cargoes pressured differentials for North Sea crude, which fell to its lowest level for the year. Weak prices prompted sellers to dispose of cargoes as the November programme emerged in the first week. In the second week, the clearing of October cargoes led to the BFO differentials firming amid the prospect of healthy winter demand in November as refineries returned from seasonal maintenance. Nevertheless, some unsold October cargoes amid the perception of rising supply in November revived market bearishness. In the third week, lingering supply disruptions from Norway as plant demand resumed after turnaround maintenance underpinned the market. In the fourth week, rising regional freight rates amid high inventory levels triggered a return to volatility. In the final days of the month, plentiful supplies amid disappointing refinery demand kept the pressure on price differentials. Brent's monthly average stood at \$56.75/b, representing a drop of 97¢, or 1.7 per cent.

Mediterranean market

In the first week of October, Urals crude in the Mediterranean firmed on strengthening fuel oil margins amid an increase in November price differentials by a Middle East major. Thus, Urals firmed to a nine-month high. In the first week, Urals averaged \$1.48/b under Dated Brent. In the second week, lower supply from a Middle East major amid sustained healthy refinery mar-

gins helped the Urals discount firm to \$1.77/b to Dated Brent. However, lingering North-West Europe cargoes prompted sellers to move to the Mediterranean, thereby weakening price differentials in the third week amid unsold October cargoes with ample November supply. Hence, the Urals discount widened to its lowest level in nine weeks with the average in the third week standing at \$3.11/b, an increase of \$1.34. Nonetheless, clearing October barrels amid the larger-than-expected OPEC output cut saw the sour grade firm. Furthermore, perception that the November programme would show lower scheduled exports from Primorsk, compared with the previous month, supported the sour grade, which also saw gains following a pipeline leak to the west of Chelyabinsk in southern Urals. However, questions regarding OPEC's implementation of its production cut kept the sour market somewhat in balance. The Urals weekly average discount to Brent was \$1.03 narrower at \$2.08/b. The firmness continued in the final days of the month as OPEC Member Countries informed customers of the lower output allocations. The Urals monthly average discount to Dated Brent was 13¢ firmer at \$2.26/b.

Middle East market

The Middle East market emerged in October on weak refining margins amid some unsold Abu Dhabi barrels for November loading. Kerosene stocks in Japan were healthy and new competition came from Russia's light sweet Sokol crude, which began exports last month. The narrowed Brent/Dubai spread was also seen responsible for weakening demand for sour crude as it made rival West African crude comparatively more attractive. December Oman was trading at a 15¢ discount to MOG. Moreover, lower refinery run rates, due to poor refining margins, also kept the bearishness intact. In the first week of the month, the Brent/Dubai spread was 48¢/b, down from \$2.2/b the week before. Despite the wide Brent/Dubai spread amid wider differentials for rival West African and Urals crude, due to strong European and US demand, market sentiment weakened further on softer Asian demand. In the second week, December Oman was assessed at a discount of

25–30¢/b to MOG, with the prospect for Abu Dhabi kerosene-rich crude to be valued at a steep discount. Kerosene stocks in Japan were seen to be rising, suggesting that refiners would not increase runs ahead of winter.

The market bearishness continued in the third week on the narrowing Brent/Dubai spread, which fell by 71¢ to \$1.51/b. Incoming production from the Sakhalin-1 oilfield added further downward pressure to the market. December Oman traded at a 30–35¢/b discount to MOG, while Abu Dhabi Murban was valued at some 50¢/b to ADNOC's official selling price (OSP). Market sentiment firmed in the fourth week on lower supply from the Middle East and the widened sweet/sour crude spread. December Oman was discussed at a 25¢ discount to MOG, while Murban was assessed at a 30¢ discount to the OSP. However, weak demand, mainly from Japan, amid lower refinery run rates prevented further market bullishness. Moreover, the flow of some arbitrage barrels in a contango market pressured Middle East crude. The weakness continued in the final days of the month amid ample supply and weak demand, with December Oman on offer at a 74¢/b discount to MOG, yet Murban was firm at a 30¢/b discount to ADNOC's OSP.

Product markets and refinery operations

October

The end of the US driving season, combined with a steady distillate stock-build, changed product market sentiment significantly and exerted downward pressure on product prices and refining margins across the globe. Refining margins for WTI crude oil on the US Gulf Coast plunged to \$3.25/b in September from \$11.39/b the previous month. The same trend also dominated the European market, causing Brent crude margins to fall to \$2.59/b from \$3.80/b in August. In Asia, despite throughput cuts by some refiners, the bullish sentiment of the product market did not revive, and refining margins followed the downward trend in the Atlantic Basin, dropping

to \$2.25/b from \$3.35/b the previous month. A moderate downward correction in refining margins during the coming season is not outside market expectations, but the combination of a light autumn maintenance schedule with high distillate and natural gas stocks could prove to be a threat to product and crude prices for the next few months. However, weather conditions remain a key wild card as colder-than-normal winter in the Western Hemisphere could turn the product market's current bearish sentiment.

The firmness continued in the final days of the month as OPEC Member Countries informed customers of the lower output allocations.

Part of the throughput cuts was due to the usual autumn maintenance schedule, but the rest was attributed to refining margins falling across the globe. Among the different areas, the Japanese refinery utilization rate fell further compared with the others. Its rate dropped by 4.3 per cent in September to 85.1 per cent, compared with the previous month. With the approaching winter season, Asian refiners, including the Japanese, may raise throughput levels, but this will depend on the circumstances of the product market over the coming months. In the Atlantic Basin, US and European refinery utilization rates also declined in September – by 0.8 per cent and one per cent, respectively, to 91.5 per cent and 85.5 per cent from 92.3 per cent and 86.5 per cent.

US market

The situation of decreasing product prices led to a sharp fall in the gasoline crack spread

Table B: FSU net oil exports *m b/d*

	1Q	2Q	3Q	4Q	Year	Growth y-o-y
2003	5.87	6.75	6.72	6.61	6.49	0.91
2004	7.17	7.30	7.38	7.37	7.31	0.82
2005	7.45	7.69	7.76	7.85	7.69	0.38
2006¹	7.98	8.41	8.29	8.15	8.21	0.52
2007¹	8.46	8.98	8.84	8.69	8.74	0.54

1. Forecast.

against the benchmark WTI crude in September. The monthly crack spread of premium gasoline versus WTI crude oil on the US Gulf Coast plummeted from \$24.92/b in August to \$8.52/b in September. This bearish move also caused US refining margins to fall significantly. Looking ahead, due to seasonal factors and high gasoline stocks, the current low margins for gasoline are expected to continue over the next few months.

Meanwhile, the bearish developments seen in the gasoline markets encouraged US refiners to change their operational mode in favour of distillates, which resulted in huge distillate stock-builds across the US market over the last few weeks and put downward pressure on distillate prices in the physical and the futures markets.

The higher-than-usual distillate stock-build, together with uncertainty about the weather forecast for winter in the US, encouraged non-commercial players to liquidate their long positions significantly and to raise short position contracts for heating oil on the Nymex from 14,769 contracts in early September to 28,019 contracts in early October. Due to the autumn maintenance schedule, the recent pace of distillate stock-builds may slow in the next weeks, but the current muted situation of the US distillate market is not likely to change significantly, unless there is an early winter.

With regard to the bottom of the barrel complex, the US market situation also looks very bearish, as fuel oil demand declined in September by about 350,000 b/d from a year ago. Similarly, the weakness in natural gas prices might continue to limit utility demand for low-sulphur fuel oil over the coming months.

Table C: OPEC NGL production, 2004-07

				<i>m b/d</i>
2004	2005	05/04		
4.02	4.08	0.06		
1Q06	2Q06	3Q06	4Q06	
4.18	4.22	4.33	4.33	
2006	06/05	2007	07/06	
4.27	0.19	4.44	0.17	

European market

European refiners have benefited from the arbitrage opportunity to the US market in recent months, which lent support to product prices and refining margins since the start of this year. However, this opportunity disappeared recently, exerting downward pressure on product crack spreads in September. The monthly average gasoline crack spread against benchmark Brent crude dropped sharply to \$11.42/b from \$21.05/b in August. The weaker-than-usual arbitrage opportunity to the US market may further threaten the European gasoline market in the coming months. Together with the bearish developments in the gasoline market, the naphtha market was also dampened by the heavy cracker maintenance schedule, and prices have fallen over the last few weeks.

Despite the huge losses in the top portion of the barrel complex last month, the middle cut of the barrel component has not been seriously affected by the bearish momentum in the US product market and has maintained its earlier strength. The heavy refinery maintenance schedule in Europe during October may support the European distillate market, which is generally short. Furthermore, the European winter is projected to be colder than normal, which could lift the distillate crack spread in the future.

Regarding fuel oil, the crack spread of the high-sulphur grade improved, due to falling crude prices, but generally the market remained bearish as arbitrage opportunities to the US and Asia are effectively closed.

Asian market

The fall of most Asian product crack spreads

has forced Asian refiners to trim their throughput levels over the last few weeks. Among the barrel components, the gasoline spread in the Singapore market has followed the recent global pattern, plunging by 50 per cent to \$3.89/b on October 6 from \$7.08/b in early September. Due to seasonal factors and lack of arbitrage opportunity to the US market, the current low margin of the gasoline component is expected to remain for the next few months. Along with gasoline, the naphtha market has also lost further ground, due to the heavy crack maintenance schedule and ample supply from India. The current weak naphtha market may persist up to November, when cracker unit maintenance will be completed and petrochemical plants will return to normal operations.

Similarly, the middle distillate market weakened recently, and its spread versus benchmark Dubai crude narrowed, compared with previous months. However, with the monsoon season in South East Asia coming to an end, demand from electricity generation and the transportation sector should recover to lend support to the gasoil market. Additionally, the end of the fishing ban in the South China Sea, along with other seasonal factors, may contribute to further consumption of middle distillates to support prices and margins in the next few months.

As far as the fuel oil market is concerned, the closed arbitrage opportunity between Europe and Asia, combined with lower refinery throughput and higher Chinese demand, provided support and narrowed its spread versus benchmark Dubai crude to minus \$15.20/b on October 6 from minus \$19.52/b in early September. But sluggish demand from utility plants weighed on the low-sulphur fuel oil market, pushing low-sulphur fuel oil prices lower than those of high-sulphur fuel oil.

November

A combination of the refinery maintenance schedule with product stock-draws over the previous few weeks softened the bearish sentiment of the product markets, but failed to lift refining margins in Europe and Asia. Refining margins in Europe slid to \$1.16/b from \$2.59/b

Table D: OPEC crude oil production, based on secondary sources

1,000 b/d

	2004	2005	4Q05	1Q06	2Q06	Aug 06	Sep 06	Oct 06	Oct/Sep
Algeria	1,228	1,349	1,374	1,376	1,368	1,356	1,373	1,381	7.7
Indonesia	968	942	935	922	914	877	878	876	-2.3
IR Iran	3,920	3,924	3,911	3,849	3,800	3,919	3,884	3,810	-74.2
Iraq	2,015	1,830	1,675	1,711	2,001	2,065	2,048	1,958	-90.7
Kuwait	2,344	2,504	2,548	2,532	2,513	2,507	2,508	2,496	-12.8
SP Libyan AJ	1,537	1,642	1,665	1,680	1,699	1,718	1,727	1,720	-6.7
Nigeria	2,322	2,412	2,469	2,257	2,212	2,221	2,186	2,259	73.7
Qatar	771	796	808	817	820	840	834	836	2.3
Saudi Arabia	8,957	9,390	9,426	9,416	9,133	9,183	9,056	9,031	-25.3
UAE	2,360	2,447	2,518	2,528	2,535	2,571	2,580	2,562	-18.0
Venezuela	2,582	2,633	2,584	2,595	2,574	2,517	2,538	2,519	-18.5
OPEC-10	26,988	28,038	28,237	27,973	27,570	27,708	27,563	27,489	-74.0
Total OPEC	29,004	29,868	29,912	29,684	29,571	29,773	29,612	29,447	-164.7

Totals may not add, due to independent rounding.

in September, while in Asia they reached \$2.21/b from \$2.24/b the previous month. In the US, bullish factors reversed the downward trend for refining margins, which surged by \$1.14 to \$4.39/b from \$3.25/b in September. Upon completion of the maintenance schedule in the Atlantic Basin and with uncertainty about winter weather conditions, as well as the distillate demand level, the current soft sentiment of the product markets was not expected to shift significantly over the next few weeks and products were not expected to take the driver's seat. Such a bearish view not only prevailed in the physical market, but could also be seen in the futures market, which had resulted in higher net-long positions of non-commercial players in heating oil futures over the previous few weeks. Despite this bearish view, there is still a chance that a very prolonged cold snap in the Atlantic Basin might support crude and product prices.

In the fourth quarter of last year, post-Karina and Rita conditions and very attractive refinery margins encouraged refiners across the world to maximize their throughputs and to postpone their regular maintenance schedules. However, this year, slowing demand for transportation fuel oil and switching to substitution fuels in the industrial sectors over the last few months have resulted in higher stocks for different products

and falling refining margins. This, in turn, has forced refiners to trim their throughput levels, compared with previous months. The Japanese refinery utilization rate slid to 75.7 per cent from 84.7 per cent in September, with Atlantic Basin refiners following suit. In the US, the utilization rate declined by 3.4 per cent to reach 88.1 per cent from 91.5 per cent in the previous month. Similarly, European refinery throughput fell due to the maintenance schedule and slowing margins, while the utilization rate slipped to 84.4 per cent from 86.3 per cent in the previous month. With the approaching winter season and the completion of the autumn maintenance schedule, refinery utilization rates are expected to increase across the globe in November and December.

US market

The draw on product stocks and the refinery maintenance schedule, along with some unplanned refinery outages, provided support for the market and gasoline prices have been revived from the very low levels seen in September. The gasoline crack spread against WTI benchmark crude rose to above \$12/b from about \$10/b the previous month. Higher implied demand and lower gasoline imports over the previous couple of weeks contributed to this positive development.

Upon completion of refinery maintenance and higher gasoline production, as well as lower seasonal demand, the underlying situation in the US market is not expected to change significantly over the next months. The main development in the US gasoline market in October was also the switching of the spot pricing system to RBOB futures. RBOB futures were introduced by the Nymex in October 2005, but market players have been slow in adopting them.

Furthermore, the physical and futures distillate markets in the US also gained over the previous few weeks, and the spread level versus WTI crude improved compared with September. Despite recent improvements in distillate demand and prices, no significant changes from the present situation are expected for the middle of the barrel component market in the near future as higher online capacity suggests increased ability to meet higher seasonal demand.

In the fuel oil market, recent cooler weather has led to moderate increases in demand for low-sulphur fuel oil, but high inventories and low natural gas prices continue to threaten fuel oil demand and prices and its poor performance may persist in the next months.

European market

The bearish sentiment of the European

product market, which began in the middle of August, continued, further undermining refining margins in October. The lack of arbitrage opportunities for gasoline to the US contributed significantly to the downward movement and this may deteriorate more in the coming months if European refiners increase runs in November and December and if the arbitrage opportunity for gasoline to the other side of the Atlantic Basin remains closed. The crack spread of premium gasoline against benchmark Brent crude fell from about \$25/b in August to below \$10/b in the last few weeks. The low margin for gasoline also adversely affected the naphtha market in Europe.

As for distillates, unprecedented buying of heating oil by consumers in Germany ahead of tax hikes, effective January 1, 2007, has given some support to gasoil prices, but high primary and tertiary stock levels would ease the risk of a shortage in heating oil supply over the next months. As a result, current prices and crack spreads for distillates versus Brent crude in Rotterdam are not expected to improve sharply in the near future.

The European fuel oil market is still lackluster, and the closure of arbitrage opportunities to Asia exerted more pressure on the poor performance of the bottom of the barrel component of the market. However, potential exports to the US during the heating season and lower amounts of Russian fuel oil exports during winter may improve both the low-sulphur and the high-sulphur European fuel oil market in the near future.

Asian market

With the exception of fuel oil, market sentiment for most products has not changed from the previous month and this further trimmed the crack spread for the top and the middle of the barrel components. The crack spread of gasoline versus Dubai benchmark crude in Singapore fell to \$3.29/b on November 3, from \$6.95/b in late September. Higher demand for the New Year holidays and higher Chinese export taxes effective in November may lend some support to the gasoline market, but it is not expected to lift gasoline cracks significantly.

Similarly, the performance of the naphtha market in October was relatively weak due to ample regional supply and a lack of effective demand. With the return of cracker units to normal operation in November after an extended maintenance schedule over the last few months, market players expected the crack spread of naphtha to rise in the coming months, but high inventory levels and ample future supply may still cap any bullish movement.

High distillate stocks in Japan and the weakness of regional demand put downward pressure on gasoil and jet/kero prices, forcing some Asian refiners to cut throughput levels. A cold spell in the north-west of Asia could change the current bearish momentum of the distillate market and support crude and product prices.

Despite falling gasoline and distillate crack spreads in October, the performance of the bottom of the barrel complex against Dubai crude improved slightly, due to higher Chinese demand and lower European fuel oil inflows to Asia. The high-sulphur fuel oil crack spread versus Dubai in Singapore narrowed to minus \$13.82/b in late October from minus \$14.16/b in the same period the previous month.

The oil futures market

October

The downtrend for Nymex WTI crude oil futures contracts continued into September from the previous month. With Labour Day signaling the end of the driving season and no further developments in the Mideast geopolitical arena, bearish US petroleum stock data triggered speculators to liquidate long positions, while the perception of a further downward trend enhanced the build in shorts. The front-month contract closed the first weekly period at \$68.60/b, 1.5 per cent lower. Thus, the CFTC report for the first weekly period exhibited a further drop of 13,500 contracts in non-commercial net long positions amid a healthy build of nearly 13,000 lots in short positions. Moreover, open interest saw a build of 20,600 lots to stand at 1,170,300 lots.

In the second week, the bearish sentiment was furthered by the possible resumption of full output from BP's Prudhoe Bay oil field by the end of October. News that Royal Dutch Shell's Mars platform in the Gulf of Mexico was producing more oil than before Hurricane Katrina hit last year, as well as the partial return of Nigerian crude, helped accelerate the downward trend. Furthermore, distillate stocks were healthy amid the prospect of weakening demand, as estimated by the IEA amid steady OPEC output. The Nymex WTI prompt month closed the second weekly period down by \$4.84, or over seven per cent, at \$63.76/b. The CFTC reported that non-commercials further increased their short positions by a healthy 8,300 lots, while moderately reducing their longs. Hence, net longs were down by a considerable 10,300 lots to some 37,000 contracts. Open interest saw another significant build, rising by nearly 44,000 lots to peak at a new record of 1,214,000 contracts.

In the third week, market condition enhanced the retreat on fund sell-offs for profit-taking, with the Nymex WTI front month futures contract losing \$2.10/b, or 3.3 per cent, to close the period at \$61.66/b. The CFTC reported a significant liquidation in long positions, which dropped by 15,500 lots to the lowest level since the third week of June, with the net longs down 14,500 contracts to 22,500 lots. Moreover, open interest dropped by a healthy 36,500 contracts to 1,177,400 lots.

The downward trend continued into the final week of the month with the new Nymex WTI front month contract slipping 65¢, or one per cent, to settle at \$61.01/b. A healthy distillate stock-build amid concern over slower demand growth and receding fears about this year's Atlantic hurricane season contributed to the sustained downward trend of crude oil prices which, thus far, have dropped 20 per cent since mid-July. However, the perception of a possible OPEC supply cut prevented prices from tumbling further. The CFTC reported in the fourth week that speculators increased short positions by nearly 14,000 lots to 153,000 lots, the highest level since last December. Hence, non-commercial net long positions continued to fall, closing nearly 9,000 lots narrower at 13,700 lots, the

lowest level since March. Nonetheless, open interest continued to deflate, declining by a significant 28,600 lots to 1,149,000 contracts.

The daily average for the Nymex WTI front month in September was \$63.90/b, a drop of \$9.18/b, or 12.5 per cent, from August. Non-commercial average net long positions were some 30,000 lots, or nearly 40,000 lots less than in the previous month, yet 36,000 higher than last year. Non-commercial weekly average longs dropped by 18,000 lots, while shorts rose by 22,000 lots. Open interest's weekly average was 1,177,600 contracts, 26,000 lots higher than last month and some 310,600 contracts over the year-ago level.

The forward structure

The near month spread narrowed in September with the 1st/2nd month forward structure 25¢ narrower in contango at 94¢/b. However, the further forward month spreads continued to widen, with the 1st/6th, 12th, and 18th month average spreads at \$3.86/b, \$5.65/b and \$5.92/b, or 32¢, \$1.32 and \$2.13 wider. Yet, average weekly crude oil stocks in the US in September stood at 327m b, some 5m b lower than in August, in part due to the continued impact of higher prices on inventory depletion. Yet, stocks were still 18m b higher than the same period last year.

November

The crude oil futures market continued its downward trend from the peak seen in July with the front-month average falling for the fourth consecutive month. The futures market began the month with the prospect of ample supply which weighed on the speculation of a possible earlier OPEC production cut. The CFTC reported that non-commercials had reduced long positions by a hefty 7,200 lots, while increasing the shorts by a healthy 6,300 lots. Hence, the net long positions decreased by 13,500 contracts to stand nearly flat at 130 lots, the lowest level since March. However, open interest volume saw a build of some 25,000 lots to close at 1,174,000 lots. When options were included, open interest increased by a significant 86,000 lots to a

record high of 2,055,000, with the non-commercials dropping by a hefty 21,000 lots, yet remaining net long by 34,100 contracts.

The Nymex WTI front-month contract closed the first week down by \$2.33, or nearly four per cent, to settle at \$58.68/b. In the second week, concern over a possible supply disruption from a West African nation ignited fears of a possible supply shortfall amid talks over a possible 1m b/d output cut by OPEC Member Countries. Yet, market skepticism about the effectiveness of the cut revived downward pressure. Although there was a shift in the CFTC futures volume, with non-commercial net longs inching down a marginal 170 lots to 300 contracts, open interest rose a further 19,800 to 1,193,400 lots. When options were included, open interest increased by a considerable 53,500 lots to a new record high of 2,108,000 contracts. However, Nymex WTI prompt-month contracts closed the second weekly period lower by a marginal 16¢ at \$58.52/b.

The volatility continued into the third week with forecasts for cold weather in the US pushing up natural gas futures by almost 14 per cent, prompting bullishness in home heating fuels. With the OPEC production cut on the horizon, ample supply amid a healthy stock-build in the US triggered fund sell-offs for profit-taking, offsetting any further price rally in the week. The third weekly report from the CFTC revealed that non-commercials had reduced long positions at twice the rate of the shorts. Thus, the nets dropped by almost 3,000 lots to a net short of 2,700 contracts. Open interest saw a marginal drop of 7,200 to 1,186,300 contracts. With options included, open interest saw a hefty draw of 104,700 to 2,003,400 lots, yet non-commercials remained net long by 39,800 lots. The Nymex front-month contract was 41¢ up to close the weekly period at \$58.93/b. Despite OPEC's surprise production cut of 1.2m b/d, a cold snap in the US and outages in the North Sea, the surprise healthy build in US crude oil stocks triggered fund sell-offs for profit-taking in the fourth week period. Nonetheless, the CFTC report revealed that non-commercials increased their longs at a slower rate than the shorts; hence, the net shorts wid-

ened by 2,300 to 5,000 lots. In contrast, including options, non-commercial net long positions were inflated by 1,400 to 41,300 contracts. The Nymex WTI front-month closed the weekly period up by 42¢ at \$59.35/b.

In the final week, bullish US petroleum data and supply concerns revived market strength, while volatility remained in the market. Weaker than expected Chinese demand growth inspired fund sell-offs for profit-taking amid easing geopolitical concerns. The CFTC reported that non-commercials continued to increase long positions at a slower rate, with

The volatility continued into the third week with forecasts for cold weather in the US pushing up natural gas futures by almost 14 per cent.

the net shorts increasing by 6,300 to 11,300 lots, the highest since March. In contrast, open interest increased by 24,800 to 1,158,600 lots. Moreover, including options, open interest volume increased by 53,000 to 2,043,000 contracts. Yet, the non-commercial net long positions fell by 6,700 to 34,600 lots. The Nymex WTI front-month contract was down by 62¢ to \$58.73/b.

On a monthly basis, the Nymex front-month contract averaged \$59.14/b in October, a drop of \$4.76, or 7.5 per cent, from the previous month and \$3.13/b lower than last year. Average non-commercial long positions were 158,800 lots, down 12,200 from the month before, yet 41,300 higher than last year. The short positions were up by 21,600 to 162,500 lots, which made them 12,000 higher than the same period last year. The net position dropped by 33,900 to average at net short of 3,700 contracts. Open interest averaged 1,169,100, down

8,500 lots, yet 320,000 contracts above last year. When including options, non-commercial long positions averaged 170,000, some 6,700 lots lower than the month before, yet 53,300 higher than last year. The short volume was 132,000 lots, 11,000 higher than in September and an increase of 44,300 over the year before. Net positions averaged nearly 38,000, or some 17,700 contracts lower, yet 8,900 higher than last year. Open interest was 95,500 lots higher in October and 518,500 lots more than the same period last year.

The forward structure

The contango steepened in October to a record level on healthy crude oil supply amid steady OPEC output. The 1st/2nd monthly average spread in October widened by 74¢ to \$1.69/b, with the 1st/6th, 12th, and 18th spreads at \$5.25/b, \$7.55/b and \$8.40/b for an increase of \$1.38, \$1.90 and \$2.48, respectively. Comparing this level with last year, the market was in slight backwardation for the 1st/2nd as well as the 1st/18th month with spreads at 19¢ and 56¢, respectively. However, the 1st/6th and 12th month spreads for October last year were in contango of 50¢ and 33¢/b. US crude oil stocks averaged 333.1m b last month, an increase of nearly 6m b over the previous month and nearly 20m b over last year's figure. The phenomenon also applies to gasoline and distillates, which also stood well above last year's level by 14m b and nearly 23m b, respectively, to average 113.7m b and 145m b. The steep contango continues to help stocks rise. However, lower OPEC output could change the structure, or at least narrow the spread.

The tanker market

October

In September, estimated OPEC spot fixtures showed a decline of nearly 500,000 b/d, or 3.7 per cent, to average 12.3m b/d. OPEC fixtures have fallen for the third consecutive month, although the loss was lower than the 900,000 b/d displayed during the previous two months.

However, compared with a year earlier, OPEC spot fixtures were around 2m b/d lower. The drop in spot fixtures came as a result of the combination of a decline in OPEC production and a slowdown in demand. Despite this decline, OPEC's share in total fixtures rebounded by three per cent to 67 per cent, similar to the July level, indicating that non-OPEC spot fixtures experienced a stronger decline relative to OPEC. Middle East eastbound fixtures (including non-OPEC members) rose 700,000 b/d, or 15 per cent, to 5.6m b/d, while westbound fixtures fell 300,000 b/d, or 17 per cent, to stand at 1.5m b/d, the lowest level so far this year. The increase in eastbound fixtures was due to particularly strong bookings from China and Japan.

Non-OPEC spot fixtures fell 1.0m b/d, or 14 per cent, to average 6.1m b/d, which was 1.5m b/d below a year earlier. As a result, total global spot fixtures dropped 1.5m b/d to average 18.4m b/d, the lowest level so far this year. OPEC sailings rose nearly 1.0m b/d to 23.9m b/d, but remained 500,000 b/d below the September 2005 figure. Sailings from the Middle East showed some recovery and increased by 100,000 b/d, compared with a decline of 1.2m b/d the previous month, to stand at 17.6m b/d. Preliminary data shows that US Gulf, East Coast and Caribbean arrivals declined for the first time since May 2006 to average 10.2m b/d in September, which corresponded to 500,000 b/d less than the previous month, while arrivals in North-West Europe fell by less than 100,000 b/d to 7.6m b/d. In contrast, arrivals at the Euro-Mediterranean basin witnessed an increase of more than 200,000 b/d to average nearly 4.6m b/d, the highest level in the last four months.

The crude oil tanker market showed a mixed pattern in September with the VLCC sector remaining strong and Suezmax and Aframax softening on most routes. Spot freight rates for VLCCs trading on the Middle East/eastbound long-haul route fell a marginal eight points to average Worldscale 124, while Middle East/westbound rates stayed stable at W97, the second highest level in 2006 after February, displaying 17 per cent year-on-year growth. Despite the decline, rates on the Middle East/eastbound route showed y-o-y growth of 40

per cent and were even better than in the corresponding month of 2004, where rates hit their historical yearly high level. The performance of the VLCC sector in the Middle East was attributed to tight tonnage as tankers getting fixed to Asia and the US remained firm. The healthy activity to Asia, for instance, was reflected in the number of fixtures, which averaged 78 in September, as against 72 the previous month.

In contrast to the VLCC sector, fewer enquiries resulting in plentiful supply exerted downward pressure on the Suezmax market where rates lost between 15 per cent and 20 per cent, depending on the route. The West Africa/US Gulf Coast route saw rates average W140, representing a drop of 35 points below the previous month, due to the decline in fixtures, which went from 60 in August to 44 in September, essentially due to disruptions to Nigeria's exports. Nevertheless, freight rates strengthened during the fourth week, due to limited tonnage following robust demand for West African crude, resulting in an increase in rates of more than 20 per cent on this route. Behaving similarly, freight rates on the transatlantic route dropped 25 points to W143 amid limited trade. For instance, in September almost 75 per cent of North Sea Brent crude remained in North-West Europe, while 25 per cent was exported to the US. This contrasted with the 42 per cent that was exported to the US in August. Nevertheless, in y-o-y terms, freight rates on both routes were around 20 points higher. The Aframax tanker market showed mixed movement with rates on the Indonesia/US West Coast route continuing their upward trend, gaining 11 points to settle at a monthly average of W234. Rates for the rest of the routes weakened on the back of lower activity, especially on the cross-Mediterranean and the Caribbean/US East Coast routes. However, average rates continued to decline for the fourth consecutive month on the Caribbean/US West Coast route, dropping 33 points to average W172. The decline was due to a lack of demand from charters, which was reflected in the number of fixtures, which fell by 15 compared with the previous month.

In the Mediterranean Basin, and from there to North-West Europe, rates lost around 40

points, or 22 per cent, to stand at W142-144, due to a lack of tanker chartering interest. It is worth noting that intra-Mediterranean rates in September reached their lowest level so far this year, while on the Mediterranean/North-West Europe route, rates hit the second-lowest level after March. With the exception of the Indonesia/US West Coast route, all the routes in the Aframax sector were weaker than a year earlier.

In the product tanker market, freight rates retreated from their extremely high levels, but still remained very attractive to ship-owners. In the East of Suez, freight rates for tankers of 30,000-35,000 dwt moving between the Middle East or Singapore to Asia fell a slight five per cent to average W259 and W327, respectively, due to lower chartering activity, supported by high distillate stocks. When compared with a year earlier, rates on both routes were 50 and 110 points lower, respectively. However, it should be noted that in September last year rates were driven by hurricanes Rita and Katrina and hit their historical highs. The weakness was more pronounced in the West, where excess tonnage put more pressure on ship-owners to accept lower rates, especially those doing business on the Caribbean and on the US Gulf Coast and the transatlantic routes, where rates plunged by around 80 points to W266 and W225, respectively. The sharp decline in freight rates for vessels moving to the US can be attributed to thin trade as the gasoline season came to an end. In addition, the switch from fuel oil to natural gas in the power generation sector, following the decline in natural gas prices, also contributed to the slowing of trade and, as a consequence, the decrease of freight rates. In the Mediterranean Basin and from there to North-West Europe, freight rates have been declining throughout the month and lost 32 points, or 12 per cent on average, to stand at W231 and W241, respectively, as tonnage availability has been gradually increasing. In addition, the expected heavy petrochemical autumn maintenance season in Western Europe, which could involve up to 15 per cent of capacity, contributed to the weakness in the clean market in Europe.

November

In October, OPEC spot fixtures showed an estimated increase of nearly 600,000 b/d, or 4.8 per cent, to average 12.7m b/d. Although the first increase since June compared with a year earlier, OPEC spot fixtures were around 1.83m b/d lower. The drop in spot fixtures from a year ago came as a result of the combination of a decline in OPEC production and a slowdown in demand. Despite the increase, OPEC's share in total fixtures declined by three per cent to 63 per cent, similar to the lowest level seen in 2006 – which was in March – indicating that non-OPEC spot fixtures experienced a stronger increase relative to OPEC. Middle East eastbound fixtures (including non-OPEC members) fell by 800,000 b/d, or 14 per cent, to 4.7m b/d, while westbound fixtures rose by 200,000 b/d, or 17 per cent, to stand at 1.6m b/d. The increase in westbound fixtures was due to particularly strong bookings from the US. Non-OPEC spot fixtures rose by 1.20m b/d, or 20 per cent, to average 7.3m b/d, which was 1.2m b/d below a year earlier.

As a result, total global spot fixtures increased by 1.8m b/d to average 20.0m b/d. OPEC sailings rose by nearly 1.0m b/d to 24.1m b/d, an increase of 400,000 b/d over the same month last year. Sailings from the Middle East increased by 300,000 b/d to stand at 18.1m b/d. Preliminary data shows that arrivals at the US Gulf and East Coast and the Caribbean rose to 11.9m b/d in October. Similarly, arrivals in North-West Europe increased by less than 100,000 b/d to reach 7.6m b/d. In contrast, arrivals at the Euro-Mediterranean basin averaged 4.9m b/d, the second highest level after February this year.

The crude oil tanker market showed a mixed pattern in October with the Suezmax and Aframax sectors leading the upward movement, while the VLCC sector lost some ground and declined on most routes. VLCCs trading on the Middle East/eastbound long-haul route fell by a crucial 39 points to average Worldscale 85, the lowest rate since June 2006. The October decline of 31 per cent for the Middle East/eastbound long-haul route was the second largest

drop in 2006 after the 36 per cent fall seen in March. The weak VLCC sector for the Middle East/eastbound route is attributed to the reduction of crude output by Middle East producers, the prospect of the OPEC cut and the moderate number of fixtures compared with vessel availability, not to mention the narrowing of the Brent/Dubai differential, which exerted pressure on Dubai priced crude bound for Asia. Similarly, VLCC trading Middle East/westbound rates fell by 20 points to average W77. The high US stock levels and refiners' interest in rival crude can be seen as the reason behind the

OPEC sailings rose by nearly 1.0m b/d to 24.1m b/d, an increase of 400,000 b/d over the same month last year.

20 per cent decline in freight rates compared with the previous month and the year-on-year loss of around 22 per cent.

In contrast to the VLCC sector, the Suezmax sector experienced marginal to moderate increases in spot freight rates on its different routes. The West Africa/US Gulf Coast route saw rates increase by 16 points to average W156, due to increasing output, coupled with US refiners' interest. On the other hand, freight rates on the transatlantic route increased by a marginal four points to average W147, representing a y-o-y decline of 24 per cent.

The Aframax tanker market showed mixed movement with rates on the Caribbean/US East Coast route gaining 68 points to reach an average of W240, the largest increase so far this year and only two points below the highest rate seen in 2006 for that route. Similarly, rates for shipping within the Mediterranean rebounded from

their lowest level in September to reach W199, the highest rate so far this year. Limited tonnage at the beginning of October, which eased at the end of the month, was one of the reasons for this market support. On the Mediterranean/North-West Europe route tight availability at the end of October contributed to the rate increase of 52 points to average W194. Additionally, the delays caused by the shortened daylight hours at the Bosphorus Strait, which assisted in reducing vessel availability, and the normal pattern of preparing for the winter peak in refinery runs, contributed to market trends.

In the product tanker market, freight rates continued their downward movement on almost all routes. Freight rates for 30,000–35,000 dwt tankers moving from the Middle East and Singapore to the East lost 68 and 106 points, reaching an average of W191 and W221, respectively, partially due to high tonnage availability. The decline represents a y-o-y loss of around 61 per cent, yet the extremely high freight rate levels following hurricanes Katrina and Rita in 2005 were a major reason for the y-o-y decline.

In the west, freight rates were steady with a marginal decrease of six points and two points on the Caribbean/US Gulf Coast and North-West Europe/US East and Gulf Coast routes, respectively, reaching W260 and W223. The refinery maintenance season in the west following the summer gasoline demand season, coupled with the normal stock building ahead of winter and the mild weather, were the main reasons for the steady level of trade.

In the Mediterranean, rates followed the same trend with a decline of 16 and 17 points to average W215 and W224 on the Mediterranean/Mediterranean and Mediterranean/North West Europe routes, respectively. It is worth mentioning that rates were higher than the historical average.

World oil demand

October

World oil demand in 2006

World oil demand in 2006 is now estimated

to average 84.2m b/d, with growth of 1.0m b/d, or 1.2 per cent. This represents a downward revision of 100,000 b/d to world oil demand growth from the last MOMR, due to the slowing global economy.

Warm weather, higher oil prices and the relatively lower natural gas prices affected oil demand mostly in the OECD. The removal of price subsidies in some Asian countries further dampened oil demand growth in the first half of this year.

However, in other Asian countries, booming world trade is expected to boost transport fuel consumption, despite the decrease in power plant demand for fuel oil. To meet the increasing demand in Asia, the region was forced to import fuel oil from the Middle East, in order to offset the shortfall in the supply chain.

China's economic activities are supporting the strong oil demand growth expected for this year and will last until year-end. According to official news reports by business leaders, the Zhenhai oil storage facility, with a capacity of 5.2 million cubic metres, is reported to have started filling.

Estimate for third quarter 2006

Robust US September oil demand growth did not offset the summer decline. According to the weekly EIA report, September gasoline demand in the US was up by 3.9 per cent y-o-y and total product demand rose 2.8 per cent for the same month. Refinery input increased by 13 per cent y-o-y in September in anticipation of winter demand. The high demand in September was partially due to the low 2005 base, which was affected by the hurricanes.

As a result of fuel switching, fuel oil demand was down by 39 per cent in September y-o-y. January–September average gasoline and fuel oil consumption each grew by a meager one per cent. Thus, the low oil demand in July and August caused oil consumption to decline further in the third quarter. Hence, North American third-quarter y-o-y oil demand was revised down by 170,000 b/d to show minor growth of 70,000 b/d.

Due to higher oil prices, diesel and jet fuel demand in Canada was down by five per cent

and 12 per cent in July, compared with the previous month. The increase in fuel oil demand did not offset the decline in total oil demand of more than two per cent in July.

In total, OECD third-quarter oil demand growth y-o-y was revised down by 300,000 b/d.

OECD Europe

As seen in the first half of 2006, low heating oil demand in Europe negatively affected total oil demand. Low consumption of heating oil caused oil demand in France to drop by 5.8 per cent in August. Low demand for transport fuel caused a further decline in third-quarter oil demand. As a result, third-quarter oil demand growth in OECD Europe was revised down by 100,000 b/d to end the third quarter with a decline of 80,000 b/d y-o-y.

OECD Pacific

Japan's peak gasoline season (June–August) was hit by bad weather early in the summer. Also, recent gasoline data shows that August gasoline sales were down by five per cent, which was attributed to record-high prices. Due to the continuation of the trend which had started early in the summer, Japan's August oil imports declined by four per cent y-o-y. Hence, OECD Pacific third-quarter oil demand is estimated to show a decline of 20,000 b/d.

Developing countries

Strong economic growth in the Middle East drove y-o-y third-quarter oil demand up further. Third-quarter oil demand growth for the Middle East is estimated at 300,000 b/d y-o-y to average 6.14m b/d.

Thailand's transport fuel demand was down on average for the first eight months of 2006. To some degree, the slide in demand for this fuel was a result of higher oil prices and an increase in the use of alternative fuels. Thailand's January–August demand for gasoil declined by more than eight per cent y-o-y. Hence, oil imports over the first eight months of the year were down by 1.5 per cent. Gasohol consumption in Thailand increased this year but the negative effect on conventional gasoline consump-

tion will be modest, due to the minor differential in prices, which is less than five per cent.

India's strong economic growth of 8.1 per cent has pushed new car sales up by one third so far this year; however, oil demand growth is not matching economic growth. January–August y-o-y oil demand growth is lagging behind with a moderate expansion of two per cent.

Other regions

Gasoline and fuel oil were the main products supporting oil demand growth in China in August. Gasoline consumption is expected to grow by 15 per cent, driven by the 30 per cent increase in new car sales in China in August. New car sales increased by a similar amount over the first eight months of 2006. Strong demand forced refiners to reduce gasoline exports for August by more than 60 per cent. The fuel oil margin is attracting refiners; therefore, August y-o-y imports were up by half. Growing demand for petroleum products in China caused a domestic shortage, which was offset by imports. January–August oil imports surged 15 per cent y-o-y.

FSU oil exports decreased in the third quarter, causing apparent demand to stop the declining trend and show third-quarter growth of 70,000 b/d. However, vigilance is necessary here as preliminary data shows a further decline in FSU oil exports that might be reflected in the next report.

Forecast for 2006 demand

OECD

North America's oil demand growth in the fourth quarter of this year is expected to follow the cyclical pattern of being somewhat stronger than in the first three quarters. However, slowing economic activities in the US are curbing oil usage in the fourth quarter. Hence, the expected growth in that quarter will be minor. North America's y-o-y oil demand growth is forecast to decline by 60,000 b/d to average 25.40m b/d for 2006.

The improved European economic outlook for the rest of this year is not expected to help the oil demand forecast. Y-o-y oil demand in

OECD Western Europe is projected to show flat growth for 2006. On the other side of the world, slowing Pacific economic activities, along with high oil prices, are curbing oil demand growth for the fourth quarter. OECD Pacific oil demand is forecast to shrink by 70,000 b/d y-o-y to average 8.52m b/d in 2006.

As a result of the latest revisions, total OECD oil demand for the whole year has been revised down by 100,000 b/d to end the year at minus 100,000 b/d for 2006.

Developing countries

In the wake of recent oil price declines, the Indian government warned its domestic market that there will be no price cut of petroleum products, at least not until the oil price drops below the \$50/b level. The Indian economy is enjoying healthy growth of 8.1 per cent; however, Indian oil demand growth is not expected to exceed 2.5 per cent in 2006. Unlike in other countries in the region, Thailand's refineries are keeping the same crude run rates, despite the fall in gasoil cracks. The end of the rainy season in Thailand, along with a promising agricultural season, is expected to boost gasoil demand in the fourth quarter. Oil demand growth in the developing countries is expected to reach 600,000 b/d to average 23.1m b/d in 2006.

As predicted early in the year, strong economic activities in the Middle East are expected to continue until year-end. Oil demand for the Middle East for the whole year is expected to increase by 340,000 b/d to average 6.2m b/d. With the strong growth in Asian economies, the negative effect of high oil prices on oil demand is easing. Other Asia y-o-y oil demand growth is forecast at 100,000 b/d to average 8.8m b/d in 2006.

Other regions

China's accelerating economy is still exceeding expectations with GDP estimated at 10.2 per cent for 2006. The filling of the newly-constructed strategic oil storage reportedly has begun. Barring any future government interference in curbing future demand, oil demand growth will reach 8.2 per cent by year-end. China's oil demand growth is expected to

remain strong at 540,000 b/d to average 7.1m b/d in 2006.

Increasing attention should be paid to China's new plan to boost ethanol output via extensive subsidies. The plan is aimed at boosting ethanol production by 300 per cent in four years. As seen elsewhere, especially in the US, there is a major push towards biofuel consumption; however, even with the current high oil prices, this fuel still needs subsidies to survive.

World oil demand growth for next year is forecast to grow at a moderate rate of 1.3m b/d, or 1.5 per cent.

Forecast for 2007 demand

The world oil demand forecast for 2007 remains unchanged. World oil demand growth for next year is forecast to grow at a moderate rate of 1.3m b/d, or 1.5 per cent. There is no major economic growth forecast revision that could affect next year's oil demand forecast. China and the Middle East will lead world oil demand growth with 420,000 b/d and 300,000 b/d, respectively.

November

World oil demand in 2005

Latest data from the OECD has resulted in a minor upward revision of 70,000 b/d to total world oil demand. North America and Western Europe were revised up by 40,000 b/d and 30,000 b/d.

World oil demand in 2006

World oil demand in 2006 is estimated to

average 84.26m b/d, representing growth of 1.0m b/d, or 1.2 per cent, which represents no major change from the last MOMR.

US oil demand is finally picking up following a normal fourth-quarter upward cycle. Other OECD countries are following suit with reasonable demand growth in October. Given the expected normal winter temperatures, this upward trend is expected to continue until year-end.

Following the increasing trend in Europe to support biofuels via intensive subsidies, Finland is proposing a new law to increase biofuel consumption by almost six per cent by 2010. A similar programme exists in the US to increase biofuel demand, through tax cuts, until 2012.

Other Asia economic activities are expected to be stronger for the rest of 2006, which is anticipated to pull oil demand growth upward. As a result of the strong economy and a booming transportation sector, India's oil demand is expected to show moderate growth in 2006. The Middle East region continues to experience a strong momentum in oil consumption, marking the second largest growth in world oil demand this year.

China's new strategic oil storage is officially ready and the filling process has begun, official media have reported. The filling process is based on the oil price level as the Chinese want to take advantage of the recent drop in crude oil prices. China's new car sales are estimated to exceed five million units this year. The large growth in vehicle numbers in China is driving transport fuel demand. Hence, China's oil demand is exceeding expectations in the second half of 2006 and the country is gearing up its energy strategy, which emphasizes energy saving and efficiency. Furthermore, China is pushing its biofuel programme with ambitious plans to increase production by an average of 40 per cent annually.

Estimate for third quarter 2006

North America's oil demand is picking up momentum and tracking a typical winter upward cycle. According to the EIA, US oil demand grew by 1.1m b/d, or 5.5 per cent, in October y-o-y, twice the growth of the previous month. However, in cumulative terms, US

oil demand changes so far this year are still minus 0.4 per cent y-o-y. The biggest increase has been in motor gasoline, which increased by 360,000 b/d. However, the largest decline was in fuel oil due to fuel switching in power plants which started early in the year. Unlike September, US net oil imports in October were lower, but still on the high side with 7.3 per cent y-o-y growth.

The summer driving season, low gasoline prices and holidays in Canada drove gasoline demand up by 2.7 per cent in August over the previous month. However, total y-o-y petroleum product demand was slightly down for the month. Canada's agricultural season also pushed diesel demand up further in August, after stagnant demand in July. Meanwhile, growth in US oil demand in September was not enough to offset the large decline that occurred in July. Hence, North America's third-quarter y-o-y oil demand was revised down by 130,000 b/d, representing a minor decline of 60,000 b/d.

In total, OECD y-o-y third-quarter oil demand growth was revised down to 250,000 b/d.

OECD Europe

Warm October weather affected gasoil demand in Germany. However, gasoil imports in November should pick up in the second half of the month prior to a 16 per cent VAT increase scheduled to take effect in January 2007. As a result of intensive subsidies, biofuel use is getting stronger across the OECD region. A new production plant in Germany started last month with a capacity of 100,000 tonnes of biodiesel annually. This new plant puts Germany's biodiesel capacity at 212,000 t a year. Due to the massive fuel switching among power plants, moderate economic activity and soft transport fuel demand, OECD Europe's third-quarter oil demand is estimated to decline by 100,000 b/d y-o-y to average 15.46m b/d.

OECD Pacific

As a result of lower demand, Japan's y-o-y oil imports fell by two per cent for the month of September. Hence, petroleum product sales declined by 6.5 per cent in the same period y-o-y.

Fuel oil and kerosene were the products that declined the most, each losing 13 per cent. Along with slow industrial production, transport fuel consumption has been on the decline and affecting third-quarter total oil demand in the region. As a result, y-o-y OECD Pacific third-quarter oil demand growth was revised down by 80,000 b/d to show a total decline of 100,000 b/d.

Developing countries

Strong oil demand growth in Middle Eastern countries has continued as expected. Third-quarter y-o-y oil demand growth is estimated at 300,000 b/d to average 6.3m b/d.

As a result of high oil prices and low economic activities, Taiwan's September y-o-y consumption of petroleum products fell by almost eight per cent. Fuel oil demand had the largest y-o-y decline of 5.8 per cent in September. Low consumption of fuel oil and diesel in power stations and fishing industries were the main factors behind the large drop in September. Although diesel prices in Taiwan have risen three times so far in the year, August y-o-y diesel consumption still rose by 1.5 per cent, but then sharply dropped in September.

India's oil demand showed strong y-o-y growth of 5.9 per cent to average 2.5m b/d in September. Transport and agricultural consumption were the main factors behind the month's robust growth. January-September y-o-y gasoline consumption grew by more than 5.5 per cent, followed by diesel with growth of 4.8 per cent.

For total developing countries, y-o-y third-quarter expansion came as expected, growing by 550,000 b/d to average 23.11m b/d.

Other regions

Strong economic activity, along with the price shield that protects Chinese transport consumers, have kept oil imports and demand on the rise so far this year. The latest data indicates that China started filling its long-awaited strategic storage of 32.7m b, which has boosted oil imports. Hence, y-o-y third-quarter oil demand was revised up to reflect the stronger apparent oil demand by 150,000 b/d, which represents growth of 580,000 b/d y-o-y. China's y-o-y

January–September crude imports and refinery runs surged by 18.3 per cent and 5.2 per cent, respectively. In total, net oil imports, including products, grew by 24 per cent for the same period. China's apparent September oil demand averaged 7.4m b/d, representing y-o-y growth of 600,000 b/d, or around ten per cent. It should be noted that China's apparent demand in 2005 was exceptionally low, and furthermore the filling of the new strategic oil reserve accounts for some of the apparent demand, especially in the third and fourth quarters. Crude imports jumped by 29 per cent in September y-o-y. The agricultural season pushed up demand for diesel, which encouraged refiners to minimize kerosene production. Increasing fuel oil demand caused imports to increase by 19 per cent in September y-o-y. The booming airline business pushed kerosene imports to a record high as apparent kerosene demand grew by 25 per cent y-o-y in September. Due to growing demand, China's petroleum product additive imports also grew strongly.

As a result of slower world oil demand, Former Soviet Union (FSU) oil exports declined in the third quarter, which was not matched by production, causing apparent demand to show moderate growth. FSU third-quarter growth is estimated at 80,000 b/d y-o-y.

Forecast for 2006 demand

OECD

Lower oil prices are expected to lead to a moderate increase in oil demand in North America. However, slowing economic activity in the US is likely to curb oil use in the fourth quarter. Nevertheless, oil demand is expected to follow the cyclical winter pattern and to be somewhat stronger than the first three quarters. Y-o-y fourth-quarter growth was revised up by 100,000 b/d to reflect strong winter demand, although expected demand growth will not be sufficient to offset the total year demand decline. For the year, North America's oil demand changes are forecast to decline by 80,000 b/d to average 25.42m b/d.

A similar fourth-quarter oil demand growth pattern is expected to occur in all the OECD

regions. OECD countries' fourth-quarter oil demand growth is estimated at 600,000 b/d y-o-y to average 50.5m b/d.

Developing countries

The Indian economy experienced robust growth of 8.1 per cent and transport and agricultural fuels are expected to grow strongly. However, total oil demand growth for 2006 is not expected to exceed 2.5 per cent.

Other Asia is expected to show stronger oil demand growth in the fourth quarter, compared with the previous quarter. Other Asia oil demand growth is estimated to increase by 180,000 b/d y-o-y to average 8.8m b/d in the fourth quarter.

Led by the Middle East, oil demand growth in the developing countries in 2006 is expected to reach 600,000 b/d to average 23.0m b/d.

Other regions

In an effort to curb crude oil exports, China increased its export tariff by five per cent. With the end of the summer season, China's fourth-quarter demand should be more stable. However, the filling of the newly constructed strategic oil reserves may play a major role in China's fourth-quarter oil demand. There will be no seasonality that may drastically affect petroleum product demand in the fourth quarter. With this in mind, if there is no change in gasoline export rates, then China will have an excess of gasoline supply until year-end. Due to the unexpected growth in China's oil demand in the third quarter, y-o-y oil demand growth was revised up by 40,000 b/d to show an increase of 570,000 b/d for 2006.

Forecast for 2007 demand

The world oil demand forecast for 2007 has been increased slightly to reflect the upward revision on China's oil demand growth. As a result, world oil demand growth for next year is forecast at a moderate rate of 1.33m b/d, or 1.57 per cent. A minor upward revision to China's GDP growth forecast has affected oil demand prospects for 2007. China and the Middle East will lead world oil demand growth with 450,000 b/d and 300,000 b/d, respectively.

World oil supply

October

Non-OPEC

Forecast for 2006

Non-OPEC oil supply is expected to average 51.3m b/d in 2006, representing an increase of 1.1m b/d over 2005 and a slight upward revision versus the last assessment. A series of adjustments have been made, including the addition of historical data for biodiesel in OECD countries, as well as revisions to oil project schedules in a number of countries, but primarily in the US and Australia.

The 4Q06 forecast for the US has been revised up – Alaska's Prudhoe Bay is back earlier than previously assumed. Additionally, preliminary September data shows a stronger-than-anticipated rebound in total US supply and a portion of this has been carried through to 2007.

In Australia, most production losses associated with earlier hurricane activity in the Carnarvon Basin have been resolved and this has resulted in a significant upward revision to the 3Q06 estimate and the full-year forecast. Preliminary data for the month of August and September puts total non-OPEC supply at around 50.9m b/d and 51.7m b/d, respectively, representing y-o-y growth of 900,000 b/d and 2.8m b/d. Unplanned shutdowns in non-OPEC are now estimated to have been reduced to less than 100,000 b/d from an average of 600,000 b/d in the first half of the year.

OECD

OECD oil supply is expected to average 20.4m b/d, unchanged from last year and an upward revision of 200,000 b/d versus the last assessment. The estimate now includes new data for biodiesel covering the US and EU countries that were previously excluded. Unlike data for ethanol, which is widely available and is already part of the assessment, biodiesel production statistics for OECD countries have only just recently become reliable and can be included with a higher degree of confidence in

the supply statistics. Other positive revisions in the OECD include upward adjustments to 3Q06 data of several countries and the outlook for projects in the US and Australia. Total oil supply for OECD countries in August and September is estimated at 20m b/d and 20.7m b/d, respectively.

United States

Total oil supply is expected to average 7.4m b/d in 2006, representing an increase of 100,000 b/d versus last year and an upward revision of 95,000 b/d versus last month's assessment. On a quarterly basis, total US supply is expected to average 7.5m b/d and 7.6m b/d in the third and fourth quarters, respectively.

The revision is due to three reasons. First, the giant Prudhoe Bay field is now back onstream, and only around 50,000 b/d of production is likely to remain shut in until the end of the year versus an earlier assumption of 200,000 b/d. The upward revision assumes

added back. The season is officially over in a few weeks, but climatic and weather conditions are not conducive for the development of intense hurricanes. Preliminary data indicates that US oil supply averaged 7.3m b/d in August and 7.6–7.7m b/d in September.

Mexico and Canada

Mexican oil supply is expected to average 3.7–3.8m b/d in 2006, unchanged from last month's assessment. In contrast to conventional wisdom, total oil supply remained just above 3.7m b/d in September and as previously indicated is not expected to oscillate much outside this range. No material maintenance is expected during the rest of the year – one of the key reasons for significant month-on-month fluctuations recently. It should be mentioned that, given the type of Mexican crude, recent demand trends and inventory levels in the US, future production from the country could show a slight decrease in the months ahead.

Canadian oil supply is expected to average 3.2m b/d in 2006, representing an increase of 180,000 b/d versus 2005 and unchanged from last month's assessment. The country produced 3.2m b/d in September, a level that will rise further once the production that has been shut in or is in maintenance (Terra Nova, Syncrude upgrader, Suncor Coker, etc) comes back and new fields in the tar sands ramp up from October onwards. Year-to-date total production from the tar sands has averaged 1.1m b/d, which is 170,000 b/d higher than in the same period in 2005. The tar sands account for 33 per cent of total Canadian supply and represent the only source of growth in Canada. The recent decline in world oil prices in no way jeopardizes current or future projects as even the most expensive schemes have good economics at \$30/b for WTI.

Western Europe

Oil supply in OECD Europe is expected to average 5.5m b/d in 2006, representing a decline of 300,000 b/d versus 2005. However, the baseline has been revised up following the inclusion of historical data for biodiesel production in a number of EU countries. Total biodie-

sel production in OECD countries is assessed at 14,000 b/d in 2000, 17,000 b/d in 2001, 21,000 b/d in 2002, 30,000 b/d in 2003, 39,000 b/d in 2004, 71,000 b/d in 2005 and 83,000 b/d in 2006, of which EU countries account for 90 per cent of the total. Importantly, this data has only just recently become reliable and may be included with a higher degree of confidence in the statistics from now on.

Looking at conventional oil, Norwegian oil supply is expected to average around 2.8m b/d in 2006, broadly unchanged from last month's assessment. Preliminary data for August and September shows that production was around 2.75m b/d. Statoil, the largest operator in Norway, reduced its forecast for the year and 2007, based on a number of factors, including technical issues at the new Kristin field. More recently, the Snorre field and Draugen fields have been shut for a safety review and are unlikely to be back before the end of the month – as a result the forecast may be subject to revisions. UK oil supply is expected to average 1.7m b/d, unchanged from last month's estimate. Preliminary data for August and September indicates that UK oil supply averaged 1.6m b/d in both months. Year-to-date UK oil supply has averaged 1.7m b/d. The large Buzzard field (200,000 b/d) is on track to start before year-end (November) and this will make a sizeable contribution in 2007.

Asia Pacific

Oil supply in the OECD Asia Pacific region is expected to average 570,000 b/d in 2006, which represents an upward revision of 36,000 b/d, compared with last month's assessment. Australian oil supply is now seen averaging 510,000 b/d in 2006. As reported in the previous MOMR, oil production in the Carnarvon basin, Australia's largest producing area, was hit in January, due to a combination of hurricane-related damage and technical problems in some fields. Given the severity of the reported damage and the lack of information, it was assumed that this production would come back gradually in 2007. However, the most recent official statistics show a significant recovery in oil production in the Carnarvon

Oil supply in OECD Europe is expected to average 5.5m b/d in 2006, representing a decline of 300,000 b/d versus 2005.

that the recent power failure that cut the field's production on October 11 will be short-lived. Second, total output from the Lower onshore 48 continues to perform better than expected (see previous MOMR), while third, most of the oil production that was shut in during 2005, due to the hurricane activity, has recovered. Finally, yet importantly, the US Gulf of Mexico (GoM) has not been exposed to a single hurricane this year. Therefore, assumed losses for the third and fourth quarters are no longer justifiable or realistic and as such have now been

basin that has led us to believe that most problems have been resolved. Additionally, the new Enfield project (100,000 b/d capacity), also located in the Carnavon basin, is producing above 70,000 b/d and this, combined with the recovery at other fields, pushed total Australian oil supply in July to much higher levels than previously anticipated. As a result, the forecast for 3Q06 has been revised up 100,000 b/d to 570,000 b/d and 4Q06 by 38,000 b/d to 580,000 b/d.

Developing countries

Oil supply in the developing countries is expected to average 13.1m b/d in 2006, an increase of 500,000 b/d over 2005, and slightly lower compared with last month's report. Downward revisions have been made to the outlook for Vietnam, Brazil, Angola, and the Ivory Coast. On a quarterly basis, total oil supply in the developing countries is expected to average 13.1m b/d and 13.4m b/d in the third and fourth quarters, respectively, which represents a downward revision of 100,000 b/d in the third and 200,000 b/d in the fourth quarter. Total oil production for developing countries in August and September is estimated at 13.0m b/d and 13.1m b/d, respectively.

Vietnam's oil supply is expected to average 380,000 b/d in 2006, unchanged from last year and 20,000 b/d lower versus last month. The most recent estimate shows that production has been averaging around 380,000 b/d, which is below our forecast of 400,000 b/d for 3Q06 and 4Q06. Much of the data remains preliminary, but given the trend, a lack of projects this year, and the end of maintenance, it is unlikely that oil production will rebound to match expectations. January was the last month in which we saw production of 390,000 b/d, but this has been followed by weaker output in subsequent months.

Brazil's oil supply is expected to average 2.18m b/d in 2006, representing an increase of 150,000 b/d versus 2005 and 38,000 b/d lower versus last month's estimate. As noted in the last MOMR, as well as previous reports, the weak performance seen in the first half of this year was due to extended maintenance

and a slow ramp up of new projects. However, since July, Brazil's oil supply has been on the rise. August data and preliminary September estimates show total oil supply levels of 2.1m b/d and 2.13m b/d, respectively, compared with an average of 2m b/d for the first part of the year. The P 50 field (180,000 b/d), which started in 2Q06, was producing at half its rate not long ago. The delay in the ramp up of this field has affected Brazilian oil production, but all indications are that it will reach capacity by year-end. A similar situation applies to the new Goldfinho 1 field (100,000 b/d). A month ago it was still producing at half its capacity, but all indications are that production is on the rise again. As a result, the estimate for Brazil for 3Q06 has been revised down by 80,000 b/d. For 4Q06, the impact of 3Q06 revisions, as well as a delay in the start-up of the small Piranema B (20,000 b/d) to next year, has impacted on the estimate slightly.

Angola's oil production is expected to average 1.4m b/d in 2006, representing an increase of 170,000 b/d versus 2005 and 25,000 b/d lower than last month's estimate. The forecast for 3Q06 and 4Q06 has been revised down by 20,000 b/d and 80,000 b/d, respectively. It was previously assumed that the Marimba tie back (80,000 b/d) would start at the end of this year, but that looks more likely to be at the end of 2007. More importantly, the late start-up of the Dalia field (240,000 b/d) during 4Q06 (November-December the latest estimate) has resulted in a lower contribution to the 2006 estimate than previously thought.

The historical data and outlook for the Ivory Coast has been revised down following reports that its only deepwater field, Baobab, is underperforming, due to technical problems with sand control. The field started in 3Q05, has a capacity of 60,000 b/d, but recent reports suggest that it has been producing at less than half of this level for some time. The Ivory Coast's total oil production increased from 45,000 b/d in August 2005 to 100,000 b/d by year-end. However, given the technical troubles at Baobab, total supply from the country has inevitably come down to around 70,000 b/d since early this year. A new satellite field, West Spoir, started

in 3Q06, making a small contribution, but not enough to replace the drop at Baobab. It is expected that a number of well interventions will be needed and that may only be possible next year, perhaps by the end of 2007.

Sudan's oil production forecast has been revised up slightly, based on preliminary production estimates for new fields that have come onstream this year. In 2006, Sudan is expected to produce, on average, 420,000 b/d, representing an increase of 80,000 b/d versus 2005 and an upward revision of 13,000 b/d. All new fields are now producing (Neem Block 4; Block 3 and 7; Thar Jath in Block 5Ba) and will more than offset mature production in the country for years to come. Sudan's oil production, which averaged 360,000 b/d in the first part of 2006, may have reached the 500,000 b/d mark in September as it is expected to continue to increase close to 600,000 b/d next year. The additional crude resulting from these new fields is termed Dar Blend, a medium-heavy sweet grade oil with a high TAN content. Several cargoes were offered to Asian customers in September, but given the poor quality and adequate supply availability Dar Blend was offered at a very large discount and is still struggling to find customers.

FSU, other regions

FSU oil supply is expected to average 12m b/d, an increase of 500,000 b/d versus 2005, unchanged from last month. The forecast for other regions (i.e. China and other Europe) also remains unchanged with total oil supply expected at 3.8m b/d in 2006, representing an increase of 70,000 b/d versus 2005. Total oil production for the FSU in August and September is estimated at 12.2m b/d.

Russia

Russian oil supply is expected to average 9.7m b/d in 2006, an increase of 200,000 b/d versus 2005 and broadly unchanged from last month's estimate. The latest data shows that production averaged 9.78m b/d in September, which is a new record-high. Year-to-date Russian output has increased 240,000 b/d. Oil production growth should moderate in the months ahead, but will continue to grow,

driven by the Sakhalin 1 project. In the previous MOMR, it was highlighted that the net y-o-y contribution of state controlled firms, or oil companies in which the state has strong influence, became positive in April 2006 after 13 months of zero growth. For much of this period, all other producers saw average y-o-y growth of 300,000–400,000 b/d each month, but in June and July their contribution decreased to just 100,000 b/d. Although the main technical reason for this slowdown is unknown at this stage, it is still a worrying sign. Non-technical factors that affect the Russian oil industry are well known and have already been incorporated to a large degree in next year's forecast.

Caspian

Azeri oil production is expected to average 640,000 b/d in 2006, representing an increase of 200,000 b/d versus last year. The outlook for Azeri oil production growth has been revised down slightly following a recent announcement to shut the 130,000 b/d Chirag field in October for ten days of maintenance. Year-to-date Azeri oil production has risen 200,000 b/d, compared with the same period last year. Preliminary data for September puts total Azeri oil production at around 690,000 b/d. Recent reports indicate that the new East Azeri field will start at the end of 2006, which is earlier than previously estimated.

This phase will provide another 200,000 b/d boost to the giant ACG field, which is producing well over 550,000 b/d. The impact of an early start is a positive development for Azerbaijan; but it is assumed that the main contribution will come from early 2007 onwards.

Elsewhere, Kazak oil production is expected to average 1.3m b/d in 2006, an increase of 80,000 b/d over last year. Data for the month of September puts oil production at 1.36m b/d. Year-to-date Kazak oil production has risen 70,000 b/d, compared with the same period last year. The next expansion phase of the Tengiz field is now undergoing testing for four months before it starts in the middle of next year. Maintenance levels and short-term production failures at the two biggest fields – Tengiz and Karachaganak – continue to occur.

China

The estimate for China remains unchanged. Total oil supply is expected to average 3.7m b/d, representing an increase of 70,000 b/d over last year; September data shows average oil production of 3.71m b/d. Year-to-date output has risen by just 60,000 b/d, compared with the same period last year. The impact of typhoons has affected some of China's offshore oil fields and may have caused more shut-downs than expected, thus reducing supply growth slightly.

It is worth mentioning that in the case of China, the historical or current production data shown in the MOMR does not include biofuels, which is estimated at around 50,000 b/d (2005), mainly ethanol from wheat. It is known that China may reduce production of ethanol and shift to biodiesel, where the constraints are less, so in effect we may see a reduction of biofuels in the short term. Additionally, coal-to-liquids is excluded from current oil production estimates. In both cases, this data will need to be included at some stage once reliable statistics become available and as projects start.

Forecast for 2007

Non-OPEC oil supply is expected to average 53m b/d in 2007, representing an increase of 1.8m b/d versus 2006 and broadly unchanged from last month's forecast. On a quarterly basis, non-OPEC supply is expected to average 52.5m b/d, 52.6m b/d, 53m b/d, and 54.1m b/d in the first, second, third and fourth quarters, respectively.

The FSU region is expected to see growth of 500,000 b/d to 12.6m b/d with Caspian countries together expected to deliver more growth than Russia. Oil supply in the African region is forecast to grow by 500,000 b/d to 4.6m b/d. Most of the increase is expected to come from deepwater Angola, Equatorial Guinea and onshore Sudan. Oil supply in the North American region is expected to grow by 400,000 b/d to 14.7m b/d. The increase is driven by an unwinding of losses and additions in the US GoM deepwater and expansion of Canadian oil sands. Oil production in the Latin American region is expected to grow by 100,000 b/d to 4.6m b/d. Regional growth

is likely to be driven by a modest increase in Brazil.

Elsewhere, OECD Europe is expected to show a modest increase in growth of 100,000 b/d to 5.6m b/d, driven by the unwinding of production shut-ins in Norway, and the start-up of the Buzzard field in the UK. A normal maintenance schedule is assumed. OECD Asia is expected to see an increase of 100,000 b/d to 700,000 b/d. The forecast now reflects the return of some of the production that was lost in the Carnavon basin due to cyclone activity in Australia. Oil supply in other Asia and the Middle East is expected to remain broadly flat at 2.8m b/d and 1.8m b/d, respectively. China's oil production is forecast to increase to 3.8m b/d, or by around 60,000 b/d versus 2006.

Revisions

The forecast for 2007 has been subject to a number of revisions, including the addition of new biodiesel production statistics to the baseline of several OECD European countries, changes to project schedules in the US, Brazil, Angola, and Azerbaijan, among others, and the impact of historical revisions to the data of several countries and estimates for 2006. On a quarterly basis, total non-OPEC supply has been revised up in 1Q07 by 94,000 b/d, down 67,000 b/d in the third quarter and up 96,000 b/d in the fourth quarter.

The inclusion of biodiesel statistics increases the baseline for OECD Europe next year by around 90,000 b/d, but the impact on overall growth is negligible. In the US, the growth forecast for 2007 has been revised up by 40,000 b/d to 7.68m b/d. The old assumption that Prudhoe Bay will return quickly from 1Q07 onwards is no longer valid as the field is already onstream. This month's report assumes that the 50,000 b/d that remains shut in in the greater Prudhoe Bay area will gradually return next year. Also, the Thunder Horse field, which back in July 2006 was expected to start at the end of 2006, then last month, then moved to 2Q2007, has been pushed back again to the end of 2008, possibly early 2009, according to some reports. Last month's 2007 US forecast only included around 80,000 b/d from this field on

average, as it was always the case that it would take more than one year to reach fully capacity. The Atlantis field is still expected to start in 2Q07 and no changes have been made to the ramp up period. Finally, yet importantly, the large upward revision to total US oil supply in 4Q06 has increased the baseline for next year.

The outlook for Brazil has been revised down by 29,000 b/d to 2.34m b/d. The new expected start for the P 54 field (180,000 b/d) is 4Q07 versus a previous assumption of the early second part of 2007. The forecast also assumes a slightly lower ramp up in the remaining fields, including Golfinho Module 2, Espadarte Module II and Roncador P 52, but potential delays into 2008 should not be ruled out. Angola's oil supply outlook has been revised down by 30,000 b/d to 1.73m b/d. The Kizomba Phase I module is now expected to start in 1Q08, instead of 4Q07. The contribution of the Marimba tie back has also slipped from the end of 2006 to the end of 2007, and this has had a negative impact on the growth forecast. Other countries that have seen their outlook revised include Canada, Mexico, Norway, Australia, Vietnam, Chad, Egypt, Gabon, Kazakhstan, Azerbaijan, and China. In most cases, the revisions are in the range of 10,000 b/d.

OPEC NGLs and non-conventional oils

In 2006, OPEC NGLs and non-conventional oils are expected to average 4.3m b/d, representing an increase of 200,000 b/d over the previous year. All of the growth is coming from NGLs. In 2007, expected growth for OPEC NGLs remains unchanged at 200,000 b/d, but following a recent announcement by the Venezuelan Ministry of Energy and Petroleum that Orimulsion will no longer be produced from January 1, 2007, the monthly report will exclude Orimulsion (~100,000 b/d) from the non-conventional memo item from 2007 onwards. What is left in this item is the volume associated with Saudi Arabia's MTBE production.

OPEC crude oil production

Total crude oil production averaged 29.7m b/d in September, representing a drop of 100,000 b/d from last month, according to

secondary sources. Iraq's oil production was 2.1m b/d.

FSU net exports

In 2006, FSU net oil exports are expected to average 8.3m b/d, an increase of 600,000 b/d over the previous year, slightly higher than previously estimated. September crude exports reached 6m b/d, unchanged from the previous month (revised data). Including products, total net oil exports were 8m b/d in the month. Looking at October, it is likely that total oil exports via rail will fall slightly, whilst loading from the Black Sea and Baltic Sea will increase substantially. Increasing export tariffs and lower oil prices are not a good incentive for high-cost exports, but demand weakness may be a reason for several producers increasing exports regardless. Next year, total FSU net oil exports are expected to rise to 8.8m b/d, or by 500,000 b/d, versus 2006, driven by new sources of crude from the Caspian and Russian product exports.

November

Non-OPEC

Forecast for 2006

Non-OPEC oil supply is expected to average 51.2m b/d in 2006, representing an increase of 900,000 b/d over 2005 and a slight downward revision from the last assessment. An upward revision to the 2005 base, sharper than expected downward revisions to the September 2006 and 3Q06 data for the US, Denmark, and Kazakhstan, and a downward revision to the 4Q06 outlook for Russia, account for the bulk of the change. Actual data for the month of August shows that total non-OPEC supply averaged 51m b/d, in line with the preliminary estimate. However, September output is now assessed at 51.3m b/d, representing y-o-y growth of 2.3m b/d, down 400,000 b/d from preliminary figures. Sharper-than-expected downward revisions to September 2006 monthly data for the US, Denmark, and Kazakhstan account for most of the revision. Preliminary data for the month of October puts total non-OPEC sup-

ply at around 51.7m b/d, representing a y-o-y change of 2.1m b/d. October is the fourth consecutive month this year with a y-o-y change of more than 1m b/d.

OECD

Total OECD oil supply is expected to average 20.4m b/d, slightly lower than in the last assessment. On a quarterly basis, total oil supply is expected to average 20.3m b/d and 21m b/d in the third and fourth quarters, respectively, which represents a downward revision of 80,000 b/d in the third quarter and 14,000 b/d in the fourth quarter. Preliminary data for the month of October puts total oil supply in OECD countries at 20.7m b/d.

United States

Oil supply in the US is expected to average 7.4m b/d in 2006, representing an increase of 60,000 b/d over last year and slightly lower than in last month's assessment. On a quarterly basis, US oil supply is expected to average 7.4m b/d and 7.6m b/d in the third and fourth quarters, representing a downward revision of 21,000 b/d and 27,000 b/d, respectively. The revisions are due to three reasons. First, the latest US data provided by the Department of Energy shows a significant revision to NGL production versus preliminary estimates and weekly indicators. Second, revisions in other categories, such as oxygenates, have been taken into account. Finally, Alaskan production was affected again in October by bad weather shortly after the Prudhoe Bay field recovered. Output from Prudhoe Bay seems to have normalized from October 27.

As previously indicated, the US Gulf of Mexico has not been affected by hurricanes this year and, as a result, production has remained steady. The hurricane season is officially over in two weeks, and climatic and weather conditions are still not conducive for the development of intense hurricanes. Actual data for the month of September shows that total US oil supply averaged 7.42m b/d – down 200,000 b/d from preliminary figures. Preliminary data for the month of October indicates that US oil supply averaged 7.5m b/d.

Mexico and Canada

The outlook for Mexico remains unchanged. Total oil supply is expected to average 3.7m b/d in 2006. Current production is running at 3.69m b/d, a level that could rise slightly in November and December provided there is sufficient demand in the US. Recent reports suggest that the giant Ku-Malooop-Zaap complex is producing over 400,000 b/d. A new large FPSO with a 200,000 b/d capacity is expected to arrive before year-end and to start production at the end of the 1Q07. This will be a key project that is expected to help maintain, if not increase, total Mexican heavy crude output.

Canadian oil supply is expected to average 3.2m b/d in 2006, representing an increase of 160,000 b/d versus 2005 and slightly less than in last month's assessment. The most recent official data indicates that historical production was lower than previously estimated in 1Q06 and 2Q06, resulting in a revision to the base. In October, the country produced a new output record of 3.35m b/d, a level that will rise further now that most of the production that was shut-in, or in maintenance, has returned.

Western Europe

Oil supply in OECD Europe is expected to average 5.5m b/d in 2006, representing a decline of 300,000 b/d versus 2005. On a quarterly basis, total oil supply is expected to average 5.3m b/d and 5.6m b/d in the third and fourth quarters, respectively. Total oil supply in September is assessed at 5.33m b/d (down 100,000 b/d from preliminary estimates) and in October at 5.44m b/d.

The outlook for Norway and the United Kingdom remains unchanged. Norwegian oil supply is expected to average 2.8m b/d in 2006, or 140,000 b/d less than last year. Preliminary data for October shows that production was around 2.7–2.8m b/d, but should rebound in November and December as the impact of temporary field shutdowns recedes and maintenance is completed for the year. UK oil supply is expected to average 1.7m b/d, a drop of 160,000 b/d versus last year. Preliminary data for October indicates that UK oil supply averaged 1.7m b/d, but total supply is also expected

to rebound in November and December. The only recent surprise in the North Sea is that Danish oil production was down 100,000 b/d to average 260,000 b/d in September, according to official statistics, due to maintenance. The previous forecast did not include such an extended level for maintenance. As a result, both the estimate for 3Q06 has been revised down, as well as the full-year forecast. Danish oil supply is expected to average 350,000 b/d, around 30,000 b/d less than in 2005 and 10,000 b/d less than previously thought.

Asia Pacific

Oil supply in the OECD Asia Pacific region is expected to average 570,000 b/d in 2006, flat from last year and broadly unchanged from last month's assessment. On a quarterly basis, total oil supply is expected to average 650,000 b/d in the third and fourth quarters. Australian oil supply is expected to average 510,000 b/d in 2006, or 10,000 b/d lower than last year. The forecast remains unchanged despite the fact that the 3Q06 estimate has been revised up by 28,000 b/d to reflect recent official statistics. The main reason for leaving the forecast unchanged is that the new Enfield field, which hit an output figure of 70,000 b/d, is facing water problems which will prevent it from reaching the expected level of 100,000 b/d in the short term. Preliminary data for the month of October puts total oil supply in Australia at 600,000 b/d.

Developing countries

Oil supply in the developing countries is expected to average 13.1m b/d in 2006, an increase of 500,000 b/d over 2005, and slightly higher from last month's report. On a quarterly basis, total oil supply in the developing countries is expected to average 13m b/d and 13.4m b/d in the third and fourth quarters, respectively, which represents a downward revision of 53,000 b/d in the third quarter and an upward revision of 33,000 b/d in the fourth quarter. Downward revisions have been made to the data (historical and outlook) of India, Brazil, and Trinidad, which have been offset by upward revisions to the data for Angola,

Ecuador, Egypt, Equatorial Guinea and Sudan. Total oil supply in the developing countries in October is estimated at 13.15m b/d.

India's oil supply is expected to average 780,000 b/d in 2006, which represents an increase of 20,000 b/d versus last year. The most recent official data indicates that production in 2Q06 and 3Q06 averaged slightly less than previously thought, largely due to weather problems. The estimate for 2Q06 and 3Q06 has been revised down by 11,000 b/d and 38,000 b/d, respectively. Given this and the lack of new projects this year, it is unlikely that oil production will recover entirely in 4Q06 to match earlier expectations. As a result, the outlook has been revised down slightly.

Brazil's oil supply is expected to average 2.18m b/d in 2006, representing an increase of 140,000 b/d over 2005, but 10,000 b/d lower than last month's estimate. Actual data for 3Q06 came in slightly lower than estimated and this has impacted on the full-year forecast. Recent reports suggest that the Espadarte Module II FPSO (100,000 b/d) will start before year-end, much earlier than expected. Preliminary data for October puts total oil supply slightly above 2.15m b/d and this is expected to rebound in November and December. As reported in the previous MOMR, the new P50 field (180,000 b/d) and Goldfinho 1 (100,000 b/d) experienced delays in their ramp up, which affected Brazilian oil production growth. However, current indications suggest that both are on track to reach capacity by year-end and thus lift total Brazilian oil supply to average 2.25–2.29m b/d in 4Q06.

The historical data for Trinidad & Tobago has been adjusted to reflect updated official statistics. Total oil supply is now assessed at 160,000 b/d in 2004, 180,000 b/d in 2005 and 190,000 b/d in 2006. For 2006, the revision represents a reduction of 34,000 b/d. Trinidad produces crude, condensates and other liquids from its LNG plants and petrochemical complexes. Other revisions have been made to the historical data of Ecuador and Angola (back to 2005) and more recently to the historical data of Egypt and Equatorial Guinea. The outlook for Angola and Sudan has also been revised

up slightly, as production is now estimated to run slightly ahead of expectations for 4Q06.

FSU, other regions

Oil supply in the FSU is expected to average 12m b/d, an increase of 500,000 b/d versus 2005, but slightly lower versus last month. The forecast for other regions (i.e. China and other Europe) remains unchanged with total oil supply expected at 3.8m b/d in 2006, representing an increase of 70,000 b/d versus 2005. On a quarterly basis, total oil supply in the FSU is expected to average 12.2m b/d in the third and fourth quarters, which represents a downward revision of 74,000 b/d in the third quarter and 101,000 b/d in the fourth quarter. Oil supply in October in the FSU is assessed at 12.1m b/d.

Russia

Russian oil supply is expected to average 9.6m b/d in 2006, an increase of 200,000 b/d over 2005, but 34,000 b/d lower than last month's estimate. On a quarterly basis, total oil supply is expected to average 9.73m b/d and 9.7m b/d in the third and fourth quarters, respectively, which represents a downward revision of 30,000 b/d in the third quarter and 100,000 b/d in the fourth quarter. The latest data shows that production averaged 9.72m b/d in September, but this dropped to 9.68m b/d in October. It was always anticipated that oil production growth would moderate later in the 4Q06 and into the winter, but the recent drop, combined with the poor performance of non-state linked companies and ongoing problems in Sakhalin 1, suggest that Russian growth may have reached its maximum for this year. The previous estimate for 4Q06 was 9.77m b/d, but this is more likely to average 9.7m b/d. Crude export tariffs are expected to drop. However, this will coincide with winter when exports typically drop due to closure of river transport systems and higher domestic demand for products.

Caspian

Azeri oil production is expected to average 640,000 b/d in 2006, representing an increase of 200,000 b/d over last year. On a

quarterly basis, total oil supply is expected to average 680,000 b/d in the third quarter and 730,000 b/d in the fourth quarter, which represents an upward revision of 7,000 b/d in the third and fourth quarters. The outlook continues to be revised up in parts as output from the ACG field exceeds targets. Preliminary data for October puts total Azeri oil production at around 660,000 b/d, down slightly from September due to ten-day maintenance at one of the platforms (Chirag) and the Supsa export terminal. The new East Azeri field (260,000 b/d) started up on October 23. The impact of an early start is positive for Azerbaijan, but this report continues to assume that the main contribution will come from early 2007 onwards. Whilst flows from the Chirag platform are back to normal, recent reports suggest that the Mediterranean port of Supsa is expected to be shut for three months. This port has a capacity of around 150,000 b/d, with the rest of the exports going through the BTC pipeline (currently 400,000 b/d), via rail to Batumi terminal (150,000 b/d), and through pipeline to Novorossiysk (50,000 b/d).

Kazak oil production is expected to average 1.29m b/d in 2006, an increase of 60,000 b/d over last year and representing a downward revision of 16,000 b/d versus last month's estimate. Data for the month of September puts oil production at 1.23m b/d, much lower than the preliminary figure of 1.36m b/d. Ongoing maintenance at the Karachaganak condensate field impacted on Kazak output. However, total Kazak output appears to have recovered in October to 1.33m b/d, based on loadings at the CPC pipeline. The first phase of the sour gas injection project that is expected to double Tengiz output from second half of next year has also started.

China

The outlook for China remains unchanged. Total oil supply is expected to average 3.7m b/d, representing an increase of 70,000 b/d over last year. October data shows average oil production at 3.66m b/d. Year-to-date, output has risen by 60,000 b/d, compared with the same period last year. It is worth mentioning that the historical and current production data shown in

the MOMR does not include biofuels, which are estimated at around 50,000 b/d, mainly due to a lack of reliable statistics. Additionally, coal-to-liquids is excluded from current oil production estimates. In both cases, this data will need to be included at some stage, once reliable statistics become available and as projects start up.

Forecast for 2007

Non-OPEC oil supply is expected to average 53m b/d in 2007, representing an increase of 1.8m b/d over 2006 and broadly unchanged from last month. Non-OPEC supply is expected to average 52.4m b/d, 52.6m b/d, 52.9m b/d, and 54.1m b/d in the first, second, third and fourth quarters, respectively.

The FSU region is expected to see growth of 600,000 b/d to 12.5m b/d. Together, Caspian countries are expected to deliver more growth than Russia. However, recent trends in Russia are not supportive of current growth expectations there. Oil supply in the African region is forecast to expand by 500,000 b/d to 4.6m b/d with most of the increase expected to come from deepwater Angola, Equatorial Guinea and onshore Sudan. Oil supply in the North American region is expected to grow by 400,000 b/d to 14.7m b/d. This increase will be driven by unwinding losses in the US Gulf of Mexico (GoM), Alaska, GoM deepwater, US ethanol and expansion of the Canadian oil sands. Oil supply in the Latin American region is expected to grow by 200,000 b/d to 4.7m b/d. Regional growth will be driven by Brazil (crude and ethanol). Elsewhere, OECD Europe is expected to show modest growth of 100,000 b/d to 5.6m b/d, driven by the end of production shut-ins in Norway, but also from new projects and the start of the Buzzard field in the UK. A normal maintenance schedule for this region is assumed. OECD Asia is expected to see a supply increase of 100,000 b/d to 700,000 b/d. The forecast now reflects the return of some of the production that was lost in the Carnavon basin, due to cyclone activity in Australia. Oil supply in other Asia and the Middle East is expected to remain broadly flat at 2.8m b/d and 1.8m b/d, respectively. China's oil production is forecast to increase by 60,000 b/d to 3.8m b/d.

Revisions

The forecast for 2007 remains broadly unchanged, but the base and outlook of some countries have been subject to revisions. On a quarterly basis, total non-OPEC supply has been revised down by 30,000 b/d in 1Q07, 20,000 b/d in 2Q07, but up by 30,000 b/d in 4Q07.

The outlook for the US has been revised down slightly. The Atlantis field is still expected to start in 2Q07 and no changes have been made to the ramp-up period. However, recent reports suggest that its start-up is likely to be the end of 2Q07. Therefore, some adjustments have been made. In Australia, we have assumed that problems at the Enfield field will be fixed from 3Q07 onwards. The outlook for Brazil has been revised slightly up now that the Espadarte Module II FPSO will start earlier than expected, thus having more impact on Brazil's oil production next year. The forecast assumes a con-

Total OPEC crude oil production averaged 29.4m b/d in October, representing a drop of 160,000 b/d from the previous month.

servative ramp up at the new fields, including Golfinho Module 2, Espadarte Module II and Roncador P52. Sudan's outlook has also been revised up slightly, following a better-than-expected performance in 2006. The outlook for Azerbaijan has also been revised up now that the East Azeri field has started ramping up from late 2006 onwards versus a previous estimate of early 2007.

Risks

This reports highlights that the growth estimate for Russia next year may turn out to be optimistic. The current forecast sees total pro-

duction averaging 9.8m b/d (maximum of 9.9m b/d in 4Q07), representing growth of 190,000 b/d over 2005. The previous forecast estimated growth to be 210,000 b/d. Essentially, the Russian oil industry is not showing signs of vigorous growth anywhere and there are no positive catalysts that might give sufficient support to next year's forecast.

The portfolios of non-state controlled companies are showing a poor to deteriorating performance and state-linked companies are not growing fast enough. The reasons for this trend is well known, but what is driving these factors – i.e. underlying production trends across fields, well completions, company decisions, effectiveness of capex, etc – are all too complex to see. This report has taken the conservative outlook for Russian medium-term growth since April 2005, but short-term fluctuations, including flat to a slight y-o-y decrease, are within possibilities.

As usual, the overall forecast for non-OPEC performance for 2007 does not take into account a number of risks, such as the impact of extreme hurricane activity in the US and Asia, unplanned shutdowns, material delays, and political instability. Tightness in the oil service sector poses some risks, particularly when specialized services are suddenly required. Rising underlying costs also pose a risk in the near term for small marginal projects, EOR and stripper wells. However, it should be noted that current oil prices are several times higher than average production and development costs of most producing regions. Finally, but of equal importance, sharp downward fluctuations in energy prices could affect some investment plans and as a direct consequence mature oil production, thereby reducing growth. Combined, these risks could affect as much as 500,000 b/d of the forecast expansion.

OPEC NGLs and non-conventional oils

In 2006, OPEC NGLs and non-conventional oils are expected to average 4.3m b/d, representing an increase of 200,000 b/d over the previous year. All the growth is coming from NGLs. In 2007, expected growth for OPEC NGLs remains unchanged at 200,000 b/d.

OPEC crude oil production

Total crude oil production averaged 29.4m b/d in October, representing a drop of 160,000 b/d from the previous month, according to secondary sources. Iraq's oil production was 2m b/d.

FSU net exports of crude & products

Total FSU net oil exports are now expected to average 8.2m b/d in 2006, an increase of 500,000 b/d over the previous year. Next year, total FSU net oil exports are expected to average 8.7m b/d, or 500,000 b/d higher than 2006, driven by new sources of crude from the Caspian and Russian product exports. The estimate has been revised down by 100,000 b/d for both 2006 and 2007.

Current trends

Preliminary figures for the month of October indicate that total crude exports remained steady at 6m b/d, unchanged from the previous month. Including products, total net oil exports were 8.1m b/d in October, slightly higher than the previous month. Crude exports increased via the Black Sea, Baltic, and Druzha pipeline. Russian rail exports to the Far East (China) also increased slightly.

Oil trade

October

OECD

According to preliminary data, OECD crude oil imports continued their upward trend to hit their highest level so far this year, averaging 32.1m b/d in September, which corresponds to around 100,000 b/d above the previous month and some 70,000 b/d higher than a year earlier. The US and Japan remained the main contributors to the growth. In contrast, product imports remained almost stable at 11.1m b/d, implying total OECD oil imports of nearly 43.3m b/d, up 130,000 b/d from the previous month. For the period January–September, OECD crude oil imports averaged 31.7m b/d, compared with 31.5m b/d for the same period of 2005 which represented growth of 200,000 b/d, while prod-

uct imports increased 420,000 b/d to stand at 11.0m b/d.

OECD oil exports remained almost unchanged at around 15.4m b/d in September, with 7.3m b/d of crude oil and 8.1m b/d of products. When compared with a year earlier, crude oil exports were 660,000 b/d down, while products were 260,000 b/d higher. As a result, OECD net oil imports stood at 27.9m b/d, up 112,000 b/d from the previous month, but almost 1.0m b/d, or three per cent, higher than a year earlier.

Regarding deliveries, Saudi Arabia and the FSU remained the main suppliers of OECD crude oil imports in September with around 16 per cent each. Both sources saw their shares increase by three per cent from September 2005 figures. Norway and Mexico were ranked third and fourth with eight per cent and 7.5 per cent, respectively.

As for products, no significant changes have been seen. Nevertheless, it appears that Venezuela's share in supplying OECD products has dropped from around seven per cent to about four per cent this year, to be overtaken by the Netherlands and the FSU as the largest suppliers of OECD product imports with five per cent each.

United States

Preliminary data show that US crude oil imports rose by 200,000 b/d, or around two per cent, to stand at 10.6m b/d in September, a 15-month high as refineries continued to run above 90 per cent of their capacity. In addition to high throughput from refineries, large stock-builds, which sees stocks running above seasonal averages, contributed to the growth in US crude oil imports displayed in August and September. In contrast, product imports dropped by 220,000 b/d, essentially from gasoline following the end of the seasonal driving season, as well as kerosene jet fuel. Furthermore, high output from refineries and comfortable levels of product stocks, especially distillates, discouraged imports.

The US imported, on average, 10.2m b/d of crude oil between January and September 2006, 77,000 b/d, or less than one per cent,

more than in 2005. Product imports averaged 3.5m b/d, 250,000 b/d, or 7.6 per cent, higher than the same period last year.

Regarding exports, crude oil remained unchanged at 21,000 b/d, while products increased by 50,000 b/d to 1.2m b/d. Consequently, US net oil imports declined by 68,000 b/d on a combination of a 200,000 b/d increase in crude oil imports and a 269,000 b/d drop in products to settle below 13.0m b/d. Despite this decline, total net oil imports remained 760,000 b/d, or 6.2 per cent, higher than a year earlier.

Canada and Mexico, with around 16 per cent each, remained the largest suppliers of US crude oil imports ahead of Saudi Arabia and Venezuela, each with 12 per cent. However, Saudi Arabia and Canada saw their share in US imports lose four percentage points from the previous month. When compared with a year earlier, Saudi Arabia's share dropped by four per cent, while Canada's and Mexico's shares lost two per cent.

On the product side, Canada, the Virgin Islands and Algeria remained the largest suppliers to the US with 15 per cent. Algeria and the Virgin Islands saw their shares increase by around four per cent in September at the expense of Canada, the Netherlands and Mexico.

Japan

Japan's crude oil imports continued to recover from their significant total drop of 900,000 b/d experienced during May and June and they increased by 122,000 b/d, or three per cent, to average nearly 4.2m b/d, the same level as in September 2005. In contrast, product imports remained stable at around 600,000 b/d, but they displayed 300,000 b/d, or 35 per cent, y-o-y growth.

For the first nine months of 2005, Japan's total oil imports averaged 5.2m b/d, 214,000 b/d below the same period last year. The decline was mainly attributable to the products, which retreated by more than 150,000 b/d, or 15 per cent.

As product exports remained almost unchanged at 400,000 b/d, Japan's total net oil imports rose by 122,000 b/d to average

4.3m b/d with crude oil at 4.2m b/d and products at 1.3m b/d. When compared with a year earlier, Japan's net oil imports were 550,000 b/d, or 11 per cent, lower than a year ago. Crude oil imports from Saudi Arabia and the UAE accounted for almost 60 per cent of total Japanese crude oil imports in September.

China

China's crude oil imports increased by 278,000 b/d, or 11 per cent, to average nearly 2.8m b/d in August, reversing the downward trend displayed during the previous four months.

When compared with a year earlier, China's crude oil imports showed significant growth of around 35 per cent, but it should be noted that the country's imports in August 2005 averaged less than 2.1m b/d, the lowest monthly average in that year. The surge in China's crude oil imports was attributed to a combination of steady demand and the beginning of filling its new strategic reserve, where, according to sources, at least 1.0m b of crude oil was stored in August.

In contrast, product imports edged down by 28,000 b/d to 1.1m b/d, but remained 60,000 b/d higher than a year ago. Most of the decline in product imports concerned fuel oil, which represents the largest imported product. Despite the decline of 2.5 per cent from the previous month, fuel oil imports were 56 per cent higher than a year earlier. However, jet kerosene imports saw a significant increase in August, due to strong demand from the aviation sector.

China imported, on average, 2.9m b/d of crude oil during the first eight months of 2006, which represents growth of 15 per cent compared with same period last year.

On the export side, China's oil exports rose by 113,000 b/d to average 500,000 b/d with two-thirds being crude oil and one-third products. As a result, China's net oil imports averaged 3.3m b/d in August, which corresponds to 138,000 b/d above the previous month, with crude oil imports increasing by 240,000 b/d, while product imports lost 102,000 b/d. However, at 3.3m b/d, China's net oil imports were 930,000 b/d, or 38 per cent, higher than a year earlier.

For the first time in the year, Saudi Arabia regained its position as the main supplier of China's crude oil with 19 per cent, which corresponds to 530,000 b/d, compared with 350,000 b/d the previous month.

Angola, which has been China's largest supplier since February 2006, moved back to second position with 13.5 per cent of total imports, followed by Iran (13.3 per cent), Oman (11 per cent) and Russia (ten per cent). Compared with a year earlier, Saudi Arabia and Iran saw their shares in China's crude oil imports surge by 53 per cent and 60 per cent, respectively. China's imports from Kazakhstan increased by 68 per cent from a year earlier following the start-up of the Atasu-Alashankou pipeline linking Kazakhstan to China in July, making Kazakhstan the tenth largest supplier of China with 60,000 b/d in August.

India

India imported 2.1m b/d in August, down by 32,000 b/d from the previous month, but 53,000 b/d more than a year earlier. Product imports inched down by 7,000 b/d to 240,000 b/d. For the January–August period, India's crude oil imports averaged nearly 2.2m b/d, as against 2.1m b/d a year ago, whereas product imports moved down by 40,000 b/d to 260,000 b/d. All together, crude oil and product imports showed growth of less than three per cent, which was in line with growth in demand for the period January–August this year.

With product exports averaging 430,000 b/d, 22,000 b/d below the previous month and 77,000 b/d below August 2005 figures, India's total net oil imports continued to hover around 2.0m b/d since May 2006, 70,000 b/d higher than in August 2005.

November

OECD

Preliminary data shows that the upward trend of OECD total oil imports displayed since April came to an end in October with imports falling by 130,000 b/d, offsetting the growth of the same level from the previous month. Crude oil imports averaged 32.0m b/d, which

represents a decline of around 110,000 b/d, while products dropped to 11.1m b/d, 22,000 b/d lower than in the previous month. Together, crude oil and product imports averaged 43.1m b/d, implying y-o-y growth of nearly 200,000 b/d. Among OECD countries, the US saw its crude oil and product imports fall significantly in October.

OECD crude oil imports in the first ten months of the year averaged 31.8m b/d, up by 160,000 b/d from a year earlier. However, products showed an increase of more than 400,000 b/d with a monthly average of 11.0m b/d over the same period. On the other hand, OECD oil exports remained stable at 15.4m b/d, comprising 7.3m b/d crude oil and 8.1m b/d products. As a result, OECD net oil imports declined for the first time in 2006 to average 27.8m b/d, down by 150,000 b/d from the previous month, but still 750,000 b/d, or three per cent, higher than a year earlier with crude oil imports at 24.7m b/d and products at 3.0m b/d.

Saudi Arabia remained the largest supplier of OECD crude oil imports with 17 per cent, followed by the FSU with 16 per cent. Compared with a year earlier, Saudi Arabia's share gained almost four per cent and the FSU less than two per cent. On the product side, imports are diversified with the largest exporters to the OECD – the Netherlands and FSU – holding a share in total OECD product imports of around five per cent each.

United States

Preliminary data shows that US crude oil and product imports declined significantly in October, due to abundant stocks and a decline in natural gas prices. Crude oil imports dropped from a record of nearly 10.7m b/d in September to 10.0m b/d, the lowest level since May, while product imports slipped by around 240,000 b/d to 3.0m b/d, the lowest level so far this year. The decline in US oil imports was reflected in the draw on product stocks and a drop in the refinery utilization rate, which decreased to around 88 per cent, compared with 92 per cent the previous month, due to weaker demand and plant maintenance. Regarding products, fuel oil dropped by almost 200,000 b/d, or 27

per cent, as a result of its lower utilization for power generation after the decline in natural gas prices.

Despite this strong decline, OECD crude oil imports showed y-o-y growth of 580,000 b/d, or more than six per cent, while product imports were nearly 1.8m b/d below the October 2005 level. However, it should be mentioned that in September and October the previous year US crude oil imports were below the yearly average after declining significantly, while products reached record highs, due to disruptions in refining facilities following hurricanes Katrina and Rita.

For the period January–October, the US imported, on average, 13.7m b/d of crude oil and 3.5m b/d of products. Both crude oil and products were comparable to their levels of the corresponding period of the previous year. The zero growth in US oil imports reflects to some extent the slowdown in demand this year.

With product exports, which represent 99 per cent of US oil exports, increasing by 66,000 b/d to almost 1.3m b/d and crude oil remaining unchanged at 21,000 b/d, US total net oil imports fell by 950,000 b/d to stand below 11.8m b/d for the first time since last April. Compared with a year earlier, US total oil imports were down 1.5m b/d in 2006.

In terms of deliveries, Mexico and Canada remained the main suppliers of US imported crude with 17 per cent and 16 per cent, respectively, followed by Saudi Arabia and Venezuela with 12 per cent each and Nigeria with 11 per cent. For products, Canada, the Virgin Islands and Algeria continued to be the largest sources of imports for the US with 17 per cent, 12 per cent and ten per cent, respectively.

Japan

After having increased for three consecutive months, Japan's crude oil imports fell by 83,000 b/d in October to average 4.1m b/d. This level was 70,000 b/d lower than a year earlier, due to a slowdown in demand and the poor refinery utilization rate, which fell to around 76 per cent. In contrast, product imports remained stable at 600,000 b/d, but displayed a strong decline of more than 300,000 b/d, or 35 per

cent, compared with the October 2005 level. It is worth noting that Japan's product imports declined from 900,000–1.0m b/d in January–May 2006 to average around 600,000 b/d for the period June–October. High stock levels, especially distillates, and weaker demand have largely contributed to the decline in product imports during recent months.

For the period January–October, Japan's crude oil imports stood at an average of 4.1m b/d, 60,000 b/d below the level of a year ago, while product imports showed a y-o-y decline of 170,000 b/d to stand at 800,000 b/d.

With product exports unchanged at 400,000 b/d, Japan's total net oil imports dropped by 84,000 b/d to 4.2m b/d with crude oil representing almost 97 per cent of this figure. When compared with a year earlier, Japan's total net oil imports were 370,000 b/d lower in 2006. The difference came essentially from the strong drop in product imports.

The share of imports from the main supplier, Saudi Arabia, rose by three per cent to more than 33 per cent. Similarly, the United Arab Emirates increased its share by four per cent points to 27 per cent to remain the second largest crude supplier to Japan, followed by Qatar with 12 per cent and Iran with nine per cent. For products, imports from Saudi Arabia and the UAE, the country's main suppliers, accounted for around one-quarter of Japan's imports.

China

China's crude oil imports hit an all-time high of 3.28m b/d in September, which corresponds to a jump of nearly 500,000 b/d, or 17 per cent, over the previous month and 640,000 b/d, or 24 per cent, compared with the corresponding month last year. This substantial jump in crude oil imports, which followed growth of 280,000 b/d from August, came as result of the move to begin filling the country's strategic reserve at Zhenhai on the eastern coast of Zhenjiang province. In addition, the start-up of a new refinery of 8m t/y in the province of Hainan also contributed to the increase in crude oil imports. Product imports were around 1.0m b/d after dropping by 52,000 b/d, or five per cent, and were lower than a year earlier by 3.5

per cent. The decline in product imports came essentially from fuel oil which has fallen by 20 per cent since August.

For January–September, China imported, on average, 490,000 b/d more crude in 2006, than in 2005 and 130,000 b/d more products.

Regarding exports, China exported 300,000 b/d of crude oil in September, 30,000 b/d lower than the previous month. It significantly reduced its exports of products – from 173,000 b/d to 31,000 b/d after Sinopec suspended gasoil exports in September to ensure domestic supply. It is worth mentioning that China's product exports have declined considerably in 2006, compared with the previous years. However, for the first three quarters of 2006, China's product exports were 22 per cent lower than the corresponding period of the previous year.

Total net oil imports surged by around 610,000 b/d to hit 4.0m b/d in September with crude oil representing 75 per cent and products the remaining 25 per cent. When compared with a year earlier, the increase was much higher at 730,000 b/d.

Saudi Arabia remained the main supplier of China's crude oil with 17.5 per cent, despite a loss of two per cent from the previous month. Iran, Angola and Russia followed with around 12 per cent each. Compared with September 2005, the structure of crude oil imports does not show any major differences in terms of ranking, apart from the emergence of Venezuela in the top ten exporters of China.

India

India's total oil imports continue to hover around 2.4m b/d, with crude oil at around 2.2m b/d and products at 250,000 b/d, representing essentially heavy fuel oil and LPG. The modest growth of 20,000 b/d in total oil imports reflected the small growth in India's demand so far. Similarly, product exports inched up 11,000 b/d to remain at around 440,000 b/d, corresponding essentially to naphtha and gas/diesel oil. As a result, India's net oil imports stayed at 2.0m b/d, which represented y-o-y growth of 56,000 b/d, or three per cent.

On average, India imported 2.17m b/d of crude oil during the first nine months of 2006,

up 150,000 b/d from the corresponding period of the previous year, while product imports were down 33,000 b/d at 220,000 b/d. With product exports increasing by 89,000 b/d for the same period, India's total net imports dropped by almost 20,000 b/d from a year earlier, in line with the weak demand of this year.

Stock movements

October

United States

Total commercial oil inventories in the US rose by 22.0m b, or 700,000 b/d, to 1,088.7m b in September, which was 7.6 per cent and 10.0 per cent higher than the year-ago level and the five-year average. The stock-build came entirely from products as crude oil stocks declined on a monthly basis.

Crude oil stocks declined by 1.8m b to 328.8m b in September from the previous month, but stayed at a comfortable level of 7.1 per cent above the same month last year and 14.0 per cent above the five-year average. The drop in crude oil stocks on a monthly basis was lower than in August, due to a recovery in production to 5.1m b/d, along with lower demand and a slight decline in refinery input – from 15.8m b/d to 15.7m b/d. It must be noted that contrary to expectations, crude oil inventories were boosted by over 3.4m b in the week ended September 29, compared with the previous week.

Likewise, crude production recorded a recovery to 5,000 b/d, while crude runs fell by 1m b/d in the week ended September 29, following reports of a recovery in BP's Alaskan Prudhoe Bay field. The drop in demand for crude is explained by refinery maintenance in the US and was also reflected in the 2.5 per cent decline in refinery runs during this week. In terms of forward cover, at 20.6 days crude inventories were still six per cent above the five-year average.

In line with seasonal patterns, gasoline stocks rose by 8.2m b to 215.1m b in September, 9.5 per cent and 7.0 per cent over a year ago and the five-year average, respectively. The upward

trend in gasoline inventories was linked to a 3.7 per cent decline in domestic demand, despite a drop in production and imports of both conventional gasoline and blending components on a monthly basis, based on the EIA's four-week average. Forward cover stood at 23.3 days, a gain of five per cent and two per cent against the year-ago level and the five-year average.

Moving to middle distillates, inventories scaled up a further 11.1m b to 151.0m b in September – 17.9 per cent and 19 per cent above the year-ago level and the five year average. Forward cover also increased by 2.5 days to stand at 36.6 days, widening the gains over the year-ago level and the five-year average to 12 per cent and eight per cent, respectively. In the week ending September 29, diesel contributed the most to stocks with 7.8 b, which left the level at 88.5m b, or 25.6 per cent higher than a year earlier and 24 per cent above the five-year average. The 2.0m b drop in regular diesel fuel (15 ppm to 500 ppm sulphur) was outpaced by a 9.8m b build in ultra-low

Lower gasoline and fuel oil prices resulted in negative margins, leading to an early start to the turnaround season.

sulphur diesel (ULSD). Increased production of ULSD was behind the build in diesel stocks. Heating oil inventories rose by 3.7m b to 63m b, an increase of 9.4 per cent and 14 per cent over the year-ago level and the five-year average.

In the week ended October 6, crude oil stocks saw a larger-than-expected build of 2.4m b, week-on-week, reaching 330.5m b, or eight per cent and 14 per cent over the year-ago level and the five-year average. As crude

imports declined, the build in crude stocks was related to higher production, which increased by around 100,000 b/d on a weekly basis to 5.3m b/d and a decline in refinery runs, which decreased by 0.7 per cent to 89.2 per cent from the previous week.

In terms of forward cover, crude oil stocks were five per cent above the five-year average, but nine per cent below one year earlier. Gasoline stocks ended the week with a slight surplus of 300,000 b to 215.4m b, standing 21.1 days in terms of forward cover. Middle distillate inventories unexpectedly declined by 1.5m b to 150.0m b, but were still at very comfortable levels of 20 per cent and 19 per cent higher than one year ago and the five-year average.

The drop in middle distillate inventories was entirely due to a draw on heating oil stocks of 1.8m b to 61.2m b as diesel rose by 200,000 b. The trend in heating oil inventories was attributed to an 110,000 b/d fall in weekly production, which may be linked to seasonal refinery maintenance in the USA and healthy inventory levels, which exerted downward pressure on margins.

Despite the draw, heating oil stocks were eight per cent and 11 per cent above the year-ago level and the five-year average and, at 72.5 days, the forward cover was high compared with the previous year. Diesel inventories edged up a slight 300,000 b to 88.7m b, owing to falling production, but were still at very high levels compared with a year ago and the five-year average.

Western Europe

In Eur-16 (Eu-15 plus Norway) total commercial stocks declined by 6.4m b to 1,141.1m b in September, a drop of 0.6 per cent compared with the same month last year, but were still 6.4 per cent above the five-year average. The draw was mainly due to a further reduction in crude oil inventories, as well as a draw on middle distillate stocks.

Crude oil stocks slipped further by 7.5m b to stand at 487.2m b in September, narrowing the y-o-y surplus to 3.6m b, 29.5m b over the five-year average. This trend took place despite an important cut in refinery runs as offshore maintenance limited output in the North Sea

and lower BFO prices encouraged eastbound crude shipments. Refinery runs decreased by 150,000 b/d in September from August, which meant a cut of two per cent to 92 per cent in the operable utilization rate.

Lower gasoline and fuel oil prices resulted in negative margins, leading to an early start to the turnaround season. On the product side, gasoline stocks continued building in September, growing by 2.6m b to 132.5m b on a monthly basis as a result of the closed arbitrage window to the US, where gasoline inventories increased. Nevertheless, gasoline stocks were 2.7 per cent and 2.4 per cent lower than a year ago and the five-year average.

The surplus in middle distillate stocks in August turned into a deficit in September, decreasing by 2.9m b to reach 384m b month-on-month, three per cent lower than the same month last year, but still around eight per cent above the five-year average. The draw on middle distillate stocks was prompted by strong demand for both diesel and heating oil, which has been partially matched by imports from the US and the Asia-Pacific.

It must be noted that data on middle distillate stocks for Eur-16 was revised up in August after a downward revision in July, which resulted in a further stock-build in August. In the case of residual fuel oil, inventories remained unchanged at 111 b in September, compared with August, which saw a considerable draw based on revised data. Problems related to pressure on European storage have been overcome by exports to the Asia-Pacific, but independent stocks in Rotterdam are still reported to be 35 per cent near to tank top and turnarounds have cut local output.

Japan

Total commercial oil inventories in Japan rose by 11.9m b in August, compared with the previous month to reach 195.8m b, or more than four per cent higher than the year-ago level and the five-year average. Both crude and products contributed to the build.

Crude oil inventories in Japan reversed the downward trend of the previous month, increasing by 1.1m b in August, which left inventories

on a par with the year-ago level and 2.9 per cent above the five-year average. This trend took place despite a 6.3 per cent increase in refinery runs and a slight 0.7 per cent expansion of imports compared with the previous month. On a yearly basis, crude throughput was 1.6 per cent lower, triggering a 4.0 per cent drop in August crude imports. The moderate growth in crude imports was due to lower imports by Iran, compared with the huge rise in July. In July, crude imports rose by 19.8 per cent month-on-month, due to a huge 164 per cent rise in the flow coming from Iran.

Product inventories continued to recover, increasing a further 10.8m b to stand at 78.3m b, which represented a cushion of more than six per cent over the year-ago level and the five-year average, respectively.

A 12.6 per cent drop in imports of total products was offset by an expansion in production and a fall in domestic oil product sales, which dipped 4.7 per cent to 3.6m b/d in August from the previous month when domestic sales for products, although low relative to year-ago standards, still rose on a monthly basis. Product oil sales were 8.3 per cent lower in August than in the same month last year.

The unusually weak demand for gasoline in July, owing to high prices, continued during August when it was 4.0 per cent below the year-ago level. The slowdown in domestic product sales was also linked to falling demand for kerosene and jet fuel, which declined by 31.2 per cent and 12.4 per cent, respectively. The lower gain in stocks corresponded to gasoline which reported a 600,000 b rise to 12.7m b in August from July, which left the level 3.1 per cent higher than a year ago, but 1.1 per cent lower than the five-year average. Higher production and a slowdown in domestic gasoline sales, which grew by 2.4 per cent in August compared with 10.1 per cent in July, were partially counterbalanced by the considerable 34 per cent drop in imports and increased exports from July.

Middle distillate inventories edged up 8.8m b, which left the level at 44.4m b, an increase of 10.3 per cent and 9.1 per cent over a year earlier and the five-year average. Apart from naphtha, all middle distillates contributed to

the stock-build in products headed by kerosene, jet fuel, gasoil and fuel oil.

In the case of kerosene, higher imports and production, together with weaker demand, combined to pull stocks 35.5 per cent higher in August than in July, despite greater exports. It should be noted that the considerable drop in product demand boosted inventories, encouraging refiners to reduce crude processing rates for September and October.

November

United States

After building in September, US total commercial oil inventories saw a draw in October, falling by 25m b from the previous month to 1,063.7m b. This still represented a cushion of 5.8 per cent and 3.4 per cent against the year-ago level and the five-year average. The draw was the result of a decline in product inventories, which largely outpaced the surplus in crude oil.

Contrary to the downward trend in September, crude oil inventories rose by 5.8m b in October, which left a level of 334.6m b – four per cent and 11 per cent above the year-ago and the five-year average. This trend reflected a slight increase in production, together with a cut in refinery runs, which declined from 15.7m b/d to 15.1m b/d in October, compared with the previous month, as many refineries went into turnaround. The refinery utilization rate declined from 92 per cent in September to 87.6 per cent in October. In terms of forward cover, crude oil stocks were three per cent and 11 per cent above the same month last year and the five-year average.

Gasoline inventories witnessed a drop of 11m b in October from the previous month, which left the level at 204m b – eight per cent and 2.4 per cent higher than the same month last year and the five-year average, respectively. The fall in gasoline stocks was related to a 1.5 per cent expansion in domestic demand compared with September, which was likely due to the lower retail and pump prices seen during the last three months. Lower production and imports in October also contributed to this per-

formance. In terms of forward cover, at 21.7 days gasoline inventories were 8.9 per cent over the year-ago level and two per cent higher than the five-year average. Moving to middle distillates, stocks declined by 11.7m b to 139.3 in October, compared with the previous month, which left forward cover at 31.2 days, one per cent below the five-year average.

Diesel inventories ended the month 10.1m b lower than in September following a hefty 52 per cent decline in imports in October from the previous month and a 6.7 per cent reduction in production (EIA, four-week average). Despite that, diesel inventories remained comfortable at 15 per cent and 13 per cent higher than the year-ago level and the five-year average. It must be noted that the major drop in diesel inventories came from regular sulphur diesel stocks, which experienced a draw of around 9m b in October. With the first cold spells of winter, heating oil inventories edged down by 2.8m b to 60.2m b in October, compared with September, or 15 per cent and ten per cent above the year-ago level and the five-year average. Greater demand and declining production outpaced the expansion in imports. In terms of forward cover, there was a decline from 72.5 days to 59 days on a monthly basis, but this was still above the five-year average.

In the week ending November 3, crude oil inventories edged up by 440,000 b to 334.7m b following lower refinery runs as imports declined and production recovered slightly. Forward cover was at a comfortable level compared with the year-ago level and the five-year average. The US refinery utilization rate fell to 88.1 per cent during the referred week, which seems to support reports of unplanned outages of nearly 190,000 b/d. In the case of gasoline, stocks declined by 600,000 b to 205.1 week-on-week, which represented a cushion of 1.4 per cent and three per cent against the year-ago level and the five-year average. Concerning middle distillate stocks, the draw of 2.7m b week-on-week was more than forecast. Diesel inventories declined by 2.9m b, owing to lower production and a slight drop in imports, but these were well above the year-ago level and the five-year average. Although there was a

build of 250,000 b in heating oil stocks, which left them at a comfortable level of 60.2m b over one year ago and the five-year average, forward cover indicated a fall of two days compared with the previous week. The situation with the oil market and inventories will depend heavily on weather conditions in the months ahead.

Western Europe

Total commercial oil stocks in Eur-16 (EU-15 plus Norway) ended the month at 1,138.9m b, a drop of 7.2m b compared with September, or 1.4 per cent lower than the same month last year, but 6.8 per cent above the five-year average. The stock-draw took place mainly on the back of middle distillates, followed by crude oil and gasoline.

Crude oil stocks dropped by 1.4m b to 486.9m b in October, despite lower refinery runs, which still left inventories at comfortable levels – slightly above a year earlier and 5.4 per cent above the five-year average.

Total product stocks were down by 6.3m b to 623.3m b in October relative to September. This was 4.4 per cent below the year-ago level, but 3.7 per cent higher than the five-year average. Gasoline inventories showed a fall of 1.3m b to 129.7m b in October, 0.5 per cent lower than a year ago, but five per cent above the five-year average. The draw on gasoline stocks was due to exports to the US, where demand started to show signals of growth due to lower prices. Middle distillate stocks experienced a 7.1m b draw to stand at 379.9m b, 3.7 per cent below the year-ago level, but eight per cent higher than the five-year average. The downward trend was related to the boost in heating oil demand prompted by cold weather and refinery turnarounds. Refinery crude runs declined, cutting the utilization capacity rate to 91 per cent, due to the autumn maintenance season, mainly in France and Germany. Residual fuel oil stocks edged up by 2.1m b to 113.8m b in October, also as a result of refinery maintenance, which widened the fuel oil yields and led to a closure of the arbitrage to Asia-Pacific for most of the month. Inventories were four per cent below the year-ago level, but one per cent above the five-year average.

Japan

Japanese total commercial inventories rose by 7.4m b to stand at 194.3m b in September, compared with the previous month, as a result of an expansion in total products and to a lesser extent in crude oil. This left total commercial inventories at almost one per cent above the year-ago level and two per cent higher than the five-year average.

The falling trend witnessed by crude oil stocks in August turned into a surplus during September, expanding by 1.7m b, compared with the previous month, reaching a level of 110.2m b. Nevertheless, this was around four per cent below the year-ago level and the five-year average. The build was associated with an 8.3 per cent decline in refinery runs in September relative to the previous month, despite a 2.3 per cent decline in imports.

The 5.8m b build in total product inventories in September was moderate compared with August. This left an inventory level of 84.1m b – 7.4 per cent and 9.9 per cent above the year-ago level and the five-year average, respectively. The rise in stocks was the result of lower domestic demand as production and imports declined. The 5.8 per cent increase in total product inventories was driven by kerosene, Fuel Oil A, and gasoline. In the case of gasoline, inventories went up by 900,000 b to reach 13.6m b in September, which meant a cushion of eight per cent against the year-ago level and four per cent over the five-year average. Gasoline demand dropped by 14 per cent in September relative to August and was six per cent lower than in the same month last year.

Middle distillate stocks ended at 48.9m b in September, a rise of 4.5m b compared with the previous month and an increase of 8.1 per cent and 10.8 per cent relative to a year earlier and the five-year average, respectively.

It should be noted that according to recent data from the Petroleum Association of Japan (PAJ), kerosene stocks dropped by 0.9 per cent to 33.96m b in the week to November 4, compared with the previous week, due to temporary stronger demand following a three-day weekend.

Balance of supply/demand

October

Estimate for 2006

Estimated demand for OPEC crude in 2006 is expected to average 28.7m b/d. Demand for OPEC crude has been revised down by 200,000 b/d, following lower expectations for demand growth. On a quarterly basis, actual data shows demand for OPEC crude at 29.8m b/d in the first and 28.3m b/d in the second quarter, and estimated at 28.2m b/d in the third and 28.7m b/d in the fourth quarter.

Forecast for 2007

Estimated demand for OPEC crude in 2007 is expected to average 28.1m b/d, unchanged from the previous MOMR. On a quarterly basis, the forecast shows that demand for OPEC crude is expected at 29.2m b/d in the first, 27m b/d in the second, 27.8m b/d in the third, and 28.3m b/d in the fourth quarter.

November

Estimate for 2006

Estimated demand for OPEC crude in 2006 is expected to average 28.8m b/d. On a quarterly basis, the new estimate shows that demand for OPEC crude is expected at 29.8m b/d, 28.3m b/d, 28.4m b/d and 28.9m b/d in the first, second, third and fourth quarters, respectively.

Forecast for 2007

Forecast demand for OPEC crude in 2007 is expected to average 28.1m b/d, representing a decline of 700,000 b/d over 2006. On a quarterly basis, the forecast shows that demand for OPEC crude is expected at 29.3m b/d, 27.1m b/d, 27.8m b/d, and 28.4m b/d in the four quarters, respectively.



Table E: World crude oil demand/supply balance*m b/d*

World demand	2002	2003	2004	2005	1Q06	2Q06	3Q06	4Q06	2006	1Q07	2Q07	3Q07	4Q07	2007
OECD	47.9	48.6	49.3	49.6	50.1	48.0	49.0	50.5	49.4	50.5	48.1	49.2	50.8	49.7
North America	24.1	24.5	25.4	25.5	25.1	25.1	25.5	25.9	25.4	25.5	25.2	25.6	26.2	25.6
Western Europe	15.3	15.4	15.5	15.5	15.7	15.1	15.5	15.8	15.5	15.6	15.2	15.5	15.8	15.5
Pacific	8.5	8.6	8.5	8.6	9.3	7.9	8.0	8.8	8.5	9.4	7.8	8.0	8.8	8.5
Developing countries	20.3	20.6	21.7	22.4	22.7	23.2	23.1	23.1	23.0	23.3	23.7	23.8	23.8	23.6
FSU	3.7	3.8	3.8	3.8	3.7	3.6	3.9	4.0	3.8	3.8	3.5	3.8	4.1	3.8
Other Europe	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9
China	5.0	5.6	6.5	6.5	7.1	7.3	7.0	7.0	7.1	7.4	7.9	7.5	7.4	7.6
(a) Total world demand	77.8	79.4	82.3	83.3	84.6	83.0	83.8	85.6	84.3	86.0	84.0	85.2	87.1	85.6
Non-OPEC supply														
OECD	21.9	21.7	21.3	20.5	20.3	20.0	20.3	20.9	20.4	20.9	20.8	20.7	21.2	20.9
North America	14.5	14.6	14.6	14.1	14.2	14.2	14.3	14.7	14.3	14.7	14.7	14.6	14.8	14.7
Western Europe	6.7	6.4	6.2	5.8	5.7	5.3	5.3	5.6	5.5	5.6	5.5	5.4	5.8	5.6
Pacific	0.8	0.7	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.7
Developing countries	11.5	11.6	12.0	12.5	12.9	12.8	13.0	13.4	13.0	13.5	13.5	13.8	14.1	13.7
FSU	9.3	10.3	11.1	11.5	11.7	12.0	12.1	12.2	12.0	12.2	12.5	12.6	12.8	12.5
Other Europe	0.2	0.2	0.2	0.2	0.2	0.1								
China	3.4	3.4	3.5	3.6	3.7	3.7	3.7	3.7	3.7	3.8	3.7	3.8	3.9	3.8
Processing gains	1.7	1.8	1.8	1.9										
Total non-OPEC supply	48.1	48.9	50.0	50.2	50.6	50.5	51.1	52.4	51.2	52.4	52.6	52.9	54.1	53.0
OPEC NGLS and non-conventionals	3.6	3.7	4.0	4.1	4.2	4.2	4.3	4.3	4.3	4.3	4.4	4.5	4.6	4.4
(b) Total non-OPEC supply and OPEC NGLS	51.7	52.7	54.0	54.3	54.8	54.7	55.5	56.7	55.4	56.7	56.9	57.4	58.7	57.4
OPEC crude supply and balance														
OPEC crude oil production¹	25.4	26.9	29.0	29.9	29.7	29.6	29.7							
Total supply	77.0	79.6	83.0	84.2	84.5	84.3	85.2							
Balance²	-0.8	0.2	0.7	0.9	-0.1	1.3	1.3							
Stocks														
OECD closing stock level <i>m b</i>														
Commercial	2478	2517	2548	2596	2596	2654	2759							
SPR	1347	1411	1450	1487	1487	1493	1495							
Total	3825	3928	3999	4083	4083	4147	4254							
Oil-on-water	816	883	906	961	962	974	n.a.							
Days of forward consumption in OECD														
Commercial onland stocks	51	51	51	53	54	54	55							
SPR	28	29	29	30	31	30	30							
Total	79	80	81	83	85	85	84							
Memo items														
FSU net exports	5.6	6.5	7.3	7.7	8.0	8.4	8.3	8.2	8.2	8.5	9.0	8.8	8.7	8.7
[(a) – (b)]	26.1	26.7	28.3	29.0	29.8	28.3	28.4	28.9	28.8	29.3	27.1	27.8	28.4	28.1

1. Secondary sources.

Note: Totals may not add up due to independent rounding.

2. Stock change and miscellaneous.

Table E above, prepared by the Secretariat's Energy Studies Department, shows OPEC's current forecast of world supply and demand for oil and natural gas liquids.

The monthly evolution of spot prices for selected OPEC and non-OPEC crudes is presented in **Tables One and Two** on page 106 while **Graphs One and Two** (on page 107) show the evolution on a weekly basis. **Tables Three to Eight**, and the corresponding graphs on pages 108–109, show the evolution of monthly average spot prices for important products in six major markets. (Data for Tables 1–8 is provided by courtesy of Platt's Energy Services).

Table 1: OPEC Reference Basket crude oil prices, 2005–2006

\$/b

Crude/Member Country	2005			2006									Weeks 39–43 (week ending)					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Sep 29	Oct 6	Oct 13	Oct 20	Oct 27
Arab Light – Saudi Arabia	54.65	51.55	52.84	58.43	56.56	57.54	63.85	64.83	65.03	69.06	68.76	59.72	55.64	56.75	56.13	55.34	55.91	55.50
Basrah Light – Iraq	51.39	48.07	49.15	55.59	52.32	54.01	61.18	62.32	62.38	66.49	65.42	56.40	51.53	54.02	51.76	51.45	51.50	51.66
BCF-17 – Venezuela	47.51	41.33	42.34	47.90	45.90	49.52	56.01	56.62	55.01	58.72	60.29	50.96	46.99	47.89	47.73	46.70	47.05	46.29
Bonny Light – Nigeria	60.74	57.18	57.91	64.04	62.12	63.80	71.80	71.75	70.22	75.49	75.29	63.87	58.75	60.95	58.28	59.23	59.26	58.79
Es Sider – SP Libyan AJ	58.25	54.92	57.14	61.77	59.12	60.22	67.03	67.25	66.62	71.42	70.72	61.54	56.20	59.07	55.73	56.68	56.71	56.24
Iran Heavy – IR Iran	51.73	49.28	50.88	57.10	55.43	56.56	63.09	63.27	62.24	66.59	66.42	57.14	53.27	54.08	53.46	52.96	53.75	53.27
Kuwait Export – Kuwait	51.76	49.19	50.83	56.52	55.01	55.80	62.20	62.80	62.37	66.35	66.02	56.75	53.02	53.51	53.54	52.72	53.41	52.76
Marine – Qatar	55.80	53.17	54.72	59.85	59.06	59.39	65.62	66.29	66.16	70.21	70.05	60.90	57.15	57.35	57.66	56.73	57.63	56.79
Minas – Indonesia	58.64	53.87	54.43	63.35	61.35	62.30	69.17	70.47	68.49	74.13	75.42	63.32	54.87	60.05	57.69	55.61	54.35	52.83
Murban – UAE	59.30	56.13	57.47	62.72	61.77	62.33	68.46	69.84	69.66	73.70	73.66	65.01	61.04	61.49	61.43	60.74	61.50	60.80
Saharan Blend – Algeria	59.48	56.15	57.65	64.06	61.59	62.98	70.21	70.31	69.15	74.37	74.50	63.27	58.55	60.48	58.08	59.03	59.06	58.59
OPEC Reference Basket	54.63	51.29	52.65	58.48	56.62	57.87	64.44	65.11	64.60	68.89	68.81	59.34	54.97	56.33	55.32	54.85	55.28	54.76

Table 2: Selected OPEC and non-OPEC spot crude oil prices, 2005–2006

\$/b

Crude/Country	2005			2006									Weeks 39–43 (week ending)					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Sep 29	Oct 6	Oct 13	Oct 20	Oct 27
Arab Heavy – Saudi Arabia	49.03	47.40	49.16	54.91	53.52	54.08	60.74	60.88	59.84	63.74	63.57	54.56	50.49	51.17	51.03	50.18	50.93	50.15
Brent – North Sea	58.75	55.41	57.02	63.05	60.12	62.08	70.35	69.83	68.69	73.66	73.11	61.71	57.80	58.72	57.33	58.28	58.31	57.84
Dubai – UAE	54.20	51.63	53.22	58.56	57.61	57.82	64.14	65.07	65.22	69.17	68.92	59.82	56.36	56.51	56.85	56.06	56.80	56.01
Ekofisk – North Sea	59.22	55.76	57.54	63.34	60.36	62.53	70.32	69.88	68.45	73.74	73.09	62.24	58.17	59.35	57.78	58.62	58.48	58.47
Iran Light – IR Iran	54.38	51.31	53.20	58.99	57.00	58.77	65.14	64.67	64.30	68.81	68.49	58.56	55.42	55.85	54.57	55.47	55.86	56.10
Isthmus – Mexico	55.64	51.57	52.77	58.54	53.87	56.85	64.51	64.82	63.88	68.30	67.47	57.18	52.46	55.04	53.32	52.31	51.92	52.46
Oman – Oman	55.52	52.78	54.21	59.35	58.61	59.19	65.54	66.39	66.17	70.22	70.12	61.01	57.32	57.53	57.90	57.00	57.76	56.98
Suez Mix – Egypt	52.83	49.29	51.59	56.92	54.54	55.54	62.43	62.46	61.95	66.51	65.78	56.96	52.91	54.28	53.09	53.64	52.32	53.06
Tia Juana Light ¹ – Venez.	51.48	48.77	49.23	54.27	50.97	52.32	58.77	58.66	56.98	60.93	60.99	52.35	48.05	50.28	48.84	47.91	47.55	48.06
Urals – Russia	55.80	52.38	54.63	59.58	57.06	58.11	64.95	65.09	64.51	69.20	68.49	59.47	55.68	56.91	55.85	56.51	55.20	55.76
WTI – North America	62.67	58.42	59.36	65.39	61.49	62.82	69.46	70.89	70.88	74.33	73.01	64.00	58.82	61.96	59.72	58.53	58.40	58.80

Note: As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the OPEC Reference Basket has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference.

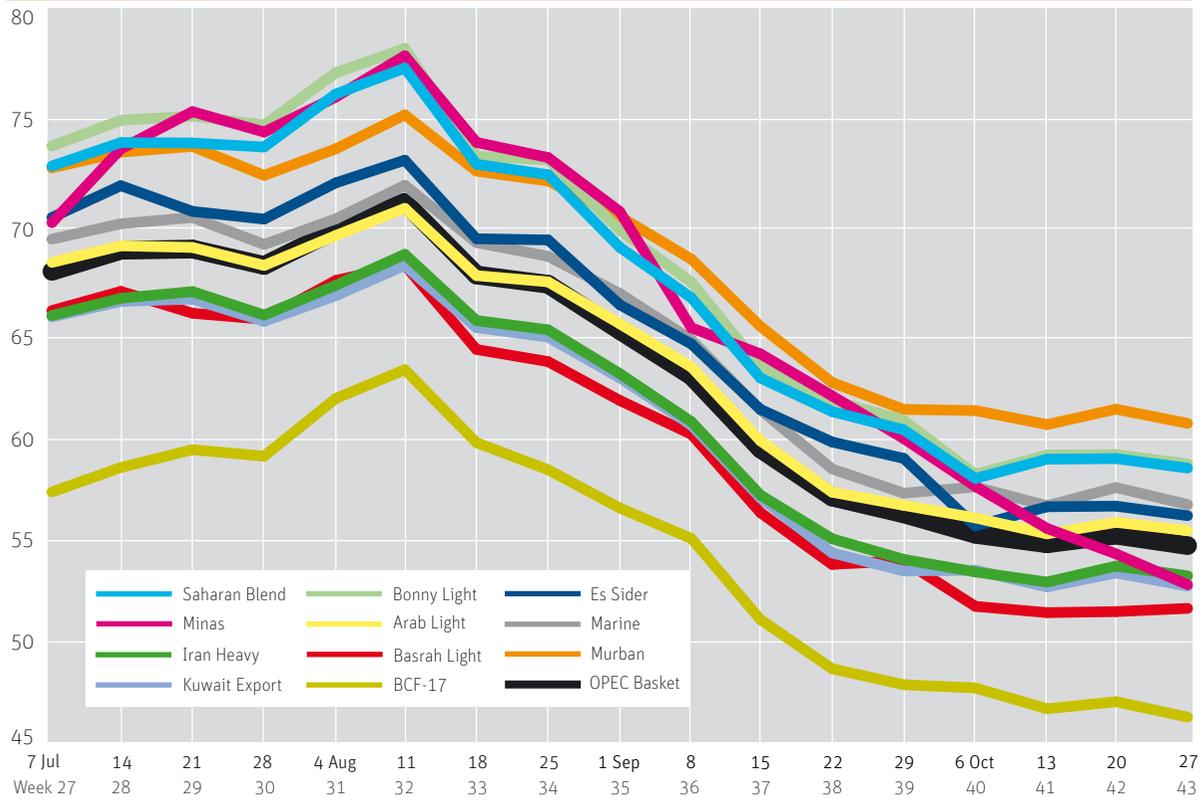
1. Tia Juana Light spot price = (TJL netback/Isthmus netback) x Isthmus spot price.

Brent for dated cargoes; Urals cif Mediterranean. All others fob loading port.

Sources: The netback values for TJL price calculations are taken from RVM; Platt's; Reuters; Secretariat's assessments.

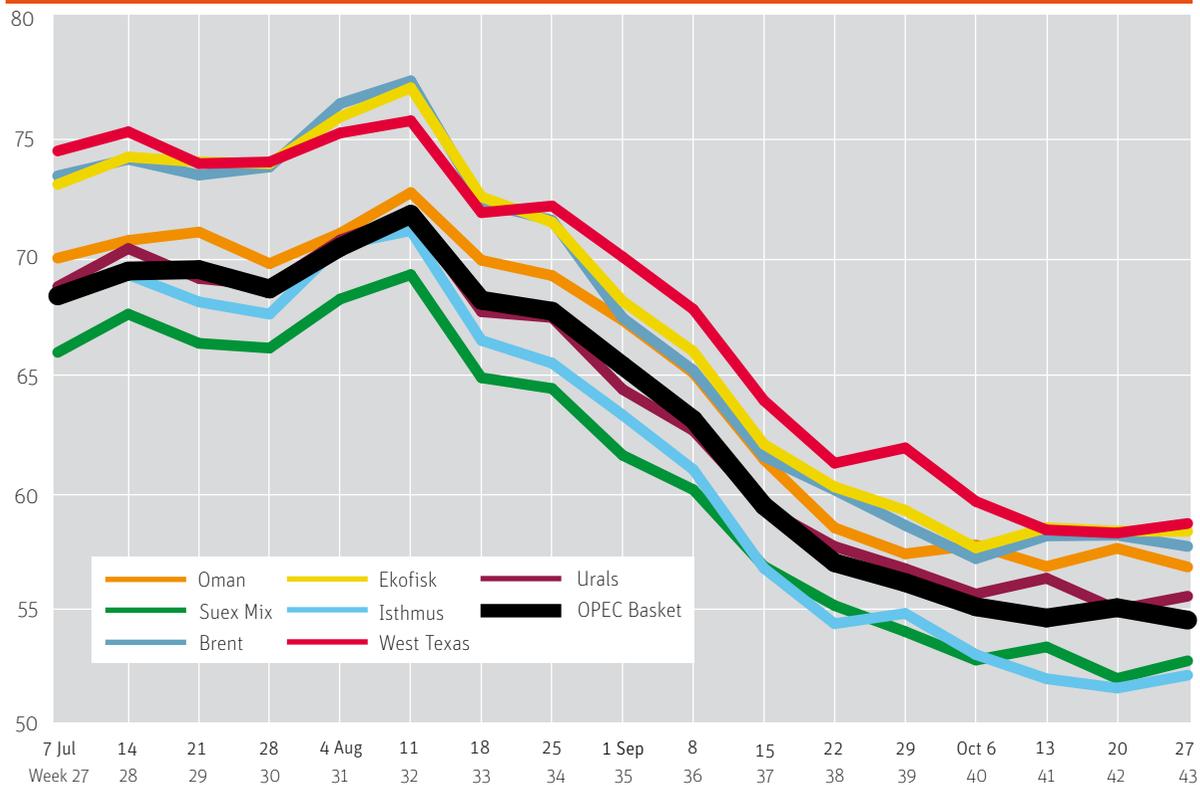
Graph 1: Evolution of the OPEC Reference Basket crudes, July to October 2006

\$/b



Graph 2: Evolution of spot prices for selected non-OPEC crudes, July to October 2006

\$/b



Note: As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the OPEC Reference Basket has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference.

Table and Graph 3: North European market – spot barges, fob Rotterdam

\$/b

	naphtha	regular gasoline unleaded	premium gasoline 50ppm	diesel ultra light	jet kero	fuel oil 1%S	fuel oil 3.5%S
2005							
October	71.56	68.81	77.64	81.54	81.27	46.94	39.98
November	62.65	59.58	67.03	71.05	69.50	42.01	37.50
December	65.20	60.82	68.24	69.25	70.00	41.75	37.54
2006							
January	73.50	67.85	76.37	73.79	76.16	45.19	42.21
February	68.79	62.43	70.12	72.76	74.31	47.04	44.03
March	69.12	68.03	76.53	77.42	76.52	45.37	44.02
April	77.49	80.84	90.97	84.69	84.70	47.77	47.67
May	78.73	83.24	93.84	86.03	87.00	47.14	48.13
June	80.63	84.91	95.72	86.13	87.06	44.65	44.60
July	84.43	91.03	102.17	87.80	89.69	46.10	46.79
August	81.35	82.74	93.21	89.75	91.68	46.38	46.41
September	68.51	64.54	72.69	77.31	79.71	42.04	40.67
October	66.51	59.57	67.12	74.92	73.68	37.91	39.25

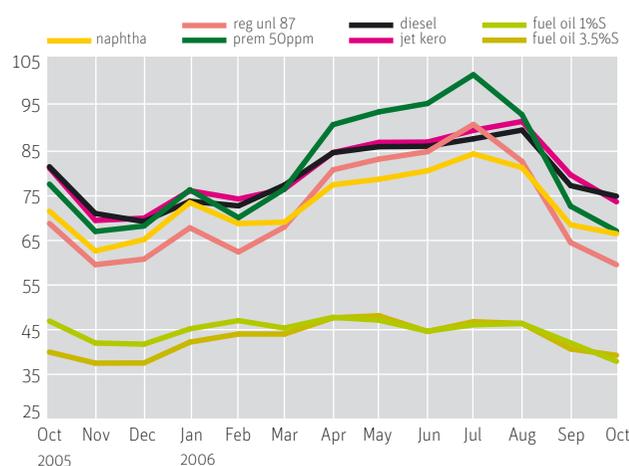


Table and Graph 4: South European market – spot cargoes, fob Italy

\$/b

	naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1%S	fuel oil 3.5%S
2005					
October	58.43	75.86	81.66	45.39	39.15
November	51.20	64.69	69.80	41.91	35.57
December	53.71	67.95	70.64	43.53	35.02
2006					
January	59.23	75.71	74.58	47.98	39.62
February	56.42	68.48	74.41	51.10	42.56
March	57.70	77.70	77.59	47.73	43.29
April	64.78	90.10	84.93	47.66	46.28
May	65.85	94.46	87.09	48.89	46.44
June	67.45	95.00	85.85	46.95	44.47
July	70.21	102.69	88.92	49.59	46.80
August	67.81	93.24	89.83	49.86	44.99
September	56.94	71.74	77.33	40.94	39.72
October	55.46	67.91	73.68	38.41	37.96

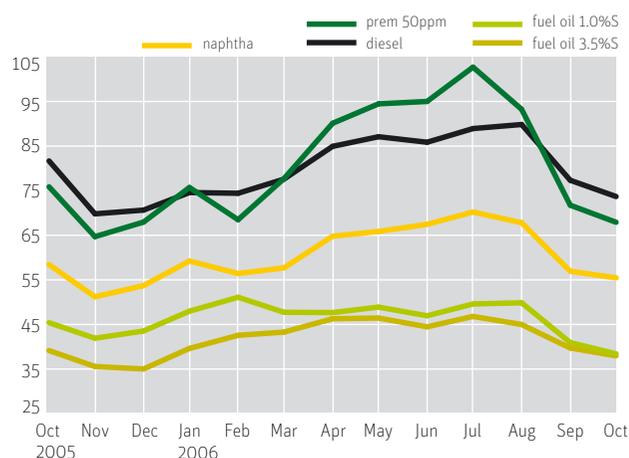
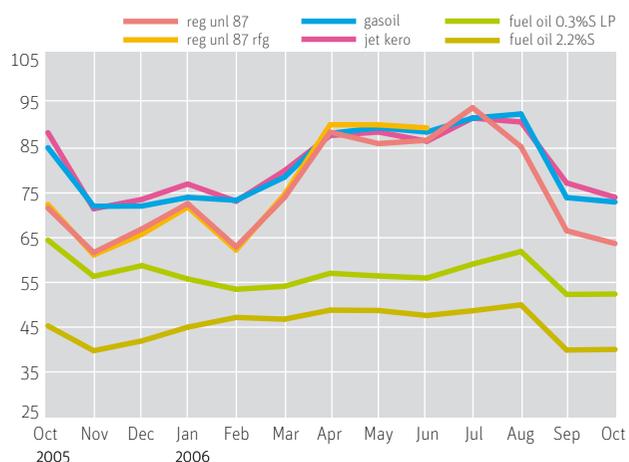


Table and Graph 5: US East Coast market – spot cargoes, New York

\$/b, duties and fees included

	regular gasoline unleaded 87	regular gasoline unl 87rfg	gasoil	jet kero	fuel oil 0.3%S	fuel oil 2.2%S
2005						
October	71.63	72.41	85.13	88.48	64.45	45.28
November	61.67	61.14	72.03	71.47	56.36	39.73
December	66.97	65.79	72.08	73.56	58.75	41.93
2006						
January	72.61	71.85	74.01	77.00	55.77	44.99
February	62.95	62.25	73.36	73.15	53.47	47.17
March	73.97	74.67	78.53	79.97	54.13	46.78
April	88.59	90.25	88.32	87.84	57.04	48.80
May	86.03	90.23	89.57	88.63	56.44	48.72
June	86.79	89.54	88.62	86.56	55.98	47.60
July	94.07	na	91.74	91.74	59.09	48.67
August	85.35	na	92.66	90.87	61.91	49.98
September	66.56	na	73.96	77.24	52.32	39.88
October	63.69	na	72.98	74.03	52.40	40.01



na not available.

Source: Platts. Prices are average of available days.

Table and Graph 6: Caribbean market – spot cargoes, fob

\$/b

	naphtha	gasoil	jet kero	fuel oil 2%S	fuel oil 2.8%S
2005					
October	65.85	87.54	101.92	41.28	39.37
November	58.23	70.47	71.86	35.73	37.15
December	62.83	71.27	73.56	37.93	37.15
2006					
January	67.61	73.77	77.25	40.99	42.44
February	60.19	69.56	74.65	43.17	42.44
March	74.98	74.98	79.53	42.78	42.56
April	79.53	83.72	88.06	44.80	44.72
May	72.61	83.50	87.84	44.72	44.65
June	78.88	81.20	88.22	43.60	43.37
July	82.38	82.39	91.23	44.67	44.55
August	71.17	85.12	90.20	46.00	45.51
September	61.91	72.46	76.92	35.88	35.81
October	61.31	69.90	73.81	36.01	35.93

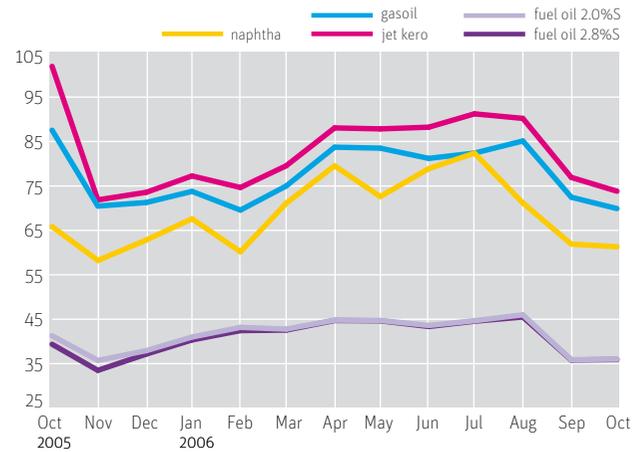


Table and Graph 7: Singapore market – spot cargoes, fob

\$/b

	naphtha	premium gasoline unl 95	premium gasoline unl 92	diesel ultra light	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2005							
October	57.80	69.10	67.91	77.28	75.71	45.42	45.78
November	53.19	60.87	59.48	66.50	70.37	43.80	42.91
December	53.77	61.01	59.89	69.10	70.37	43.68	42.48
2006							
January	58.26	66.78	65.42	77.61	74.96	46.72	45.33
February	56.65	65.02	64.20	79.36	74.96	49.18	47.95
March	59.82	69.64	69.05	82.11	75.66	49.43	48.89
April	64.45	81.13	80.15	90.68	84.77	51.81	51.32
May	65.59	86.80	86.17	92.78	85.55	52.02	51.32
June	68.06	82.76	82.21	89.13	86.18	49.68	48.46
July	70.55	85.50	84.47	88.17	87.57	52.28	50.72
August	66.59	81.22	80.36	88.19	89.47	50.16	47.61
September	57.32	65.86	65.18	77.75	80.55	43.25	42.24
October	56.03	61.83	61.21	73.12	74.02	42.46	42.40

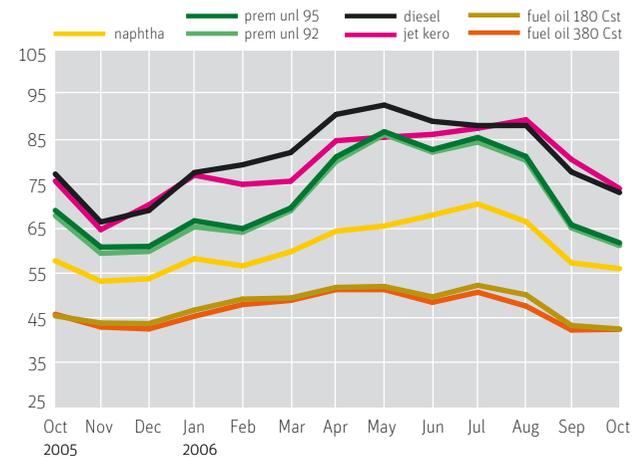
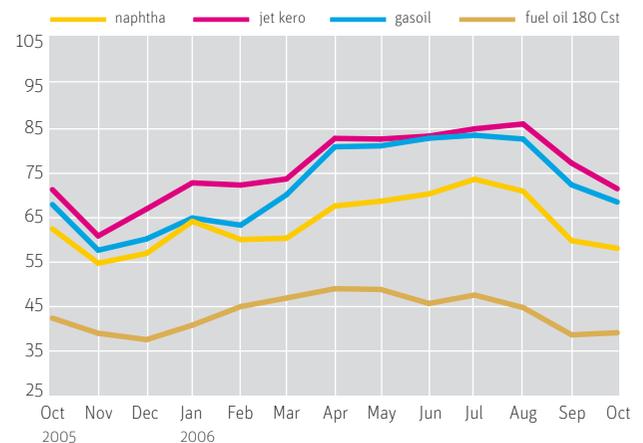


Table and Graph 8: Middle East Gulf market – spot cargoes, fob

\$/b

	naphtha	gasoil	jet kero	fuel oil 180 Cst
2005				
October	62.50	67.97	71.33	42.41
November	54.78	57.69	60.91	39.00
December	56.99	60.23	66.97	37.57
2006				
January	64.19	64.95	72.85	40.82
February	60.10	63.33	72.36	45.01
March	60.39	70.17	73.73	46.93
April	67.65	80.97	82.86	49.03
May	68.72	81.18	82.71	48.87
June	70.37	82.91	83.38	45.71
July	73.66	83.57	85.02	47.60
August	70.99	82.72	86.11	44.79
September	59.86	72.42	77.31	38.65
October	58.12	68.54	71.53	39.12



na not available.

Source: Platts. Prices are average of available days.

Forthcoming events

Achieving fiscal stability in upstream oil and gas, November 29–December 1, 2006, Houston, TX, USA. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.iqpc.co.uk.

Advanced price risk management, November 30–December 1, 2006, Singapore. Details: Conference Connection Administrators Pte Ltd, 105 Cecil Street #07-02 The Octagon, 069534, Singapore. Tel: +65 6222 0230; fax: +65 6222 0121; e-mail: info@cconnection.org; website: www.cconnection.org.

Electric industry fundamentals, electric industry restructuring, November 30–December 1, 2006, Calgary, Canada. Details: Canadian Energy Research Institute (CERI), #150, 3512–33 Street NW, Calgary T2L 2A6, Canada. Tel: +1 403 282 1231; fax: +1 403 284 4181; e-mail: staple@ceri.ca; website: www.ceri.ca.

Canada's oil sands industry, December 4–5, 2006, Calgary, Canada. Details: Canadian Energy Research Institute (CERI), #150, 3512–33 Street NW, Calgary T2L 2A6, Canada. Tel: +1 403 282 1231; fax: +1 403 284 4181; e-mail: staple@ceri.ca; website: www.ceri.ca.

FPS 2006, December 5–6, 2006, London, UK. Details: IBC Energy Conferences, 69–77 Paul Street, London EC2A 4LQ, UK. Tel: +44 207 017 5518; fax: +44 207 017 4745; e-mail: lindsay.ambrose@informa.com; website: www.ibcenergy.com.

2nd International refinery forum, December 5–6, 2006, Dubai, UAE. Details: IBC Gulf Conferences, Office 507, Umm Hurair Building, Zabeel Road, PO Box 15078, Dubai, UAE. Tel: +971 4 336 9992; Fax: +971 4 336 0116; e-mail: ibcgulf@emirates.net.ae; website: www.ibcgulfconferences.com.

Managing energy risk, December 5–8, 2006, London, UK. Details: The Petroleum Economist Ltd, 69 Carter Lane, London EC4V 5EQ, UK. Tel: +44 207 779 8800; fax: 44 207 779 8899; e-mail: amsmith@petroleum-economist.com; website: www.petroleum-economist.com.

16th International oil and gas industry exhibition and conference, December 5–8, 2006, Singapore. Details: OES Ltd, 12th Floor, Westminster CI Tower, 3 Albert Embankment, London SE1 7SP, UK. Tel: +44 207 840 2137; fax: +44 207 840 2119; e-mail: osea@oesallworld.com; website: www.oesallworld.com.

International conference on Fluid and thermal energy conversion, December 10–14, 2006, Jakarta, Indonesia. Details: Research Group for Industrial Energy Engineering, Engineering Centre for Industry, Institut Teknologi Bandung, Jalan Ganesha 10, Bandung 40132, Indonesia. Tel and fax: +62 22 250 2342; e-mail: Nathan@thermo.pauir.itb.ac.id; website: www.thermo.pauir.itb.ac.id/FTEC2006.

Advanced corrosion management in Middle Eastern oil and gas, December 11–12, 2006, Abu Dhabi, UAE. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.iqpc.co.uk.

Introduction to the natural gas industry ... from wellhead to burner-tip, December 11–12, 2006, Calgary, Canada. Details: CWC Associates Ltd, 3 Tyers Gate, London SE1 3HX, UK. Tel: +44 207 089 4200; fax: +44

207 089 4203; e-mail: awilliams@thecwcgroup.com; website: www.thecwcgroup.com.

Winter gas supply demand, December 11–12, 2006, London, UK. Details: The Petroleum Economist Ltd, 69 Carter Lane, London EC4V 5EQ, UK. Tel: +44 207 779 8800; fax: 44 207 779 8899; e-mail: amsmith@petroleum-economist.com; website: www.petroleum-economist.com.

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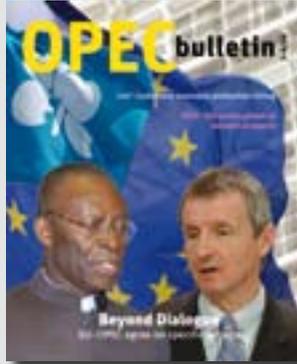
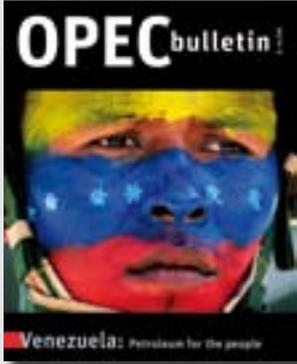
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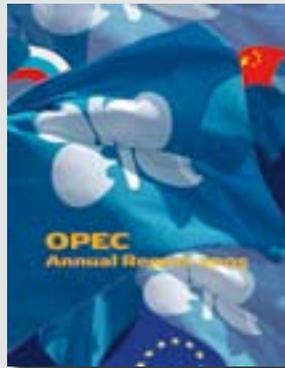
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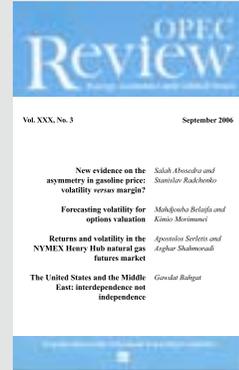
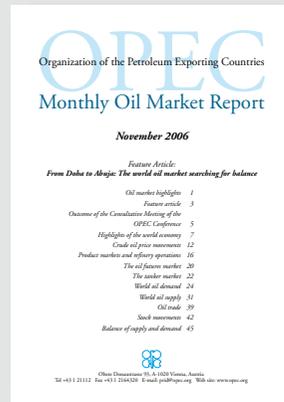
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