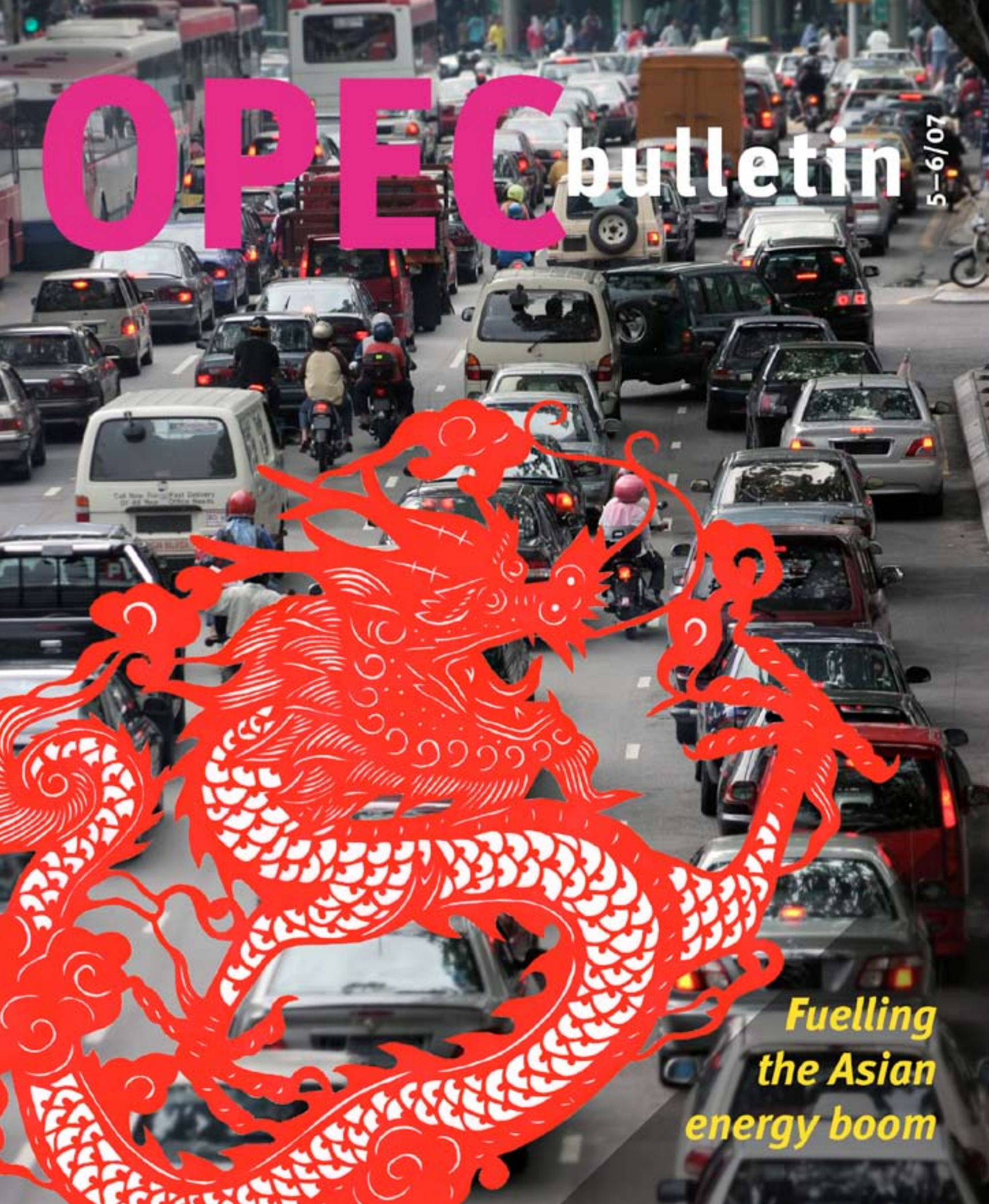
OPEC bulletin

5–6/07



Fuelling the Asian energy boom

Cleaner oil for a cleaner future

The first half of this year has seen the issue of climate change rise higher than ever in the public consciousness in many parts of the world.

Indeed, government pronouncements have been reflecting this heightened level of concern. For example, in the space of just one week, as May slid into June, Australia, China and the United States each made high-level, albeit varied, statements of national policy about this issue, in the build-up to the G-8 summit in Germany, where it featured prominently.

During that same week, environmental protection was a prominent topic of discussion at the European Union-OPEC Joint Roundtable on Energy Policies, in Brussels on May 30. Both sides repeated views expressed at previous meetings of the EU-OPEC Energy Dialogue, that cleaner fossil fuel technologies should be promoted, especially carbon capture and storage, with its huge potential to limit greenhouse gas emissions.

With environmental protection being one of the three pillars of sustainable development, the roundtable recognized that access by the poor to modern energy services would help the achievement of the Millennium Development Goals (MDGs) and the eradication of poverty, which, as was stated at the World Summit in Johannesburg in 2002, is the greatest challenge facing the world today.

China, in unveiling its first national plan on climate change at the beginning of June, touched upon an aspect of the issue which has been at the forefront of discussions for many years, epitomised by the 'Earth Summit' in Rio de Janeiro in 1992 and the 'Johannesburg Plan of Implementation' ten years later — namely the trade-off for developing countries between tackling climate change and promoting economic development.

This comes right to the heart of the three pillars, the third of which is social progress. Together, they constitute a set of fundamental challenges that affect not just individual countries, but also the future of mankind generally.

However, in a world full of inequities and inequalities, quite clearly the most vulnerable communities are the most impoverished ones. And they will perpetuate their suffering and perhaps take it to even harsher extremes, if they cannot develop their economies and their societies in a sound and sustainable manner — and in a way which reflects the true spirit of Johannesburg.

With regard to the provision of modern energy services, as we stated at the 15th session of the United Nations Commission on Sustainable Development in New York in early May, OPEC welcomes any diversification in the energy mix, which can contribute to the achievement of the MDGs.

Indeed, we believe that the introduction of new fuels could be a good development. However, with energy demand expected to grow by more than 50 per cent by 2030, this will not be sufficient to play a dominant role in meeting world energy needs. Furthermore, some of these fuels also have downsides, with the production of biofuels in some areas, for example, competing for the land, water and food which are also necessary for sustainable development.

In short, there is no escaping the fact that most of the increase in world energy demand will be met by fossil fuels. Therefore, as was acknowledged in Brussels on May 30, if we are to tackle climate change with the sense of urgency that is being called for in many quarters, it is important to continue to promote the development and deployment of cleaner fossil fuel technologies.

With today's technology, crude oil provides the most accessible, useable and affordable energy source for many countries seeking to develop and modernise their economies. Fuels derived from petroleum have become increasingly cleaner over the years, and OPEC's Member Countries, which collectively possess about four-fifths of the world's proven crude oil reserves, have been heavily involved in this achievement. This is hardly surprising, since OPEC is represented at all the major international fora on climate change and sustainable development, and has a clear understanding of what is required for the future healthy advancement of the oil industry.

Clearly, there is no perceived magic solution on the horizon to the tripartite challenges implicit in the three pillars of sustainable development. Realism, pragmatism, judicious prioritisation and making the most of the world's existing proven resources are some important qualities required to ensure that countries the world over have access to modern energy services in a timely, sufficient and environmentally harmonious manner.

The world cannot wait for new energy sources to be developed in large-scale commercial quantities. Development of new types of energy is, of course, an imperative. But, in commercial terms, the consensus view is one of decades, rather than years. Consumers need to receive their energy in the meantime, and every effort is being made by the oil industry — and by OPEC Member Countries — to ensure that they will receive this energy with environmental credentials that are as sound as existing, available technology will allow.

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The symbolic dragon is synonymous with the fast-expanding economies of Asia *(see pp4–33)*.
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 12 Members: Qatar joined in 1961; Indonesia and SP Libyan AJ (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); Nigeria (1971); and Angola (2007). Ecuador joined the Organization in 1973 and suspended its Membership in 1992; Gabon joined in 1975 and left in 1995.

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as well as contributions on oil and energy issues in general.
Please send your letters to: obletters@opec.org

Contributions
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Asian energy boom

OPEC stands ready to supply the extra barrels expanding economies will require

With demand for oil in Asia expected to nearly double over the next 25 years, OPEC Member Countries will lead the way among global producers of petroleum in supplying the extra barrels the region's expanding economies will require. Today, Asian nations already account for almost half of the Organization's total global crude exports and this will take on an even greater significance in the future as supply growth from non-OPEC producers reaches a plateau, before declining. In this series of articles, the OPEC Bulletin looks at this region of promise and highlights some of the issues put forward by leading oil industry officials at first, the Second Asian Ministerial Energy Roundtable, held in Riyadh, Saudi Arabia, in May 2007, and then a workshop on Asian Energy Dialogue, which convened in Bangkok, Thailand, the previous month. In addition, we report on the progress made between OPEC and the International Energy Agency (IEA), at their 5th Joint Workshop, in Bali, Indonesia, in mid-May, which covered Asian oil demand, and finally, we hear how energy ministers from the Asia-Pacific Economic Cooperation (APEC) group, met in Australia at the end of May to formulate the 'Darwin declaration' on energy security and sustainable development.

Reports compiled by Jerry Haylins

Ali I Naimi, Saudi Arabia's Minister of Petroleum and Mineral Resources, who addressed the Asian Energy Roundtable in Riyadh.

Leading Asian energy producers and importers have given their concerted backing to a series of measures aimed at securing their respective petroleum futures in the years ahead.

The Second Asian Ministerial Energy Roundtable, hosted by Saudi Arabia on May 2, was attended by around 20 Asian countries, who spoke of their recognition of the growing importance of the region, both to the global economy and the international energy market, particularly concerning supplies of oil and gas.

"The participating countries and organizations recognize that with Asia's continued economic growth, increasing levels of income and greater prosperity, the continent's demand for all types of energy is set to increase during the coming decades," said a joint statement issued at the end of the one-day meeting in Riyadh.

Saudi Arabian Minister of Petroleum and Mineral Resources, Ali I Naimi, alluded to the growing importance of the region, particularly the mutual dependency and exchanges between West and East Asia.

"Our hydrocarbon relationship is strong and crucial for each side. Two-thirds of West Asian oil is exported to East Asia," he stated in his opening address to the meeting.

Naimi pointed out that a big share of incremental oil demand in the future will be from Asia.

"Today, Asia is a massive oil market — the most important oil market. Moreover, it has a vital role in the world economy."

The facts speak for themselves: Asia is home to more than half the world's population, while its oil and natural gas production is equal to one-third of global output. And, in possessing two-thirds of the planet's petroleum reserves, there are plenty of energy resources yet to be explored that are capable of meeting the continent's future energy needs.

Delegates at the meeting stressed that with this growing importance in mind, there was, today, an even greater need for closer, more concerted cooperation and coordination among Asian energy exporters and importers within a bilateral, regional and global context.

They also stressed the importance of expanding ties with and between international concerns, such as OPEC, the Riyadh-based International Energy Forum (IEF), the OECD energy watchdog, and the International Energy Agency (IEA), so that a wide-ranging and effective dialogue could be established for the testing years ahead.

Constructive dialogue

Naimi highlighted the need for supporting this kind of initiative to heighten mutual cooperation, not only in energy, but also in other important energy-related fields, as well as economic and educational issues.

He described "open and constructive" dialogue as being a vital step in helping to form a relationship that supports energy security and enhances living standards the world over. And Naimi was emphatic in assuring oil-importing countries that they can depend on West Asia for satisfying their future demand for petroleum.

Most of the key producing countries were present at the meeting, where they spoke with one voice concerning

Growing trade will continue to support the Chinese economy. Pictured is the increasingly busy Shanghai dockyard.

their commitment to ensuring that the necessary investment was made available for securing the appropriate levels of production and supply required for meeting consumers' needs at all times.

However, Naimi advised consumers must do more to help producers determine just how much extra output capacity will be required in the future.

According to him, faced with uncertain projections over oil demand levels in the coming years, Saudi Arabia will need to see something more concrete from consumers before committing to a further boost in production capacity beyond the already planned 12.5 million barrels per day target set for 2009.

"Our feeling now, with the thrust and push towards conservation, efficiency and the use of alternative energy sources, is that we probably need not go beyond 12.5m b/d," Naimi told journalists after the roundtable.

The Minister echoed comments contained in the meeting's joint statement calling for the provision of more accurate and reliable data on future demand levels and working towards open, competitive and transparent oil and gas markets, in order to reduce uncertainty and price volatility.

Delegates deemed it especially important to encourage the flow of information, bilateral and multilateral exchanges and the development of energy research networks within Asia. They felt that the Joint Oil Data Initiative (JODI), supported by OPEC and coordinated by the IEF Secretariat, could offer great assistance in this regard.

The roundtable was divided into two working sessions — the first focused on supply and demand and the prospects of oil trading in East and West Asia, while the second looked at investment issues in oil exploration, refining and marketing and the role of national and international oil companies.

Participants discussed energy security from an international and Asian perspective, the role of strategic reserves, surplus energy, transparency and energy consumption trends.

Joint statement

The following joint statement was issued at the end of the Second Asian Ministerial Energy Roundtable, hosted by Saudi Arabia

Upon an invitation from the Kingdom of Saudi Arabia, ministers in charge of energy affairs from 17 Asian countries met in Riyadh on May 2, 2007 for the Second Asian Ministerial Energy Roundtable. The participating countries and organizations recognized the growing importance of Asia in both the global economy and the global energy market, particularly in terms of oil and gas. They also recognized that with Asia's continued economic growth, increasing levels of income, and greater prosperity, the continent's demand for all types of energy is set to increase during the coming decades. They further recognized that there are plenty of energy resources to be explored throughout the continent, which is capable of meeting future Asian and global energy needs. Recognizing also the increasing importance of bringing Asian dimensions to bear on efforts to deepen their global dialogue in the International Energy Forum (IEF), in particular at the 11th IEF Ministerial Conference that Italy will host in April 2008, the participants to the roundtable:

1. Call for greater cooperation and coordination among and between Asian energy exporters and importers within the bilateral, regional and global context, and encourage the participation of international bodies, such as the International Energy Agency (IEA), the IEF, and OPEC in the promotion of dialogue and cooperation.
2. Continue to work for the stability and predictability of the energy market and encourage maintaining spare capacity of both producers and consumers and in the whole energy value chain — upstream, midstream and downstream.
3. Encourage improvements in energy efficiency by both exporting and importing countries through such measures as setting individual goals and/or action plans voluntarily on an overall and/or sectoral basis and sharing best practices.
4. Promote investments in all segments of the energy value chain between and among Asian countries and support cross-national investment in different energy sectors, according to each country's needs and in accordance with acceptable commercial practices.
5. Work towards open, competitive and transparent oil and gas markets, in order to reduce uncertainty and volatility in these markets.
6. Recognize that free and economically based global markets should be the basis for different energy sources and will work to maintain such markets in the interest of increased stability and transparency.
7. Encourage international and regional trade of energy products and services and enhance regional cooperation for security of energy transport routes.
8. Endeavour to insulate energy markets from unwarranted political influences wherever they may occur.
9. Support technological solutions to various issues facing the energy industry, including those related to environmental protection and climate change, such as carbon capture and sequestration.
10. Encourage the flow of information, bilateral and multilateral exchanges and the development of energy research networks within Asia and the Joint Oil Data Initiative (JODI), coordinated by the Secretariat of the IEF, at international level.

Asian East and West must make the right decisions for securing the future – El-Badri

The regions of East and West Asia already have some excellent economic and energy links, but it is important that "together" they make the right decisions for the future, particularly given the challenges and uncertainties surrounding today's oil market, according to OPEC Secretary General, Abdalla Salem El-Badri.

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This traffic congestion in Bangkok, Thailand, is typical of Asian capitals today, where a growing number of vehicles are thronging the streets.

Speaking at the Asian Ministerial Energy Roundtable, El-Badri noted that the East/West relationship from the perspective of the oil market is very much complementary.

"We need each other. By this I do not mean only as producers and consumers, but as partners," he told delegates during the session on Energy and Economic Interdependence between East and West Asia.

And El-Badri said that it was easy to see how the regions of East and West Asia complement each other.

"This stems from their closeness geographically, their peaceful coexistence over many centuries, their close trade ties and technology expertise, and from the shared oil supply and demand perspective," he noted.

Going forward, by 2030, Asian oil demand is expected to rise to 43m b/d, an increase of around 18m b/d from today.

"This demand will, of course, be driven by regional economic growth in a similar manner to recent years. For example, in terms of GDP growth over the past year, China has grown by over ten per cent, India by over eight per cent, Indonesia and Malaysia by over five per cent, and South Korea and Thailand by just under five per cent."

On the supply side, from the East, said El-Badri, OPEC producers such as Saudi Arabia, Iran, Iraq, the United Arab Emirates (UAE), Kuwait and Qatar all stood ready to deliver the oil the expanding economies of West Asia required.

He pointed out that East Asia supplies a significant share of the world's oil and also holds considerable reserves.

"In fact, taken as a whole, OPEC Member Countries today hold approximately 78 per cent of the world's proven crude oil reserves with much of this in the Middle East," commented El-Badri.

Mutually supportive

The OPEC Secretary General said that in bringing "these two strands together", it is clear that East and West Asia interdependence is already clearly defined.

"The two regions are mutually supportive. This is further emphasised by the fact that if we take crude oil exports for Asia, Europe and the United States, OPEC supplies more to Asia than the other two regions combined. At present, almost 50 per cent of OPEC oil exports are bound for Asia," he said.

El-Badri said this important inter-relationship pointed to the fact that any talk of energy security must take into account both supply and demand perspectives.

"The role of oil is equally important to the economic growth and prosperity of consuming-importing countries, as well as to the development and social progress of producing-exporting countries.

"The concern for consuming countries is for the secure and predictable flow of oil at reasonable prices. I would like to stress up front that OPEC is ready, willing and able to supply oil — as it always has done — and there are still plentiful reserves.

"For producing countries, concerns centre on demand uncertainties. For example, to 2020, scenarios developed by the OPEC Secretariat highlight that the additional amount of oil required from OPEC could range by close to 9 million b/d," he said.

Translating this uncertainty into monetary terms, the cost of future investment for Member Countries is somewhere between $230 billion and $500bn, representing a huge uncertainty for upstream requirements.

With these figures in mind, he said, it is easy to appreciate the importance of producers and other investors having a fair idea of how much oil will be required and who their main consumers will be so that they may invest with confidence.

"... a large amount of idle capacity would put much downward pressure on prices and be detrimental to vital export revenues," he added.

El-Badri said that market uncertainties also impact the downstream, which is currently witnessing a great deal of tightness in refining.

He said that in response to meeting the upstream and downstream investment challenge, OPEC recognized the importance of cross investments, particularly in the East and West Asia region.

"New refining capacities in Asia will be increasingly dependent on incremental supply from the West and thus cooperation in product movements in areas such as the physical swaps for supply and the sharing of storage infrastructure will be significant. We need to build relationships beyond just the buyer and seller," he maintained.

Carbon-constrained world

The Organization also hoped to see enhanced relationships among national oil companies (NOCs), as well as between NOCs and international oil companies (IOCs).

"For example, in today's environment we need to look at collaboration on technological options that allow the continued use of fossil fuels in a carbon-constrained world, such as carbon capture and storage (CCS)," he said.

El-Badri said they also needed to aid further information exchange and help evolve larger and more developed research and development networks.

"One particular area of global concern is that surrounding manpower development and training as a large shortage of engineers and other key personnel is threatening the timely completion of essential projects. Such cooperation can also help bring down the high costs of services, which are creating further pressure on well-devised output expansion strategies," he said.

AP Photo

The transportation sector is forecast to be one of the main drivers of China's booming energy market. Subsequently, great interest was shown in this year's Shanghai Auto Show.

New avenues of cooperation

Commenting on the expansion of energy ties, El-Badri said it was important that "we look to continually develop and explore existing and new avenues of cooperation at the level of governments and international organizations".

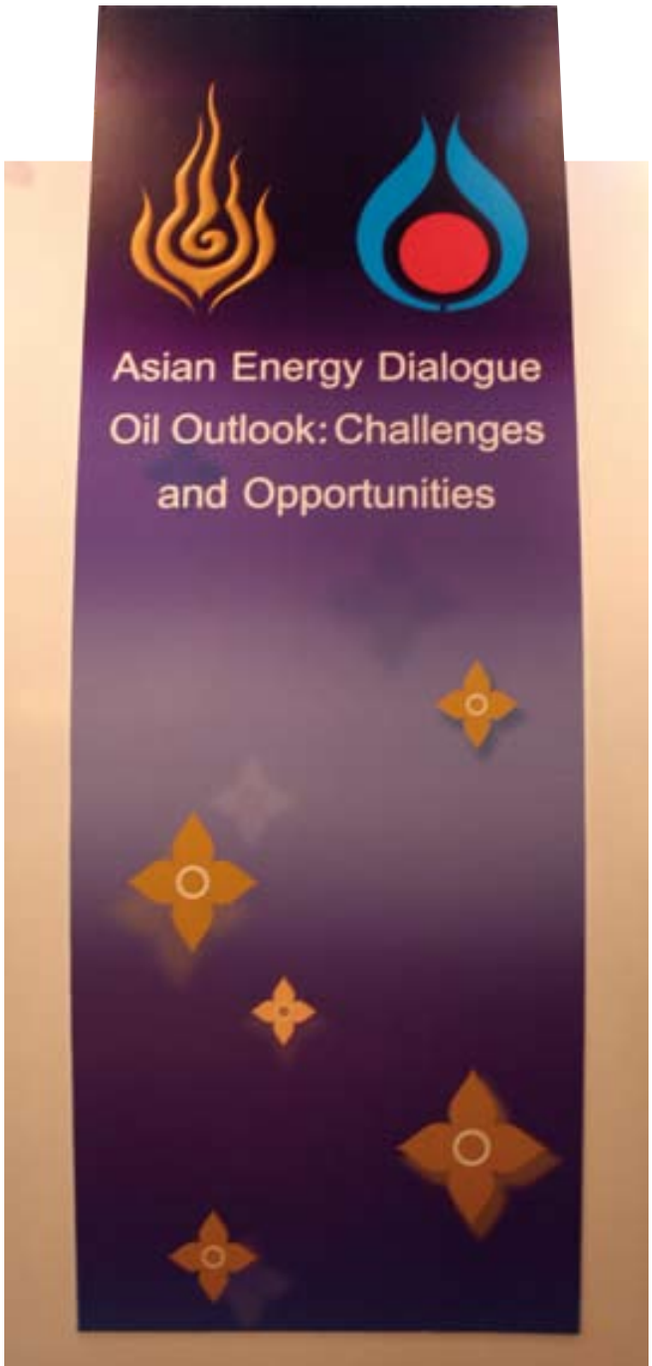
He continued: "Efforts at expanding dialogues are something our Organization has, and continues to devote much energy to," he added.

El-Badri said the most recent result of this was the establishment of energy dialogues between OPEC and a number of other industry stakeholders — the European Union, China, Russia, other non-OPEC producers and the OECD energy watchdog, the Paris-based International Energy Agency (IEA).

"This year will also witness OPEC broadening its talks in the Asian region. In late March, there was a meeting with the Asian Refinery Community in Bangkok, and talks will also be held with Japanese officials from the Ministry of Economy, Trade and Industry in Tokyo," he said.

Bangkok Energy Dialogue workshop
looks at strategies for dealing with challenging years ahead

Multilateral dialogue seen as essential for developing "sound and orderly" energy future



OPEC is ready "at all times" to listen to and address the energy concerns of the vast, diverse continent of Asia, especially with regard to the steady, secure supply of crude oil to the region.

That was the overriding message conveyed by the Organization to the workshop on *Asian Energy Dialogue,* which took place in Bangkok, Thailand, from March 21–23.

"We believe in OPEC, that effective multilateral dialogue is essential if the world oil industry is to develop in a sound and orderly manner in the future, benefiting producers and consumers alike and with a heavy emphasis on the special needs of emerging economies, as well

Mohamed Bin Dhaen Al Hamli, President of the Conference, and Minister of Energy of the UAE.

as the world's many impoverished nations," said OPEC Conference President Mohamed Bin Dhaen Al Hamli.

Hosted by PTT Thailand and held under the theme, 'Oil Outlook: Challenges and Opportunities', the workshop was aimed at enhancing mutual understanding over oil market and related issues through direct interaction among OPEC Member Countries and the Asian refining community, while fostering dialogue on the issue of security of supply and demand.

"The fruits of improved dialogue and cooperation are already being felt in this part of the world," commented Al Hamli, who is Energy Minister of the United Arab Emirates (UAE), in his address to the workshop.

He said the workshop was a natural part of enhancing the cooperation and dialogue already evident in Asia.

"Today, the Organization places great credence on the issue of shared responsibility," he professed.

In Asia, the Organization has a formal dialogue with China, with the next workshop taking place in Beijing later this year. In May, OPEC held a workshop with the International Energy Agency (IEA) in Bali on Asian demand. It is also scheduled to hold informal talks with Japanese officials from the Ministry of Economy, Trade and Industry (METI) and the Institute of Electrical Engineers of Japan (IEEJ). It has taken part in the Asia-Pacific Economic Cooperation (APEC) Energy Ministers' meetings, and is in talks for a more formal dialogue with APEC. In addition, OPEC has attended Roundtables of the Asian Oil and Gas Ministers.

In May, OPEC was involved in the Second Asian Ministerial Energy Roundtable in Riyadh, hosted by the International Energy Forum (IEF), which has its Secretariat in the Saudi Arabian capital.

Concerning OPEC's formal energy dialogue established with the People's Republic of China, Al Hamli said: "Established at the end of 2005, this has enormous potential for an enhancement of the already good relations between the two groups; there is little doubt that the benefits will be felt across Asia as a whole."

The Bangkok gathering was another example of the kind of events OPEC is participating in within the Asian region in its bid to cultivate better and more structured ties with the Organization's fastest growing energy market.

It was attended by a group of experts from OPEC Members — Indonesia, Iran, Kuwait, Saudi Arabia, the UAE, and Venezuela — as well as the OPEC Secretariat.

Other leading representatives were from Chinaoil/CNPC and UNIPEC/SINOPEC from China, Reliance Industries and TERI from India, Idemitsu from Japan, the PTT Public Company of Thailand, the SK Corporation of

South Korea, Singapore Petroleum, PVM of Austria and Barclay Capital (Asia-Pacific).

A busy agenda encouraged frank and open discussion on a number of important issues, which underlined the value of direct interaction at an informal, expert level, where the main goal was to attain a better understanding of each other's positions.

Among the topics covered were the structure of primary energy and energy strategies in the major Asian countries, the outlook for the oil industry, important policy issues, such as supply and demand security, strategic stocks, investment in future capacity expansion, trade flows, as well as various refining and pricing issues.

Al Hamli pointed out on a general note that steady energy supply is essential to the efficient operation of any economy.

"You are especially aware of this in Asia, where there have been distinct phases of dynamic economic growth and development over the past half century, with the focus, in turn, switching from one part of this vast, fascinating continent to another," he told the workshop.

The Conference President noted that oil is expected to maintain its longstanding position as the leading source in the global energy mix for the foreseeable future and Asia is set to become an even more important consumer of oil in the coming decades. This would be spread among the region's established consumer societies, emerging economies and developing countries.

The annual average rates of oil demand growth expected to occur in China and South/South-east Asia collectively over the next 25 years will be around two-and-a-half times the global average of 1.4 per cent. This excludes Asian members from the OECD and OPEC.

China and South Asia (largely India) will be the mainstays of the growth, where it is forecast to rise by 15m b/d up to 2030.

"Looked at another way, in 2005 China and South/South-east Asia collectively accounted for around 17 per cent of world oil demand. The scenario sees this rising steeply to around 29 per cent in 2030. These proportions become even greater when we add the Asian members from the OECD and OPEC," said Al Hamli.

Interdependence

The workshop also looked at OPEC's role in stabilizing the market, its work towards bringing about price equilibrium and its impressive track record as a committed and responsible crude oil supplier.

However, it was stressed that oil market stability could not be achieved by OPEC alone and was dependent on close cooperation with other parties in the oil industry, especially other producers and the consumers.

Petroleum interdependence between producers and consumers was considered critical in supporting the economic development and growth of both sides.

The workshop pointed to the need for pursuing continuous in-depth dialogue between producers and consumers at all levels (from technical, expert level to high-level policy and government).

Delegates agreed that there was an increasing level

Participants at the Bangkok Energy Dialogue workshop.

Dr Hasan M Qabazard (r), Director of OPEC's Research Division; with OPEC's Senior Research Analyst, Nadir Guerer (c).

of common expectation and mutual interest between producers and consumers and that dialogue between the two sides should not be confined to times of crisis, but should be held on a continuous basis and dealing with a wide range of issues.

Interaction should address such topics as security of supply and demand, with an emphasis on consuming countries publicizing accurate and reliable demand forecasts over the mid- to long-term so that upstream projects in producing countries remained viable concerns.

Minimizing uncertainties, such as those relating to rates of world economic growth, advances in technology and policy measures in the consuming countries, were deemed critical for enhancing the process of decision-making for safeguarding oil's future.

More transparency in the evolution and implementation of policies among consuming countries was considered essential, so that better assessments could be made for undertaking the appropriate levels of capacity expansion and preventing waste of precious financial resources.

Al Hamli said the two sides should also collaborate in the field of cleaner oil technologies.

"We are particularly interested, as a 'win-win' situation, in the promising technology of carbon capture and storage combined with enhanced oil recovery solutions. This would not only address environmental challenges, but also help increase energy supplies," he maintained.

On security of supply, delegates heard from speakers about current constraints, such as geopolitical risks, maturing oilfields, soaring exploration and production costs, cost inflation, including a lack of rigs, materials and qualified engineers, as well as preservation of natural resources by the producing countries.

Since oil was a vital commodity for both producers and consumers, mutual understanding and collaboration on all the pertinent issues were described as vital for the benefit of the two sides.

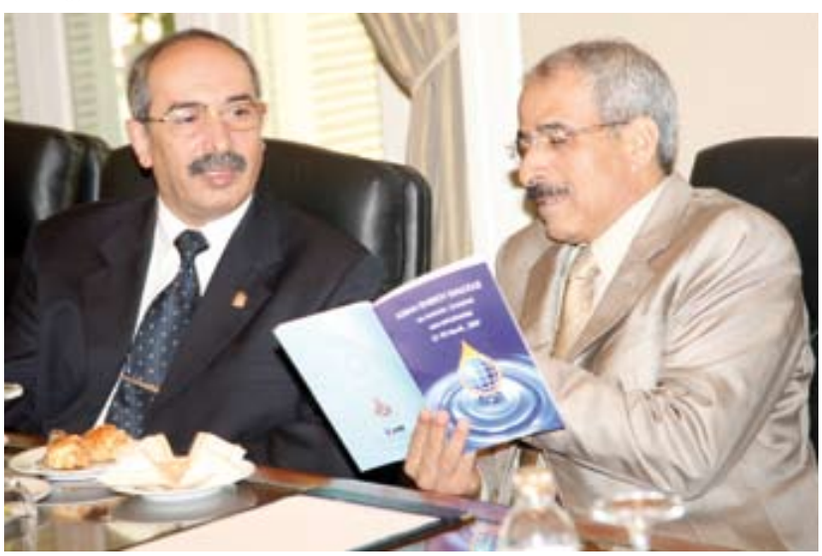
The meeting was of the opinion that although energy demand in Asia is set to increase in line with the region's dynamic economic growth, with oil leading the way, there was the danger that such eventualities as energy efficiency, conservation and the increasing development of alternative energy sources, could eat into crude oil demand.

Demand growth for fuels in the transportation sector was forecast to be stronger than other products, but it was felt that the overall picture would require extensive capacity growth in the refining sector towards the end of the decade with the Asia-Pacific and Middle East accounting for more than 60 per cent of the increase.

Al Hamli told the workshop that with the biggest oil demand growth rates of any region in the world and the expectation that this trend will continue for the foreseeable future, Asia, which today needs to import more than 90 per cent of its crude oil, is well aware of the need to safeguard and develop existing secure sources of supply from beyond its vast borders, or establish new ones.

"Some countries, of course, are already well-advanced in this regard," he added.

Mohamed Bin Dhaen Al Hamli (r), President of the Conference, and UAE Minister of Energy; Salem Eissa Al Qatam Al Za'abi (l), UAE Ambassador to Thailand.



Dr Piyasvasti Amranand, Minister of Energy of Thailand.

Fuad Al-Zayer, Head of the Data Services Department at the OPEC Secretariat.

Dr Ahmad Al-Ghamdi, Advisor to the Minister, Ministry of Petroleum and Mineral Resources, Saudi Arabia.

Anon Sirisaengtaksin, Senior Executive Vice President, Corporate Strategy and Development and Acting Executive Vice President, Petroleum Authority of Thailand.

Left (from l–r): Surong Bulakul, Executive Vice President of International Trading, PTT; Dr Hasan M Qabazard, Director of OPEC's Research Division; and Dr Kurujit Nakornthap, Deputy Permanent Secretary, Ministry of Energy of Thailand.

Right: Prasert Bunsumpun, President, PTT Public Company Ltd, talking to the press after the meeting.

Ali Obaid Al-Yabhouni, Governor for OPEC of the UAE.

Johannes Benigni, Managing Director, PVM Oil Associates.

Prasert Bunsumpun, President, PTT Public Company Ltd.

However, the challenges extend beyond this, since Asia must expand its infrastructure in two principal respects — the transportation network and the downstream facilities. This will also involve the development of much newer infrastructure, said Al Hamli.

Also, workshop participants considered that new refining capacity in the Asia-Pacific would be increasingly dependant on incremental supply from the Gulf and other regions.

Al Hamli said that OPEC, on its part, is committed to ensuring steady, secure supplies of crude oil to consumers at reasonable prices both now and in the future. Obviously, Asia is a key region in this respect.

"OPEC is willing and able to rise to the challenge and to take every opportunity to ensure that the world remains well-supplied with oil at all times," he said.

"Our reference case scenario suggests that the amount of crude that OPEC will be expected to supply will rise by nearly 60 per cent by 2030. We are willing and able to meet our longstanding commitment, and this is supported by our Member Countries holding around four-fifths of the world's proven crude oil reserves."

Al Hamli stated that OPEC Member Countries also have a growing amount of investment downstream and this includes joint ventures in refining and petrochemicals in key markets in Asia.

However, there is only so much OPEC can do downstream, since this is essentially and traditionally the domain of consuming countries, he contended.

Energy interdependence requires a shared responsibility

The following is an edited transcript of an interview granted by ***Dr Hasan M Qabazard****, Director of the OPEC Secretariat's Research Division, on the sidelines of the Asian Energy Dialogue workshop in Bangkok.*

What is the purpose of this conference?

We live in a world where our energy interdependence advances by the day. Thus, it is critical we take on board a shared responsibility, as a means of understanding the needs of each stakeholder and collectively addressing current and future market challenges.

With this in mind, at OPEC, we believe that effective multilateral dialogue is essential if the global oil industry is to develop in a sound and orderly manner, benefiting producers and consumers alike and with a heavy emphasis on the special needs of emerging economies.

This is the purpose of the conference. Bringing together stakeholders to listen and learn about the needs of each other, particularly on a continent like Asia that is growing so fast.

The meeting is also a natural part of enhancing the dialogue and cooperation that is already taking place in this part of the world, for example, the Roundtable of Asian Oil and Gas Ministers. OPEC is also open to constructing dialogue with other consumers and producers in the ASEAN and broader Asian region.

Outside ASEAN, the Organization has also set up a formal process of energy dialogue with China last year, and this has enormous potential for an enhancement of the already good relations between the two sides.

OPEC will also be holding informal talks this year with Japanese officials from the Ministry of Economy, Trade and Industry (METI) and the Institute of Electrical Engineers of Japan (IEEJ). And In May, OPEC convened a workshop with the International Energy Agency (IEA) in Bali, Indonesia on Asian demand.

Will any decisions or policies result from this conference, or is it simply to foster discussion?

We see this as an event that fosters discussion between all stakeholders. I cannot speak directly about any decisions and policies, but there is little doubt that OPEC Member Countries and countries of the ASEAN region will be looking to foster greater ties going forward.

How can OPEC help or benefit Thailand's energy industry?

I feel the key is learning from each other. These kinds of talks and deliberations are an essential part of our understanding. This can only benefit all parties.

Why was Thailand selected as the host for this conference given that Thailand is not an OPEC Member?

Thailand is one of the most important and active members of ASEAN with a dynamic economy in the region.

What is the global energy outlook from OPEC's perspective?

For the foreseeable future, oil is expected to maintain its longstanding position as the leading source in the global energy mix (at around 37 per cent in 2030).

World oil demand is projected to rise to 118 million barrels per day at an average annual rate of 1.4 per cent during the period to 2030. We expect consumption in developing countries to double, accounting for 86 per cent of the global increase.

On the supply side, while non-OPEC oil supply will continue to grow throughout this period, the amount of crude that OPEC would be expected to supply increases markedly — from 30m b/d to 49m b/d — nearly 60 per cent.

With around four-fifths of the world's proven crude oil reserves, OPEC is willing and able to meet such an undertaking.

Outside of China and India, where are you seeing the most demand in Asia?

Asia is set to become an even more important consumer of oil over the coming decades. This will be spread among the region's established consumer societies, emerging economies and developing countries.

Outside of China and India, Thailand, Indonesia, Malaysia and South Korea have all witnessed growth levels of around or above five per cent. In comparison, the figure for the United States is just over three per cent and for the Euro-zone it is around 2.5 per cent.

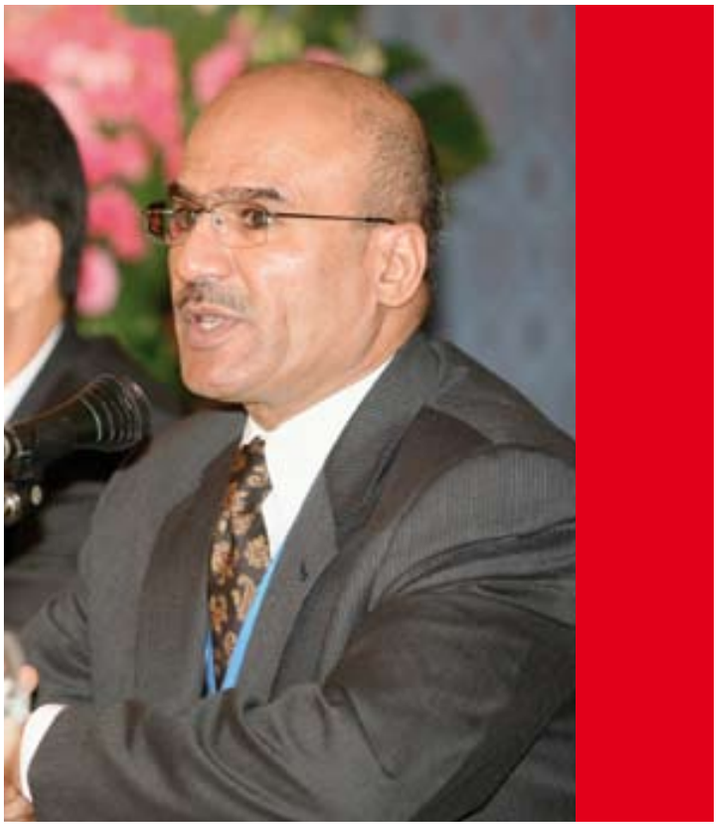
With this in mind, there is expected to be increases in demand across the region.

It is also interesting to note that when discussion turns to OPEC and the Asian region, the crude oil export levels are enlightening. If we take crude oil exports for Asia, Europe and the US, OPEC supplies more to Asia than the other two regions combined.

Is OPEC interested strategically in the recent discovery of wells in the Gulf of Thailand?

OPEC cannot speak directly for individual Member Countries. The only thing I can say is that the recent discoveries in the Gulf of Thailand look extremely promising and I wish Thailand and whoever develops these concessions/wells every success.

How does OPEC plan to compete with non-OPEC countries in providing more and more of the world's petroleum resources?



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

With regard to your question about non-OPEC oil, allow me to give you a few figures from our recent research.

According to our projections, non-OPEC crude oil supply — excluding non-conventional oil — is expected to rise over the coming years and reach a plateau of 48m b/d, before beginning a gradual decline from around 2020.

This plateau is maintained initially as increases from Russia and the Caspian and Latin America, mainly Brazil, compensate for declines elsewhere. The outlook today is a little more conservative than previous assessments due to the inclusion of Angola in the OPEC grouping.

Additionally, OPEC's most recent assessment of the market up to 2030 introduces non-conventional oil supply and biofuels from non-OPEC countries. In total, more than 10m b/d of non-conventional oil supply, plus biofuels, will come from non-OPEC producers by 2030, 8m b/d more than in 2005.

The most significant growth is expected to come from the Canadian oil sands, with some increases elsewhere, primarily in China.

From OPEC's perspective, the amount of crude oil that it is expected to supply increases markedly post-2010, rising to 38m b/d by 2020 and 49m b/d by 2030.

OPEC-IEA Workshop assesses extent of surging Asian energy demand

By Douglas Linton

L–r: Abdalla Salem El-Badri, OPEC Secretary General; Dr Purnomo Yusgiantoro, Indonesia's Minister of Energy and Mineral Resources; and Claude Mandil, Executive Director of the IEA.

The fifth in a series of joint workshops between OPEC and the International Energy Agency (IEA) was held over two days in Bali, Indonesia, in mid-May. Hosted by the Indonesian Ministry of Energy and Mineral Resources, the workshop on *Asian oil demand: outlook and challenges* was attended by high-level delegates from the OPEC and IEA Secretariats. It also included senior government officials from the Organizations' Member Countries, international and regional energy and economic experts, as well as senior representatives from leading global institutions.

The event provided a fruitful exchange of views, ideas, assessments and presentations on the key issues and uncertainties surrounding Asian oil demand over the coming years. Over the two days, a better understanding of developments in the region, especially with regard to demand prospects for energy in general and oil in particular, was reached.

Obviously, the leading Asian economies of China and India were the main focus of the Bali workshop. These two countries combined are the main forces behind Asia's increasing importance in an expanding global economy and in oil demand growth in the decades ahead. Both countries are undergoing major socio-economic reforms and are the subject of an extensive industrialization drive, which will require increasing amounts of energy.

However, it is a fact that uncertainties are more

Workshop presentations highlight following key points:

- The overwhelming significance of Asia, particularly China and India, in global economic expansion and, consequently, oil demand growth, both now and in the coming years. This necessitates the importance of having a deeper understanding of developing trends in the region and the need for more accurate and timely data.

- In determining the oil market outlook over the medium term, simple GDP-based models are not enough. Regional understanding is important as well as a need to calculate growth from the bottom up. Considerable uncertainties exist regarding GDP and price levels. Poor and incomplete data provide a further challenge.

- Alternatives to crude oil, such as biofuels, gas-to-liquids, coal-to-liquids and coal-to-gas, have and will continue to have only a limited impact on the energy scene as increased demand drives up feedstock prices. Given the current technology, the targets set by many consuming countries are unlikely to be economically viable.

- Looking ahead, oil demand growth is expected to be increasingly concentrated in the transportation sector, given the expected positive effects on personal income, particularly in China. Refining configurations and capacity expansion plans for the region need to take this into account. Transport demand is seen as a key determinant of future growth, as demand is inelastic. Fleet efficiency during the growth phase will determine rates of consumption for years to come.

- Asia is one three key oil demand growth regions alongside the United States and the Middle East, with China expected to dominate the energy scene.

- India's economy is expected to become the third-largest globally by 2030 and this will result in a four-fold increase in primary energy consumption. The petroleum sector will be vital to India's expansion and the country is set to be an important refining hub for Asia. There is a high growth potential for the natural gas, liquefied natural gas and petrochemical sectors. However, governments will need to adopt favourable policies and establish a stable political climate, good credit rating and ensure minimal investment risks.

- Efforts to diversify supply will have limited benefits given the interlinkages in the oil market.

- Energy policies should not discourage the use of cost-effective energy inputs.

- OPEC, which supplies more crude oil to Asia than to the other major oil consuming regions combined, is willing and able to continue its role as a major supplier to the region.

- Even over the near-term, there is considerable uncertainty about the required investment needed to meet expected demand. The increasing number of policy initiatives discriminating against oil has only added to this uncertainty. Reduced uncertainty for oil supply and demand is beneficial to all parties involved.

evident in Asia's developing energy activities than in other more stable and traditional markets. These uncertainties cover areas like the ability of these countries to maintain present high rates of economic growth, to weather any sudden and unforeseeable factors, as well as their ability to achieve targets set in their energy policies, especially those related to expanding production and consumption of alternative sources of energy and enhancing energy efficiency.

There is also a high degree of uncertainty related to the environmental impact of their increasing energy consumption, as well as their ability (in the case of China) to reduce the share of coal consumption in their energy mix at the targets already set.

The workshop began with opening remarks from Indonesia's Minister of Energy and Mineral Resources, Dr Purnomo Yusgiantoro (see news report, page 28), the Executive Director of the IEA, Claude Mandil, and OPEC Secretary General, Abdalla Salem El-Badri (see full speech on page 26).

Mandil said he appreciated the exchange of views on the key issues and uncertainties that are shaping Asian oil demand. "After all, this region has represented the greater part of the growth in global demand for quite

Dr Purnomo Yusgiantoro, Indonesia's Minister of Energy and Mineral Resources, at the opening ceremony of the workshop.

L–r: Dr Maizar Rahman, Indonesian Governor for OPEC; Fereidun Fesharaki, FACTS; and Hossein Kazempour Ardebili, Iranian Governor for OPEC and Chairman of the OPEC Board of Governors.

L–r: Manabu Miyagawa, Ministry of Foreign Affairs, Japan; Abdalla Salem El-Badri, OPEC Secretary General; and Chairman Luluk Sumiarso, General Director, Oil & Gas, Ministry of Energy and Mineral Resources, Indonesia.

L–r: Denie Tampubolon, Assistant to the Deputy President of Pertamina; Imen Nidhal Boudinar, from the Algerian delegation; and Mohammad Khesali, Petroleum Industry Analyst in OPEC's Energy Studies Department.

some time and is expected to do so for many years to come. Unless we maintain a good understanding of what is happening in Asia, we have no chance of making an accurate assessment of global trends, something that is necessary if IEA and OPEC Member Countries are to overcome their concern over security of supply and security of demand respectively," he stated.

Important issues

OPEC-IEA workshops continue to address the most important issues affecting the two sides. The first two events concentrated on oil investment prospects, particularly in relation to the future outlook, investment challenges, drivers and uncertainties, while the third workshop focused on the economic prospects for the Middle East and North Africa (MENA) region, as well as its energy supply and demand prospects.

After covering the supply issues, the fourth workshop turned to the subject of demand in a global context and looked at the prognosis for the future and accompanying uncertainties. With the fifth event, a similar dialogue was initiated, but confined to the Asian region where most global incremental oil demand growth will occur up to 2030.

The workshop in Bali was divided into the five sessions. The first session on *Asian economic development and energy demand prospects: structural shifts and other uncertainties* provided a link to the previous workshop on global oil demand uncertainties. The focus was on Asia, concentrating on structural changes and uncertainties affecting economic growth and oil demand in the region, as well as energy policy issues.

Session two looked at the *Key drivers of Asian oil demand,* focusing on demand scenarios and providing a general overview of the region. The key drivers addressed included demographics, economic growth and transportation, among others.

In Session three, *China development prospects and*

Said Nachet (l), IEFS; and Pravin K Agarwal, TERI.

L–r: Hossein Samiei, IMF; Mohammad Alipour-Jeddi, OPEC; Chairman Luluk Sumiarso, Director General of Oil and Gas, Ministry of Energy and Mines, Indonesia; Fatih Birol, IEA; Fereidun Fesharaki, FACTS.

L–r: Esam Al-Khalifa, Oil Demand Analyst, OPEC; An Feng, iCET; Erie Soedarmo, Director of Oil and Gas, Ministry of Energy and Mines, Indonesia; Noe van Hulst, Director of Long-term Cooperation & Policy Analysis, IEA; and Lawrence Eagles, Head, Oil Industry and Markets Division, IEA; Ken Koyama, IEEJ.

Above the Wrap-up discussion delegates (from l–r):
Félix Manuel Ferreira, Angolan Governor for OPEC;
Manubu Miyagawa, Director of the Japanese Foreign Ministry's Economic Security Division;
Abdalla Salem El-Badri, OPEC Secretary General;
Luluk Sumiarso, General Director, Oil & Gas, Ministry of Energy and Mineral Resources, Indonesia;
Claude Mandil, Executive Director of the IEA;
Hossein Kazempour Ardebili, Iranian Governor for OPEC and Chairman of the OPEC Board of Governors;
Kenji Kobayashi, Director of the IEA's Oil Markets & Emergency Preparedness Office;
V H Okade, Executive Director of Corporate Planning and Economic Studies at the Indian Oil Corporation.

Abdalla Salem El-Badri (l), OPEC Secretary General, and Dr Purnomo Yusgiantoro, Indonesia's Minister of Energy and Mineral Resources.

implications on oil consumption, delegates looked specifically at China, providing an economic outlook for the country before covering key oil demand uncertainties and challenges over the near term.

Session four concentrated on the *Indian oil industry: future outlook* and showed, in contrast with China, India's importance as a demand centre and how this would grow in the future. The session focused on India's future outlook, especially with regard to its development as a refining export centre.

Finally, Session five, the *Wrap-up discussion: Asian oil demand outlook,* saw concluding remarks made

The Indonesian organizing committee and the OPEC Secretariat delegation gather at the end of the workshop.

by a distinguished panel of high-ranking officials and experts. In addition to El-Badri and Mandil, the panel included Hossein Kazempour Ardebili, the OPEC Governor of Iran; Félix Manuel Ferreira, the Angolan Governor for OPEC; Manubu Miyagawa, the Director of the Japanese Foreign Ministry's Economic Security Division; V H Okade, the Executive Director of Corporate Planning and Economic Studies at Indian Oil Corporation; Dr Wawan Prawiraatmadja of Pertamina; Kenji Kobayashi, the Director of the IEA's Oil Markets & Emergency Preparedness Office; and Luluk Sumiarso, General Director, Oil & Gas, Ministry of Energy and Mineral Resources, Indonesia.

At the end of the two days, the workshop reaffirmed that continued cooperation and active dialogue between OPEC and the IEA is an important element in improving understanding of the concerns of all parties involved in the energy sector and is clearly in line with the mutual interests of supporting oil market stability and predictability.

Delegates highlighted the need for this cooperation to be sustained and developed in the future. Mandil told journalists after the event that the next round of energy discussions between OPEC and the IEA will likely be held in May 2008. Mandil will step down at the end of August this year. His successor will be Nobuo Tanaka from Japan.

OPEC concerned over continuing demand uncertainties

The following opening remarks made at the OPEC-IEA Workshop by Abdalla Salem El-Badri, OPEC Secretary General, highlighted the growing importance of the Asian region to future world oil demand, but warned that producers might have to take a closer look at their investment plans for extra capacity in the years ahead if consuming country policies continue to impact on demand growth prospects.

On behalf of my colleagues from OPEC Member Countries and the Secretariat, I would like to thank Your Excellency and our Indonesian friends for hosting this event. Today's workshop — the fifth held between OPEC and the IEA — builds on the previous one held in Norway last year, which addressed the important issue of global oil demand uncertainties. Today's workshop takes this a step further by focusing on demand in the world's fastest developing region, Asia.

OPEC takes pride in the advancements seen in the Asian region. Gross domestic product (GDP) growth rates of almost 11 per cent in China, over nine per cent in India, and more than five per cent in countries such as Indonesia and Malaysia, underline the rapid economic growth these countries are witnessing.

Alongside this, there has also been a significant expansion in energy demand. Going forward, Asia is expected to see the largest energy and oil demand growth rates of any region in the world. In OPEC's reference case scenario, world oil demand is expected to rise from 84.6 million barrels per day in 2006 to 118m b/d in 2030. Developing countries account for most of this rise with consumption doubling, and more than two-thirds of this will be in Asian developing countries. Over this period, Asian oil demand is expected to rise to 43m b/d with annual growth in oil demand of around 20 per cent.

With Asia's energy demand growth in mind, the complementary nature of Asia's relationship with OPEC comes to the fore. On the oil demand side, Asia today needs to import more than 90 per cent of its crude, to cover a collective shortfall of more than 15m b/d between demand and supply. On the supply side, OPEC Member Countries today hold approximately 78 per cent of the world's proven crude oil reserves. It is clear that OPEC and Asia have a mutually supportive oil market relationship. This is further evidenced by the fact that, if we take crude oil exports for Asia, Europe and the United States, OPEC supplies more to Asia than the other two regions combined.

This mutual interdependence is further evidenced in Asia's geographic closeness to many OPEC Member Countries, particularly in the Middle East.

Returning to the theme of demand, OPEC understands

Abdalla Salem El-Badri, OPEC Secretary General.

the concerns of consuming countries for the secure and predictable flow of oil at reasonable prices. Here, what I would like to stress is that OPEC Member Countries are ready, willing and able to supply oil — as they always have done — and there are still plentiful reserves.

Yet, what also needs to be appreciated is that, for producers, concerns centre on predicting demand — not easy in today's climate of uncertainties, such as those related to world economic growth, advances in technology and policy measures in consuming countries.

Invest with confidence

Whilst we recognize that nothing can be 100 per cent predictable, it is important that producers have a fair idea of how much oil will be required and who their main consumers will be, so that they may invest with confidence. To illustrate the impact of uncertainties, scenarios developed at our Secretariat in Vienna suggest that, even over the near term to 2010, there is an estimated range of uncertainty of $50 billion for required investment, and this increases to as much as $270 billion by 2020. These are very large sums of money, especially for developing countries, with acute social, economic and other developmental needs.

A particular focus for this workshop will be medium-term oil demand in Asia. Whilst there are numerous short-term demand projections available, and both OPEC and the IEA provide long-term scenarios, there are very few medium-term forecasts. A major difficulty in providing near-term forecasts is the problem in predicting turning points in economic activity, cycle-induced changes in oil intensity and the impact of consuming country policy initiatives. However, given that the medium-term translates into investments today, it is critical we have a much deeper understanding of this time period.

Here, I would like to elaborate a little further on the issue of policies, as OPEC has recently seen an increase in the number of policy initiatives that discriminate against oil, involving subsidies for competing fuels and higher tax rates.

This means lower demand and, accordingly, raises the question of whether producing countries need to revisit their investment plans, in the face of policies that lean towards a movement away from oil? Investments that produce an excess amount of idle capacity do not make sense. While OPEC has offered, in the past, and will continue to offer in the future, adequate levels of spare capacity for the benefit of the world at large, it cannot be expected to invest in what, to all intents and purposes, is a back-up security policy in case alternative fuel policy initiatives fail to materialize.

I very much look forward to the upcoming session and I hope that this workshop with the IEA sheds light on the demand trends in this important region. Our discussions today should also help pave the way for possible further cooperation in the future.

Indonesia still has a lot to offer in enhancing security of energy supply in Asia — *Yusgiantoro*

Indonesia still has extensive domestic oil and gas resources to develop, which could effectively contribute to security of energy supply in Asia in the challenging years ahead.

That was the view of Indonesian Minister of Energy and Mineral Resources, Dr Purnomo Yusgiantoro, in his address to the OPEC-IEA Workshop in Bali.

He pointed out that among 60 hydrocarbon basins in his country, many of them are still unexplored.

"The offshore basins have not yet been as intensely explored and exploited. Hypothetically, there is still 80 billion barrels of oil that needs to be identified," he told delegates.

The Minister pointed out that the political progress achieved so far in Indonesia has resulted in domestic stability, which has consequently provided a strong base for a good investment climate.

"The country is currently making the transition from a traditional economy to an industrial economy. And with a population of nearly one-quarter of a billion people, Indonesia will certainly grow to become one of the largest energy-consuming countries which will require it to develop its vast potential of energy sources, conventional fossil fuels, as well as alternative types of energy," said Yusgiantoro.

He explained that Indonesia's energy position is unique. Besides being an energy consumer, it also produces energy, which allows it to maintain a positive fossil fuel energy balance.

This would be an added advantage in the years ahead considering that Asian countries are the centre of discussion when it comes to growth in global energy demand over the next two decades.

"As we know, Asian countries, with a population of almost two-thirds of the world total, currently contribute up to 20 per cent of global oil demand. Naturally, there is huge potential for an oil demand increase in this region," he affirmed.

Yusgiantoro said that according to current assessments, oil demand in Asia is set to increase significantly in the future, while growth in other regions, except for the Middle East, is basically flat.

"Furthermore, in East Asia, the energy balance is negative, which necessitates it to rely on imports from other sources," he said.

Looking at the situation generally, Yusgiantoro said that an increase in world oil demand could be seen as a positive indicator of global economic growth.

"However, it is also seen with concerns, with regard to an increase in the oil price, environmental issues, as well as energy security, both from the supply side and the demand side," he added.

Speaking on OPEC-IEA relations, the Minister said they have witnessed expanding cooperation between the two sides and between Member Countries of the two organizations.

"This cooperation has led to increased collaboration between the two organizations in tackling issues related to the global energy scene, with particular emphasis on petroleum. One would recognize the strategic nature of such cooperation, since OPEC and the IEA each represent major world oil producers and consumers, respectively."

Yusgiantoro said it is even more encouraging to see that such collaboration has included both talks at ministerial and policy-making level, as well as technical discussions between experts, such as the joint OPEC-IEA workshops.

It was through such workshops, he said, that "we hope we all can learn more about the out-look and challenges of oil demand, particularly in Asia."

Reducing demand uncertainty essential for orderly oil market — *Alipour-Jeddi*

Developing Asia has emerged as a key player on the energy scene with huge potential for future energy and oil consumption, according to Mohammad Alipour-Jeddi, Head of the Petroleum Market Analysis Department, at the OPEC Secretariat.

Alipour-Jeddi told delegates at the OPEC-IEA Workshop in Bali that an obvious potential exists for considerably more growth in Asia in the coming years given the present low oil consumption per capita.

The dynamic, fast-growing economies in Asia had made the region an increasingly important part of the world economy, he said in his presentation to the gathering.

For example, he observed that, in 2006, China contributed almost one-third of the global gross domestic product (GDP) growth of around 5.4 per cent — equal to the entire OECD contribution. India's contribution was equal to the rest of Asia, while Asia in total represented more than 50 per cent of world GDP.

Alipour-Jeddi pointed out that the pace of growth in the export of merchandise in both China and India was even higher than in the East Asian nations during the 1980s and the 1990s.

He highlighted the fact that — as the main supplier of incremental oil demand to Asia in the years ahead — OPEC has undertaken investment to expand supply capacity to meet the expected substantial increase in world oil demand, which would come largely from Asia.

As part of this effort, OPEC has already embarked upon production capacity expansion plans in all Member Countries, with production approaching 38 million barrels per day by 2012 from the current 32m b/d.

Alipour-Jeddi stressed that security of demand was essential for this significant level of investment, as well as for determining future market needs. Reducing uncertainty regarding oil demand would be beneficial to all parties involved as it would enhance market stability.

Strong economic growth, he stated, was important for helping to alleviate poverty and lift living standards in developing countries, including those in Asia.

Alipour-Jeddi also highlighted the importance of upgrading the quality of energy carriers to improve the well-being of communities, as well as choosing an environmentally sustainable energy path. Constraining the consumption of coal as a dominant energy source in the region, particular in China and India, will be a tremendous challenge in this regard.

In summing up, he said it is of utmost importance that energy policies do not discourage the utilization of cost-effective energy inputs.

"Oil is one of the superior energy sources on economic and efficiency grounds and its utilization should not be discriminated against in all sectors of the economy, such as household, industry, transportation, and power," he stated.

Countries issue 'Darwin declaration'

Landmark meeting seeks energy security through sustainability


APEC Secretariat

With the main drivers of oil demand in the foreseeable future forecast to come from Asia, leading countries from the region, under the umbrella of the Asia-Pacific Economic Cooperation (APEC) grouping, met in Darwin, Australia, at the end of May to look at issues pertaining to energy security and efficiency, sustainable development, as well as conservation and diversity. *Bulletin* Editor, Jerry Haylins, reports on this meeting, which ended with APEC issuing the landmark 'Darwin declaration'.

APEC economies will collectively need to invest more than $6 trillion by 2030 to meet their fast-expanding energy requirements. That was one of the key messages to come out of the 8th Meeting of APEC Energy Ministers, which discussed the challenges of meeting this rapidly growing energy demand, while minimizing the environmental effects.

The APEC region accounts for over 60 per cent of world energy demand and with the world's three biggest energy users — China, the United States and Russia — part of the grouping, the meeting was seen as a golden opportunity to assess the challenges ahead and look at how energy efficiency and diversity could be improved.

Figures show that APEC oil import dependency is forecast to rise from 36 per cent in 2002 to 52 per cent in 2030.

After two days of talks, the meeting concluded with the 'Darwin declaration', which, among other things, stressed the need to deploy cleaner, more efficient and sustainable energy technologies in the demanding years ahead.

"This is a landmark achievement for APEC member economies," commented Australian Industry, Tourism and Resources Minister, Ian Macfarlane, who chaired the meeting.

"Energy ministers from across 21 economies have agreed to a number of ways forward to achieve energy security and sustainable development. The decisions and deliberations we have had, particularly in relation to clean development and climate, will be an integral part of broader considerations undertaken by APEC Leaders when they meet in Sydney in September 2007," he noted.

Delegates at the meeting were unanimous in their opinion that the future prosperity of the APEC region relies on securing energy supplies, and on clean and efficient energy production and use.

The declaration features an agreement to improve energy efficiency through a range of measures, including the establishment of an Energy Investment and Trade Study and Roundtable, and a voluntary APEC Energy Peer Review Mechanism to improve the operations of energy markets.

"The review will focus on assisting APEC economies to increase their energy efficiency and reduce their dependence on oil," explained Macfarlane.

"This will support the twin objectives of energy security and environmental sustainability and highlight the fact that while energy is paramount to APEC, environmental sustainability is also a key concern of member economies."

The declaration looks at emergency preparedness to ensure APEC economies manage the consequences of short-term supply disruptions, and seeks to improve oil data sharing and cooperation with other international energy organizations.

In addition, it looks to develop best practices towards energy efficient transportation, intensifying efforts to develop and deploy techniques for the cost-effective use of non-food feedstocks and encourage international collaboration on alternative fuels.

During their talks, the Ministers looked at ways and means of overcoming obstacles to boosting regional oil exploration and production, as well as removing barriers to attracting energy investment and facilitating greater cross-border energy trade.

L–r: Claude Mandil, Executive Director of the International Energy Agency; Ambassador Colin Heseltine, APEC Secretariat Executive Director; Ian Macfarlane, Australian Industry, Tourism and Resources Minister; John Ryan, Chair of the APEC Energy Working Group.

Security of supply

They agreed that recent high oil prices have been driven by supply-demand fundamentals, geopolitical risks and concerns about supply interruption and speculative trading.

In response, they called on APEC economies to adopt a broad range of measures designed to enhance security of supply and promote fuel efficient transport and the uptake of viable alternative fuels.

One of the guest speakers to the meeting, Claude Mandil, Executive Director of the International Energy Agency, pointed out that the APEC region — like the world in general — is facing serious energy security and sustainability challenges.

APEC Secretariat

Ian Macfarlane (l), Australian Industry, Tourism and Resources Minister, with Dr Purnomo Yusgiantoro, Indonesian Minister of Energy and Mineral Resources.

He pointed to a growing reliance on oil and gas imports from a limited number of producers via susceptible transit routes and an unrelenting growth in CO_2 emissions.

He maintained that a secure and sustainable energy future is possible at a cost that is within reach, but a diverse portfolio approach will be needed to attain that goal.

In noting that six APEC economies are also IEA members, Mandil affirmed the need for five steps to attain a secure energy future. These comprised more capacity, more efficiency, more diversity, more transparency, and the provision of a safety net.

In all aspects, he added, global and regional cooperation "is crucial at each step".

APEC is recognized as the premier forum for facilitating economic growth, cooperation, trade and investment in the Asia-Pacific region.

Since its birth in 1989, it has grown in stature to encompass members that span four continents, representing arguably the most economically dynamic region in the world. The region accounts for around 40 per cent of the world's population, 56 per cent of global gross domestic product and almost half of all world trade.

The 21 APEC Members are Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong; China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Republic of the Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; the United States, and Vietnam.

Meanwhile, APEC ministers, energy sector business leaders and representatives of non-governmental organizations also took part in the APEC Energy Business Forum as part of the Ministers' Meeting.

In his address to the Forum, the Chairman of Shell Australia, Russell Caplan, highlighted the importance of dialogue involving all stakeholders to manage energy related issues for the future.

"As energy demand grows, so too will the associated emissions. The International Energy Agency's scenarios say CO_2 emissions will grow between 35 and 55 per cent in the period to 2030. This forum is a chance for us to develop our thinking in this direction — thinking that takes account of the regional and indeed global view."

Said Caplan: "I believe we're now beyond debating the scientific links between CO_2 emissions and climate change — it's now time for action. The question is what sort of action, by whom and by when."

He said it was his opinion that market mechanisms are likely to be the most effective means of implementing change.

"Capping of carbon emissions and trading of credits, such as has occurred under the EU emissions trading scheme since 2005, is a good start. But trading needs to become global to be truly effective and establish a clear market price for CO_2 that will be factored in to the investment evaluations on the new technologies and energy conservation measures we need for a lower carbon future," he added.

Darwin declaration

Achieving energy security and sustainable development through efficiency, conservation and diversity

1. We, Energy Ministers of the APEC economies, gathered for the eighth time in Darwin, Australia, on May 29, 2007 under the theme "Achieving Energy Security and Sustainable Development through Efficiency, Conservation and Diversity."

2. We met within the context of an increasing global consensus that energy security is fundamentally linked to our economic, social and environmental well-being. We discussed the Ha Noi Declaration's call to respond to the challenges of meeting rapidly growing energy demands, while minimising environmental effects.

3. We emphasized the need to strengthen our emergency preparedness and participate in measures to manage the risks and consequences of short-term energy supply disruptions.

4. We also recognized the importance for our longer-term energy future of pursuing policies and technologies to promote the development of cleaner energy and the improvement of energy efficiency and conservation.

5. We determined that addressing the challenges of energy security and sustainable development should be based on well-functioning markets that are progressively characterized by free and open trade, secure and transparent frameworks for investment, market-based price signals, market transparency, good governance and effective competition.

6. We welcomed the keynote address by the Executive Director of the International Energy Agency (IEA) on global and regional energy security challenges. We encouraged the development and implementation of APEC–IEA collaboration.

7. We recognized the need to address environmental challenges — in particular air quality and climate change objectives — requiring a concerted response to promote energy efficiency and conservation, develop and deploy cleaner and more efficient technologies, address barriers to energy investment and facilitate cross-border energy trade.

8. We discussed actions to achieve greater efficiency and diversity in the stationary energy sector. We noted how energy efficiency in industry, buildings and commerce and cleaner power generation technologies — including renewables, clean coal, natural gas/LNG, and for interested economies, nuclear technologies — can provide for more secure, diversified systems of energy supply and use with lower carbon emissions.

9. We discussed actions to achieve greater efficiency and diversity in the transport energy sector, which is the key driver of oil demand. We encouraged the development of policies and technologies to promote fuel efficient transport, as well as the uptake of biofuels and other alternative transport fuels in a sustainable manner.

10. We welcomed the meeting of energy business at the APEC Energy Business Forum and the address by the Energy Business Network. We noted the recommendations of the Energy Business Network. We encourage the efforts of the Energy Business Network to strengthen its structure and widen its membership.

11. We responded to APEC Leaders' instructions to report in 2007 on ways in which APEC might further contribute to policies and technologies that promote the development of cleaner energy and the improvement of energy efficiency, thereby enabling economies to meet increasing energy needs with a lower environmental impact and to address climate change objectives.

Biofuels:

Food for thought

Magazines and newspapers are full of biofuel stories: from the ethanol-crazed farmers of Iowa to the European Commission's recent decision to set biofuel targets. Whether these column inches are warranted is a matter of debate. **James Griffin** examines the issues, weighing up the current pros and cons of biofuels from the perspective of sustainable development.

In many parts of the world there is no lack of political will to develop biofuels. In 2005, the United States government mandated the use of 7.5 billion gallons of biofuels per year by 2012 — mainly ethanol produced from corn — and in January this year, this figure was raised to 35 billion gallons by 2017. In the European Union (EU), it was recently proposed that there be a mandatory target of ten per cent for biofuels, mainly from rapeseed and sunflower seeds, in the transportation sector by 2020. And other countries, such as Brazil, which use sugar cane in the production of ethanol, have also set mandatory targets.

The benefits attributed to biofuels often focus on them being a cheaper, cleaner and more secure means of supplying energy. It is also stated that they can be made from almost anything and their production often supports local farmers. Put this simply, biofuels tick many of the desired energy use boxes.

Yet as more research goes into their overall sustainability, many questions are being raised as to just what biofuels are capable of doing. Predictions and realities do not always match up. It is therefore important to measure the use of biofuels against what are labelled the three pillars of sustainable development: economic growth, social progress and environmental protection. It begs the question: how do they stand up?

A number of recent reports, one from the United Nations and the other from the United Kingdom's Co-op Insurance Society, have raised concerns that the drive to switch to biofuels could have a major impact on societies and the environment. Both reports stress that there is a future for biofuels, but underline there could be serious

Above: A beaker containing biofuel made from corn. A handful of corn kernels before being processed at an ethanol plant.

consequences if food prices rise, communities excluded from ownership and if forests are razed for plantations.

Food vs fuel

One of the primary concerns centres on what many are calling the competition between food and fuel. For example, the Co-op Insurance Society report states that around nine per cent of the world's agricultural land may be needed to replace just ten per cent of the world's transport fuels. It means the production of biofuels could lead to a decrease in land available for food production, which would be a particularly acute problem in countries where food is already scarce. It should also be recognized that the world's population is expected to add a further one billion people by 2015, and in 20 years' time, it is anticipated that an extra 50 per cent of food production will be required to feed the world's growing population.

As has already been witnessed, biofuel development can also impact food prices. For example, the use of corn for ethanol has meant that the price paid for this food staple has been shooting up around the world. Corn prices in the US have almost doubled in one year and the futures market anticipates prices rising further. The price rises have also impacted the price of tortilla flour in Mexico, which gets 80 per cent of its corn imports from the US, causing riots in some areas. The price surge was exacerbated further by speculation and hoarding. On top of this, the knock-on effect is that this is significantly impacting the livestock industry, which relies on corn as feed.

To put future prices in some perspective, the International Food Policy Research Institute in Washington has stated that the rapid increase in global biofuels production will push global corn prices up by 20 per cent by 2010 and 41 per cent by 2020. The price of oilseeds, including soybeans, rapeseed and sunflower seeds, are projected to rise by around 26 per cent by 2010 and 76 per cent by 2020. In the poorest parts of sub-Saharan Africa, Asia and Latin America, where cassava is a staple, its price is expected to increase by 33 per cent by 2010 and 135 per cent by 2020. The projected price increase may be mitigated a little if crop yields improve and ethanol moves into other raw materials, but the figures are striking.

The increased use of land for biofuel production and the price rises might sound like nirvana to producers, but it is hardly that for consumers, especially in develop-

Vegetable oil, extracted from the seeds of the jatropha curcas plant (pictured), can be refined into biodiesel.

Sunflower seeds can also be used to produce biofuel.

ing countries where many of the world's poorest people already spend about 50 to 80 per cent of their meagre total household income on food. In fact, it is likely to lead to much more food insecurity, according to two scientists from the University of Minnesota — Ford Runge and Benjamin Senauer. They state that if the prices of basic foodstuffs were to increase due to biofuel demand, the number of people with food insecurity will hike by more than 16 million for each percentage of the real increase in food prices.

Going forward, it will be interesting to see how second generation biofuels, such as ligno-cellulosic processing, develop. This technology will allow biofuels to be produced from any plant material, not just foodstuffs. Pilot projects for these technologies are already established, but the technology is very much in its infancy and costs still need to come down.

There are many ponderables in the food versus fuel debate, but the focus must be on one outcome. The priority must be on making sure that everyone in the world has access to basic foodstuffs. The flip side of the picture would mean that many more people would suffer from the devastating implications of both food security and global poverty. Biofuels should not bring energy and agricultural markets into direct competition. First and foremost, the food supply is for hungry people, not for hungry cars.

The environmental angle

Biofuels are often cast as climate-friendly and a means to reduce greenhouse gas emissions, but both recent reports articulate doubts. Concerns expressed include the impact of deforestation and the energy involved in this process, the use of crops that may deplete soil nutrients

Left: Carts loaded with sugar cane destined for an ethanol plant at Simbhaoli, Uttar Pradeshi, India. Pictured above is the raw product.

and lead to soil erosion, the effect on water resources, and what additional carbon footprint is required to turn the crops into biofuels.

For example, the destruction of forest ecosystems that remove carbon from the atmosphere requires a huge amount of energy and can lead to a net increase in emissions. The UN report also warns that the "use of large-scale mono-cropping could lead to significant biodiversity loss, soil erosion and nutrient leaching." Though it does add that this has been avoided in the Brazilian state of Sao Paulo where sugar cane farmers are obliged to leave a percentage of their land as natural reserves.

The use of row crops, such as soybeans and corn, also require fuel to grow, harvest and dry, as well as large amounts of fertilizer and pesticides. This could mean that fertilizers and insecticides end up in the water supply.

The reliance of some biofuels on natural gas or coal throughout the production process also means that any environmental benefits are probably limited at best. In fact, there are suggestions that some biofuels are not fuel-efficient and use more energy than they return.

The environmental benefits are further questioned in recent research published in the journal Environmental Science & Technology. This states that ethanol-fueled vehicles could contribute to more illnesses and deaths from respiratory disease than gasoline-powered cars and trucks. It adds that if all cars and trucks were replaced by vehicles fueled by ethanol, deaths related to air pollution would rise by about four per cent in the US.

In fact, what is interesting to note from the UN report is that in terms of cost and reducing emissions, biofuels may be better used for combined heat and power (CHP), rather than for transport fuels or other uses. "Current research concludes that using biomass for CHP, rather than for transport fuels or other uses, is the best option for reducing greenhouse gas emissions in the next

decade," it comments. Transportation is currently the main focus, but might this change?

Economic sense

There is no doubting that biofuels have created numerous business opportunities for investors. The US corn belt is booming with new biofuel investments, Brazil is the world's largest exporter of ethanol, the EU is expected to see demand increase on the back of biofuel use mandates and Malaysia and Indonesia together account for 85 percent of global crude palm oil exports.

Yet some have questioned whether all these developments make economic sense to us all. For example, in the US the government penalizes imports and provides subsidies for domestic production. This might help US farmers, but overall it hits taxpayers in the pockets. In fact, energy economist Philip Verleger, President of PKVerleger LLC, is one of many who traced last summer's high gasoline prices to ethanol panic. As it turned out the taxpayer paid twice: first at the pump, and then because of the longstanding ethanol tax-breaks.

Holistic view

Biofuels will have a place in the energy mix going forward and the UN report does highlight that they can be a force for good if planned well. The key phrase is 'planned well'. We all want a greater diversity in the energy mix. We all want energy to be used more effectively and efficiently. And we all want energy to support and push forward sustainable economic, social and environmental development. What needs to be recognised is that sustainable development means different things to different people.

With this in mind, it is important to take a holistic view of biofuel development that takes into account the convergence and knock-on effects for the biodiversity of land, greenhouse gas emissions, water use and any benefits associated with security of supply. It is important that biofuels do not become a false promise that diverts attention from finding real solutions to the world's energy and environmental problems. Biofuels have their benefits, if delivered in the right manner, but it seems their contribution to world energy will remain modest and in some cases they may in turn create greater competition for land, water and food.

A maturing corn plant: food or energy?

OPEC participates in 15th Session of the United Nations Commission on Sustainable Development

Access to energy deemed essential for sustainable development

By Susannah Maio

On April 30–May 11, 2007, the OPEC Secretariat participated in the 15th Session of the United Nations Commission on Sustainable Development (CSD) in New York. During this time, OPEC delegates joined representatives of government missions, intergovernmental and non-governmental organizations, and various interest groups in Turtle Bay, a strip of land along the East River that is home to the United Nations Headquarters. The purpose of their meeting was to discuss energy and environmental policies, which have the potential to affect us all.

The CSD was established in 1992 to ensure that the outcomes of the UN Conference on Environment and Development — also known as the Earth Summit or Rio Summit — would be followed-up effectively. The CSD is also responsible for providing policy guidance to countries with regard to the Johannesburg Plan of Implementation, which resulted from the 2002 World Summit on Sustainable Development. Over the last 15 years, it has become widely accepted that socioeconomic development and the health of the environment are intrinsically linked, and that progress can only be made through the worldwide promotion of sustainable development, in other words by "meeting the needs of the present without compromising the ability of future generations to meet their own needs." In terms of energy, sustainable development means using resources responsibly, in a way that takes into account our well-being and that of our children and grandchildren.

The 15th Session of the CSD, under the chair of Abdullah bin Hamad Al Attiyah, Minister of Energy and Industry of Qatar, focused on four interconnected themes: energy for sustainable development; industrial development; air pollution/atmosphere; and climate change. As a major supplier of energy to the world and as an Organization composed of developing countries, OPEC naturally had a part to play in the discussions, in particular with regard to the issue of energy for sustainable development.

In his statement to the Commission, OPEC Secretary General and head of delegation, Abdalla Salem El-Badri, reiterated the Organization's commitment to sustainable development through the provision of energy and the pursuit of greater market stability. He also said that "access to modern energy services is essential for poverty eradication and sustainable development," and reminded fellow delegates that there can be no development of any kind in places where energy poverty reigns. Clearly, concerted action must be taken to assist the 2.4 billion people (more than one-third of the global population) who continue to cook and heat their homes by burning traditional biomass, such as wood and dung, thus filling their homes with indoor pollution that causes severe health problems. Nor should the 1.6 billion people who have no access at all to electricity be left in the dark.

Greater energy diversity

Aware of the great challenges faced by leaders and ordinary citizens alike by the convergence of factors like population growth, climate change, widespread poverty and

UN Photo

UN Photo

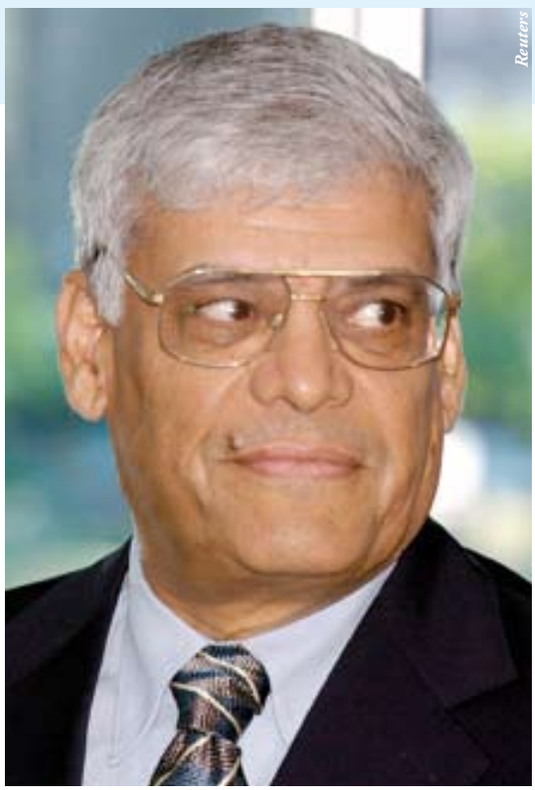
Abdullah bin Hamad Al Attiyah, Minister of Energy and Industry of Qatar, chaired the OPEC Session at the CSD.

increased energy demand, El-Badri also stressed that "OPEC welcomes greater diversity in the energy mix" and called for a more effective and efficient use of existing energy sources. With regards to alternative fuels, OPEC agreed at the CSD that "the introduction of new fuels, including biofuels, could be a good development," but also expressed concern that "their production could compete for the land, water and food which are also necessary for meeting the Millennium Development Goals," in particular that of eradicating extreme poverty and hunger (Goal No 1).

One way of meeting the demand for sufficient energy to fuel social and economic development while reducing greenhouse gas emissions would be to invest in cleaner fossil fuel technologies, including carbon capture and storage (CCS). Thanks to CCS technologies, in fact, carbon can be captured from stationary sources (such as industrial plants) before it is released into the atmosphere and before it can contribute to global warming. Moreover, the captured CO_2 could be used to facilitate the recovery of difficult-to-extract oil from partially exploited reservoirs. Since the technologies already exist, industrialized countries with the necessary means should show leadership in organizing large-scale demonstration projects and paving the way for implementation. After all, and as the CSD rightly points out, it is "the world's most industrialized nations [that] still consume the most energy and cause the most emissions."

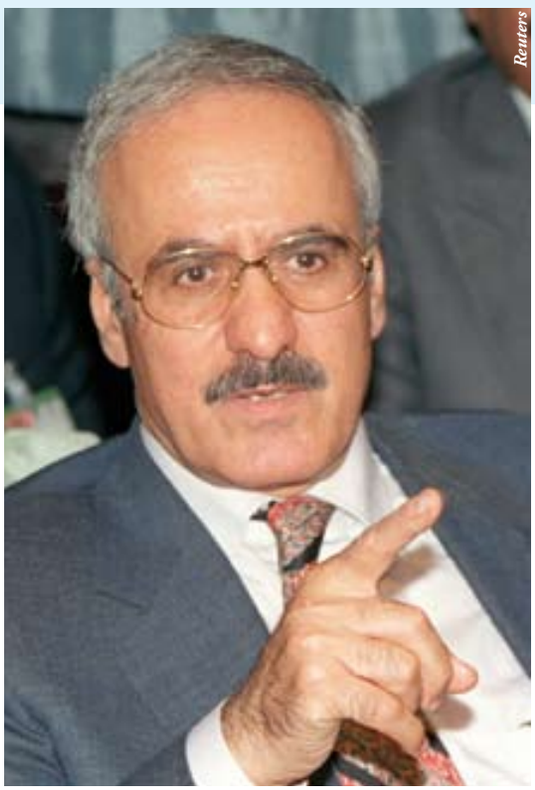
Another issue that was highlighted by OPEC at the CSD was the value of strengthening cooperation between various energy players. At the side event on *Energy security through lived interdependence* organized by the

United Nations Headquarters in New York.



Abdalla Salem El-Badri, OPEC Secretary General.

Permanent Mission of Austria with Vienna-based international organizations, Mohamed Hamel, who heads the Energy Studies Department at the OPEC Secretariat, spoke about the importance of maintaining a fruitful dialogue between producers and consumers. He stressed that our current energy system is characterized by interdependence and that "energy independence is, therefore, a myth." Hamel outlined the main actions that OPEC has taken over the last 15 years to promote cooperative efforts, starting with its involvement in the establishment and development of the International Energy Forum, which brings together public and private sector leaders active in the energy sector. Also noteworthy is the Joint Oil Data



Suleiman Jasir Al-Herbish, Director General of the OPEC Fund for International Development (OFID).

Initiative, which aims to improve the transparency, quality and timeliness of oil-related data. Most recently, OPEC has created formal dialogue mechanisms with key partners: China, Russia, the European Union and the International Energy Agency.

As for cooperative action aimed specifically at improving the situation in poorer parts of the world, Hamel said that OPEC Member Countries are doing their part through effective bilateral and multilateral initiatives. One of these is the OPEC Fund for International Development (OFID), (also present at this session of the CSD), which has operated in 119 non-OPEC developing countries since it was established in 1976.

The concerns expressed by OPEC were reflected in the summary issued by the Chairman of the Session, Abdullah Bin Hamad Al Attiyah, Minister of Energy and Industry of Qatar, after the meeting. Most importantly, the recommendations for action included in the summary are based on the assumption, supported by OPEC, that energy is crucial for sustainable development. Also in line with OPEC's position, the summary encourages UN member states to take concrete actions to diversify their energy mix and to develop appropriate technologies, including advanced and cleaner fossil fuel technologies.

Biofuel side effects

Also speaking at the session, Suleiman Jasir Al-Herbish, Director General of the OPEC Fund for International Development (OFID), noted that no one size fits all energy models that exist to satisfy the basic energy needs of the world's poor.

He stated that the energy mix for the poor can only rely on diversified fossil fuels, as well as renewables.

Al-Herbish opined that some renewables, such as water, wind, sun and biomass, although limited, could provide interesting sustainable local solutions, at the same time pointing out that biofuels do produce negative side effects, such as reducing food production, distorting food market prices and causing water shortages in some cases.

He said renewables could only cover a limited share in the energy mix of the poor, and called for the development and deployment of clean fossil fuel technologies, in particular, CCS, which, he stated, has shown great promise for sustainable supply of energy.

The OFID Director General, while arguing for improved energy efficiency, capacity-building and enhanced financial assistance to the poor, also maintained that sustainable development does not depend on financial resources only, but also on the need for knowledge transfer, as well as cooperation between different partners.

OPEC at OTC 2007

OTC 2007 was held at the Reliant Centre in Houston, Texas, United States.

The 2007 edition of the annual Offshore Technology Conference (OTC), held in Houston, Texas, with the theme 'Transforming the Industry' attracted the largest number of participants in the 28-year history of the event. With over 67,000 visitors from over 100 countries and representatives from 2,400 companies, OTC 2007 broke many records.

By Omar Farouk Ibrahim

For the second time in the history of OTC events, OPEC played an important role. A special session was organized on the second day for the Organization on the theme *The petroleum scene: the new realities ahead.* The session was chaired by OTC President, Rick Hill, and moderated by the Director of OPEC's Research Division, Dr Hasan M Qabazard, whose opening remarks set the tone for what turned out to be one of the most successful sessions at OTC 2007, in terms of attendance, as the 500 seat room was filled to capacity. Qabazard outlined the expectations of the audience from the panelists, noting that the oil industry was undergoing major changes and that players should be able to think and plan ahead.

In his contribution, panelist Fuad Al-Zayer, Head of OPEC's Data Services Department, argued that the conventional oil resource base was sufficient to meet current and future demand, and that technology has gradually blurred the distinction that used to exist between conventional and non-conventional oils. He stated that fossil fuels will continue to provide over 90 per cent of global commercial energy needs, and that by 2030 OPEC would be providing 49.3 million barrels per day of crude oil, up from 31.3m b/d in 2005.

Al-Zayer emphasized that there are a number of factors militating against efforts at ensuring long-term stability in the oil market. Chief amongst these is the uncertainty surrounding levels of oil demand. He argued that statements coming from leaders of major oil-consuming countries, and the policies they have been introducing in recent times, send signals to producing countries that in the near future they may not have a market for the oil in which they are investing so much of their scarce resources to explore and produce. He also noted that other challenges include the rising cost of production, as well as the environment. Al-Zayer argued that the challenge of the environment can be successfully tackled with cooperation in technology. He called on all stakeholders, particularly the major consumers, who also happen to have the technology to intensify efforts at making carbon capture and storage technology work, to make fossil fuels cleaner.

OPEC's key role

Dr Nimat Abu Al-Soof, Upstream Oil Industry Analyst in OPEC's Research Division, made a presentation on *The role of OPEC's spare capacity,* where he demonstrated the key role the Organization has been playing to stabilize the oil market.

Sadek Boussena, former Algerian Energy Minister.

Al-Soof's presentation traced OPEC's production versus its spare capacity since 1990, showing that, at any given time, OPEC had maintained sufficient spare capacity to be able to provide the necessary cushion against sudden demand surges. His presentation showed that up to 2009, non-OPEC production will be rising, and thereafter, OPEC output will witness a major boost from 2010. Given the expected growth in world oil demand, the extra barrels to come from OPEC from 2010 onwards will ensure the market is well supplied. The problem however is that there are a number of challenges facing the industry, both in the upstream and downstream sectors. Al-Soof concurred with Al-Zayer that production costs were on the rise, while uncertainties surrounding demand have increased as a result of policies and statements from major oil-consuming countries. These uncertainties, he argued, make investment decisions very difficult, as there are many contending demands for the scarce resources of OPEC Member Countries, who are all developing countries with huge socio-economic and other demands.

New energy era

Sadek Boussena, one-time OPEC Conference President and Algerian Minister of Energy and now professor of

Fuad Al-Zayer, Head of OPEC's Data Services Department.

Dr Nimat Abu Al-Soof, Upstream Oil Industry Analyst in OPEC's Energy Studies Dept.

L-r: Dr Nimat Abu Al-Soof, OPEC; Sandrine Dixson-Decleve, International Sustainable Energy Exchange (ISEE); Adrian Lajous, Petrometrica; Sadek Boussena, Société Générale; Rick Hill, EWI Microalloying; Dr Hasan M Qabazard, OPEC; Edgard Habib, Chevron; Cornelia Meyer, The British Swiss Chamber of Commerce; Fuad Al-Zayer, OPEC.

Economics at Grenoble University, reminisced that 30 years ago, OPEC was accused of making oil prices rise above $2 per barrel, noting that but for the rise in the price of oil most of the reserves discovered since that time would not have been discovered, with the implication that the price would have been a lot more than what it is today. Boussena argued that the new energy era should not always be seen from the rising price of energy, but also the rising costs of producing energy. He noted that one of the greatest services OPEC has been rendering to the energy industry is the stabilization of the oil market. He called on the Organization to carry on playing that role by continuing to assume the role of swing producer. While recognizing that there have been times when the market had gone off balance, despite OPEC's efforts, Boussena said that on those occasions, things could have been a lot worse without OPEC. Maintaining idle capacity, noted Boussena, was a costly enterprise, and the industry should appreciate the role of OPEC in this regard.

Another important service OPEC had been offering to the industry is the institution of the price band mechanism, according to Boussena, who called for its re-introduction as soon as practicable, recognizing that the market in the last few years has been determined by factors other than fundamentals.

Competing demand

Edgard Habib, Chief Economist at Chevron, noted that with the upsurge in energy demand seen over the last decade-and-a-half, there was competing demand for materials amongst various industries, thus making the cost of producing oil rise. Habib argued that with the world economy booming, demand for steel for the construction of rigs was competing with demand for steel for construction in some of the booming economies. Habib noted that the rise in oil prices is not peculiar to oil as other commodities' prices have also risen during the same period.

Adrian Lajous, of Petrometrica, discussed, among other issues, the Canadian oil industry and its future and how the United States market perceives various sources of oil. He noted the increasing importance of Canada as an energy supplier to the US, evidenced in the doubling of oil imports between 2000 and 2006.

In a presentation entitled *Supply and demand: two sides of the same coin,* Cornelia Meyer, of the British Swiss Chamber of Commerce, identified six pillars of energy security — capacity, diversity, transparency, demand, sustainability and physical security. Noting that the different stakeholders in the industry, consumer and producers, tend to see energy security from their own perspectives, she argued that it is necessary to see energy security from the perspective of all parties, thus the title of her paper. Meyer opined that the industry needs huge investments, to the tune of over $20 trillion to meet energy demand over the next 25 years. Of this amount, 21 per cent is expected to be made in oil, 19 per cent in gas, three per cent in coal and one per cent in biofuels. Meyer, like some of the speakers before her, noted that consumers need adequate capacity, as well as diversity of supplies, while producers need to be able to adequately predict demand. Both producers and consumers, she argued, need transparency, predictability of regulatory regimes and universally agreed reliable data. Beyond the producers and consumers, she noted, the world needs security, as well as environmental and social sustainability. They are, she emphasized, the truly global public goods.

IAEA symposium hears how hydrology can enhance carbon capture

Carbon capture and storage (CCS), seen as one of the most efficient methods for helping to curb global warming, was one of several topics discussed in a week-long international symposium organized by the International Atomic Energy Agency (IAEA) in Vienna in May.

Around 300 participants attended the International Symposium on *Advances in isotope hydrology and its role in sustainable water resources development,* at which presentations on studies from over 60 countries, including carbon trapping, were delivered and discussed.

Carbon trapping — or sequestration as it is known in technical terms — has emerged as one of the most effective research areas for combating global warming.

Scientists attribute around one-third of all CO_2 emissions to the generation of electricity, where each power plant is capable of emitting several million tonnes of CO_2 annually. A variety of other industrial processes also emit large amounts of CO_2, such as oil refineries, cement works, and iron and steel production facilities.

They claim that these emissions could be reduced substantially, without major changes to the basic process, by capturing and storing the CO_2. Other sources of emissions, such as transport and domestic buildings, cannot be tackled in the same way because of the large number of small sources of CO_2.

According to an IAEA release, CCS technology involves natural or artificial processes designed to remove carbon from the atmosphere, to reduce or slow rising emissions through interaction with natural 'sinks', mainly oceans, deep parts of the Earth's crust, or plants. In some processes, the CO_2 is injected into an underground water source where it dissolves and remains in long-term storage.

The IAEA pointed out that not many people see isotope hydrologists on the front line of the fight against climate change, but it was here where they come in.

"Once the CO_2 is trapped in the water, you want to make sure it stays put," said Brent Newman, a scientist in the IAEA's Isotope Hydrology section. "You use isotopes like carbon and oxygen to monitor if the CO_2 is leaking or flowing from the aquifer, and to assure the integrity of the aquifer is maintained."

He said that for carbon sequestration you need a brine aquifer where the water is thousands of years old. "Isotope hydrology can tell you the age of the water. If it is very old, then it is unlikely the water is flowing out of the aquifer rapidly enough to be a problem. In addition, many brine aquifers have the capacity to absorb lots of CO_2."

A range of other issues — from water pollution to protection — were on the symposium agenda. Participants heard how isotope hydrology is being used to help countries protect their drinking water.

In the Abidjan area of Côte d'Ivoire over recent years, the main source of groundwater quickly became contaminated. Using nitrogen isotopes, hydrologists identified urban sewage as the main contributor contaminating the groundwater.

In an area of Uganda where people are reliant on spring-water for their drinking supply, scientists used isotopes to track where the springs were recharged.

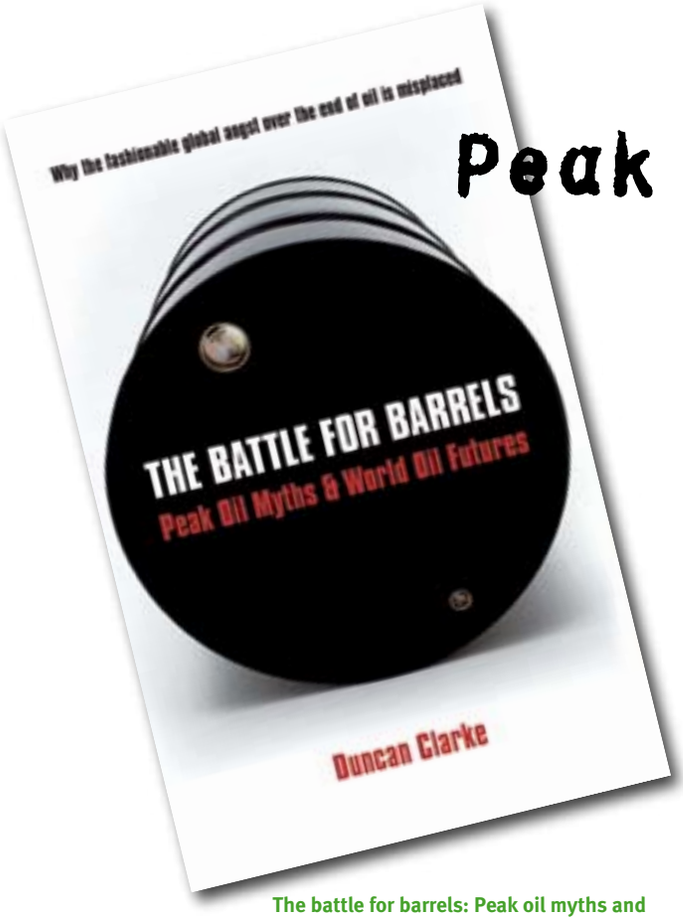
K M Kulkarni, an Isotope Hydrologist at the IAEA, said. "Originally it was thought the water came from large mountain lakes, but the isotopes showed it actually came from swamps in the mountains. These swamps are now protected so that the springs can continue to be a sustainable source of water."

Pradeep Aggarwal, Head of IAEA Isotope Hydrology, said the symposium was an opportunity to highlight new advances, major breakthroughs and discussions on isotope techniques that are being applied in hydrological sciences across the world.

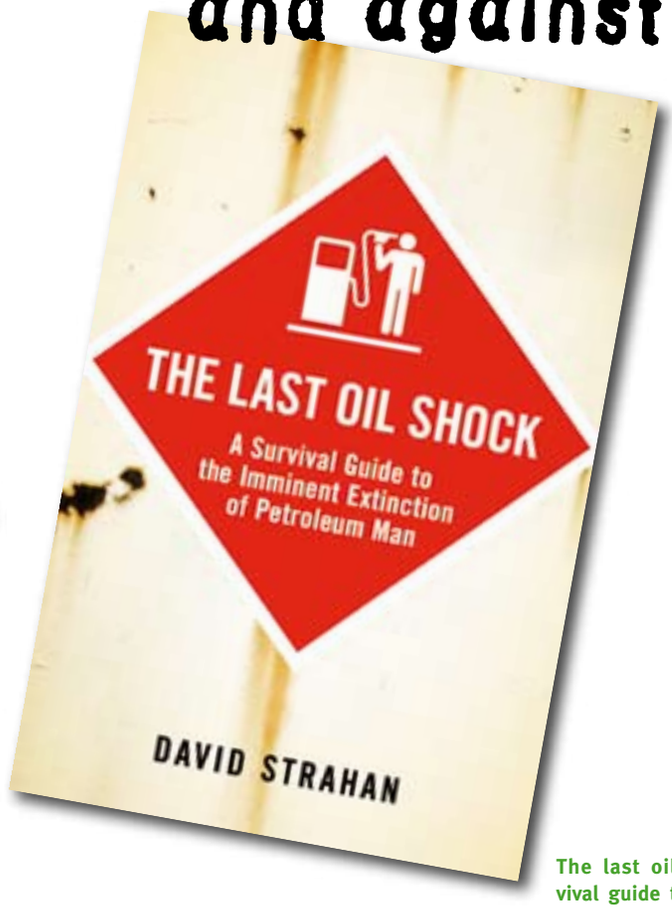
He said that with its focus on issues of sustainable development and environmental protection, the symposium looked at the many ways science and technology was helping countries solve water-related problems.

A newly developed laser isotope analyzer that the IAEA helped to test and modify was demonstrated during the meeting. The size of a small table top, and one-fifth of the cost of the standard device, "it will give developing countries greater self-sufficiency to perform their own analysis of water samples," said Aggarwal.

Peak oil: The case for and against



The battle for barrels: Peak oil myths and world oil futures.
By Duncan Clarke, Profile Books, February 2007, 224pp, £20.00.



The last oil shock: A survival guide to the imminent extinction of petroleum man.
By David Strahan, John Murray (Publishers), April 2007, 292pp, £12.99.

Review by Susannah Maio

Peak oil, or the idea that world oil reserves are going to peak and start declining in the near future (if they have not done so already), has gained much attention in recent times, opening up the stage for many people to write books and articles, speak at conferences, and campaign tirelessly to sway public opinion either in favour or against.

Two books have recently been published that give a good overview of the diametrically opposite positions held by pro-peak oil and anti-peak oil proponents.

On the one hand, David Strahan's *The last oil shock* upholds the view that "worldwide oil and gas production are poised to go into terminal decline" and that this "may turn out to be one of the biggest crises ever to face humanity."

This scenario is what Duncan Clarke, the author of *The battle for barrels,* ironically refers to as the "Petro apocalypse". No such catastrophe is envisioned in Clarke's book, which assumes that "the world is unlikely to run short of realizable commercialized reserves any time soon."

Unsurprisingly, both books feature a very similar cast of characters. Marion King Hubbert, a Texan geoscientist who held positions at Shell Oil and at the United States Geological Service, is recognized as central for his early predictions on oil depletion, made in the 1950s.

Out of messy methods and guesstimates (according to Clarke), and observations and calculations (according to Strahan), emerged "Hubbert's Peak", a bell-shaped curve that has become the standard for trying to predict when oil production will peak, not only in mature fields like those in the US, but the world over.

Supporting characters include the leading contemporary figures in the peak oil movement: Colin Campbell, Jean H Laherrère and Kenneth Deffeyes. The latter has contributed significantly to popularizing Hubbert's ideas by publishing Hubbert's Peak in 2001, the same year in which Cambell and Laherrère founded the Association for the Study of Peak Oil (ASPO).

The battle for numbers

Having identified Hubbert as the catalyst for their plots, Clarke and Strahan also spend some time on the man's findings, which were first made public at a meeting of the American Petroleum Institute (API) in 1956.

At the meeting, Hubbert estimated that US oil production would peak within 15 years. And this is where the two authors start to go down different paths. While Strahan writes on the assumption that US oil production "slipped into terminal decline [by] the spring of 1971" and that the world's oil supply will start to fall "in the next decade or so", Clarke assumes no such thing.

To the contrary, he claims that peak oil proponents have revised their forecasts for the beginning of terminal decline time and again, first declaring that the peak will occur in 2001–03, then in 2004–08, then "before 2004". The most recent estimates are for 2005–10 (Colin Campbell) and 2010-20 (Jean Laherrère).

Equally contested are the numbers on reserves, production and forecasts published by the oil industry (through the BP Statistical Review) and OPEC, in particular. Strahan dedicates an entire chapter to OPEC and its Member Countries, particularly Saudi Arabia, who, he claims, give misleading data and "pluck yet-to-find and production forecasts out of thin air when it suits their purpose."

Clarke picks up on the scepticism often voiced by peak oil theorists regarding the oil industry's data and responds by stressing the difficulty, if not outright impossibility, of precise calculations in this field.

Deprived of what they believe are the true figures, peak oil theorists are likened to children who are not given "the toys they need to play their oil game."

Geological determinism and technology

Clarke also accuses peak oil advocates of seeing the future as "geologically determined" — in other words, of basing their calculations solely on current knowledge and technological possibilities without taking into account "as yet unknown technologies, advancing geoscience, complex economic variables and to-be-discovered political dispensations."

Interestingly, however, Strahan does show an awareness of recent technological advances, for example in the field of carbon sequestration, which can be applied to stationary sources of CO_2 (such as industrial plants) to reduce emissions into the atmosphere of this greenhouse gas.

As Strahan points out, "we could carry on burning cheap coal at the present rate until the current proved reserves ran out, while emitting a fraction of the CO_2."

Instead of seeing this as evidence of the enormous potential that these and other technologies have for providing a continued supply of affordable energy to the world, Strahan uses it as one of many reasons for complaining about the performance of Prime Minister Tony Blair's Labour government.

Peak oil will not solve global warming

Strahan's book does hold some surprises. While most would assume that a decreased dependency on fossil fuels (whether voluntary or forced) will, at least, signal good news for the environment, Strahan says that "the oil peak will probably worsen both climate change and the food crisis."

This, he explains, is because oil scarcity will lead to the increased exploitation of coal and oil sands and thus generate much more carbon dioxide than conventional crude.

Moreover, as oil runs out, more and more farmland will be given over to producing fuel, "putting the gas tanks of the rich in direct competition with the stomachs of the poor."

Where to from here?

Despite agreeing on the importance of the role that oil currently plays in our economies, Clarke and Strahan energetically defend positions that are essentially incompatible.

And because both authors seem to feel they have something to gain by convincing readers of the rightness of their position, they tend to adopt a tone of superiority.

For example, Clarke unnecessarily uses Latin phrases (such as *ceteris paribus* for 'all things equal', *quantum fixe,* for 'fixed amount', *in toto* for 'in total' or 'completely', *fons et origo* for 'source and origin'), while Strahan imbues his writing with the righteous smugness of those who know they are right and task themselves with blowing "away the denial and disingenuity" surrounding them.

It is thus unsurprising that Strahan is alarmist about the current situation and the purported evils

brought about by a global economy that is based on fossil fuels.

In line with his view that "business as usual means collective suicide", readers are called upon to drastically and immediately change their lifestyles. Essentially, this means reducing energy consumption by driving "like an old man, not a boy racer", getting rid of SUVs since "owning one is not only selfish but stupid", eating food that has been bought and grown locally, and installing domestic wind turbines.

Strahan even has opinions on which jobs parents should advise their children to study, with geology, engineering, construction, agronomy and accountancy being "good" subject areas.

Quite inexplicably, Strahan councils parents to encourage their children "to take science over liberal arts and, please, anything but media studies."

Clarke, on the other hand, is predictably dismissive of peak oil theorists and refers to them as groupies of a "quasi-religious" movement. In drawing his conclusions, Clarke seems to turn not to the general public but to peak oil theorists, suggesting they stop using a model that he sees as too rigid, unconcerned with the lessons to be learned from economics and blind to the possibilities offered by the future.

Peak oil and energy poverty

Perhaps the most glaring omission in Battle for barrels and The last oil shock is any discussion about what a change in the global energy system, currently based on fossil fuels, would mean for the vast majority of the world whose reality is characterized by energy poverty.

Strahan's call to exchange oil for liquefied petroleum gas (LPG) as vehicle fuel and to give up patio heaters, although well intentioned, is clearly meaningless to the vast majority of people who can afford neither cars nor a good meal on an artificially heated patio.

And, by focusing on discrediting peak oil theory, Clarke too ignores the perspective of the world's most disadvantaged.

It is time to start seriously thinking about how to resolve one of the biggest challenges of our time, namely how to ensure that all governments have access to sufficient energy supplies to propel development and lift their citizens out of poverty.

About the authors

Duncan Clarke is Chairman and CEO of Global Pacific & Partners (GP&P), a private advisory firm operating from offices in London, The Hague, Johannesburg and Nicosia. *The Battle for Barrels* draws on his global experience of over 25 years in the international oil exploration business. He gained his PhD in economics in 1975 and was a lecturer, economist and adviser before establishing GP&P, with a focus on economics and strategy in the worldwide upstream industry.

Author's and cover photos courtesy Profile Books.

David Strahan is an award-winning investigative journalist and documentary film-maker who specializes in popularizing some of the most difficult and important stories in business and science. He made a documentary called *The last oil shock* for the BBC's Money Programme and another called *The war for oil* which was transmitted a week after the invasion of Iraq. Other major documentaries he has produced include *Inside the Enron scandal* and *The Moscow theatre siege*. This is his first book.

Author's and cover photos courtesy John Murray.

A selection of news stories on OPEC Member Countries taken from international media services

Sonatrach plans to invest $26 billion in upstream activities

Algiers — Algeria's state-owned energy company, Sonatrach, plans to invest around $26 billion in upstream activities over the next five years, the firm's Chief Executive Officer, Mohamed Meziane, has said. Addressing a seminar in Algiers, he said Sonatrach currently operates 95 blocks independently and 55 blocks in partnership. The firm made 18 hydrocarbons discoveries in 2006 and six finds so far this year. The country, which is also a major gas exporter, has earned $230 billion in the past six years. It produces around 1.4 million barrels of crude oil per day and plans to boost this to 2m b/d by 2010. Its annual gas output is estimated at 62 billion cubic metres, and is expected to reach 85 bn cu m by 2010. *APS*

Study on Algerian economy by 2025 to be launched

Algiers — An in-depth study on Algerian economic diversification by the year 2025 will be launched by the national economic advisory committee, Finance Minister, Mourad Medelci, has announced. The study, to be carried out within 18 months by Algerian and foreign experts, is intended not only to provide an overall and accurate insight into the restrictions and assets of the Algerian economy, but also to define new directions and an agenda with a view to achieve sustainable development and to reduce dependence on oil and gas, he pointed out. *APS*

Sonangol to undertake construction of Lobito refinery alone

Luanda — Angola's National Oil Company, Sonangol, will carry out the construction of the Lobito refinery alone, following failure to reach an agreement with the Chinese firm, Sinopec, which was initially contracted to set up a partnership for the project. According to Sonangol Managing Board Chairman, Manuel Vicente, the breakdown in talks with the Chinese firm was due to misunderstandings between the parties about the specifications of the products that should be produced by the plant. In an interview with the *Economia & Mercado* magazine, Vicente said that despite the problems, the refinery will be ready by 2010, after all financial arrangements for the plant's construction are made. With the start of the Lobito refinery, estimated to cost $3 billion, the country will save $500 million in the import of oil derivatives, and even start exporting. The plant will be designed to refine 240,000 b/d, starting in a first phase with about 120,000 b/d. Angola currently has only one refinery, which was built in the 1950s near Luanda, with the limited production capacity of 40,000 b/d. The construction of the Lobito refinery will solve the shortage in the domestic supply of fuel, which Sonangol has been mitigating with imports. *AngolaPress*

Angola's Capanda dam to double output in July

Luanda — Angola's Capanda hydroelectric dam in the northern province of Malanje will double its power output in July this year, following the start-up of two additional 130 megawatt units that will reinforce supplies to the capital, Luanda. The expansion is as a result of investments made in the provision of new electricity transmission lines. The new Capanda-Lucala-Luanda line will be able to carry 400 kilowatts, as against the existing 230 KW. Work has cost an overall $218 million. Two other lines, Capanda-Ndalatando and Cambambe-Luanda, are being provided under Chinese funding. The decision to boost power supplies follows rising demand in the country since peace was restored in April 2002. The increase in the nation's gross domestic product (GDP) and the consequent gradual increase in the number of consumers are other factors behind the move to create more capacity. The Capanda hydroelectric dam, with a capacity to generate 520 MW of electricity, was inaugurated by Angolan Head of State, Jose Eduardo dos Santos, in November 2005. *AngolaPress*

Indonesia forecasts 2007 oil output at one million b/d

Jakarta — The Indonesian government forecasts that crude oil production will reach one million barrels per day this year, slightly less than the estimate of 1.05m b/d calculated in the state budget, according to Energy and Mineral Resources Minister, Dr Purnomo Yusgiantoro. Last year, the country's oil output reached 1.007m b/d. The forecast for 2007 has been lowered because output from PT Chevron Pacific Indonesia is now expected to be only 414,720 b/d, instead of the 439,400 b/d originally estimated, Yusgiantoro said. Chevron Pacific Indonesia is the country's largest oil producer. Its output was 540,000 b/d last year. *Antara*

Pertamina to spend $1.2 billion on upstream oil, gas venture

Jakarta — Indonesia's state-owned oil and gas company, PT Peramina, will invest up to $1.2 billion in the upstream sector of the oil industry this year. The company's President, Ari Hernanto Soemarno, said this would finance the drilling of 170 oil and gas wells this year, including 35 exploration wells. This year, the company will also invest in oil ventures abroad in countries such as Sudan, Ecuador and fellow OPEC Member Libya. *Antara*

Indonesia's non-oil exports fall by 3.75 per cent

Jakarta — Indonesia's non-oil exports in April 2007 stood at a total value of $7.35 billion, down 3.75 per cent from the previ-

ous month, according to the Central Bureau of Statistics (BPS). The Deputy Head for Economic Statistics, Peitojo, said the largest decline was recorded in the export of electric machinery and equipment, as well as seed commodities, iron crust and ash, and non-knitted garments. He said that although exports declined in April, compared with the same month last year, they were up by 23.63 per cent. "The biggest hike was recorded in the export of animal/vegetable oil and fat, worth $218.2 million," he said. Large increases were also recorded in the export of copper (up $83.6 million), mineral fuels (up $49.6 million) and organic chemical materials (up $49.1 million). *Antara*

Indonesian nuclear power plant to cost $1.5 billion

Jakarta — Indonesia's first nuclear power plant, which it hopes to construct by 2016, is likely to cost $1.5 billion. The plant, expected to be built on Muria Peninsula in Central Java, will have a capacity to produce 1,000 megawatts of electricity to help meet rising demand for power from the country's 220 million people. The Deputy Chairman of the country's National Atomic Energy Agency (BATAN), Adiwardojo, said Indonesia will set up a joint venture with Japanese concerns to develop the plant. The two countries have already signed a memorandum of understanding on nuclear energy cooperation. State electricity firm PT Perusahaan Listrik Negara (PLN) plans to build power plants to generate 10,000 MW by 2010 to meet rising demand and avoid power shortages. *Antara*

Iran ready for oil and gas cooperation with Algeria

Tehran — Iranian Foreign Minister, Manouchehr Mottaki, has voiced Tehran's readiness to cooperate with Algiers in various areas, such as oil and gas, cement, transportation and the construction of power plants. He made the remark while talking to reporters after his meeting with Algerian Prime Minister, Abdelaziz Belkhadem, in the Algerian capital. Referring to the expansion of bilateral economic cooperation in the past year, Mottaki stressed that agreements reached between the two sides will be enacted soon. He pointed out that Iran and Algeria share identical views regarding several international and regional developments, adding that Algiers plays a constructive role both in the world and the region. *IRNA*

Iran, India and Pakistan serious about gas pipeline

Tehran — Iran, Pakistan and India are striving to sign an agreement to export natural gas from Iran to the two states. The final date set by the three sides for achieving a result on the so-called 'Peace' pipeline agreement is July 30 and all sides will make their best efforts to prevent any delay. Iranian Petroleum Minister, Sayed Kazem Vaziri Hamaneh, has evaluated the views of all sides of the agreement as being positive. He added that United States sanctions on his country were not affecting the trend of the agreement. Pakistan President, Parviz Musharraf, has stressed repeatedly that the gas pipeline will be constructed at any cost and Islamabad will not tolerate any pressure against the project. On the other side, Indian authorities have termed the scheme technically executable and clarified that the three states would sign a general agreement by the end of June. *IRNA*

Iran, Saudi Arabia to set up joint commerce committee

Tehran — Iran and Saudi Arabia have decided to set up a joint commerce committee studying grounds for economic cooperation between the two OPEC Member Countries. An agreement to this effect was reached between Tehran and Riyadh following a visit by Iran's Commerce Minister, Massoud Mir-Kazemi, to the Kingdom. The Head of Iran's Trade Development Organization and Deputy Commerce Minister, Mehdi Ghazanfari, who accompanied Mir-Kazemi on his Saudi visit, expressed hope it would bring a new era in bilateral relations. "Iran and Saudi Arabia have agreed to usher in a new era in bilateral trade and have made serious determination in this respect," he said. He called for exchange of high-ranking economic delegations to discuss the management of the oil revenues of the two countries. Ghazanfari said he hoped issues relating to customs agreements and avoidance of double taxation would be settled and trade ties between the two sides expanded. *IRNA*

President Ahmadinejad says Iran safest state for investment

Tehran — Iranian President, Mahmoud Ahmadinejad, has said that Iran is currently the most secure country for investment. Speaking to reporters in elaborating on the economic achievements of the government, he said that despite massive anti-Iran propaganda, the country is the most secure nation for foreign investment. "Foreign investment in the Iranian calendar year 1383 (March 2004—March 2005) was valued at $2.7 billion," he said, adding: "The figure soared to $4.3 billion and $10.3bn in 2005 and 2006, respectively." The President stressed that these figures showed impressive growth in foreign investment in the country, which will lead to the creation of jobs and a decrease in the inflation rate. Ahmadinejad said Iran's economic growth, which stood at 4.7 per cent in 2004, increased to six per cent in 2005 and around seven per cent in 2006. *IRNA*

Iran-China trade exchanges set to reach $16 billion

Tehran — The volume of trade exchanges between Iran and China will reach $16 billion in 2007, according to Chinese Ambassador, Liu Zhentang. Addressing Iran's Chamber of Commerce, Industries and Mines, he noted that bilateral trade was valued at $14bn in 2006. He said the two countries are striving to boost bilateral trade exchanges through expanded activities in the private sector. According to the Chinese envoy, some two-thirds of Iran-China commercial ties lay between the two countries' public sectors. Liu stressed that trade ties between Iran and China had improved in recent years, thanks to the efforts of the countries' chambers of commerce. More than 32,000 Iranians traveled to China in the past year. "China has implemented an 'open-door' policy over the years and has achieved successful results in this respect," he said, noting that due to this policy, China's gross domestic product had seen double digit growth over the past five years. The Head of the Iran-China Chamber of Commerce, Asadollah Asgaroladi, expressed hope that political, economic and commercial cooperation between the two countries will increase in the years ahead. The two sides intend to ink memoranda of understanding in 2007 and 2008 on expansion of cooperation in the private sector. *IRNA*

Kuwait's budget surplus forecast down by 12 per cent

Kuwait — Kuwait's Ministry of Finance has hinted that the country's budget surplus for fiscal 2006–07 declined by 12 per cent compared with the year before, the National Bank of Kuwait (NBK) has announced. The initial 2006–07 budget surplus hit almost $20 billion, after ten per cent was referred to the Kuwait Fund for Future Generations, an NBK report said, adding that the surplus had been positively influenced by a 12.8 per cent rise in revenues to $55bn, thanks to the rise in oil prices. However, an increase in expenditure by about 60 per cent led to the surplus falling. According to the report, the actual budget surplus is expected to amount to $16.75bn to $17.80bn in the balance sheet. Actual expenditure is estimated at 94–96 per cent of the budget, the NBK said, pointing to the delay of some Ministries' expenditure reports. Total expenditure is expected to be up by $7bn, a rise of 24 per cent, compared with only 8.5 per cent last year. *KUNA*

Some 15 companies expected to tender for Kuwait's fourth refinery

Kuwait — At least 15 companies are expected to tender bids for the fourth refinery that the Kuwait National Petroleum Company (KNPC) intends to construct at Al-Zour, in the south of the country, according to KNPC's Deputy Managing Director, Asaad Al-Saad. He said that after KNPC called for a re-bid on the project, it expected companies that did not bid the first time round to do so now after the construction budget was brought up from $6–$12 billion, alongside changes in the contracting conditions. He added that KNPC had held a meeting recently with leading companies that had not placed bids the previous time but were now willing to take part. Al-Saad explained that raising the project's budget was to counter the increased cost of construction materials, resulting from the hike in oil sector investments, especially in the Gulf region. The new refinery will produce environmentally friendly fuel to operate electricity and water plants around the country. It will also produce petrochemicals for export. The plant's production capacity will be 615,000 b/d. *KUNA*

UNESCO selects Tripoli as headquarters for regional centre

Paris — The Executive Council of the United Nations Educational, Scientific and Cultural Organization (UNESCO) has decided to select the Libyan capital, Tripoli, as its headquarters for the Regional Centre for the Joint Management of Groundwater Resources in African and Arab Homeland. It said the choice was made in appreciation of the pioneering role played by Libya and its effective contribution to water resources management at both international and regional level. The Centre will promote international cooperation and contribute to the effective management of joint groundwater resources in African Union (AU) member countries. It will also disseminate data and technology and help increase awareness about studies related to water resources in Africa and Arab countries through the execution of joint projects. The decision to site the Centre in Libya came after a study prepared by the International Centre for Hydrological Programmes at UNESCO. *JANA*

First phase of Nigerian LNG scheme to be ready in 2012

Lagos — The first phase of Nigeria's Olokola Liquefied Natural Gas (LNG) project will be ready by 2012, according to outgoing President, Olusegun Obasanjo. The Olokola LNG scheme and related pipeline projects will cost an estimated $9.8 billion, with Nigeria taking up a 49.5 per cent stake in the venture. The project will produce 22 million tonnes of LNG a year, with completion of the first stage set for 2012. Authorities had previously estimated start-up in 2011. The four-train production plant is being built on the border of the south-western states of Ogun and Ondo through a joint venture with Royal Dutch Shell, Chevron and the BG Group. It will produce an initial 10m t of LNG and 2.5m t of liquefied petroleum gas (LPG) a year, as well as substantial quantities of condensate. Obasanjo said that Nigeria should be earning $10bn annually from liquefied gas exports by 2011 when the first cargo from its second LNG plant is due for export to the United States. Brass LNG is a joint venture between the Nigerian National Petroleum Corporation (NNPC), ENI, Total and ConocoPhillips. *NAN*

Nigerian government approves 1,000 exploration licences

Abuja — Over 1,000 exploration licences and reconnaissance permits have been approved in line with the provisions of Nigeria's Minerals and Mining Act 2007. The approval, which is also in line with laid-down guidelines, was announced by the country's Minister of Mines and Steel Development, Bala M Borodo, at the annual national press briefing of the Ministry. Addressing the media and stakeholders in the sector, Borodo enumerated the key elements of the new Minerals and Mining Act of 2007 to include access to mineral title, open to all big and small-scale miners, either foreign or local, on a level and equitable playing field on a first-come, first-served basis, guaranteeing security of tenure and profitability of mineral rights. In addition, he said the government has embarked on an aerial survey and mapping of the country. Government efforts to explore alternative sources of revenue for the country were to reduce over-dependence on oil as a single source of foreign exchange for the nation, he affirmed. He added that this would also stop the recklessness of youths in the oil-producing Niger Delta region of the country and bring about peace. *NigeriaDirect*

Gulf firms eye booming Indian retail sector

Dubai — With a retail boom sweeping India, private entities from the Gulf region are making a beeline to invest in the sector, but are wary of some challenges in the huge and diverse market, according to experts. They said that over the next two years, India is planning to develop a staggering 518 shopping malls across the country. Typically, every 160 km, the food and language changes, which means communications has to be key, Srinath Sridharan, Head of Lifestyle Business and Strategic Alliances at Wadhawan Holding in India, was quoted as saying. The size of the country is another factor that could deter retailers from investing in India, said Shubhranshu Pani, President, Retail Services at Trammell Crow Meghraj Property Consultants. However, Susil Dungarwal, Head of Retail (West and South) at Emaar, said the time is right for global companies to enter the Indian retail market. But he too outlined several challenges facing these companies, including the ability to secure space in legitimate and retail friendly properties which are more than 500,000 square feet in size. He also highlighted a lack of retail talent in India,

but said the 15 million people in the unorganized retail sector have the basic skills to make the jump into organized retail. By 2015, almost 72 per cent of the population would be under 35 years of age, which would contribute to the highest number of consumers in the world. *QNA*

Saudi Arabia discovers two new oil fields

Riyadh — Saudi Arabia has announced the discovery of two new oil fields near Ghawar, the world's largest oil field. The Kingdom's Minister of Petroleum and Mineral Resources, Ali I Naimi, said output from one of the fields was light crude with a 35° API gravity. This field's Dirwazah-1 well produced 5,569 barrels per day of oil and 2.8 million cubic feet per day of gas. The second field produced heavy crude with an API gravity of 27.4°. Its Mabrouk-1 well produced 5,600 b/d of heavy crude and 2m cu ft/d of associated gas. He said actual production levels from the fields would exceed the levels from the two wells. *SPA*

Middle East seen as major contributor to global chemical industry

Manama — As Saudi Arabia expands its petrochemical industries, "numerous other industries also flourish," not just in Saudi Arabia, but in the world in general, according to Abdulaziz F Al-Khayyal, Senior Vice President of Refining, Marketing and International at the Saudi Basic Industries Corporation (SABIC). "That could make the Kingdom a major player in the world economy for something other than oil," he told a conference on 'Energy as the lifeblood of the petrochemical industry: The future role of the Middle East region'. He said that although the $1.7 trillion chemical industry is a global business dominated by the European Union, Japan and the United States, the Middle East can become a leading contributor. "What we have to offer … is the fuel and feedstock that constitute the lifeblood of the petrochemical industry," he said. "The Middle East region boasts abundant supplies of competitively priced gas and liquids, meaning reduced costs for petrochemical facilities, as well as lower costs of electric power generation. These low energy costs constitute a tremendous competitive advantage, particularly in an energy-intensive business like petrochemicals." Al-Khayyal pointed to Saudi Aramco's groundbreaking integration of refining and petrochemicals through its PetroRabigh joint venture, formed with Sumitomo Chemical of Japan. And since then, the company has signed a memorandum of understanding with Dow Chemical for a similar venture at Ras Tanura. Al-Khayyal said that just as the Middle East has come to be a leading power in crude oil and natural gas, it will "also assume a much higher profile in the petrochemical sector. In fact, I think we are already witnessing the beginning of a paradigm shift as petrochemical investments in the region start to accelerate." *SPA*

UAE "most connected country in Arab world"

Dubai — The United Arab Emirates (UAE) is the most connected country in the Arab world, according to the Arab Adviser Group. The Group, a member of the Arab Jordan Investment Bank, calculates what it terms as the Total Country Connectivity Measure (TCCM) annually of each country by assessing the number of household landline and cellular calls, as well as Internet hits, according to a report in the *Khaleej Times*. The results were released on the first day of the Fourth Annual Media and Telecommunications Convergence Conference, held in Amman, Jordan, on June 4–5, 2007. The UAE was awarded a TCCM score of 261.4 per cent. It was followed by Qatar (255.6 per cent), Bahrain (233.9 per cent), Saudi Arabia (173.5 per cent), Kuwait (161.8 per cent), Oman (137.5 per cent), Libya (131.3 per cent), Jordan (130.3 per cent), Lebanon (113.1 per cent), Algeria (110.4 per cent), Tunisia (110 per cent), Syria (106.4 per cent), Egypt (92.7 per cent), Palestine (74.5 per cent), Morocco (73.2 per cent), Iraq (64.2 per cent), Yemen (42.9 per cent), Mauritania (41 per cent) and Sudan (21.7 per cent). *WAM*

UAE records rise in industrial investments

Dubai — The industrial sector in the United Arab Emirates (UAE) achieved significant growth last year, with investment expanding by a value of $20 million, according to Dr Mohammed Khalfan bin Kharbash, Minister of State for Finance and Industrial Affairs. Speaking before traveling to Riyadh to attend the 25th Meeting of the GCC Industrial Cooperation Committee, he said industrial growth in 2006 was $6m more than during the previous year. He noted that the rise in investment volume coupled with a corresponding increase in the number of industrial firms during the last five years. The UAE industrial register shows that industrial firms rose by 42 per cent in the five years. "The UAE attaches great importance to industrial investment as one of viable methods for diversifying the economic base," he pointed out. *WAM*

Venezuela, Iran to strengthen cooperation in strategic areas

Caracas — The governments of Venezuela and Iran are committed to expanding project development cooperation in industrial, scientific, cultural, economic, agricultural, and university areas. This was endorsed by the Ambassador of Iran to Venezuela, Abdollah Zifan, after his meeting with the President of the National Assembly of Venezuela, Cilia Flores, at the Federal Legislative Palace. Zifan said relations between both nations "are doing well" in the fields specified, but he was confident that closer ties still could be attained. "We want to keep strengthening relations. In this sense, we are going to take advantage of the potentialities of each country, like the area of gas where both nations can work," he said. *ABN*

Venezuelan GDP has grown by 12.6 per cent in last three years

Caracas — The gross domestic product (GDP) of Venezuela has grown at an average of 12.6 per cent over the last three-and-a-half years, Minister of the People's Power for Planning and Development, Jorge Giordiani, announced. He indicated that current expansion levels exceeded the GDP growth registered in the 1950s and 1970s. "For 50 years, the Venezuelan economy has not grown like this. The most relevant of this registered growth is that it is a sustained process. The numbers seen in the first trimester of 2007 demonstrate this — in the last three months, GDP growth was at eight per cent," he said. Giordiani pointed out that comparing this growth with other nations of the region, Venezuela continued to show a significant increase and was the nation with the biggest growth in Latin America. *ABN*

Nigeria welcomes new President


AP Photo

***Umaru Musa Yar'adua** (l) promises an improved economy, reaffirms his country's commitment to Africa and says that resolving the longstanding Niger Delta crisis is "a matter of strategic importance to his country."*

By Angela Agoawike

Umaru Musa Yar'adua, born in 1951, in Katsina State, was educated at the Rafukka Primary School, Dutsinma Boarding Primary School, Government College, Keffi and Barewa College, Zaria, from where he obtained a Higher School Certificate in 1971. He enrolled at the Ahmadu Bello University, Zaria, from 1972 to 1975, and attained a degree in Education and Chemistry. In 1978, he received an MSc in Analytical Chemistry from the same University. He is married with children.

Vice President, Goodluck Ebele Jonathan, was born in Bayelsa State in November 1957. He holds a PhD in Zoology from the University of Port Harcourt, Rivers State. He is also married with children.

On Tuesday, May 29, 2007, OPEC Member Country Nigeria — Africa's largest oil producer — marked its first successful civilian-to-civilian transition, 47 years after it gained independence from Great Britain. The day marked the inauguration of a new President, who was elected on April 23, as the country's third Executive President after Alhaji Shehu Shagari and Olusegun Obasanjo.

Umaru Musa Yar'adua, a chemist and former university lecturer, was Governor of the northern state of Katsina before he ran for the country's Presidential elections with Goodluck Ebele Jonathan, Governor of the Niger Delta state of Bayelsa, as his Vice.

With the inauguration, the eight-year Presidency of Olusegun Obasanjo, who first ruled Africa's most populous nation as a soldier from 1976 to 1979, formally came to a close. For Obasanjo, the end of his tenure took place exactly where it began eight years previously — at Eagle Square, in the central business district of Nigeria's capital city, Abuja.

It was there that he handed over the nation's flags and constitution to the soft-spoken Yar'adua, before he took a back seat and let his successor hug the limelight for the

From l–r: Outgoing President Olusegun Obasanjo; the new President Umaru Musa Yar'adua; and the Vice President, Goodluck Ebele Jonathan.

first time as President of the world's most populous black nation of around 140 million people and the eighth largest global oil exporter. The Oaths of Office and Allegiance on both the new President and his Vice were administered by the Head of the country's Supreme Court, Idris Kutigi, who is also Nigeria's Chief Justice.

Speaking shortly after his swearing-in, Yar'adua said his administration will pay great attention to the Niger Delta region.

Nigeria has been plagued by the ongoing problems that have affected the oil-rich Niger Delta, a situation that has led to the shut-in of more that one-third of the country's daily crude oil production capacity. The crisis has been perpetrated by militant youths in the region, who are fighting for control of the nation's oil resources, which happen to be the mainstay of the country's economy, accounting for more that 85 per cent of foreign exchange earnings.

Said Yar'adua: "The crisis in the Niger Delta commands our attention and it is a matter of strategic importance to our country. I will use every resource available to me to address this crisis in a spirit of fairness, justice and cooperation. We have a good starting point because our predecessor has already launched a master plan that can serve as a basis for a comprehensive examination of all issues.

"We will involve all stakeholders in working out a solution. As part of these efforts, we will move quickly to ensure the security of lives, property and investment. In the meantime, I appeal to all aggrieved communities to suspend all forms of violence. Let us allow the intending dialogue to take place and continue to act from there.

"We are all in this together and we will find a way to achieve peace and justice. As we work to resolve the challenges of the Niger Delta, we must also seriously tackle the issue of poverty throughout the country. By fighting poverty, we will also fight disease," he professed.

Yar'adua, who described himself as a servant-leader, said his administration will pay attention to rebuilding Nigeria's physical infrastructure, as well as its human capital, in order to move the country forward.

"Central to this," he said, "is rebuilding our basic infrastructure. We already have comprehensive plans for mass transportation, especially railroad development. We will make these plans a reality. Equally important, we must devote our best efforts to overcoming the energy challenge. Over the next four years, we will see dramatic improvements in power generation, transmission and distribution."

If Yar'adua is able to put basic infrastructure in place in Nigeria, then the country will no doubt be on the right track towards addressing its developments needs.

Paying tribute to his predecessor, Yar'adua thanked Obasanjo on behalf of all Nigerians, "for his vision, courage and boundless energy", which, he said, "led to the creation of a roadmap towards the united and economi-

Being sworn in, Vice President, Goodluck Ebele Jonathan.

cally thriving Nigeria we seek," as against the situation before 1999, when, according to him, the major national issue was whether Nigeria as an entity should remain.

Having succeeded in uniting Nigeria, a country of diverse ethnic groups and religions, Yar'adua promised that the country could now make positive economic projections. Towards the achievement of this purpose, "we will focus on accelerating economic and other reforms in a way that makes a concrete and visible difference to ordinary people.

"We will concentrate on rebuilding our physical infrastructure," he continued. "Our economy already has been set on the path of growth. Now we must continue to do the necessary work to create more jobs, lower interest rates, reduce inflation and maintain a stable exchange rate. All this will increase our chances for rapid growth and development," he maintained.

One of the major fall-outs of the Yar'adua election was the widespread allegation of election malpractice, as a result of the manipulation of the country's electoral system. Mindful of the disaffection generated by that, the new President, credited with being Nigeria's first leader to have a university education, pledged to reform the entire electoral system.

He said: "We acknowledge that our elections had some shortcomings. Thankfully, we have well–established legal avenues of redress, and I urge anyone aggrieved to pursue them. I also believe that our experiences represent an opportunity to learn from our mistakes. Accordingly, I will set up a panel to examine the entire electoral process with a view to ensuring that we raise the quality and standards of our general elections and thereby deepen our democracy."

Yar'adua also promised to intensify the war on corruption, which was embarked upon by the previous administration, while calling on Nigerians to join hands with him to build a better Nigeria.

"All hands must be on deck," he said. So, "let us join together to feel the pains of today, while working for the gains of tomorrow. Let us set aside criticism and strive for the good society that we know is within our reach.

"Let us disperse the habit of low expectations of ourselves, as well as of our leaders. Let us stop justifying every shortcoming with that unacceptable phrase, 'the Nigerian factor' as if to be a Nigerian is to settle for that.

"Let us recapture the mood of optimism justifying us at the dawn of independence. Let us join together now to build a society worthy of our children. We have the talent, we have the ability, and we have the intelligence. Let us have the will and develop the will to do just that. The challenge is great, the goal is clear and the time is now," he affirmed.

Sounding extremely upbeat, Yar'adua said of his and Jonathan's inauguration: "This occasion is historic also because it marks another kind of transitional generational shift when the children of independence assume the adult responsibility of running the country at the heart of Africa.

"I urge you all to march with me into the age of restoration. Let us work and strive together to restore our time-honoured values of building honesty, decency, generosity, modesty, selflessness, transparency and accountability."

He continued: "These fundamental values determine societies that succeed or fail. We must, as a nation and as a people, choose to succeed. I will and I pledge to set a worthy personal example as your President. No matter what obstacles confront us, I have the confidence and faith in our ability as a people and as a nation.

"We are all Nigerians. We are a resourceful and enterprising people. We have in us and within us the skill to make our country a better place. To this end, I most humbly offer myself as a servant-leader. I will be a good listener and a doer and serve this nation with honesty, transparency, accountability and absolute fear of God."

The inauguration, which lasted two hours, was witnessed by dignitaries that included former Nigerian Vice President, Alex Ekwueme, Senate President, Ken Nnamani, Speaker of the House of Representatives, Aminu Bello Masari, and heads of state from across the continent, including South Africa's Thabo Mbeki and his wife, Ghana's John Kuffour, who is also Chairman of the African Union, President Ellen Johnson Sirleaf of Liberia, President Idris Derby of Chad, President Abdullahi Wade of Senegal, Frederic de Menendes of Sao Tome and Principe, Hipi-kipunya Pohamba of Namibia, Medes Zenawi of Ethiopia, Faure Gnassingbe of Togo, Mohammed Gede of Somalia, Paul Biya of Cameroon, Nguema Mbasogo of Equitorial Guinea and Yayi Boni of Benin Republic. There were also representatives from Great Britain, the United States and South Korea.

Al Attiyah named 2007 Petroleum Executive of the Year

Qatar's Deputy Prime Minister and Minister of Energy and Industry, Abdullah bin Hamad Al Attiyah, has been named by *Energy Intelligence* and the *International Herald Tribune* as the recipient of this year's Petroleum Executive of the Year Award.

It is the third year in a row that the prestigious title has been bestowed on a high-ranking official from an OPEC Member Country.

In 2006, Dr Shokri Ghanem, Chairman of the People's Committee, the National Oil Corporation (NOC) of Libya, was accorded the honour, while in 2005 the award went to Abdallah S Jum'ah, President and Chief Executive Officer of Saudi Aramco.

The announcement for 2007's winner was made by Thomas Wallin, President of Energy Intelligence, in conjunction with Michael Golden, Publisher of the International Herald Tribune newspaper.

A statement issued by Energy Intelligence said that Al Attiyah was chosen by his peers in a confidential selection process.

He is being honoured because of his strong leadership in the development of Qatar's oil and gas industry and the major role it is playing in the global liquefied natural gas (LNG) business.

"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," commented Raja W Sidawi, Chairman of Energy Intelligence.

Nominations for the award were solicited from the chief executives and other senior managers of over 100 of the world's largest oil and gas firms, as they appear in the annual rankings drawn up by Petroleum Intelligence Weekly.

The nominations were then reviewed by a representative group of senior oil executives, who made the final selection.

As is customary, the award will be presented to Al Attiyah at a special banquet which forms the centrepiece of the annual Oil and Money Conference, convened by Energy Intelligence and the International Herald Tribune. The event this year will take place at Claridge's Hotel on October 30.

Al Attiyah, born in Qatar in 1952, received a bachelor's degree in history from Alexandria University in Egypt in 1976. He began his career in 1972 in Qatar's Ministry of Finance and Petroleum.

He was appointed Head of the Ministry's Department of International and Public Affairs in 1973, a position he held for 13 years. In 1986, he became Director of the Office of the Minister of Finance and Petroleum and, three years later, moved to the same position with the Minister of Interior/Acting Minister of Finance and Petroleum.

In September 1992, Al Attiyah was named Minister of Energy and Industry. In 2003, he was also named Second Deputy Prime Minister, and in April this year, became Deputy Prime Minister. He was elected President of the 15th Session of the United Nations Commission on Sustainable Development (UNCSD).

Energy Intelligence pointed out that, in these roles, Al Attiyah has been central in establishing all of the country's major investments in the petroleum sector that have led to the ongoing expansion of Qatar's oil and gas production and exports, as well as the country's rapid economic development.

His other posts include Director of the Gulf Helicopters Corporation, which he has held since 1975, Board Director of the Gulf Airways Corporation (since 1986), Head of the Qatar Association of Radio Fans, and Head of the Resources Development and Expenditure Rationalization Committee.

Al Attiyah, who is married with five children, counts amateur radio, fishing, and reading as his hobbies.

New Libyan OPEC Governor appointed

Abdullah Ammar Ballut, a chemical and petroleum refining engineer, has been appointed Governor for OPEC of the Socialist People's Libyan Arab Jamahiriya.

Born in Tripoli in July 1948, he received a BSc in Chemical and Petroleum Refining Engineering from the Colorado School of Mines, Golden, Colorado, United States in 1972. Four years later, he attained an MS in Chemical Engineering at the Arizona State University. In 1979, he obtained his PhD in Chemical and Petroleum Refining Engineering at the Colorado School of Mines.

Ballut began his working career in 1972 as a chemical engineer with the Libyan National Oil Corporation (NOC). Thereafter, in 1973, he went into academia, reading and researching at the Al-Fateh University, where he became Professor in 1990.

Earlier this year, Ballut who is Chairman of the Libyan National Energy Committee's Bureau of Energy Data and Studies, was appointed Director of International Cooperation at the NOC.

In addition to his other responsibilities, Ballut is a member of the Editorial Board of the Petroleum Research Journal, which is published in English by the Petroleum Research Centre (PRC), in Tripoli, and Editor-in-Chief of Energy and Life, a quarterly technical and scientific journal published in Arabic by the Bureau of Energy Data and Studies.

Ballut is a member of the Libyan Engineering Institute, Tripoli and acts as a consultant to various institutions, oil companies and research centres in Libya.

Since 1980, he has served as a member of organizing and scientific committees for numerous conferences and seminars held in Libya in the field of engineering and energy and has attended numerous international conferences, seminars and exhibitions.

Ballut has chaired expert, as well as study committees in the field of chemical engineering, energy planning, energy conservation and renewable energy, both on a local level and on the level of the Conference of Energy Ministers of the Arab Maghreb Union.

In addition, he has authored and co-authored numerous studies and reports in the field of energy for the Libyan National Energy Committee, the NOC, the PRC, and other bodies.

Ballut is married with three sons and two daughters.

Al Yabhouni named UAE Governor

Ali Obaid Al Yabhouni has been appointed United Arab Emirates (UAE) Governor for OPEC. He is already his country's National Representative to the Organization, and before his substantive appointment was *ad-hoc* Governor for OPEC.

Al Yabhouni majored in Economics and Political Science at the University of Southern Indiana, in the United States and received a Masters in Business Administration and Management from the South Eastern University, Washington DC.

He started his career in marketing with ADNOC Distribution, a subsidiary of the Abu Dhabi National Oil Company (ADNOC). Al Yabhouni then entered the mainstream oil and gas industry in 1996 through ADNOC's Marketing and Refining Directorate, with whom he has since been associated.

From 1996–98, he was Sales Coordinator of the Crude and Condensate Division for the Pacific Region and from 1998–2007 he was Head of the Marketing Research & Analysis Department of the Marketing & Refining Planning and Research Division. In April this year, he was appointed Manager of Planning & Group Coordination, where he is responsible for managing the long- and medium-term planning activities for ADNOC's refining and retailing investments.

Al Yabhouni is a standing member of various committees in his country, such as the Board Advisory Committee of the Abu Dhabi Oil Refining Company (TAKREER), the Ministry of Economy & Planning's National Committee, which pertains to the World Trade Organization (WTO) and Free Trade Agreements (FTA), and is a member of the National Communication Committee in the Ministry of Energy.

Nigeria names new OPEC National Representative

Dr Ayorinde Alfred Balogun, head of the London Office of the Nigerian National Petroleum Corporation (NNPC), has been appointed his country's National Representative to OPEC.

Born in February 1952 in Oro-Ago, Kwara State, he attended the University of Ibadan, Oyo State, Nigeria between 1972 and 1975. From there he got a BSc (Hons) in Economics in 1975 and a PhD in 1981.

In 1992, Balogun attended the College of Petroleum and Energy Studies, Oxford, UK, and the International Human Resources Development Corporation (IHRDC), Boston Massachusetts, in the United States in 1993.

He attained his Higher School Certificate (HSc) in 1972, a BSc (Hons) in Economics in 1975, and his PhD in the same subject in 1981. In 1992, he received his Certificate in Crude Oil Supply, Transportation, Refining and Trading and in 2000 his Certificate in International Oil, Gas, Power Project Development and Management.

His working career began as a member of the Faculty of Economics at the University of Ibadan, moving to become Researcher at the Office of the Chief Economic Adviser to The President, the Economic Research and Intelligence Department of the NNPC, and the Planning Department of the National Petroleum Investment Management Services (NAPIMS). During this period he was sent on attachment with multinational oil companies, including Chevron and Texaco, for more intensive hands-on training in strategic planning and petroleum management.

In 1991, Balogun joined Hyson Nigeria Ltd, a joint venture petroleum products trading subsidiary of NNPC/Chevron in Lagos and the following year took up a position with NNPC/Chevron offshore petroleum trading subsidiary Calson Services (UK) Ltd in London.

In 1995, he was appointed Commercial Manager for Hyson Nigeria and three years later became NAPIMs Manager, Logistics. One year later, he was appointed Manager and Head of Planning at NAPIMS.

In 2000, Balogun became Manager, Capital Planning, in the Corporate Planning and Development Division of NNPC Headquarters, Abuja. Four years later, he was appointed General Manager/Senior Technical Assistant to the Minister of State for Petroleum Resources.

In 2006, Balogun became General Manager/Head of the NNPC London Office and in April this year was appointed Group General Manager.

Married with children, Balogun lists football, basketball, reading and writing among his hobbies.

The Hofburg:
A palace truly fit for royals!

Arts & Life:
Appreciating Life's Little Gifts

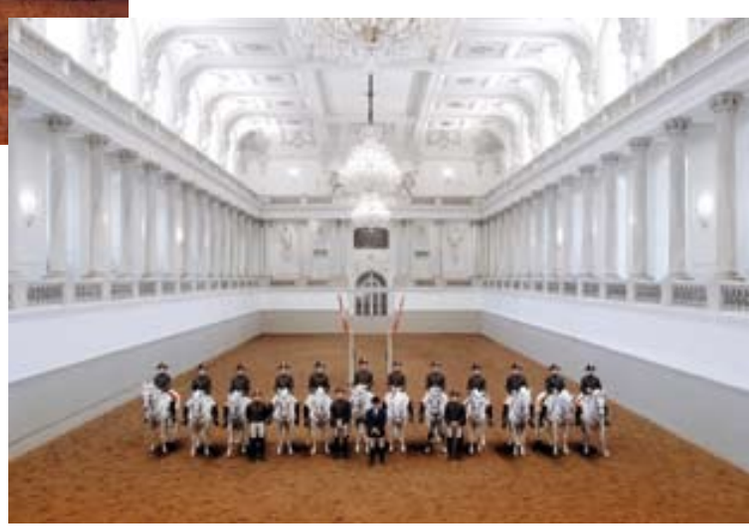
At OPEC, while the oil business forms the central part of our existence, we also realize that life is not just about petroleum. Beginning with this edition, the OPEC Bulletin will dedicate a section to Arts & Life to showcasing the finest buildings, events, activities and people from the Secretariat's home city of Vienna, and those from its Member Countries. First up is one of Austria's most famous buildings, the Hofburg, the former residence of the Habsburg dynasty.

By Siham Alawami

The Viennese are a proud people — and rightly so too. Inhabitants of the Austrian capital bask in the perceived understanding that their city, Vienna, is one of the safest capitals in Europe. It is also now being said to be Europe's fastest-growing city, with an influx of immigrants from former Soviet Union countries, many now part of the European Union, and other parts of the world.

Vienna is world-famous for its music and arts. In fact, to some people, Vienna is a cultural city and the first thing they want to know when you mention visiting the capital is whether you have attended any concert; visited Vienna Opera House or the residence of the Royal family, among other questions. Vienna is also home to Wolfgang Amadeus Mozart (Salzburg) and Ludwig van Beethoven (born in Germany, but he lived his life in Vienna). For us, Vienna is very important because it has also been home to the OPEC Secretariat for the past 42 years.

The Spanish Riding School in Vienna has been open for business for over 430 years and continues to cultivate classical equitation in the Renaissance tradition of the haute école.
Photos courtesy Spanish Riding School.



The city boasts public buildings of architectural beauty that dot its landscape, thus ensuring a constant stream of tourists from across the globe. For these visitors, there is so much to see — from the Opera House to the Parliament building, from the Royal Summer Residence, Schönbrunn to the Royal Winter Residence, the Hofburg, whose amazing history will open this new segment of the *Bulletin*.

The Hofburg is the official residence of the President of Austria. But it has not always been so. In past centuries, the Hofburg, an imposing collection of buildings in Vienna's first district, has been home to some of the most powerful people in the history of Austria. These include the Habsburg dynasty, which ruled the Austro-Hungarian Empire. It also served as the winter residence, while the Schönbrunn palace was the summer dwelling.

A visitor to Vienna needs at least two days to visit this beautiful complex of six museums, the national library, the famous Vienna riding school, the horse stable, the treasury, the national theatre, the splendid botanic house, the huge park and the offices of the President of Austria, which overlook Helden Platz, or Heroes Square, commissioned under the reign of Emperor Franz Joseph. When the President is at the Hofburg, the Austrian flag, along with the blue and yellow flag of the EU, are hoisted atop the roof of the palace.

The Hofburg is a 13th century medieval castle which has expanded gradually over the years with every emperor adding or improving a portion in a manner that fitted his lifestyle. If you visit the Hofburg and are in awe with what you see and so decide to

call it a city within a city, then you will not be far wrong as the complex extends over 240,000 square metres, consisting of 18 wings, 19 courtyards and 2,600 rooms in which around 5,000 people work and live today.

Within the old Hofburg, fashion, art, music, architecture, and culinary thrived. This is not surprising for the Palace was not just the seat of the emperors of the Habsburg dynasty that ruled Austrian land, the Holy Roman Empire of the German Nation (until Napoleon in the battle of Austerlitz dismantled the empire by removing a good portion of what is known today as Germany from the empire), but also a complex with some of the best designed buildings seen across the world. The Hofburg has the following structures within its confines:

Amalienburg: The residential part.
Hofkapelle: The Royal Chapel where the Vienna Boys Choir perform. Two famous members of this Choir were the composers Josef Haydn and Franz Schubert.
Naturhistorisches Museum and Kunsthistorisches Museum: The two identical museums of Natural History and Museum of Fine Art.
Hofbibliothek, now the Prunksaal (Imperial Library)**:** The Austrian National Library, the foundation of which was laid by the Patron of Science, Emperor Maximillian I. It is regarded as the most beautiful library in the world.
Schatzkammer: The Treasury, which, among other treasures, holds the 10th Century crown of the Holy Roman Empire.
Burgtheater: The National Theatre.
Hofreitschule: The Spanish Riding School.
Stallburg and Hofstallungen: The horse stable, originally built as a residence for Crown Prince Maximmilian II. It is said that Ferdinand I did not wish to house his son under his roof, being that Maximilian had veered towards Protestantism. This structure later accommodated the art collection of Archduke Leopold Wilhelm, the art-inclined brother of Emperor Ferdinand III.

Numerous architects were connected with the design of the Hofburg, as well as all the added structures that have given the complex its imperial outlook, even in a post-imperial Austria. They include among others, Italian architect-engineer Filiberto Luchese, Lodovico Burnacini and Joseph Emanuel Fischer von Erlach who designed the Reichschancelry wing and the Winter Riding School, Johann Fischer von Erlach (the library), and the architects of the grandiose Neue Burg, built between 1881 and 1913.

Today, the Hofburg has become a conference centre of international repute. Known as the new Hofburg, the conference centre, which includes a grand ballroom, is a 1958 extension of the Leopold wing, first erected in the 1660s under Emperor Leopold I. The lower section of

Left: The entrance of the Imperial Library on Heldenplatz.

Right: The 'Prunksaal', the Imperial Library.

Below right: Another splendid building at Josefsplatz, that forms part of the Hofburg complex.

this wing, as well as that of the Amalienburg, served as an enormous wine cellar for the Hofburg. The wing also houses the offices of the Austrian President.

In 1809, a part of the old bastion adjacent to the old castle was demolished in the course of the Napoleonic Wars. All the way up to the present Ringstrasse, new grounds were laid, in which the neoclassical Castle Gate (Burgtor) was integrated. Within the new walls, which were erected in 1817, three gardens were laid: the private Imperial Castle Garden (Burggarten), Heroes Square as a lawn with boulevards, and the People's Garden (Volksgarten) with the Temple of Theseus (Theseustempel), which, along with the Burgtor, was designed by Peter von Nobile.

Equestrian statues of the two most important Austrian fieldmarshals — Prince Eugene of Savoy and Archduke Charles — stand at the foci of Heroes Square.

On the night of November 26–27, 1992, a large fire originated in the Hofburg in the area of the Redoutensäle on Joseph Square. A part of the roof, as well as that of the upper floor, were completely burned down. Its renovation was completed by 1997, and the newly-rebuilt sections now contain wall and ceiling paintings by Josef Mikl.

All photographs on this spread courtesy Österreichische Nationalbibliothek.

Nigeria's Chinua Achebe wins Booker International Prize

For OPEC Member Countries, oil plays a crucial part in their everyday developmental affairs. That is not surprising as oil constitutes, on average, more that 80 per cent of their foreign exchange earnings.

However, outside the business of oil, the people of these countries engage in other activities that bring honour to their nations and for Nigeria, these honours especially in the literary field seemed to have flowed in the month of June.

That was when two of its writers — **Professor Albert Chinualumogu Achebe** (more popularly known and called Chinua Achebe) and **Chimamanda Ngozi Adichie,** won the prestigious *Man Booker International Prize* and *Orange Prize in Literature,* respectively.

While Chimamanda, at 29, and with two international award winning literature credits — *Purple Hibiscus* and *Half of a Yellow Sun*, is relatively new on the scene, Chinua Achebe, who will be 77 next November, has been around longer than independent Nigeria.

He made his literary debut 49 years ago (a year before the country's independence) with his internationally acclaimed novel, *Things Fall Apart,* an epic that chronicles the clash of cultures between the Igbo of south-eastern Nigeria and the British. It has been translated into 50 languages, but not his native Igbo because for him, what exists today as Igbo language is a "bastardized version of the authentic village dialects" and he holds the missionaries responsible for this.

While *Things Fall Apart* is considered to be in the league of the finest novels ever written, Achebe is also seen as one of the most widely read authors in the world and Africa's most translated writer.

Things Fall Apart has been made into a television drama series in his native country, Nigeria.

In considering him for the *Man Booker International Prize,* which was announced on June 13, 2007, one of the judges, South Africa's Nobel Laureate, Nadine Gordimer, described Achebe as "the father of modern African Literature". Not surprisingly, because it was Chinua Achebe, the Charles P Stevenson Jr Professor of Languages and Literature at Bard College, Annandale, New York State that was the founding editor of the African Writers Series (published by Heinemann), which ended up publishing most of the renowned writers the continent has produced.


AP Photo

Elaine Showalter, also a member of the three-person panel that picked Achebe, said of him: "In *Things Fall Apart* and his other fictions set in Nigeria, Chinua Achebe inaugurated the modern African novel. He also illuminated the path for writers around the world seeking new words and forms for new realities and societies. We honour his literary example and achievements."

And for Colm Tibin, "Chinua Achebe has been one of my heroes since I read his book *Things Fall Apart*. This book manages to capture an essential moment in the colonial drama; it dramatizes momentous change with clarity, sympathy and astonishing fluency and ease."

It is often said that a writer is a product of his environment. To a very large extent, Chinua Achebe exemplifies that saying. He could have chosen esoteric topics to write on, but that would be living in a world, where his writings are simply to entertain. Rather, he chose, from the word go, with *Things Fall Apart,* to tell a story: The story of his people the way it had never been told.

AP Photo

Above: Chimamanda Ngozi Adichie.

Left: Professor Albert Chinualumogu Achebe.

His works have centred on Nigerian and African politics, in which he has tried to tell their story, how they were, what colonialism did to them and the resultant clash of culture between the Europeans and the Africans.

In his writings, Achebe thought in a localized kind of way, but wrote for a global audience. No wonder then that *Things Fall Apart,* the story of a community in south eastern Nigeria is considered among the finest novels ever written and has sold over 10 million copies around the world.

Speaking with the BBC after he was announced as winner of the £60,000 prize, he said of his mission and that of other African writers: "What African literature set about to do was to broaden the conception of literature in the world — to include Africa, which wasn't there.

"In the stories we tell, it is intended to help us solve the problem of this failure that has overtaken the early sense of joy and happiness when Africans became independent, received their self-determination."

His other novels include *No Longer at Ease, Arrow of God (1964), A Man of the People (1966), Chike and the River (1966)* and *Anthills of the Savannah (1988).* His short stories include *The Sacrificial Egg and other Stories*, *Girls at War and Other Stories*, *African Short Stories* and *Heinemann Book of Contemporary Short Stories*.

Achebe is not just a story teller; he is also a poet and political activist, with so many publications to show for his commitment. These include *Beware Soul Brother and Other Poems; Christmas at Biafra and Other Poems; Don't let Him Die: An Anthology of memorial poems for Christopher Okigbo; Refugee Mother and Child and poems;* as well as *Morning Yet on Creation Day; Hopes And Impediments;* and *The Trouble With Nigeria.*

A well decorated man, Professor Chinua Achebe has received more than 30 honorary degrees from prestigious universities in England, Scotland, Canada, South Africa, Nigeria and the United States.

His awards include the Commonwealth Poetry Prize; the New Statesman Jock Campbell Prize; the Margaret Wrong Prize; the Nigerian National Trophy in 1961; the Peace Prize of the German Book Trade; and the Nigerian National Merit Award.

In the early 1990s, Achebe had an auto accident that left him paralyzed from waist down. Since then, he has been in a wheel chair. However, while the accident may have curtailed him physically, albeit slightly, it did not affect his writing ability or the spirit in him that fights for what he thinks is just.

The Man International Booker Prize, which was first won by Albanian writer Ismail Kadar in 2005, is awarded once every two years for a body of writing that has contributed to an achievement in fiction on the world stage. In winning it, Achebe defeated other respected writers like Britain's Doris Lessing, Ian McEwan, Salman Rushdie, as well as Ireland's John Banville, two Americans — Philip Roth and Don DeLillo, three Canadians — Margaret Atwood, Alice Munro and Michael Ondaatje, and Amos Oz.

Born on November 16, 1930, to Okafo and Janet N Iloegbunam Achebe in Ogidi, in the present day Anambra State in south-eastern Nigeria, Albert Chinualumogu Achebe attended the Government College, Umuahia and the then University College of Ibadan. He received a Bachelor of Arts from the London University in 1953 and in 1956 studied broadcasting in London at the British Broadcasting Corporation (BBC). He joined the Nigerian Broadcasting Company in Lagos in 1954, later becoming its Director of External Broadcasting. During the Civil War, he worked for the Biafran government. After the war, he was appointed Senior Research Fellow at the University of Nigeria, Nsukka, of which he is now Emeritus Professor of English.

This section includes highlights from the OPEC Monthly Oil Market Report (MOMR) for April, May and June published by the Petroleum Market Analysis Department of the Secretariat, with additional graphs and tables. The publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage.

April 2007

Crude oil supply remains ample

Seasonal tightness seen in gasoline market

Despite the current tightness in the gasoline market, global crude oil fundamentals in the month of March appeared to be largely in balance at current OPEC production levels.

In the United States, commercial crude oil stocks stood at 333 million barrels at the start of the month, a level that corresponded to seven per cent over and above the five-year average. Product inventories, despite having fallen to 649m b for the week ending April 6, still stood one per cent over the five-year average. Draws on distillate and gasoline inventories were the main drivers behind the fall in product stocks.

The draw meant that gasoline inventories had fallen for nine consecutive weeks to a level of 200m b, some three per cent below the five-year average. In terms of forward cover, gasoline stocks stood above 21 days, or one day below the same time last year.

However, despite the drop in product stocks, total commercial oil inventories remained three per cent above the five-year average.

The drop in US gasoline stocks was in line with the typical downward seasonal trend for this period, whereby summer grades replace winter products, although it was observed that the draw did actually begin earlier than last year.

Early refinery maintenance and a large number of unplanned plant outages over the first quarter of the year kept utilization rates at a low level of around 86 per cent, compared with past years when they hovered at around 91 per cent.

Taken together, planned and unplanned shutdowns, and their resulting impact on gasoline stock levels, were the main factors behind the upward pressure on gasoline prices.

Other factors influencing gasoline stock levels included lower imports into the US, coupled with stronger demand. Developments in the gasoline futures market also played their part.

With the gasoline futures market in backwardation, refiners had little incentive to build stocks. However, the forward structure indicated that the market was not showing any concern about gasoline supplies in the months ahead.

While gasoline market fundamentals appeared relatively bullish in the very short term, pressure on the oil market was expected to ease as refinery maintenance ends and crude runs increase.

Given the situation of ample crude supplies in the marketplace, it was felt that increasing production would only serve to build crude oil inventories and would not resolve the tightness in downstream operations.

It was also considered that non-fundamental factors, such as geopolitical concerns or exceptional events, such as an acute hurricane season in the Gulf of Mexico, could undermine the current steady market outlook for the US driving season.

In the light of these and other potential factors, OPEC remained committed to continue to closely monitor the market situation to ensure that stability is achieved and that sound global economic growth is sustained.

In its review of the market, the OPEC Report for April left 2007 world oil demand growth unchanged at 1.3 million barrels per day, 1.5 per cent higher than in 2006.

Concerning the OECD region, it said the cold winter had led to first-quarter oil demand in North America being revised up by 400,000 b/d to average 25.83m b/d, representing year-on-year growth of 700,000 b/d.

Conversely, in Europe in the first three months of the year, oil demand was hit by

warmer weather and was consequently revised down by 300,000 b/d to show a y-o-y decline of 400,000 b/d.

A similar situation occurred in the Pacific region where a warmer-than-average winter led to a downward revision in consumption of 400,000 b/d, representing a y-o-y decline of 400,000 b/d.

Developing countries' oil demand was forecast to have grown by 500,000 b/d y-o-y in the first quarter, while in the Middle East, petrochemical and transportation activities also supported strong oil demand growth. Middle East first-quarter oil demand expansion was forecast at 300,000 b/d to average 6.34m b/d.

First-quarter oil demand in the other regions grouping was forecast to have grown by 500,000 b/d y-o-y to average 12.27m b/d. China's oil demand growth for all of 2007 was put at 480,000 b/d to average 7.6m b/d.

Non-OPEC supply

Preliminary figures indicated that world oil supply in March averaged 84.94m b/d. OPEC's crude share was estimated at 35 per cent of the total.

Non-OPEC oil supply is expected to average 50.72m b/d in 2007, an increase of 1.26m b/d over 2006. This represents an upward revision of 83,000 b/d by OPEC since its last monthly assessment. On a quarterly basis, non-OPEC supply is expected to average 50.4m b/d, 50.4m b/d, 50.6m b/d, and 51.5m b/d, respectively, throughout this year.

Looking at a breakdown, total OECD oil supply in 2007 is expected to average 20.43m b/d, 75,000 b/d more than OPEC's last assessment and an increase of 260,000 b/d over the 2006 figure.

Oil supply in the US is expected to average 7.55m b/d this year, representing an increase of 170,000 b/d over 2006, while oil supply in OECD Europe is forecast to average 5.25m b/d in 2007, translating into a drop of 120,000 b/d from the 2006 figure.

Oil supply in other Western Europe is expected to average 590,000 b/d, around 30,000 b/d more than the 2006 level.

In the OECD Asia Pacific region, oil supply is forecast to average 640,000 b/d in 2007, representing growth of 80,000 b/d compared with last year, while, in the developing countries, oil supply is expected to average 11.81m b/d this year, representing an increase of 250,000 b/d over 2006.

In other Asia, oil supply was revised up by 23,000 b/d from OPEC's last assessment to stand at 2.74m b/d, representing growth of 50,000 b/d over the 2006 figure, while oil supply in the Middle East group was revised down by 42,000 b/d to 1.73m b/d, a decline of 40,000 b/d from 2006.

The forecast for oil supply in Latin America and Africa remained virtually unchanged at 4.51m b/d and 2.82m b/d, respectively, representing growth over 2006 of around 80,000 b/d and 160,000 b/d.

Oil supply in the Former Soviet Union in 2007 is expected to average 12.69m b/d, representing an increase of 670,000 b/d from 2006, a downward revision by OPEC of 8,000 b/d from its previous report.

Of note, Russian oil supply is slated to average 9.97m b/d this year, an increase of 320,000 b/d over 2006, while in the Caspian region, Azeri oil supply is expected to average 910,000 b/d in 2007, representing an increase of 260,000 b/d over last year.

Kazak oil supply is forecast to average 1.40m b/d in 2007, representing an increase of 100,000 b/d over last year, while total oil supply in China is expected to average 3.74m b/d, which translates into an increase of 60,000 b/d over 2006.

Regarding oil trade, US crude oil imports, according to preliminary data, increased in March by 500,000 b/d, or six per cent, to a near 10.0m b/d, while in Japan, crude oil imports in the same month increased by 160,000 b/d, or five per cent, to average 4.7m b/d.

OPEC production

Demand for OPEC crude in 2007 is expected to average 30.28m b/d, around 140,000 b/d less than the 2006 figure. On a quarterly basis, the Organization's forecast shows that demand is expected at 30.93m b/d, 29.32m b/d, 30.38m b/d and 30.50m b/d, respectively.

In March, according to secondary sources, OPEC production averaged 30.03m b/d.

Concerning oil prices, the OPEC Reference Basket[1] averaged $58.47/b in March, which represented a six-month high and a gain of $4.02/b, or 7.4 per cent, over the previous month.

In the first half of April, the Basket moved higher again — reaching $64.71/b on April 13 — supported by Middle East geopolitical developments.

On the US market, prices for sweet crude emerged on a firm note during the month amid demand for light-end products and a stronger gasoline outlook. Front-month contracts on the New York Mercantile Exchange (NYMEX) averaged $60.74/b in March, $1.35/b higher than in the previous month.

In the North Sea, the market was also firm after Norsk Hydro shut its Oseberg field in Norway after a platform fire. Dated North Sea Brent averaged $62.15/b for the month, $4.72/b, or eight per cent, higher than in February.

In the Mediterranean market, Urals crude was weaker on ample supply and higher March production, while the Middle Eastern market saw a bullish trend amid the restart of Oman's 160,000 b/d Sohar refinery, which limited crude exports.

May 2007

Global economic growth to remain on track in 2007

Downside risks remain

A widespread consensus began to emerge throughout the month of April that the global economy had a good chance of enjoying another year of broad-based and robust

growth in 2007, despite the numerous downside risks.

Overall, it was felt that growth should be only moderately slower than in 2006. This meant that the unprecedented global economic expansion seen since 2004 was set to continue with the main drivers of demand coming from the Asian region. World economic growth is forecast at 4.8 per cent in 2007, 0.6 per cent slower than in 2006, but still above the five-year average of 4.5 per cent and way above the 20-year average of 3.5 per cent.

It was noted that lower oil intensities and generally benign economic conditions had allowed the global economy to successfully absorb the higher prices of commodities, including oil.

The OPEC Reference Basket surged to an eight-month high in April on concern over summer fuel supplies.

Admittedly, downside risks remained, the most immediate of which was the possibility that the current weakness seen in the United States housing sector may spill over to the rest of the economy and subsequently to the rest of the world.

The widespread turbulence seen in the financial markets in early March indicated that markets in the emerging countries and developed world may be becoming more closely correlated. However, in contrast, there appeard to be a gradual de-linking of growth in Europe and Asia from the US.

Since the US economy started slowing in the second half of 2006, no reduction in growth had been observed in other parts of the world, due in part to increasing regional integration in Asia and other regions and to the fact that housing has relatively few trade links.

In its review of the market, OPEC's May report left the world oil demand growth forecast for 2007 unchanged at 1.3m b/d, or 1.5 per cent y-o-y, to remain at 85.4m b/d.

As a result of a predominantly warmer winter in OECD regions in the first quarter, 2007 total OECD countries' y-o-y oil demand growth is estimated to grow by 100,000 b/d to average 49.32m b/d.

Consumption in OECD Europe was revised down slightly from last month's assessment.

First-quarter oil demand in North America was estimated to have averaged 25.85m b/d, representing 700,000 b/d growth y-o-y, due to surging demand for both fuel oil and gasoline. With the expectation of a normal winter in the fourth quarter, North America's 2007 oil demand growth is forecast at 300,000 b/d to average 25.61m b/d.

Again, as a result of the warm weather, OECD Europe oil demand was revised down by 200,000 b/d in the first quarter to show a y-o-y decline of 700,000 b/d.

Developing countries' oil demand was said to be contributing the most to total world oil demand growth in 2007, reaching an expansion level of 620,000 b/d to average 23.69m b/d.

Booming economic activity helped boost oil demand in both the Middle East and China. Middle East first-quarter oil demand growth was put at 300,000 b/d to an average of 6.3m b/d.

China car sales

China's apparent oil demand growth in March was the strongest since November 2006 when it grew by 590,000 b/d to a y-o-y average of 7.58m b/d. China's first-quarter oil demand growth was estimated at 360,000 b/d to average 7.46m b/d.

China's booming car sales were expected to continue apace with last year, meaning that apparent oil demand for 2007 was estimated to grow by 500,000 b/d.

Preliminary figures indicated that world oil supply in April averaged 84.83m b/d with OPEC's crude share estimated at 35.5 per cent.

Non-OPEC oil supply is expected to average 50.67m b/d in 2007, an increase of 1.19m b/d over 2006. On a quarterly basis, non-OPEC supply is expected to average 50.4m b/d, 50.3m b/d, 50.5m b/d, and 51.5m b/d, respectively.

Preliminary data put non-OPEC supply in April at 50.4m b/d, around the same level as in the first quarter of 2007.

Looking at the breakdown, total OECD oil supply is now expected to average 20.35m b/d in 2007. This comes after a 81,000 b/d downward revision by OPEC to its last assessment. The new figure represents an increase of 170,000 b/d over 2006.

Oil supply in the US is forecast to average 7.51m b/d this year, an increase of 120,000 b/d over the 2006 figure and down 46,000 b/d from OPEC's last estimate. Preliminary data shows April US oil supply at 7.44m b/d, 100,000 b/d less than the second-quarter forecast.

Oil supply in OECD Europe is expected to average 5.23m b/d in 2007, representing a drop of 150,000 b/d from 2006 and down 22,000 b/d from OPEC's last monthly assessment, while oil supply in the OECD Asia Pacific region is expected to average 620,000 b/d in 2007, which translates into growth of 60,000 b/d over 2006 and lower by 22,000 b/d from OPEC's previous monthly report.

Oil supply in the developing countries is forecast to average 11.82m b/d in 2007, an increase of 260,000 b/d over 2006 and an upward revision by OPEC of 11,000 b/d.

Oil supply in Latin America has been revised down slightly to 4.51m b/d, a gain of 70,000 b/d over 2006, while the Middle

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).

East group was revised down by around 47,000 b/d to 1.69m b/d, 90,000 b/d less than in 2006.

Oil supply in the FSU is expected to average 12.71m b/d this year, representing an increase of 690,000 b/d over 2006 and 23,000 b/d higher than in OPEC's last assessment.

Other Europe oil supply remains almost unchanged at 150,000 b/d, compared with the 2006 figure.

Russian oil supply is expected to average 9.97m b/d in 2007, an increase of 320,000 b/d over 2006 and unchanged from last month's OPEC estimate, while Azeri oil supply is forecast to average 920,000 b/d this year, representing an increase of 270,000 b/d over 2006.

Kazak oil supply is expected to average 1.39m b/d in 2007, representing an increase of 90,000 b/d versus last year.

In China, total oil supply is forecast to average 3.73m b/d in 2007, an increase of 60,000 b/d over last year and a downward revision by OPEC of 5,000 b/d from its last report.

Total OPEC production in April, according to secondary sources, averaged 30.14m b/d, an increase of 97,100 b/d over the previous month.

OPEC-10 production averaged 26.45m b/d, an increase of 31,900 b/d over March. Iraq's April oil production averaged 2.08m b/d, around 58,400 b/d more than the March figure, while Angola's oil output stood at 1.61m b/d.

US oil imports

Demand for OPEC crude in 2007 is expected to average 30.33m b/d, down 90,000 b/d from the previous year. On a quarterly basis, demand for OPEC crude is expected at 30.87m b/d, 29.40m b/d, 30.43m b/d and 30.62m b/d, respectively.

Regarding oil trade, April data shows that US oil imports rose to more than 10m b/d in April with crude inflows increasing by around 170,000 b/d, or 1.8 per cent, to average 10.15m b/d, while, in Japan, crude oil imports dropped by around 180,000 b/d in April to average 4.4m b/d, according to preliminary estimates.

Concerning inventories, US total commercial crude oil and product stocks continued to increase to stand at nearly 986m b in April, a rise of 3.7m b from the previous month. Crude oil stocks continued to expand, while product stocks fell due to lower refinery utilization, which remained below 89 per cent, despite a marginal increase from the previous month.

Crude oil stocks rose a further six m b, or 200,000 b/d, to reach around 339m b, the highest level since May 2006, to stand at the upper range of the five-year average.

Gasoline stocks declined by around 12m b to stand below 200m b for the first time since October 2005. Distillate stocks edged up by 200,000 b to 118.1m b to show a surplus of two per cent over a year ago.

Residual fuel and jet fuel stocks continued to hover around 40m b. Residual fuel oil rose by 900,000 b to 39.7m b, while jet fuel stocks fell by 400,000 b to stand at around 40m b, which corresponded to 12 per cent above the five-year average.

Basket surge

Total US commercial oil stocks in the week ending May 4 stood at nearly 989m b, three per cent above the five-year average.

The OPEC Reference Basket surged to an eight-month high in April on concern over summer fuel supplies and worries over potential supply disruptions amid geopolitical developments. The situation was exacerbated by falling summer stocks and refinery turbulence. The Basket rose by $4.92, or 8.4 per cent, in the month to stand at $63.39/b, which marked the third monthly rise and a 25 per cent gain over January.

Early in May, the Basket resumed its downward trend on the perception of lower demand. However, upward revisions to Energy Information Administration (EIA) and International Energy Agency (IEA) forecasts for higher global demand and the threat of more supply disruptions from West Africa kept prices in check. The Basket closed at $63.68/b on May 14 to average $62.94/b for the month so far.

On the US market, light crude was supported by concerns over a supply shortfall from the Middle East at a time of rising demand for summer fuels. Light crude front-month contracts, which were also supported by speculative find-buying, averaged $64.04/b in April, a gain of $3.3, or 5.4 per cent, over the previous month.

In the North Sea, a perception of lower Forties oil supply in June amid healthier refining margins supported prices. Sentiment firmed further on improving margins and the approach of North Sea crude oil supply facility maintenance. Consequently, dated Brent averaged $67.51/b in April for a gain of $5.36, or 8.6 per cent, over the previous month.

On the Mediterranean market, weaker refining margins pressured Urals crude in the first week of the month, but it rebounded strongly later in the period to average $5.11/b, or 8.7 per cent, higher in April at $63.92/b. The Middle East market was also bullish throughout April.

June 2007

Crude oil market currently well supplied

OPEC ready to pump more if needed

With the current high stock levels and OPEC spare production capacity reaching around 15 per cent in the second half of 2007, the Organization considers that a sufficient cushion of supply is available to cope with any upward risk to the forecast.

While market fundamentals do not indicate that additional supply is necessary at this time, OPEC stands ready to relieve any emerging tightness in the crude oil market.

The June market report noted that total OECD commercial oil stocks were currently around 34m b higher than the five-year average. Within the OECD, total oil invento-

ries in Europe (EU plus Norway) reached an historic high and stood at 66m b above the five-year average.

In the US, crude oil stocks indicated a surplus of 24m b over the five-year average, while gasoline inventories — although still below the five-year average — have shown a sharp increasing trend in recent weeks.

The report stated that continuation of OPEC crude production at current levels should maintain commercial stocks at comfortable levels. This would avoid a repeat of the overhang of inventories accumulated in the third quarter of last year, which triggered excessive volatility and destabilized the market.

In its review of the market in May, OPEC again left its estimate for global oil demand at 1.3m b/d, or 1.5 per cent, unchanged from the previous forecast, supported by its assumptions over relatively strong demand from the US, China, the Middle East and India.

Total OECD oil demand in 2007 is estimated to grow by 100,000 b/d y-o-y to average 49.30m b/d.

In OECD North America, the train of thought is that high gasoline prices will now lead to gasoline demand growth in 2007 falling by around a further one per cent from the previous forecast. OPEC adjusted North America's first-quarter oil demand down by 100,000 b/d y-o-y to average 25.71m b/d.

However, US oil demand in May averaged 20.9m b/d indicating y-o-y growth of 2.2 per cent, or 450,000 b/d. The main growth component was fuel oil (250,000 b/d), while gasoline fell short of average expected growth. Hence, US year-to-date oil demand has shown y-o-y growth of 2.3 per cent, or 470,000 b/d. North America's second-quarter y-o-y oil demand growth is now estimated at 100,000 b/d to average 25.95m b/d.

Oil demand growth in OECD Europe, which was affected by warm weather early in the year, is forecast to show a y-o-y decline of 100,000 b/d in 2007. United Kingdom petroleum product consumption has been on the decline, while Germany's oil demand showed a y-o-y decrease of 9.4 per cent, or 219,000 b/d, in March.

In the OECD Pacific, second-quarter oil demand is expected to show a decline of 90,000 b/d y-o-y, with question marks over the level of demand in South Korea and Japan.

Developing country oil demand is contributing the most to total world oil demand growth in 2007, reaching a level of 650,000 b/d to average 23.9m b/d.

Developing country oil demand is contributing the most to total world oil demand growth in 2007.

In the Middle East, second-quarter oil demand growth is forecast at 300,000 b/d to average 6.4m b/d. Booming Gulf Cooperation Council (GCC) economic activities have given impetus to oil demand levels. Expansion of air travel has increased demand for jet fuel by six per cent in the year, while construction activities and petrochemical growth across the region are also offering support.

India's year-to-date oil demand consumption has been showing strong growth of 158,000 b/d, or 5.85 per cent y-o-y, to average 2.85m b/d, while recent data has revealed stronger-than-expected oil demand in Singapore.

Hence, other Asia's first-quarter oil demand was revised up by 50,000 b/d to show y-o-y growth of 140,000 b/d, while Latin America and Africa were given upward revisions of 32,000 b/d and 28,000 b/d, respectively, in the first quarter.

In other regions, China's economy is moving faster than earlier expected. The latest revision to the country's 2007 gross domestic product (GDP) puts it at 10.2 per cent. This strong growth is leading to more energy consumption. China's y-o-y oil apparent consumption is forecast to grow by 480,000 b/d in 2007.

April's apparent demand in China grew by 9.8 per cent, or 700,000 b/d, to average 7.9m b/d y-o-y — the highest level since November 2006. China's oil imports increased in April by 18.3 per cent, or 640,000 b/d y-o-y, to a five-month high.

China's second-quarter apparent oil demand is expected to grow by 510,000 b/d to average 7.85m b/d.

Regarding global oil supply, preliminary figures for the month of May indicate that it averaged 84.41m b/d, a decline of 160,000 b/d from the previous month.

OPEC's crude share, estimated at 35.6 per cent, was based on preliminary data for non-OPEC supply, estimates for OPEC natural gas liquids and OPEC crude production from secondary sources.

Non-OPEC deliveries are expected to average 50.61m b/d in 2007, an increase of 1.14m b/d over 2006 and a net downward revision of 57,000 b/d from the last OPEC assessment.

On a quarterly basis, non-OPEC supply is expected to average 50.3m b/d, 50.3m b/d, 50.5m b/d and 51.4m b/d, respectively. Significant revisions were made to the outlook, due to the availability of actual first-quarter data.

The first, third and fourth quarters were revised down by 112,000 b/d, 67,000 b/d and 74,000 b/d, respectively, while the second quarter was revised up by 25,000 b/d.

Total OECD oil supply is expected to average 20.40m b/d, an increase of 210,000 b/d over the 2006 figure and an upward revision of 49,000 b/d from the last OPEC estimate.

On a quarterly basis, OECD oil supply is expected to average 20.33m b/d, 20.31m b/d, 20.22m b/d, and 20.72m b/d, respectively. April and May preliminary data put the estimate of OECD oil supply for the second quarter at 20.18m b/d, around 131,000 b/d less than the current forecast.

In the US, oil supply is expected to average 7.47m b/d in 2007, representing an increase of 80,000 b/d over the 2006 figure and down by 40,000 b/d from last month's estimate. The quarterly downward revisions were 65,000 b/d, 32,000 b/d, 32,000 b/d and 32,000 b/d, respectively.

Preliminary April and May data show US second-quarter oil supply at 7.47m b/d, around 34,000 b/d less than the current second-quarter forecast.

Oil supply in OECD Europe is slated to average 5.28m b/d in 2007, representing a drop of 100,000 b/d from the 2006 figure, but up 48,000 b/d from OPEC's last report.

The quarterly oil supply figures are expected to be 5.42m b/d, 5.25m b/d, 5.08m b/d and 5.37m b/d, respectively. Preliminary April and May figures for the group put the second-quarter estimate at around 5.39m b/d, which is 144,000 b/d over the current forecast.

Oil supply in the OECD Asia Pacific is expected to average 620,000 b/d in 2007, representing growth of 60,000 b/d compared with last year, and marginally lower than last month's forecast. On a quarterly basis, total oil supply is expected to average 570,000 b/d, 590,000 b/d, 660,000 b/d and 660,000 b/d, respectively.

In the developing countries, oil supply is forecast to average 11.77m b/d in 2007, 230,000 b/d more than in 2006, but a 42,000 b/d downward revision from last month's OPEC figure.

On a quarterly basis, total oil supply in the developing countries is expected to average 11.62m b/d, 11.64m b/d, 11.80m b/d and 12.03m b/d, respectively.

The Other Asia group has witnessed a downward revision in supply of around 10,000 b/d, due to an adjustment to Brunei (14,000 b/d) and Malaysia (23,000 b/d), which was partially offset by Vietnam (23,000 b/d), which now stands at 2.76m b/d, an increase of 70,000 b/d over the previous year.

The African group of countries also witnessed a downward revision, mainly contributed to by Sudan (47,000 b/d). The 2007 total for this group now stands at 2.81m b/d, an increase of 170,000 b/d over the previous year.

The downward revisions were partially offset by upward adjustments in the other two groups. Latin America has been revised up by around 11,000 b/d, mainly contributed by Colombia, with the annual figure for this group now standing at 4.52m b/d, an increase of 70,000 b/d over the previous year.

The Middle East group was also revised up slightly and now stands at 1.69m b/d, or 80,000 b/d below the 2006 figure. Preliminary figures for April and May put the second-quarter estimate for total developing countries at around 11.61m b/d, which is 28,000 b/d less than the current forecast.

Oil supply in the FSU is expected to average 12.64m b/d in 2007, representing an increase of 620,000 b/d over 2006, but a downward revision of 68,000 b/d from OPEC's last assessment.

On a quarterly basis, total oil supply in the FSU is expected to average 12.50m b/d, 12.60m b/d, 12.67m b/d and 12.80m b/d, respectively.

Minor upward revisions were carried out to the other Europe group, but the figure remains almost unchanged at 150,000 b/d, representing zero growth compared with 2006.

Russian oil supply is expected to average 9.90m b/d in 2007, an increase of 250,000 b/d over 2006 and 68,000 b/d lower than last month's estimate.

On a quarterly basis, Russian oil supply is expected at 9.87m b/d, 9.87m b/d, 9.92m b/d and 9.95m b/d, respectively. Preliminary figures for April and May put Russia's second-quarter performance at 9.78m b/d, around 91,000 b/d less than the current forecast.

In the Caspian, Azeri oil supply is expected to average 920,000 b/d in 2007, representing an increase of 270,000 b/d over last year. Preliminary figures for April and May put second-quarter supply at around 860,000 b/d, about 44,000 b/d below the current forecast. The quarterly forecast level now stands at 850,000 b/d, 900,000 b/d, 950.000 b/d and 960.000 b/d, respectively.

Kazak oil supply is expected to average 1.39m b/d in 2007, an increase of 90,000 b/d from 2006. Preliminary data for April and May indicate that the second-quarter could come in at 1.38m b/d, around 20,000 b/d below the current forecast. Quarterly supply figures are currently expected at 1.35m b/d, 1.40m b/d, 1.36m b/d, and 1.46m b/d, respectively.

China's total oil supply is expected to average 3.73m b/d in 2007, representing an increase of 59,000 b/d over last year, but unchanged from last month's report. The quarterly figures stand at 3.75m b/d, 3.70m b/d, 3.73m b/d, and 3.76m b/d, respectively. Preliminary April and May figures put China's second quarter supply at 3.75m b/d, around 52,000 b/d higher than the current forecast.

Total OPEC crude oil production in May, according to secondary sources, averaged 30.03m b/d, a decline of 82,700 b/d from the previous month.

OPEC-10 production averaged 26.40m b/d, down 57,400 b/d. Iraq's oil production averaged 2.02m b/d, a decline of around 24,000 b/d, while Nigeria's oil production stood at 1.99m b/d, a drop of around 153,200 b/d.

Demand for OPEC crude in 2007 is expected to average 30.56m b/d, representing a decline of 210,000 b/d from the previous year. On a quarterly basis, the forecast shows that demand for OPEC crude is expected at 31.11m b/d, 29.49m b/d, 30.64m b/d, and 30.98m b/d, respectively.

In the downstream sector, the continuation of refinery snags compounded the bullish sentiment of product markets, and refining margins surged across the globe.

Margins for WTI crude on the US Gulf Coast reached a new record of $24.84/b in May, up from $20.90/b the previous month.

In Europe, the market followed suit with the Brent crude margin on the Rotterdam market hitting an unprecedented level of $11.02/b. It rose by 90 per cent compared with the same period last year.

US oil imports remained strong in May, increasing by around 2.8 per cent or 281,000 b/d from the previous month to

average 10.4m b/d, the highest level since September 2006.

The increase in crude oil imports came on the back of refiners' preparation for the summer season. Similarly, US product imports rose sharply — by ten per cent — from the previous month to average around 3.9m b/d, the highest level since August 2006.

Exports from the US remained steady in May averaging around 1.2m b/d for both crude oil and product exports.

According to preliminary data, Japan's crude oil imports continued to decrease for the second consecutive month to average 3.9m b/d in May, representing a drop of six per cent or 250,000 b/d from the previous month. Product imports remained stable at 540,000 b/d in May, representing a decline of around two per cent.

China's crude oil imports surged by 10.5 per cent in April from the previous month, reaching a new record of around 3.6m b/d, according to preliminary data. On an annual basis, China's crude oil imports indicated annual growth of 23 per cent, the highest growth since November 2006.

Product imports rose a further 24 per cent, or 213,000 b/d, to average 1.1m b/d, the highest level since August 2006, indicating y-o-y growth of six per cent.

For the first time since the third quarter of 2006, both US crude oil and product inventories rose at the same time.

Concerning inventories, in the US, for the first time since the end of the third quarter of 2006, both crude oil and product inventories rose at the same time.

However, while crude oil stocks continued to build for the third consecutive month, products witnessed the first increase this year in May. As a result, total oil stocks rose 21.4m b, the largest increase seen since September 2006, to stand at around 1,007m b at the end of the month, the second highest level so far this year. This was 28m b below the level seen a year ago, but still 10m b above the five-year average.

The build in crude oil stocks was attributed essentially to the increase in imports. On the product side, stocks jumped 18m b, ending the month at nearly 665m b. The substantial increase in product stocks was driven mainly by imports, which rose by 370,000 b/d in May.

Gasoline stocks, which have been the main driver of the oil market, reversed the downward trend seen since last February and increased by 4.9m b to stand at 198m b.

Following the same trend, distillate stocks increased by 4.2m b in May, the largest build since the end of the third quarter of 2006. Stocks remained at a comfortable level of 122.3m b, representing a surplus of six per cent over the five-year average.

In Western Europe, EU-16 (Eur-15 plus Norway), total commercial oil stocks increased a further 4.4m b in May to hit an all-time high of 1,169m b. Inventories remained above the upper five-year range for the third straight month.

Compared with the same period last year, stocks showed a surplus of 17m b and were 66m b above the five-year average. The build in stocks was driven by products, which rose sharply, while crude stocks showed a marginal decline.

An increase in the refinery utilization rate of more than two per cent resulted in a drop of 900,000 b, or 30,000 b/d, in crude oil stocks, which ended the month at nearly 481m b, 10m b above the five-year average.

Concerning oil prices, the OPEC Reference Basket averaged $64.36/b in May, 97¢ higher than in the previous month and the highest level in nine months.

It started the month on a bearish note, before picking up in the third and fourth weeks of the period under review. In fact, in the fourth week, the Basket's average was recorded at $66.39/b for a gain of $1.84, the highest weekly average seen in the year so far. Nonetheless, in the final days of the month, an easing of the Middle East geopolitical situation and the cancellation of a threatened strike in Nigeria pushed the Basket down to close at an average of $64.99/b.

Moving into June, the Basket remained volatile, moving higher as Cyclone Gonu threatened petroleum infrastructure and shipping in the Middle East. This, along with new geopolitical developments, pushed prices over $67/b before dropping back to just over $65/b. The Basket stood at $65.56/b on June 13.

On the US market, prices for sweet crude were relatively firm throughout the month, supported by increasing demand for gasoline ahead of the summer driving season, the production problems in Nigeria and concern over potential supply shortfalls from the Middle East. NYMEX WTI front-month contracts averaged $63.53/b in May, representing a drop of 51¢ from the previous month.

In the North Sea, the crude market emerged on a weaker note amid limited activities at the beginning of the month. However, sentiment began to firm in the ensuing weeks on healthy refinery demand and as a result of a sharp drop in the June loading programme, which stood at the lowest level in three years amid seasonal maintenance at supply facilities. The price recovery continued with Brent averaging $67.38/b for May, a decline of 13¢ from the previous month.

In the Mediterranean market, differentials for Urals crude were supported by healthy refining margins, although higher exports in May over the previous month calmed market sentiment. Urals averaged $64.29/b for the month, which was a $3.09/b discount to Brent and 50¢ firmer than the April average.

The Middle East market was also supported by healthy refining margins in Asia at the start of the month, but market bearishness became apparent in the final days of the month.

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	50.3	48.0	48.9	49.7	49.2	49.7	48.1	49.1	50.3	49.3
North America	24.1	24.5	25.4	25.5	25.2	25.1	25.5	25.4	25.3	25.7	25.2	25.6	25.8	25.6
Western Europe	15.3	15.4	15.5	15.5	15.8	15.1	15.5	15.6	15.5	15.1	15.1	15.6	15.7	15.4
Pacific	8.5	8.6	8.5	8.6	9.3	7.9	7.9	8.8	8.5	8.9	7.8	7.9	8.8	8.3
Developing countries	20.3	20.6	21.7	22.5	22.9	23.3	23.3	23.5	23.2	23.6	23.8	24.0	24.1	23.9
FSU	3.7	3.8	3.8	3.8	3.7	3.6	3.8	4.2	3.8	3.8	3.5	3.8	4.3	3.9
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	7.2	6.9	7.1	7.5	7.9	7.8	7.4	7.6
(a) Total world demand	**77.8**	**79.3**	**82.3**	**83.3**	**84.9**	**83.1**	**84.1**	**85.2**	**84.3**	**85.6**	**84.2**	**85.6**	**87.0**	**85.6**
Non-OPEC supply														
OECD	21.9	21.7	21.3	20.5	20.4	20.0	20.0	20.3	20.2	20.3	20.3	20.2	20.7	20.4
North America	14.5	14.6	14.6	14.1	14.2	14.2	14.3	14.3	14.2	14.3	14.4	14.4	14.6	14.4
Western Europe	6.7	6.4	6.2	5.8	5.7	5.3	5.1	5.4	5.4	5.4	5.3	5.2	5.4	5.3
Pacific	0.8	0.7	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6
Developing countries	10.6	10.8	11.0	11.3	11.5	11.5	11.5	11.6	11.5	11.6	11.6	11.8	12.0	11.8
FSU	9.3	10.3	11.1	11.5	11.7	12.0	12.1	12.3	12.0	12.5	12.6	12.7	12.8	12.6
Other Europe	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
China	3.4	3.4	3.5	3.6	3.7	3.7	3.7	3.6	3.7	3.7	3.7	3.7	3.8	3.7
Processing gains	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Total non-OPEC supply	3.6	3.7	4.0	4.1	4.0	4.1	4.2	4.1	4.1	4.3	4.4	4.5	4.6	4.4
OPEC NGLS and non-conventionals														
(b) Total non-OPEC supply and OPEC NGLS	**50.8**	**51.8**	**53.0**	**53.1**	**53.3**	**53.3**	**53.6**	**54.0**	**53.6**	**54.5**	**54.7**	**54.9**	**56.0**	**55.1**
OPEC crude supply and balance														
OPEC crude oil production[1]	26.2	27.8	30.0	31.1	31.1	30.9	31.1	30.4	30.9	30.0				
Total supply	77.0	79.6	83.0	84.2	84.4	84.2	84.7	84.5	84.4	84.5				
Balance[2]	-0.8	0.3	0.8	0.9	-0.4	1.1	0.6	-0.7	0.1	-1.1				
Stocks														
OECD closing stock level *m b*														
Commercial	2478	2517	2547	2597	2597	2657	2766	2684	2684	2597				
SPR	1347	1411	1450	1487	1487	1493	1495	1499	1499	1503				
Total	3825	3928	3997	4083	4084	4150	4261	4183	4183	4099				
Oil-on-water	815	882	905	958	960	968	964	908	908	917				
Days of forward consumption in OECD														
Commercial onland stocks	51	51	51	53	54	54	56	54	54	54				
SPR	28	29	29	30	31	31	30	30	30	31				
Total	79	80	81	83	85	85	86	84	85	85				
Memo items														
FSU net exports	5.6	6.5	7.3	7.7	8.0	8.4	8.3	8.1	8.2	8.7	9.1	8.8	8.5	8.8
[(a) – (b)]	27.0	27.6	29.3	30.3	31.5	29.8	30.5	31.2	30.8	31.1	29.5	30.6	31.0	30.6

1. *Secondary sources.*
2. *Stock change and miscellaneous.*

Note: Totals may not add up due to independent rounding.

Table E *above, prepared by the Secretariat's Petroleum Market Analysis 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 76 while* ***Graphs One and Two*** *(on page 77 show the evolution on a weekly basis.* ***Tables Three to Eight****, and the corresponding graphs on pages 78–79 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, 2006–2007

$/b

Crude/Member Country	2006 May	June	Jul	Aug	Sep	Oct	Nov	Dec	2007 Jan	Feb	Mar	Apr	May	Weeks 18–22 (week ending) May 4	May 11	May 18	May 25	Jun 1
Arab Light – Saudi Arabia	64.83	65.03	69.06	68.76	59.72	55.64	55.53	57.70	50.86	54.29	58.08	62.83	64.16	63.64	62.32	64.36	65.91	64.39
Basrah Light – Iraq	62.32	62.38	66.49	65.42	56.40	51.53	52.31	55.23	47.64	51.19	55.99	59.74	61.77	61.22	59.99	61.95	63.34	62.25
BCF-17 – Venezuela	56.62	55.01	58.72	60.29	50.96	46.99	46.86	48.56	42.68	48.04	50.27	54.93	56.05	56.32	54.53	55.63	57.39	56.77
Bonny Light – Nigeria	71.75	70.22	75.49	75.29	63.87	58.75	60.32	64.28	56.18	59.58	64.59	70.01	69.99	68.30	66.58	70.43	73.45	71.62
Es Sider – SP Libyan AJ	67.25	66.62	71.42	70.72	61.54	56.20	57.32	60.73	52.08	55.83	60.60	66.06	65.99	64.31	62.58	66.43	69.45	67.58
Iran Heavy – IR Iran	63.27	62.24	66.59	66.42	57.14	53.27	53.97	55.75	47.91	51.87	56.39	61.42	62.74	61.93	60.63	63.01	64.80	63.11
Kuwait Export – Kuwait	62.80	62.37	66.35	66.02	56.75	53.02	53.56	55.69	48.42	52.33	56.22	61.07	62.08	61.64	60.30	62.28	63.75	62.22
Marine – Qatar	66.29	66.16	70.21	70.05	60.90	57.15	57.33	59.25	52.58	55.86	59.39	64.79	65.36	65.11	63.70	65.46	66.92	65.44
Minas – Indonesia	70.47	68.49	74.13	75.42	63.32	54.87	56.93	62.55	55.39	58.44	62.83	68.75	68.15	68.79	66.40	68.09	69.43	67.82
Murban – UAE	69.84	69.66	73.70	73.66	65.01	61.04	60.94	63.12	56.42	59.58	63.19	68.39	69.23	68.74	67.56	69.40	70.85	69.32
Saharan Blend – Algeria	70.31	69.15	74.37	74.50	63.27	58.55	59.77	63.55	55.78	59.58	64.30	69.71	70.09	68.32	66.68	70.53	73.55	71.62
OPEC Reference Basket	**65.11**	**64.60**	**68.89**	**68.81**	**59.34**	**54.97**	**55.42**	**57.95**	**50.73**	**54.45**	**58.47**	**63.39**	**64.36**	**63.70**	**62.26**	**64.55**	**66.39**	**64.89**

Table 2: Selected OPEC and non-OPEC spot crude oil prices, 2006–2007

$/b

Crude/country	2006 May	June	Jul	Aug	Sep	Oct	Nov	Dec	2007 Jan	Feb	Mar	Apr	May	Weeks 18–22 (week ending) May 4	May 11	May 18	May 25	Jun 1
Arab Heavy – Saudi Arabia	60.88	59.84	63.74	63.57	54.56	50.49	51.54	53.72	46.15	50.21	54.40	59.16	60.09	59.68	58.36	60.29	61.72	60.17
Brega – SP Libyan AJ	69.63	68.39	73.26	72.81	61.51	57.50	58.62	62.23	53.78	57.53	62.30	67.71	67.69	66.00	64.28	68.13	71.15	69.27
Brent – North Sea	69.83	68.69	73.66	73.11	61.71	57.80	58.62	62.23	53.78	57.53	62.30	67.71	67.34	65.68	63.93	67.78	70.80	68.92
Dubai – UAE	65.07	65.22	69.17	68.92	59.82	56.36	58.92	62.33	53.68	57.43	62.15	67.51	64.62	64.26	62.90	64.86	66.27	64.55
Ekofisk – North Sea	69.88	68.45	73.74	73.09	62.24	58.17	56.72	58.69	51.92	55.61	58.80	63.97	68.31	66.21	64.46	69.44	72.34	69.73
Iran Light – IR Iran	64.67	64.30	68.81	68.49	58.56	55.42	59.15	62.17	53.93	58.41	62.84	67.73	64.08	63.83	61.83	64.32	66.48	63.88
Isthmus – Mexico	64.82	63.88	68.30	67.47	57.18	52.46	55.39	56.98	49.12	53.64	57.92	63.87	60.54	59.39	57.71	60.83	63.14	62.28
Oman -Oman	66.39	66.17	70.22	70.12	61.01	57.32	53.34	56.82	48.90	53.48	56.78	60.60	65.06	64.72	63.32	65.22	66.67	65.19
Suez Mix – Egypt	62.46	61.95	66.51	65.78	56.96	52.91	57.37	59.35	52.38	55.82	59.19	64.45	61.31	59.52	58.12	62.17	64.89	62.18
Tia Juana Light[1] – Venez.	58.66	56.98	60.93	60.99	52.35	48.05	53.60	55.05	47.19	51.38	56.16	61.27	58.47	57.38	55.74	58.76	61.00	60.16
Urals – Russia	65.09	64.51	69.20	68.49	59.47	55.68	51.63	54.89	47.83	51.82	54.90	58.60	64.29	62.21	61.28	65.21	67.47	65.11
WTI – North America	70.89	70.88	74.33	73.01	64.00	58.82	55.95	57.95	50.13	53.82	58.81	63.92	63.43	63.69	61.85	63.52	64.86	64.10

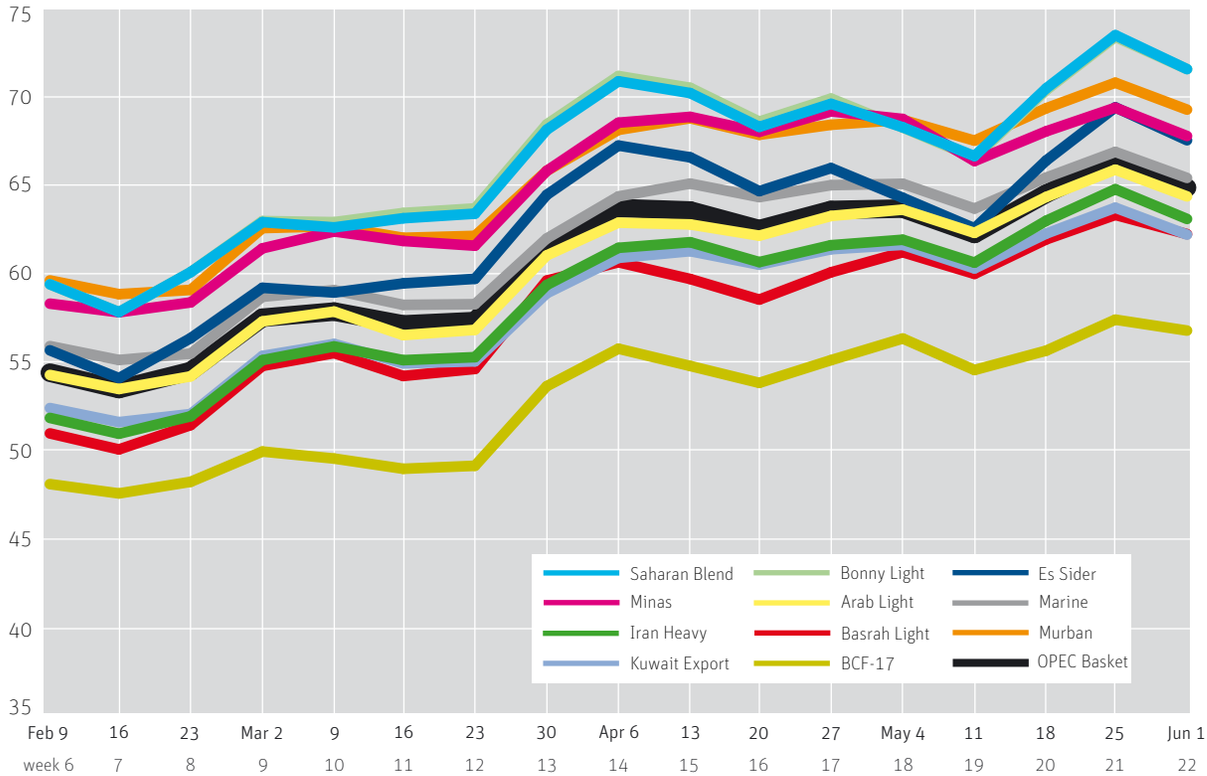
Note: As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the OPEC Reference Basket has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference.

1. Tia Juana Light spot price = (TJL netback/Isthmus netback) x Isthmus spot price.

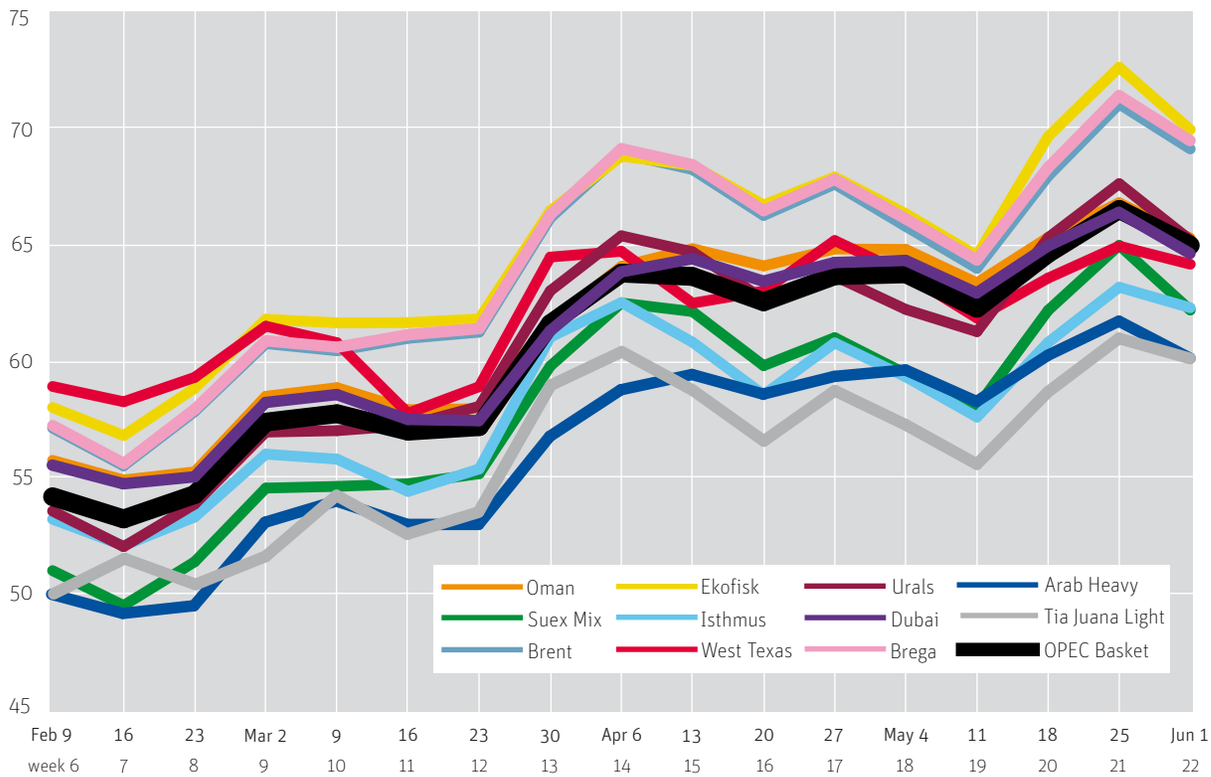
Brent for dated cargoes; Urals cif Mediterranean. All others fob loading port.

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, February to May 2007 *$/b*



Graph 2: Evolution of spot prices for selected non-OPEC crudes, February to May 2007 *$/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
2006	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
	November	67.40	61.17	69.11	74.53	73.81	38.69	38.70
	December	71.49	64.58	72.94	75.60	78.27	37.32	37.82
2007	January	66.59	57.72	65.11	67.79	70.78	36.04	33.81
	February	72.25	63.74	71.76	72.51	73.96	34.67	37.99
	March	79.22	73.41	82.57	76.23	76.82	39.24	40.35
	April	86.19	83.57	93.90	81.65	82.71	42.91	46.46
	May	90.03	89.81	100.00	81.72	83.79	45.66	47.33

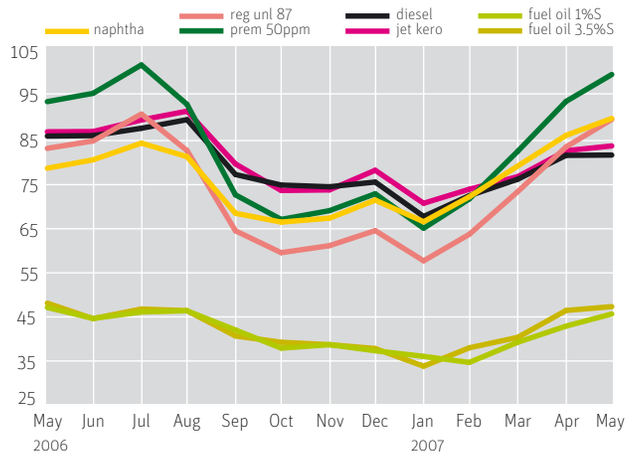


Table and Graph 4: South European market — spot cargoes, fob Italy

$/b

		naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1%S	fuel oil 3.5%S
2006	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
	November	56.16	70.33	74.31	38.29	37.49
	December	59.44	73.54	75.64	38.42	37.37
2007	January	54.77	64.62	66.93	34.63	34.49
	February	59.53	71.82	70.87	38.20	37.30
	March	65.29	82.23	74.98	41.45	40.93
	April	71.19	93.67	81.44	47.01	46.53
	May	74.42	101.00	82.85	49.97	46.49

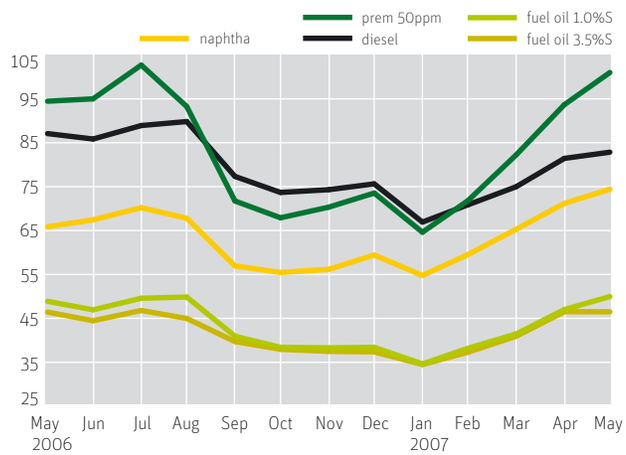
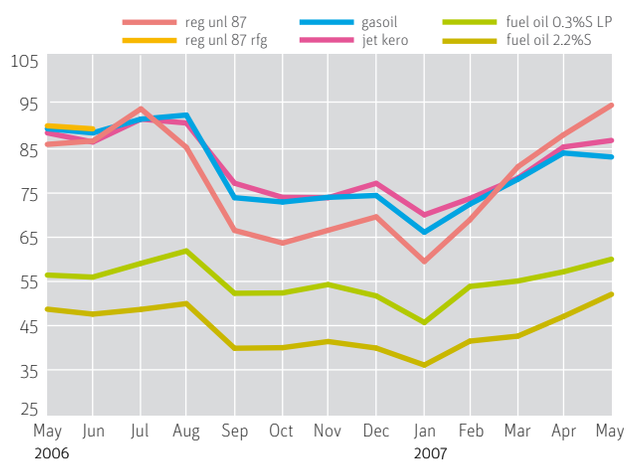


Table and Graph 5: US East Coast market — spot cargoes, New York

$/b, duties and fees included

		regular gasoline unleaded 87	regular gasoline unl 87 rfg	gasoil	jet kero	fuel oil 0.3%S	fuel oil 2.2%S
2006	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
	November	66.58	na	74.04	73.96	54.29	41.40
	December	69.62	na	74.46	77.21	51.73	39.92
2007	January	59.52	na	66.13	70.07	45.71	36.07
	February	68.93	na	72.49	73.77	53.86	41.49
	March	80.96	na	78.14	78.39	55.10	42.63
	April	88.17	na	84.08	85.43	57.18	47.06
	May	94.90	na	83.17	86.92	60.03	52.09



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
2006	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	45.51
	August	71.17	85.12	90.20	46.00	45.51
	September	72.46	72.46	76.92	35.88	35.81
	October	61.31	69.90	73.81	36.01	35.93
	November	62.44	69.83	73.86	37.40	37.24
	December	63.97	70.72	76.90	35.92	34.92
2007	January	57.18	63.61	70.10	32.07	32.02
	February	65.59	69.62	74.07	37.49	37.14
	March	75.60	72.12	78.27	38.63	38.22
	April	88.22	77.36	86.11	43.06	42.90
	May	81.49	81.02	87.42	48.09	48.03

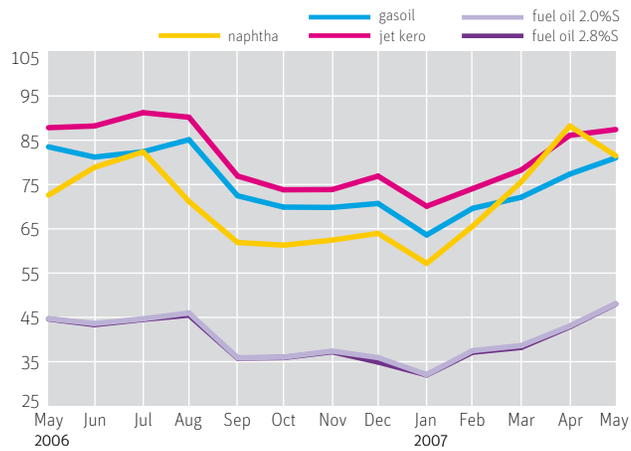


Table and Graph 7: Singapore market — spot cargoes, fob

$/b

		naphtha	premium gasoline unl 95	premium gasoline unl 92	diesel ultra light	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2006	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	89.47	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
	November	57.66	62.89	62.14	72.04	73.63	40.53	39.84
	December	60.54	68.16	67.03	74.14	77.42	41.47	40.34
2007	January	56.79	61.59	60.31	69.71	69.66	41.23	40.24
	February	63.81	66.80	65.73	72.22	71.77	44.95	43.70
	March	70.56	76.62	75.52	75.94	75.02	46.26	45.48
	April	74.22	83.49	82.69	83.18	80.91	51.24	50.87
	May	76.73	88.77	87.96	84.47	82.14	51.34	50.82

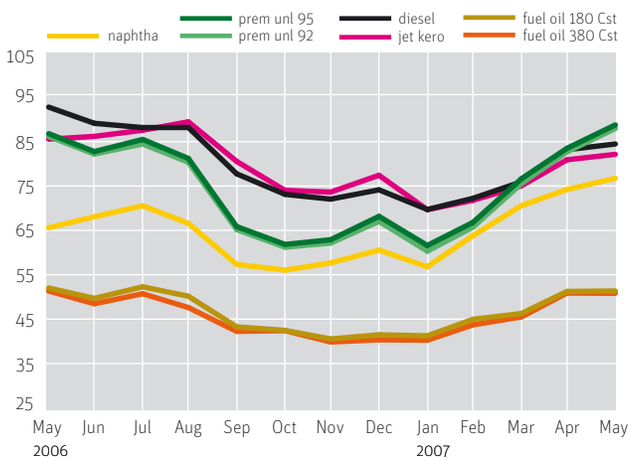
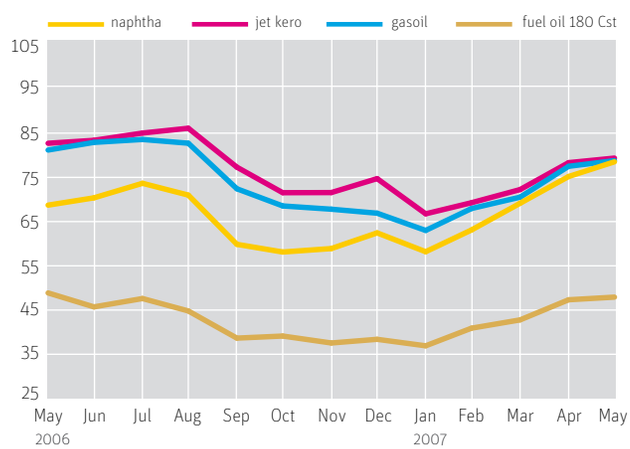


Table and Graph 8: Middle East Gulf market — spot cargoes, fob

$/b

		naphtha	gasoil	jet kero	fuel oil 180 Cst
2006	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
	November	58.90	67.80	71.56	37.55
	December	62.45	66.90	74.72	38.38
2007	January	58.19	63.00	66.76	36.91
	February	63.11	67.96	69.27	40.90
	March	69.14	70.52	72.24	42.77
	April	75.19	77.50	78.33	47.32
	May	78.52	78.79	79.36	47.92



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Source: Platts. Prices are average of available days.

Fighting famine

in sub-Saharan Africa through agricultural research

CIMMYT has developed a number of maize hybrids to suit African growing conditions.

Famine is one of the most prevalent forms of natural disaster. It is common in parts of the world where subsistence farmers rely on one or two staple crops, or on small livestock. They have no other means of feeding their families if the crops fail or the animals die. It may not be possible for the world at large to influence the environmental factors that bring about famine, but much can be done to help poor farmers grow more and better quality food. Here is one such example where the OPEC Fund for International Development (OFID) is supporting a scheme designed to boost agricultural productivity in sub-Saharan Africa.

Through agricultural research, varieties of crops can be produced that are resilient to drought and pests and that are more likely to produce decent yields in difficult conditions.

Through its support of the Consultative Group on International Agricultural Research (CGIAR), OFID is helping to finance a project aimed at increasing maize yields in sub-Saharan Africa, one of the world's most drought-prone regions, and also one of the poorest.

First introduced to Africa by the Portuguese in the 16th century, maize has become Africa's most important staple food crop and is grown by both small-and large-scale farmers throughout the continent.

Many of the 250 million people involved in agriculture in the sub-Saharan region grow nothing but maize, and over 314 million people live on a staple diet of the grain. The rural poor are particularly dependent on it, as they do not have the income to afford alternative foods.

Despite the prevalence of maize, it is not an easy crop to grow in the region and yields are among the lowest in the world. In fact, figures produced by the United Nations Food and Agriculture Organization (FAO) show that while the worldwide average maize yield per hectare is about four tons, this compares to an average of only 1.7 tons per hectare in Africa.

An ear of healthy 'ZM521' maize, developed by CIMMYT, yields 30–50 per cent more than traditional varieties in conditions of drought and low soil fertility.

Frequently, the amount grown falls short of demand, endangering the food security of the region. Even when the harvest is adequate, maize is not an ideal staple food. This is because conventional maize is deficient in essential amino acids, so many people who depend on the crop suffer from protein deficiency.

However, to overcome this problem the International Maize and Wheat Improvement Centre (CIMMYT), a CGIAR member, has developed a strain of maize with additional protein.

Quality Protein Maize (QPM) has protein of the same quality as cow's milk and can prevent protein malnutrition.

And researchers at CIMMYT are working on improving QPM further so that it also has greater resistance to drought and to common diseases that can hit the maize harvest.

Over the past decade, CIMMYT has successfully developed maize varieties which are more tolerant to drought, low soil fertility and diseases, including the destructive maize streak virus.

Developing better seed strains requires years of intensive research and experimentation, both in laboratories and in the field.

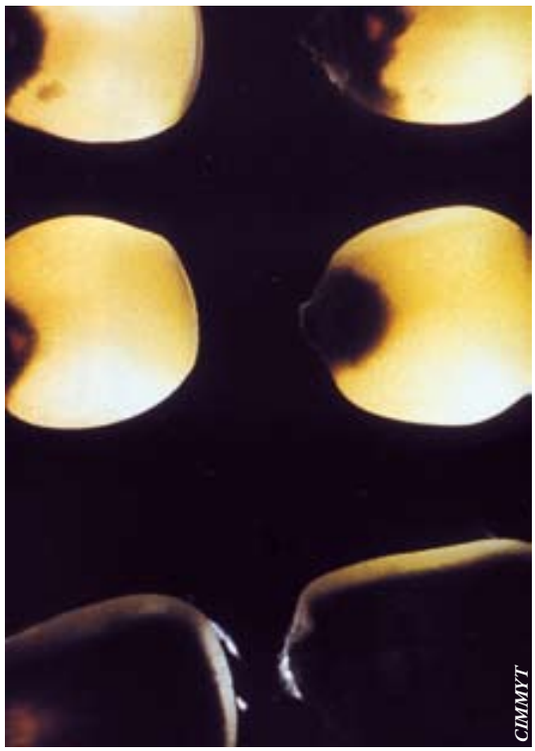
Tremendous impact

The aim now is to transfer these achievements to QPM. Importantly, the new maize varieties are produced using conventional cross-breeding techniques, without genetic modification.

Instead, the researchers use equally modern but uncontroversial tools, such as advanced statistics and very detailed and comprehensive information about weather and climate conditions and other growing factors.

Marianne Banziger, Director of CIMMYT's Maize Improvement Group, who is based in Nairobi, Kenya, highlighted the value of the research.

"The work we do can have a tremendous impact on farmers in the long term because even small increases in yields can make a huge difference overall. Some of the drought-resistant strains we developed in earlier years are now grown over areas of one million hectares, and a small increase in the harvest over such an area means a lot of extra maize.



CIMMYT was established in 1966 to help alleviate poverty by increasing productivity in maize and wheat in developing countries, while protecting the environment through agricultural research in concert with national research systems. Across all developing countries, wheat and maize rank second and third in importance after rice among all cereals. CIMMYT acts as a catalyst and leader in a global maize and wheat innovation network.

Based in Mexico City, it became part of the CGIAR system in 1971. The Consultative Group on International Agricultural Research is an informal association of over 60 private and public sector donors and member countries that support a group of 15 practice-oriented agricultural research institutions, all helping to increase agricultural productivity, among other goals.

Over the years, OFID has extended more than $17 million in grants to the various institutes that make up the group.

"The problem is that the process of developing such new varieties of maize, from the time the first cross-breeding takes place until the finished product reaches the farmer, may take as long as seven or eight years.

"Raising money for such research is not always easy because people often want to fund something that has quick results and agricultural research is sometimes seen as unglamorous and not very rewarding. Donors really have to be in it for the long haul," she said.

The QPM project, to which OFID is contributing a grant of $150,000, brings together achievements from earlier OFID-supported research projects and other schemes.

Previous OFID support helped develop screening facilities for MSV in Kenya and Uganda and the building of a regional team to develop and disseminate more than ten new drought-tolerant and streak-resistant maize varieties through participatory plant breeding with farmers.

CIMMYT researchers work not only in laboratories, developing new strains of maize, but also out in the field, testing them. Testing is done on small farms in 150 communities in eastern and southern Africa, in close cooperation with the local farmers.

According to Ms Banziger, the researchers enjoy excellent cooperation from the farmers, and there is great interest in the project, as well as a lot of pressure on CIMMYT to increase the number of communities involved.

"We have built up long-term relations with the farmers who are sampling our maize. There's a lot of goodwill about the project and also a great thirst for information about what we are doing and how to grow better maize in general. There is a demand for much more support than we can supply at the moment, she affirmed.

Good practice

CIMMYT's involvement in improving maize production in Africa goes beyond producing superior seeds for farmers. It also provides support for small seed producers and retailers in the countries concerned, to ensure that their seeds are available in local markets.

They do this by teaching the companies' staff how to produce and disseminate seeds, making sure that permission to produce the various seed varieties is divided fairly between companies and acting as a liaison between seed manufacturers and farmers.

They even help teach business skills to the producers' and retailers' staff.

CIMMYT also works closely with non-governmental organizations, national ministries of agriculture and community-based organizations to promote good practice in maize growing and to ensure that the benefits of its seed technology are widely disseminated.

The improved QPM varieties in the pipeline will be of particular benefit to the resource-poor and to women and children, who tend to be those most dependent on a good maize crop.

It should go a long way to enhance food and income security in drought-prone areas of sub-Saharan Africa. The beneficiary countries of the OFID-sponsored project are: Angola, Botswana, Burundi, Democratic Republic of Congo, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Rwanda, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

Educating small farmers about optimizing their output is an important as providing the best quality seed.

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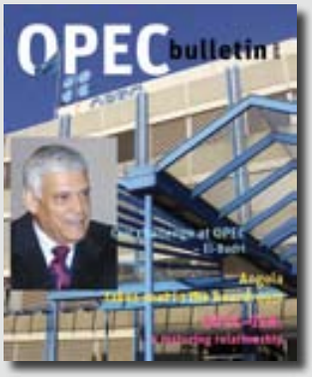

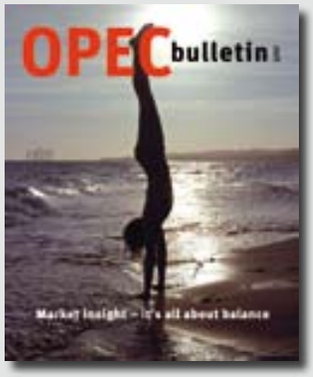

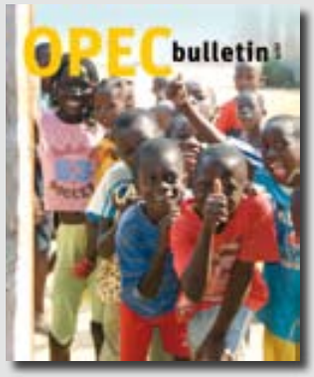

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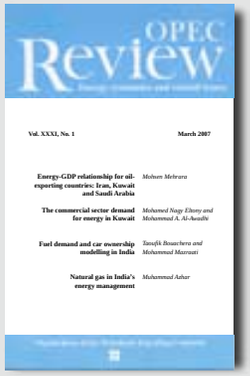

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