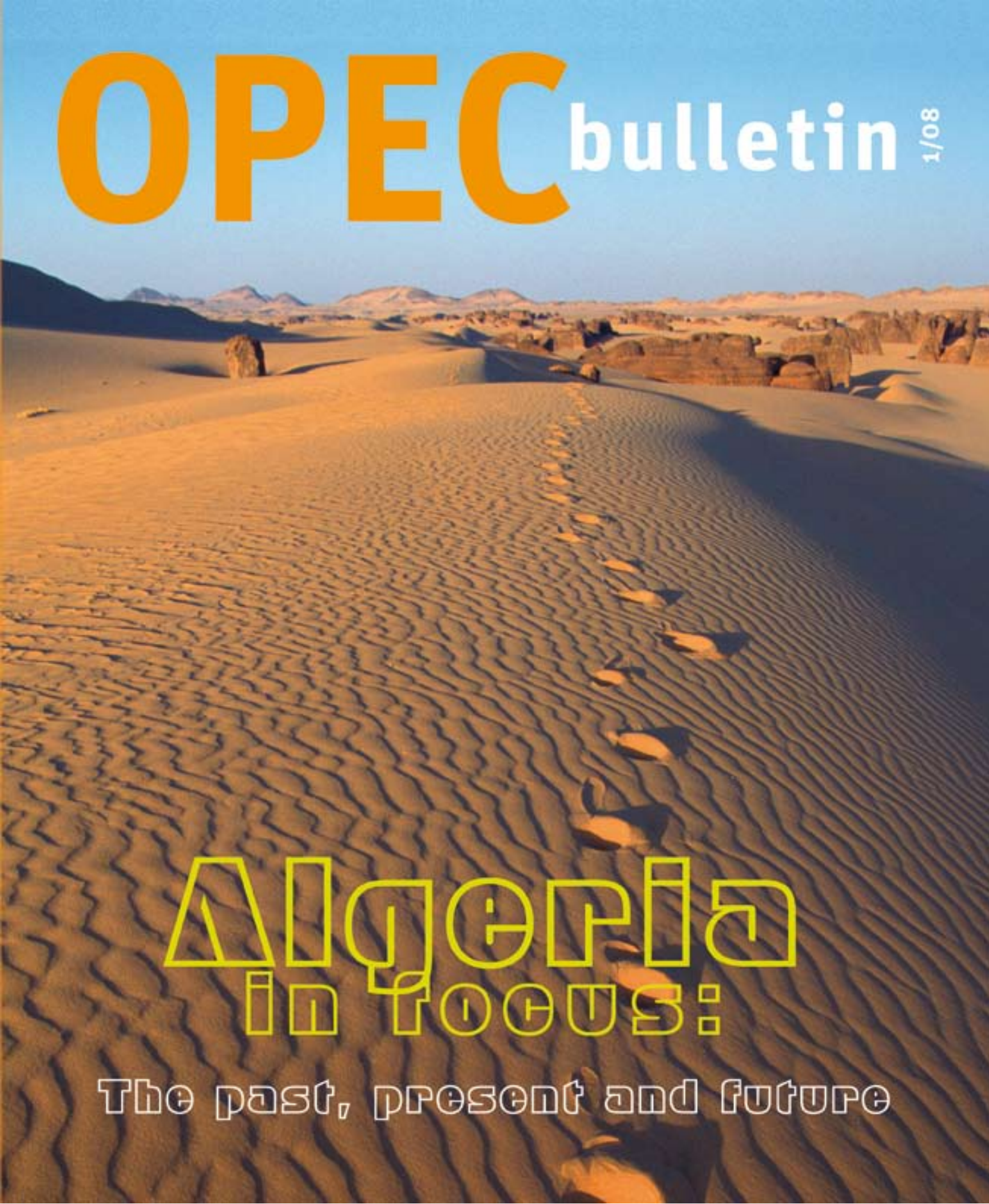
OPEC bulletin

1/08



Algeria in focus:

The past, present and future

OIL PRICES – a time for reflection

Commentary

A new year.
A new start.
And a new time for reflection.

The past 12 months were challenging ones for the world oil market.

Indeed, the present wave of volatility has been with us now for nearly four years, accompanied by frequent upward pressure on prices. This has been a headache for all parties, including OPEC, that are committed to market order and stability.

And so, what are the prospects for 2008?

As is usual at this time of the year, the forecasters have been out in force. Some present a brighter outlook. Others make for gloomy reading. Throughout the tone is cautious.

This is hardly surprising, in the light of recent events.

There is a great deal of uncertainty around. This is perhaps because this lengthy unsettled period has been characterized by fluctuating combinations of key factors affecting the market's behaviour at any one time, and these factors have been interacting with each other in an often profound and significant manner.

The factors are familiar to us and include: unexpectedly large rises in demand; unanticipated trends with non-OPEC supply; geopolitical developments in various parts of the world; downstream bottlenecks in some major consuming countries; accidents, natural disasters and extreme weather; the declining strength of the US dollar (most recently); and a big rise in speculation.

Arguably and, at least, partially, the market's volatile behaviour is a product of the times — with globalization, the information age and the jousting between the established old order and the emerging new order in the world economy.

Nevertheless, the volatility of the past few years has been difficult to handle — and yet it must be handled.

OPEC has felt that the area where it can make the biggest contribution is supply. Therefore, in response to perceived shortages of crude, we have increased crude oil supply substantially, as well as accelerated plans to bring on-stream new production capacity. Furthermore, where possible, our Member Countries have been increasing their presence downstream, at home and abroad. Some of our measures can have an almost immediate impact, while others need time to reap the full benefit of the investment.

But one area over which we have little or no influence has been speculation, and we see this as the principal driving force behind the recent volatility and rising prices.

Oil has become a financial asset, like other commodities. Large amounts of money are flowing into the commodities markets to balance portfolio risks and to seek higher returns. Indeed, the recent heightened concern about the falling value of the US dollar has encouraged inflows of new money into the crude oil futures market. The overall effect has been to detach oil prices from the fundamental dynamics of supply and demand.

We are not the only people concerned about the greatly heightened level of speculation. For example, at a joint workshop we held with the European Union in late-2006, on the impact of financial markets on the price of oil, one point that was emphasized was the role of regulation and the need for a supporting policy framework that would benefit all market participants.

Therefore, in seeking to assess the prospects for oil prices in 2008, we all need to recognize that we are operating in an increasingly complex, interdependent global arena and that all parties should act where they can in seeking to achieve sustainable order and stability in the oil market, with fair and reasonable prices, and encourage others to do the same. Above all, something must be done to reduce the damaging hold speculation has over price levels and stability.

Four years is a very long time for a protracted state of market volatility, and let us hope that, in 2008, we finally see an end to it, to the satisfaction of producers and consumers alike.

Contents

OPEC bulletin

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Tassili Foundation, Algeria *(see features on Algeria on pp22–39).*
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Publishers
OPEC
Organization of the Petroleum Exporting Countries
Obere Donaustrasse 93
1020 Vienna, Austria
Telephone: +43 1 211 12/0
Telefax: +43 1 216 4320
Public Relations & Information
Department fax: +43 1 214 9827
E-mail: prid@opec.org

Web site: www.opec.org
Visit the OPEC Web site for the latest news and information about the Organization and back issues of the *OPEC Bulletin* which is also available free of charge in PDF format.
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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 13 Members: Qatar joined in 1961; Indonesia and SP Libyan AJ (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); Nigeria (1971); Angola (2007); and Ecuador (joined the Organization in 1973, suspended its Membership in 1992, and rejoined in 2007); Gabon joined in 1975 and left in 1995.

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Please send your letters to: obletters@opec.org

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

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OPEC Conference decides to maintain current production allocations into 2008

Organization's main concern is to ensure adequate oil supplies

OPEC is concerned about the high level of oil prices, but it is even more preoccupied with ensuring that the oil market remains adequately supplied with crude at all times, according to ***Mohamed Bin Dhaen Al Hamli****, who was the OPEC Conference President in 2007.*

The horses in this painting symbolize the seven Emirates that make up the United Arab Emirates.

The host to the 146th (Extraordinary) OPEC Conference, Mohamed Bin Dhaen Al Hamli, OPEC Conference President in 2007, and Minister of Energy of the UAE.

Speaking at a press conference at the end of the 146th (Extraordinary) Meeting of the OPEC Conference, held in the United Arab Emirates (UAE) capital of Abu Dhabi in early December 2007, he stressed that at the present time there is a "disconnection" between the fundamentals of the market and the level of oil prices.

"Of course, we are concerned about high prices, but what is really important for us is to ensure that there is adequate supply to the market. We are working on building up our production capacity to make sure we always have the right supply cushion in place," said Al Hamli, who is the UAE's Energy Minister.

The Conference President for 2007 was speaking after OPEC's Oil and Energy Ministers agreed to leave the Organization's production unchanged for the time being.

"Having reviewed the oil market outlook, including the overall demand/supply projections for 2008, in particular the first and second quarters, the Conference observed that market fundamentals have essentially remained unchanged, with the market continuing to be well supplied and commercial crude/product stocks remaining at comfortable levels in terms of days of forward cover," said a communique issued at the end of the one-day meeting.

It added that Ministers had observed, with concern, that world oil prices remain volatile, due to a perception of "market tightness by market players" and exacerbated by non-fundamental factors, including the heavy influx of financial funds into commodities, speculative activity in the markets, and geopolitical developments.

Abdalla Salem El-Badri, OPEC Secretary General (r), being escorted to the Conference venue.

Asked at the press conference whether OPEC feared prices hitting the $100/barrel mark, Al Hamli replied: "We have said it many times ... prices are determined by the market. OPEC makes its forecasts on adequacy of supply. We do not set the price in OPEC."

Al Hamli pointed out that the Organization is monitoring the market very closely. "That is why we are having our next meeting at the beginning of February — to keep a vigilant eye on what is going on in the market," he noted in reference to OPEC's next Ministerial talks.

The Conference, in its communique, again emphasized the Organization's determination to take every measure deemed necessary to maintain market stability by keeping supply and demand in balance.

"Given the need for extreme vigilance in assessing the market during the coming months, the Conference decided to convene an Extraordinary Meeting in Vienna, Austria, on Friday, February 1, 2008. The Conference also confirmed that its next Ordinary Meeting will be held on March 5, 2008, in Vienna," it said.

Also, Members unanimously agreed that Angola, which joined the Organization at the beginning of 2007, should have a production allocation of 1.9 million barrels/day, while Ecuador, which has resumed its full Member-

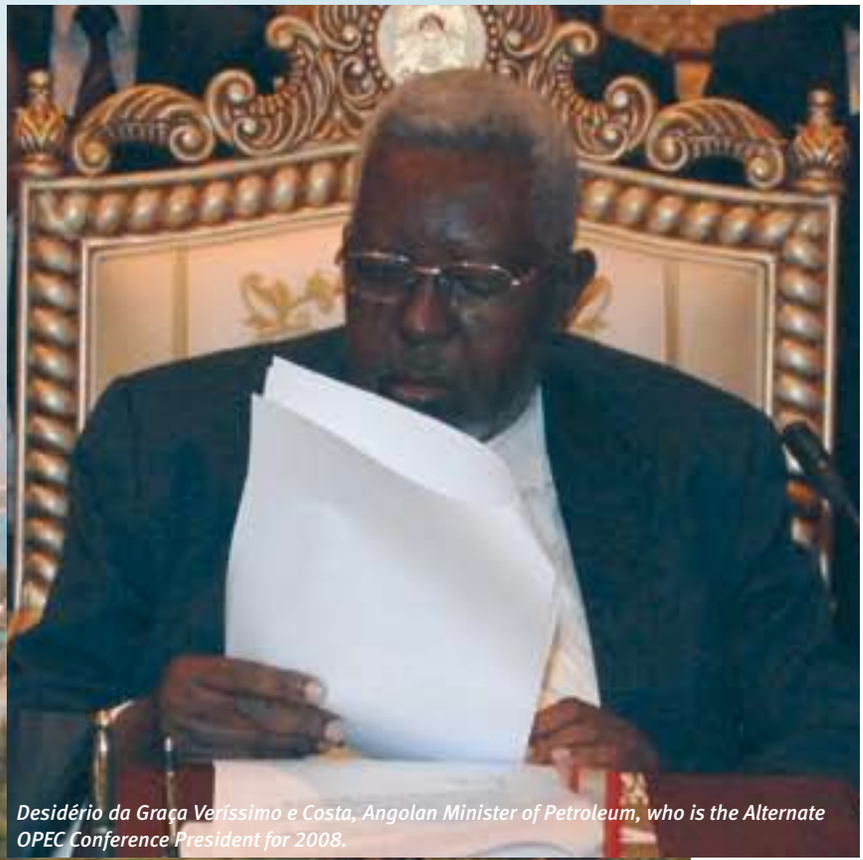
Mohamed Bin Dhaen Al Hamli (c), OPEC Conference President in 2007, and Minister of Energy of the UAE; with Hossein Kazempour Ardebili (l), Iranian Governor for OPEC and Chairman of the OPEC Board of Governors; and Abdalla Salem El-Badri, OPEC Secretary General.

Ali I Naimi, Minister of Petroleum and Mineral Resources, Saudi Arabia.

ship after a break of 15 years, was allocated a production level of 520,000 b/d. The Conference congratulated Ecuador on its return and extended a warm welcome to its Dele-gation, headed by Eng Guillermo Granja, Undersecretary of Hydrocarbons, representing Dr Galo Chiriboga Zambrano, Ecuador's Minister of Mines and Petroleum.

For the UAE, it was the first time in 29 years that an OPEC Conference had been held in the country's capital.

In his welcoming address to the Meeting, Al Hamli, in referring to the current oil market situation, said the fundamentals are sound and recent draw-downs in OECD crude stocks have minimised the excessive overhangs



Desidério da Graça Veríssimo e Costa, Angolan Minister of Petroleum, who is the Alternate OPEC Conference President for 2008.

In discussion are Abdalla Salem El-Badri (l), OPEC Secretary General, with Dr Hasan M Qabazard, Director, OPEC Research Division.

Dr Chakib Khelil, Algerian Minister of Energy and Mines, who is the OPEC Conference President for 2008.

that existed at the beginning of 2007, bringing present stocks above the five-year average.

However, he pointed out that in spite of all these positive factors, the market continues to be affected by price volatility.

"The widespread perception of current market tightness and the fear of future shortages appear to have fuelled increasing speculation in the futures market. In addition, continuing geopolitical tensions in some oil-producing regions and downstream bottlenecks have also had an impact on the market," he said.

Al-Hamli explained that the persistent volatility remains a matter of much concern to OPEC. "In light of this volatility, it is important to restate clearly that OPEC remains committed to a balanced, stable market, with secure uninterrupted supplies at reasonable prices acceptable to producers and consumers alike."

He noted that despite considerable efforts by OPEC's Member Countries to increase spare production capacity to levels that should ensure adequate supply to the market, prices have remained near record highs.

Al Hamli said the presence again of Conference Observers from non-OPEC producing countries is "an unequivocal reaffirmation that the interests of the oil industry are indivisible and can be served well by genuine collaboration to bring about a stable, secure and well-supplied market. We welcome their support and the opportunity to work together for the common good of all."

Also speaking at the press conference, OPEC Secretary General Abdalla Salem El-Badri supported Al Hamli's comments over the reasons for high oil prices.

He said that in looking at the fundamentals of the market, there is no reason for prices to go higher. There

Abbas Naqi, Undersecretary at Kuwait's Energy Ministry, and Head of his country's delegation.

Gholamhossein Nozari, Iranian Minister of Petroleum.

Eng Guillermo Granja, Undersecretary of Hydrocarbons and Head of the Ecuadorean delegation.

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

Dr Shokri M Ghanem, Chairman of the People's Committee, the National Oil Corporation, Socialist People's Libyan Arab Jamahiriya.

Odein Ajumogobia (SAN), Nigerian Minister of State for Energy (Petroleum).

Dr Hussain Al-Sharistani, Minister of Oil, Iraq.

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

is enough crude oil in the market, giving some 52 days of forward cover.

"The market is not being controlled by the fundamentals of supply and demand — it is being controlled by speculation, and speculators who consider oil as a financial asset for trading in.

"Until this phenomenon is out of the market, we will continue to see volatility day-after-day, month-after-month," he maintained.

Asked what level OPEC saw prices rising to, El-Badri said they could not predict what level prices would rise to — that was down to speculation.

"As we have said many times, OPEC does not have a price target — not $70/b, not $80/b and not $90/b. That is being left to the market to determine."

However, he added that the final selling price for oil products is down to the high taxes being applied in the consuming countries.

"So, if we are going to solve the level of higher prices we will need to cooperate with the consuming governments to reduce the level of taxes, so that the consumer can enjoy cheaper oil," he affirmed.

El-Badri said that what the Organization is doing through its actions is attempting to maintain market stability.

What is important is to ensure that the market is adequately supplied. At the present time, OPEC's spare output capacity ranges from 3–4m b/d, but is increasing.

"With 120 projects and $150 billion in investment, this capacity will be increased to 5m b/d and then 9m b/d. We have enough production, we have enough reserves, and we have the capability to meet consumers' needs," contended El-Badri.

Also speaking to OPEC livestreaming, he said OPEC is currently producing over 31m b/d of oil and looking at the market very carefully.

Ali Obaid Al Yabhouni, UAE Governor for OPEC, who was heavily engaged in the preparations for the Conference.

Hossein Kazempour Ardebili, Iranian Governor for OPEC and Chairman of the OPEC Board of Governors.

"Market supply is very important for OPEC and we take the business very seriously. We know it affects the economy of the world and affects the consumer and we care about the consumer — so we are concerned if there is any shortage, or alternatively, any oversupply."

El-Badri said the subprime mortgage and housing problems and financial markets in the United States have caused problems in the marketplace.

"The speculators that are investing in oil as a financial asset are controlling the market right now. But I am sure that, at the end of the day, the fundamentals of the market will prevail over the speculation," he stated.

El-Badri stressed that the objective of the Organization is to provide the world with enough oil and to protect the interests of its Member Countries.

"We have to keep watching the market very closely and if there is a need for more oil, we can provide it," he said.

El-Badri said that continued cooperation between producers and consumers is very important for the future welfare of the industry.

Talking to the consumers

He noted that in 2007, OPEC held its fifth meeting with the European Union, which proved to be very fruitful. Data and information were exchanged and the respective positions explained. Similar discussions were also held with China.

"By talking to the consumers, we hope that, at the end of the day, we will reach a common understanding. We understand why consumers are concerned about security of supply, but, at the same time, we are investing in the future and we need all consumers to understand that we also need security of demand. If we do not know how much demand there will be in the future, we simply cannot invest," he explained.

Rafael Ramírez, Minister of Energy and Petroleum of Venezuela.

Dr Chakib Khelil, Algerian Minister of Energy and Mines and OPEC Conference President for 2008.

Non-OPEC Observers pledge commitment to oil market stability

Also speaking at the plenary session of the 146th (Extraordinary) Meeting of the Conference, were the non-OPEC Observers, who regularly attend such Ministerial talks to offer their support and observations.

Egypt's Minister of Petroleum, **Eng Sameh Fahmy**, said the world will require more energy in the coming decades to cope with countries' development plans. However, this energy has to be used in a more efficient way and be accessible and affordable to a larger share of the world's population.

He said to achieve this objective, the world needs stable energy markets. For some time, volatile oil prices have been dominating the markets.

Lately, he said, this has been coupled with several challenging factors, which have been affecting the market, namely limited refining and storage capacities worldwide, underinvestment in oil and gas projects, expensive development projects, and overpriced onshore and offshore rig rates.

"Due to all these factors, it seems we are approaching a new era of world oil markets and oil prices, which we can call 100–1,000 — $100/b for crude oil prices ... and $1,000 a ton for high-quality oil products."

Fahmy said that, within this framework, there is global concern over security of future energy supplies, an issue that has become a top priority with many nations around the world.

"Today, energy security has risen to the top of the political agenda in the G8 economies and has extended to the developing countries, the emerging states and energy exporters," he noted.

He said that, originally, the definition of energy security was limited to security of supply and the right of consumers to receive adequate supplies of energy at affordable prices.

"But in this century, this definition has changed to include also producing countries' rights to ensure the availability of long-term consumers willing to pay market prices that justify the necessary investment to bring adequate capacity onstream."

Fahmy maintained that securing reliable and affordable energy will depend on adequate investments. Without a sizeable increase in Middle East and African investments, a shortfall in production capacity will emerge and prices will rise further and become more volatile.

Moreover, he said, the expected increase in demand for oil products translates into the need for rising refining capacity.

"The limited flexibility of refineries to process heavy crudes has placed further pressure on the market. This situation underlines the urgent need for greater investment in the downstream sector to ensure sufficient conversion capacity and to avoid a further mismatch in the marketplace.

"Therefore, it is essential to pay more attention to the downstream sector, as this is also a key element of the supply chain and ultimately of market stability."

Fahmy said it is very well recognized that OPEC meetings have become crucial and one of the most important tools for maintaining stability in the energy markets.

"Egypt shares the view and vision of maintaining market stability and reasonable prices for both producers and consumers, while ensuring security of supply and demand, which is needed to support development plans all over the world," he stated.

Fahmy said that, in this regard, and as a contribution to market stability, Egypt is implementing several action plans — one is to increase oil production next year by up to 100,000 b/d. Moreover, with the inadequate refining capacities affecting market stability, the country is studying and executing several new refining projects for export and local consumption, making use of Egypt's strategic geographic location, reliable infrastructure and proximity to energy resources and markets.

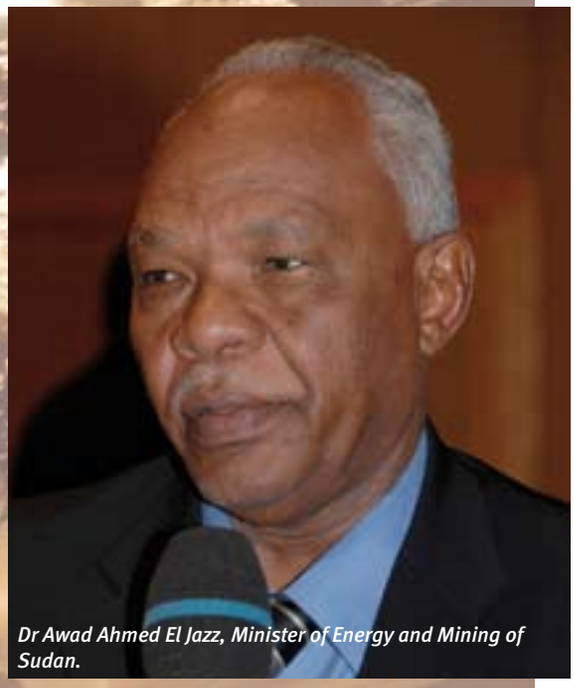
"The success in achieving stability and moderating prices requires the full support and cooperation of all players in the market — producers and consumers alike," he asserted. "I would like to emphasize that Egypt is willing to play a positive role in this concern."

Fahmy noted that, within this context, his government and the European Commission organized a ministerial-level conference in November 2007, which provided the opportunity to promote regional cooperation on energy security between the European Union, the Middle East and African countries and to "identify areas in which we would like all to benefit from for close cooperation."

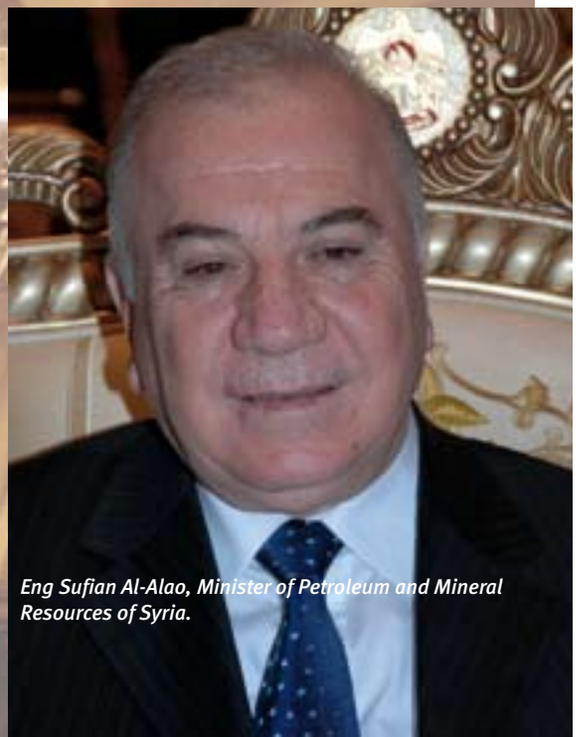
Eng Sameh Fahmy, Egypt's Minister of Petroleum.

Mohammed Bin Hamad Al-Rumhy, Minister of Oil and Gas of the Sultanate of Oman

Anatoly Yanovskiy, Deputy Minister of Industry and Energy of the Russian Federation.



Dr Awad Ahmed El Jazz, Minister of Energy and Mining of Sudan.



Eng Sufian Al-Alao, Minister of Petroleum and Mineral Resources of Syria.

He added: "I believe that with the support of these participating countries, ministerial recommendations will be made to overcome some of the challenges and ensure stability in the energy markets worldwide."

Mohammed Bin Hamad Al-Rumhy, Minister of Oil and Gas of the Sultanate of Oman, said OPEC and non-OPEC producing countries have been taking their responsibilities in the oil market very seriously.

"Our prime responsibility is to meet the needs of consumers. In today's environment, supply is of prime concern and I am happy to say that we have not let consumers down. I am sure that will also be the case in the future," he stated.

Al-Rumhy said they had all seen the recent international events that had the potential to disrupt supply, yet OPEC and other exporting countries have shown their responsibility in meeting the expectations of the market.

He said that in today's environment, unfortunately the price of a barrel of oil is being driven by so many variables "that many of us can do very little to control it."

Said Al-Rumhy: "Supply is a part of that, but it is not the only variable that is driving the price of oil, in either direction."

"We have seen recent examples that this Organization decided to increase supply, only to see the price increasing. The two (supply and price) are no longer connected, unlike in the past. I am sure we will all continue to take our responsibilities seriously and come up with the right resolutions to safeguard the interests of all — consumers and producers. We have been doing this in the past, we will do it at this meeting and I am sure we will do it in the future," he added.

Anatoly Yanovskiy, Deputy Minister of Industry and Energy of the Russian Federation, told the meeting that, at the moment, different positions and opinions exist with regard to the trend of global energy development and related challenges and opportunities.

"However, there is one definite point — the world energy industry has entered the epoch of change," he professed.

He said Russia agreed with OPEC on the reasons for the rise in oil prices — from the fundamental correlation of global demand and supply, up to the military and political aspects, and including the situation with the global currency markets.

"Also, we should not ignore the rising costs of oil services and engineering and freight rates," he said. According to different estimates, in recent years prices for these services have risen by 80 per cent, while demand has been constantly growing.

"We believe that a constructive producer-consumer dialogue, targeted at ensuring global energy security and sustainable economic development, in order to meet the range of challenges, is becoming more justified and is the only way to overcome the uncertainties of the future for the benefit of the world community," he said.

Yanovskiy said there is no doubt that energy dialogue is the main mechanism for ensuring global energy security, as was confirmed at OPEC's Third Summit in Riyadh in 2007 and the World Energy Congress in Rome.

"Russia is open to continuing its energy dialogue in all accessible significant fora and the OPEC Conference is one of the most important meetings," he added.

Dr Awad Ahmed El Jazz, Minister of Energy and Mining of Sudan, paid tribute to the great efforts being exerted by OPEC "to work hard on the very important commodity of oil."

He said that although there is a lot of pressure from many quarters for OPEC to do more, "we feel the Organization is doing its best for producers and consumers."

The Minister said it would be beneficial for producers and consumers to get together and look at the reasons for oil prices being so high.

"My feeling is that in real money, the price is still not that high, but, in any event, it would be better for both sides to sit down and look for ways and means and factors that are making it high. OPEC is not to blame for it."

El Jazz said Sudan is working hard in its domestic oil industry to boost exploration activities, upgrade refineries, build pipelines for both crude and products, as well as provide sea ports for the export of both.

He said that in looking at the costs of production materials in the oil industry, prices are much higher today.

"So, the producers are having to contend with these high production costs, while the consumers are having to cope with high product prices. That is why it is necessary to sit together and look at the problems," he affirmed.

Eng Sufian Al-Alao, Minister of Petroleum and Mineral Resources of Syria, pledged his country's support for the attainment of OPEC's goals in controlling oil price fluctuations and maintaining oil market stability.

He stated that Syria is facing a shortage in the supply of oil products and consequently has plans to build new refineries. The government is also encouraging exploration activities in the hydrocarbons sector and looking to increase its gas exports.

OPEC Ministers gathering for a group photograph.

In the camera eye ... journalists ask questions at the press conference.

Mohamed Hamel (l), Head of OPEC's Energy Studies Department; Fuad A Al-Zayer, Head of the Secretariat's Data Services Department.

Left: Conducting the final press conference are Mohamed Bin Dhaen Al Hamli (c), OPEC Conference President in 2007, and Minister of Energy of the UAE; Abdalla Salem El-Badri (r), OPEC Secretary General; and Dr Hasan M Qabazard, Director, OPEC Research Division.

Members of the OPEC Management

Members of the press jostle to get comments from the Ministers.

Celebrations in Abu Dhabi marking UAE National Day.

OPEC Ministers and delegates pictured after the Conference.

Delegates attending the dinner hosted by Mohamed Bin Dhaen Al Hamli (r), OPEC Conference President in 2007, and Minister of Energy of the UAE.

Ecuador appoints Governor for OPEC

Dr Bryon Morejon Almeida, Ecuador's Ambassador to Austria, has been appointed his country's OPEC Governor.

Born in Quito in November 1943, he graduated from the Institute of International Law, Central University of Ecuador and attended the Faculty of Law, Catholic University of Ecuador. He then attained a diploma from the Diplomatic School of Madrid and completed a Postgraduate Course on Economic Integration, at Bid Intal, Buenos Aires, Argentina.

In 1969, he was appointed Head of the Department for Economic Advice at the Ministry of Foreign Affairs in Quito. He then went on to hold numerous high-level positions within the Ministry, culminating in his appointment as Undersecretary of Bilateral Relations in 2002.

His duties in the foreign service took him to several countries. He was his country's Ambassador to Sweden, Denmark, Finland, Norway, the Netherlands, and held senior posts in the United Kingdom, Belgium, Luxembourg, Japan, Korea, Taiwan and Colombia.

From 2003, he has held Ambassadorial posts in the Slovak Republic, Ukraine and Austria. He is also Permanent Representative of Ecuador at the United Nations International Organizations in Vienna.

Morejon Almeida, who is married with two daughters, is also a Member of the Board of Governors of the International Atomic Energy Agency (IAEA).

New Nigerian National Representative appointed

Uthman Muhammad, General Manager and Head of the London Office of the Nigerian National Petroleum Corporation (NNPC), has been appointed his country's OPEC National Representative.

The appointment, approved by the Head of Nigeria's Delegation to OPEC and Minister of State for Energy (Petroleum), Odein Ajumogobia (SAN), will see Muhammad combine his new duties at OPEC with his current position at the NNPC, where he coordinates the foreign operations of the national oil company.

A graduate of Ahmadu Bello University, Zaria, Nigeria, where he attained his B Eng degree in Civil Engineering in 1979, Muhammad joined the NNPC in 1991 as a Deputy Chief Engineer.

During his time with the Corporation in Nigeria he has held a number of positions, in both Abuja and Lagos, as a project leader or manager.

His post graduate studies resulted in a diploma from the College for Petroleum and Energy Studies, Oxford, United Kingdom and a diploma from the Chartered Institute of Purchasing and Supply, UK.

Muhammad is married with children.

Algeria and its national oil company, Sonatrach, have come a long way since the country's oil industry was nationalized in the early 1970s. It has been a period of both significant challenges and opportunities. To appreciate these and understand where the industry sits today, James Griffin talks to

Dr Chakib Khelil — a man who has since the late 1960s played a significant role in his country's energy industry development. Khelil has been Algeria's Minister of Energy and Mines since the end of 1999 and is currently serving his second stint as OPEC Conference President.

The past, present and future

An interview with Dr Chakib Khelil

After arriving back late on a flight from Hassi R'Mel in the Sahara desert, I was a little concerned I would be late for my meeting with Dr Chakib Khelil, Algeria's Minister of Energy and Mines. It had only been confirmed the day before and I knew it would not be easy to rearrange. My driver, however, did not seem unduly worried and his knowledge of negotiating the traffic in Algiers was certainly exemplary. I need not have been apprehensive — we arrived in good time: in fact, half an hour early.

The benefit of this half hour was quickly realized. Upon arrival, I was told that Khelil's previous meeting had finished early and he was happy to bring the interview forward. It is not often you are granted extra time with a busy man such as Khelil, so after a glass of water and a few brief introductions with some of his staff, we were underway.

Khelil was keen to talk — happy regaling his thoughts on the past, addressing the dominant issues of the present, and discussing and deliberating the future. He certainly has the background for this. After receiving a doctorate in petroleum engineering from Texas A&M University in 1968, he joined one of Sonatrach's subsidiaries and then Sonatrach itself in 1971, the year the government nationalized the industry. Khelil says he joined Sonatrach just prior to nationalization and was the first head of the reservoirs department. It was an extremely important role, particularly given that at the time of nationalization Sonatrach did not have the stock of technical expertise in its indigenous workforce to carry out the required exploration work itself.

The nationalization process eventually led the government to promulgate the Fundamental Law on Hydrocarbons in April 1971. The law had two main purposes. The first was that it formally abolished the system of concessions and established that all mining titles, as well as the control of all petroleum reserves that might be discovered in the future in any part of Algeria, were transferred to Sonatrach. The second was that it made provision for foreign companies to enter into service contracts or joint ventures with Sonatrach, provided that 51 per cent of the assets were held by the state company.

Building a backbone

It imparted a base from which to develop, but Khelil stresses that a number of other initiatives provided the strong and robust framework for Sonatrach's and Algeria's energy and economic future. In this regard, says Khelil, perhaps the most important factor was the development of the human resource. "When I first worked at Sonatrach, my staff was mainly management and came from various countries. There were Russians, Palestinians, Egyptians, Iranians, Americans, some French staff initially, I could go on. But the point was that almost all were from outside Algeria," he said.

It was thus critical that the government put in place a structure that allowed a local workforce to bloom. With this in mind, says Khelil "two schools were set up, the Algerian Petroleum Institute (API) with the French; and the Hydrocarbons National Institute (HNI) with the Russians. The API still exists today and the other was integrated into the university system." He adds that these efforts,

The giant Hassi R'Mel gas field which extends 70 kilometres from north to south and 50 km from east to west and currently contributes around 65 per cent of Algeria's gas production.

alongside the fact that a large number of Algerians were sent to train in various countries and petroleum schools around the world, meant that by the end of the 1970s Sonatrach's personnel were basically Algerian.

Another key factor, says Khelil, was the fact that this was a period when significant assignments were undertaken. "I myself was involved in many major initiatives and it was at this time, we developed a new hydrocarbons programme. This basically planned the hydrocarbon resources, such as the development of oil, gas, refineries and LNG plants for the next 30 years," he says.

"For example, in those days we predicted that In Salah gas would be developed in 1993/94. I still have the report. Of course, it happened ten years later, but it does give you an idea of the extent of the study," he underlines. "It was very technical, went field-by-field, and also covered the economics of projects, such as how much we needed to invest, what the projects will provide to the State and Sonatrach, as well as the number and what types of human resource (engineer, analyst, administrative ...) were required."

This development also led to the advancement of a number of very challenging projects, and again provides a tie in to the human resource. "It meant that people

learnt quickly," says Khelil. "Of course some mistakes were made, but people were able to learn on the job, very often the best way." These developments were initially done in conjunction with foreign partners, but in time Sonatrach was able to advance its workforce and take on an increasingly leading role.

During this early period, the Hassi R'Mel gas field and the Hassi Messaoud oil field were further advanced, and both are still very much in evidence today. Khelil says that one of his jobs as head of the reservoirs group and then the planning group at Sonatrach was the development of plans to advance Hassi R'Mel. Today, the field extends 70 kilometres from north to south and 50 km from east to west and currently contributes around 65 per cent of Algeria's gas production.

And Hassi Messaoud continues to produce a steady stream of oil today. Khelil says that there had been some people who believed that there would not be much oil coming from this field past the 1980s, but there is a strong belief that the field will be producing at the same rate for the next 25 years or so. In fact, says Khelil, "our belief can be shown in the fact that we are building a new city for 80,000 people there, as well as a research and development centre. It is the heart of our oil production and we also expect to witness further discoveries there."

Alongside the continued cooperation with international oil companies, as well as many national oil companies, Khelil believes that this has provided the backbone for the country's hydrocarbons development. The results today certainly look impressive. The country has a healthy oil production of around 1.4 million barrels/day and the figure is expected to increase, its natural gas reserves represent almost three per cent of total world reserves, it is expanding its exports and partnering in the developing of numerous new pipelines, and Sonatrach, as an integrated and expanding international energy company, is currently ranked number 12 worldwide.

A learning evolution

Khelil, however, is keen to stress that there is still much more to be done. "It is an evolving process", he says, "and one in which we look to continue the expansion of our activities." It is certainly something Khelil has been focused on after returning to Algeria as Minister of Energy and Mines in 1999 — he was also CEO of Sonatrach from 2001 to May 2003 — after spending 19 years working on petroleum-related projects for the World Bank.

Going forward, Khelil says that with regard to the investment portfolio, the figure is around $33 billion over the next five years, with around $8bn of this coming from partners.

He talks about the importance of developing reserves and production and also adds that there will be significant efforts put into expanding export markets, such as through the Galsi pipeline to Italy, the Medgaz pipeline to Spain, and the LNG plant that Sonatrach is building at Skikda.

In addition, on the pipeline side, there is the Trans-Saharan gas pipeline project connecting Nigerian gas fields through Niger and Algeria and onto the European Union (EU). Khelil says the project is now looking at the implementation phase, with various technical, environmental and fiscal aspects, and he remains "positive that the project will continue to move forward."

The recent announcement of a plan to issue a new licensing round of some 15 exploration blocks in early 2008 is also interesting. Not only from the development viewpoint, but also from the partnership angle as it has been stated that one of the considerations for applicants will be their abilities to develop technical expertise. It also underlines the importance that Khelil and Sonatrach attach to international ambitions, and perhaps, looking more broadly, of efforts of national oil companies to enhance efficiencies and compete more directly with international oil firms.

Khelil says that Sonatrach is increasingly looking internationally because it is a necessity. Comparing it to the development of the individual, Khelil says that "when you grow up, you have to go out and compete. You cannot rely on your father providing for you any more." So for a company looking to expand, it means that "sooner or later you have to look outside of your home industry, and it is much better to do this when you still have the financial means."

It is something very much in evidence today. In sub-Saharan Africa, Sonatrach has interests in Egypt, Libya, Mauritania, Mali, Niger and Tunisia. In addition, it has activities in the UK, France, Spain, Italy, the US and Peru. The list can be expected to grow. It is not only giving the Sonatrach brand greater international exposure, but what it also brings, says Khelil, are best practices and efficiencies learned from these projects, "which can then be brought back to Algeria and passed on."

He stresses, however, that this process is something that cannot be rushed, as you "need to train your people to work overseas, where there are often different

Khelil: Determined to make sure things that need doing, are done.

frameworks and competitive environments. For example, marketing gas in England or Spain, it is not easy, and a strong market position is not given to you on a platter, you need to work hard to compete and be very creative and innovative." It is a learning evolution, but Khelil believes that it is already making sure Sonatrach is one of the most competitive energy companies in the world.

The challenges ahead

These are exciting times, with growth prospects both at home and overseas, but Khelil is also keen to highlight the challenges, not only for Algeria, but as he begins his tenure as OPEC Conference President, for OPEC and the industry as a whole. Glimpsing the short-term, he believes it will be important to monitor the outcomes of the US 'subprime' financial crisis of 2007, its impact on world economic growth and the consequences for global oil demand. "We need to watch the US and global economy closely — nobody wants a recession," says Khelil. He also touches on geopolitics and highlights the continued tensions in a number of regions, and stresses the importance of "monitoring these developments and their potential impact on oil market volatility."

Looking at 2008 and beyond, the issue of the human resource is once again high on the agenda. "Here, we need to continually monitor our staffing in terms of training and skills, for instance, in preparing the next generation to take over," he says. More broadly, he also sees the human resource challenge being especially significant for international oil companies. "In many major developed countries, particularly in the oil and gas industries (he also mentions nuclear), there has been a decline in the number of people undertaking training in these areas."

It is obviously a concern. Firstly, because of the anticipated industry expansion, and secondly, for those countries in the developing world, it might

mean that their personnel increasingly move to international oil companies. Khelil acknowledges this, but also believes that the shortfall provides an opportunity "for our training schools to improve their excellence in teaching and fill a tremendous need from international oil companies."

In this regard, the terms cooperation and collaboration spring to mind, and these are also to the fore when he talks about the importance of research and development in the drive for more efficient technologies. It is something that Sonatrach places much emphasis on. Here, Khelil underlines the future importance of offshore technologies, as well as the challenge of developing and deploying technologies for a more carbon-constrained world. With regards to the latter, one project in Algeria, the In Salah carbon capture and storage project *(see page 33)*, a joint project between Sonatrach, BP and Statoil, is garnering much international interest.

Additionally, Khelil talks about the "sometimes forgotten issue of refinery capacity, including the maintenance and operation of existing plants. I feel this is a significant issue and one that is not going away." He also touches on the decline seen in supply from major non-OPEC producing countries, such as Mexico and Norway.

Dialogue and cooperation

To help alleviate and meet many of these challenges it is important to make sure that dialogue with all the relevant stakeholders is maintained. Khelil stresses that Algeria has a long history of cooperation with other African countries. "For example, we were in the vanguard of setting up the African Energy Commission, which I presided over in its transitional period. It is now ratified by 15 countries," he says. Khelil firmly believes in strong cooperation between African nations, as well as national oil companies, both in Africa and worldwide. Algeria was the first African nation to join OLADE, the Latin American Energy Organization, and Khelil adds that the first Meeting of African and Latin American Ministers was held in Algiers.

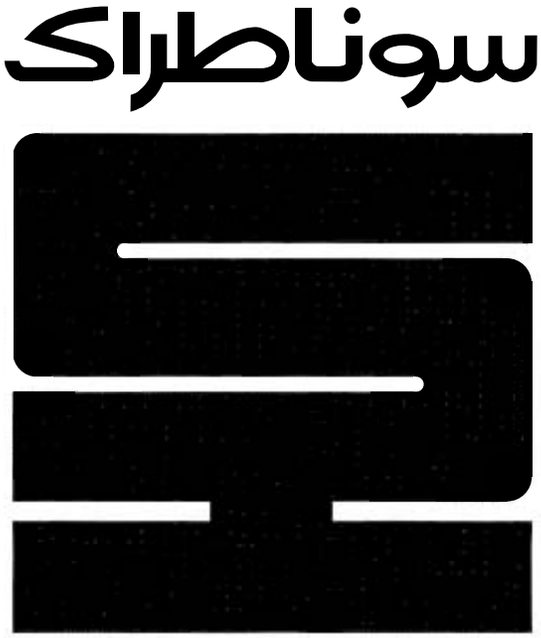
He also underlines the importance of dialogues with consuming countries, and also the significance of the dialogues that OPEC undertakes with such parties as the EU, the International Energy Agency (IEA), the International Energy Forum (IEF) and China. Going forward, he hopes that OPEC can reinforce these dialogues in its efforts for securing market stability, and also develop this type of collaboration further with emerging Asian countries, as well as more developing states.

For OPEC, he also stresses the importance of more communication with a broader audience, particularly in terms of what OPEC does. "We know that OPEC will continue in 2008 and beyond, to look to stabilize the international oil market and be a credible partner in meeting its share of global oil demand growth and responding to environmental challenges to the benefit of the global economy and the well-being of all. But it is important we look to make sure more people understand this; to improve the Organization's perception worldwide."

Keeping an eye on everything

It would have been easy to talk all afternoon, but Khelil had other matters to attend to. Nevertheless, in the time we had, his thoughts and anecdotes proved both informative and insightful. We visited the past, present and future, and what is interesting is how many of the challenges remain the same; developing the human resource, technology advancement, and of course, hard work. And on top of this, the new challenges that come and go. It underlines the importance of being both proactive and reactive.

Khelil sees 2008 as being "an interesting year, perhaps not an easy one, but then none of us have time to take our eyes off what is happening." You can be sure Khelil will monitor all before him, whether it is at home in Algeria, Sonatrach's overseas activities, or OPEC's position and role in the global arena. Talking, he may have a calm and relaxed demeanour, but alongside this there is also a steely determination to make sure things that need doing, are done.



National and International

Algeria's Sonatrach is Africa's largest corporation, the number two global exporter of LNG and the 12th largest energy company in the world. It is a major player, and not only from the viewpoint of its home market Algeria. Today, it is fast becoming a significant international presence in markets outside its traditional remit. James Griffin talks to ***Mohamed Meziane****, Sonatrach's Chairman and Chief Executive Officer, about the company's position, both domestically and on its expanding international front.*

Meziane (r) pictured during the interview with the Bulletin's James Griffin.

Sonatrach was founded on December 31, 1963, under the original name of Société Nationale de Transport et de Commercialisation des Hydrocarbures, which was the origin of the acronym Sonatrach. Since then, it has been through a nationalization process in the early 1970s, witnessed much consolidation and growth in the later 1970s and 1980s as it became one of the world's major suppliers of liquified natural gas (LNG), and seen the 1986 Hydrocarbons Law, modified in 1991, allow it to embark on numerous joint ventures with foreign companies.

Sonatrach's development and cooperation with foreign partners grew steadily in the 1990s, but from 1999 this escalated significantly and the past eight years have been a period of impressive expansion. The driving forces behind the company during this time have been Dr Chakib Khelil, Algeria's Minister of Energy and Mines since 1999 and Sonatrach's Head from 2001 to May 2003, and Mohamed Meziane, Sonatrach's Chairman and Chief Executive Officer, since October 2003.

Developments at home

Under the watchful eyes of these two men, alongside the support of Sonatrach's many tens of thousands of employees, since 1999 "there have been new approaches, new strategies and plenty of new opportunities to develop Sonatrach's activities in Algeria, with one of the keys in this regard being the opening up of the bidding for hydrocarbon exploration and development opportunities," says Meziane. It has meant that more companies have been interested in bidding, he adds, and from 1999 to 2006 more than 35 contracts for exploration and production were agreed on.

This platform has allowed the company to further strengthen its own position, broaden and advance its partnerships, and in turn, reinforce and develop its hydrocarbon reserves. Meziane says the results of these efforts are clear. Total hydrocarbon production reached 229.8 million tons of oil equivalent (m toe) in 2006, compared with around 188m toe in 1999. In 2006, Sonatrach's crude oil production was up two per cent on the previous year. Overall, Algeria produces around 1.4 million barrels/day of crude oil, with plans to increase this to

An installation at Hassi R'Mel.

2m b/d by 2010. Turning to natural gas, Sonatrach's production was up almost eight per cent between 2004 and 2006. The country's gas output is currently estimated at 62 billion cubic metres per year, and is expected to reach 85bn cu m by 2010.

Meziane stresses that another key component in the company's progress at home in recent years has been the number of new discoveries. In 2006, there were 17 new sites, eight of which were discovered by Sonatrach alone. This is more than twice the company's discoveries in 2005. Meziane was keen to highlight that in 2007 the number to August was already 15, six of which were by Sonatrach itself (the number by the end of 2007 was 18).

Furthermore, in 2006 and 2007 the company achieved many other notable successes. For example, the production launch of the Alrar oil ring; the commissioning of the Bir Berkine and Bir Berkine North oil production projects; the development of the In Amenas gas project with BP and Statoil; the Mesdar partner gas recovery station; the contract signing with KBR for the Sonatrach Skikda LNG project; the contract award to Saipem for the Hassi Messaoud crude oil treatment and stabilization plant; as well as the development of a number of downstream projects.

Going forward, says Meziane, Sonatrach will continue to develop a number of projects alone, but foreign oil companies will also maintain their presence and make an active contribution to the mapping and development of Algeria's hydrocarbon resources. In fact, it is expected that the government will soon launch new tenders for the exploration of 10–15 hydrocarbon blocks in the south of Algeria. Those international groups who currently have a presence in the country include Statoil, BP, Total, First Calgary Petroleum, Eni, BHP Billiton, Anadarko and Shell.

On the international front

On the flip side of Sonatrach's partnerships with foreign companies at home, are its own moves into the international arena. And in some respects there are links between the two, with Meziane stating that he hopes Sonatrach's international profile can be boosted by access offered by companies keen to participate in the country's next oil and gas licensing round. He adds that he is keen to look at "exchanging assets and having long-term partnerships. We want it to be a way of development for Sonatrach."

The importance of an international presence is clearly evident when Meziane talks about the company's future goals and ambitions and he sums it up succinctly in figures. He says that the group wants to see 30 per cent of its earnings by 2015 coming from international activities.

On the exploration and production side, Sonatrach is making great strides in expanding its reach. Much of this is in sub-Saharan Africa, with Sonatrach having interests in Egypt, Libya, Mauritania, Mali, Niger and Tunisia. It is perhaps the Egyptian exploration and production with Staoil that offers up an interesting reference for the future. The key word is offshore.

Whilst stressing that Sonatrach will continue to give its full 100 per cent commitment to onshore activities, when and where it can, Meziane says that much of the potential for finding more oil in the foreseeable future is related to exploration acreage in deep water. In this context, he mentions West Africa, Brazil, the Gulf of Mexico, as well as Egypt. Offshore is something he is keen Sonatrach explores further. "At the national level, we have a very short continental plateau, which means we have not had much involvement with offshore and its technology," he says. "It is important that we do, so as to increase our percentage of earnings from offshore activity. In this regard, we will continue to look at partnerships, such as the one with Statoil in Egypt."

In addition, Meziane states, on the gas side, which he expects to be the more dominant focus for the group going forward, the company is looking to be increasingly involved along the entire gas value chain. "This means looking at an integrated strategy of developing gas fields, producing gas, transporting gas, both nationally and internationally, and further developing LNG to get the maximum added value from gas," he says.

A specific spotlight has been on pipeline development activities, such as the Medgaz gas pipeline linking Algeria to Spain, with an estimated capacity of 8–10bn cu m per year, and the Galsi gas pipeline linking Algeria to mainland Italy through Sardinia, with an initial annual capacity of 8bn cu m. From Sonatrach's perspective, these will provide further access to some of Sonatrach's major international consumers, and from the perspective of Europe, both constitute important projects in terms of

energy supply security, with Medgaz being declared a 'project of European interest'.

Additionally, there is the proposed Trans-Saharan gas pipeline project linking Nigerian gas to Europe, via Niger and Algeria, as well as the Camisea project in Peru — a hydrocarbon transport and distribution network — where Sonatrach is part of the consortium.

For LNG, there is the Sonatrach Skikda LNG project, highlighted earlier, and the company is also involved in the supply of LNG to the Isle of Grain plant in the UK. In 2008/09, it has a reservation capacity of nearly 5bn cu m for the UK market. Meziane also mentions Sonatrach's involvement in the Reganosa LNG storage and re-gasification terminal in Spain, the Montoir de Bretagne terminal in France, as well as developments in the Asian and US markets.

With regard to the US, Meziane sees significant potential. He says that Sonatrach is in advanced discussions with partners to reserve capacity and "we aim to supply this growing market, as well as look at attractive opportunities in regasification terminal projects and the marketing of gas." In fact, it is oil and gas marketing, which the group currently does through its London and Singapore offices, that offers up significant growth possibilities.

This potential was underlined in a number of announcements in 2007. Firstly, when negotiations with the Spanish government saw the removal of restrictions on the volume of gas supplies Sonatrach can market in Spain through the Medgaz pipeline project. Secondly, towards the end of last year when Sonatrach reached an understanding with Energias de Portugal on the initial terms for a strategic partnership on natural gas, including the joint marketing of natural gas. The agreement also covers Sonatrach supplying up to 1.6bn cu m per year of gas to the Iberian Peninsula via long-term contracts, beginning in the first half of 2008, with an option for another 0.7bn cu m per year, as well as partnerships in combined-cycle gas turbine facilities. And thirdly, in November last year, Dr Chakib Khelil announced at a Paris news conference that Sonatrach will directly market gas to France, beginning in the year 2011.

Questioned as to whether this might be a sign of taking further steps in Europe, particularly following the European Commission's recent announcement of European Union (EU) energy utility unbundling to provide a more transparent and non-discriminatory environment, Meziane stresses that all opportunities are evaluated on "a case-by-case basis."

Pushed a little further, he says the EU unbundling initiative is at the beginning of the process and Europe still has a long way to go before its gas markets are as liberalized as that of the US or the UK and European regulators should open up to more discussions and consultations with suppliers on the matter. "However, if the process makes the market more competitive, then perhaps it will allow us to have more of a presence, particularly in our objective market, the wholesale one. We will continue to monitor what is happening," he adds.

Sonatrach: a national & international company

Meziane says that partnerships formed with other companies have helped improve efficiencies and know-how at Sonatrach, but he is also keen to emphasize that this has been reciprocal. "We learn from each other," he says. "And I think that this is a normal evolution for national oil companies such as Sonatrach that are looking to expand both at home and overseas."

He talks of how national companies cannot continue to grow only at home, particularly as globalization keeps up its relentless march. In fact, he says, it goes further than learning. "We need each other; national oil companies, international oil companies, and I think I should add in here the State. This is to make sure the market is stable, and supply and demand is secure."

For Sonatrach, the future means a number of key things. Both at home and internationally, it will develop opportunities as and when they arise, and to leverage these fully, says Meziane, there needs to be a clear focus on human resources. "This is the primary driver for our future development and the key to achieving even more success in the coming years." Meziane also underlines the importance of environmental protection in the years ahead. He highlights that Algeria is a member of the Global Gas Flaring Reduction Partnership and, in collaboration with BP and Statoil, it is also developing the In Salah carbon capture & storage (CCS) project *(see page 32),* a technological option that will allow for the continued use of fossil fuels in a carbon-constrained world. And his final point is the importance of both security of supply and security of demand, for the benefit of producers and consumers alike.

Meziane appreciates the importance of these issues to Sonatrach's future — a future that continues the company's expansion, both in Algeria and the international arena "for the long-term viability of the company." And a future in which he hopes the company can move into the top ten energy companies worldwide.

In Salah: Pioneering CCS

With fossil fuels expected to maintain their position as the leading global energy source for the foreseeable future, it is important to examine technological options that allow the continued use of fossil fuels in a carbon-constrained world. ***James Griffin*** *takes a look at an initiative, the In Salah gas project in Algeria, which is breaking new ground in the development of one such technology — carbon capture & storage (CCS).*

More than 150 kilometres from the nearest inhabited settlement, some of the world's biggest energy companies have put together a cheap and efficient means of tackling climate change with the development and deployment of industrial scale state-of-the-art fossil fuel efficient technology. The In Salah project focuses on a natural gas processing plant in the Sahara desert in Algeria, 1,200 km south of the capital, Algiers, and being developed by the Algerian national oil and gas company, Sonatrach (35 per cent), the UK's BP Group (33 per cent), and the most recent member to join the venture, Norway's Statoil (32 per cent). Much of the global interest and the reason it is being examined and analysed intently across the world, however, is the fact that it is taking carbon dioxide (CO_2) that otherwise would be released into the air and putting it back where it came from — a mile underground.

Pictured is Sonatrach's Krechba plant.

The technology in question is carbon capture and storage (CCS), which, according to the Intergovernmental Panel on Climate Change (IPCC), could significantly reduce greenhouse gas emissions from conventional fossil fuels. In fact, the IPCC states that it has the potential to meet 15–55 per cent of the global CO_2 mitigation effort by 2100. In simple terms, CCS involves three main stages: capturing the CO_2, transporting it, and storing it permanently and safely in geological formations. In addition there is huge potential for a fourth stage as CCS can also be used in conjunction with CO_2-enhanced oil recovery (EOR).

Deciding on CCS

The In Salah project has been up and running since June 2004. It involves the development of seven proven dry natural gas fields in the southern Sahara and today produces around 9 billion cubic metres of gas a year. Its final path is through a 500 km pipeline to the major gas collection point at Hassi R'Mel *(see page 36)* from where it is exported to markets in the European Union.

It is the final destination of the gas that provides one of the key insights as to why the decision was made to capture and store the CO_2. Mohamed Meziane, Sonatrach's CEO, explains: "The target market for Algerian natural gas is Europe, where the market requires incoming natural gas to contain no more than 0.3 per cent CO_2. However, the carbon content in the natural gas produced from the In Salah project ranges between four to nine per cent."

It meant that In Salah presented a very specific problem, with significant commercial implications: the CO_2 needed to be taken out of the gas before it could be exported. The question was, how? "We had three choices," says Meziane. "The business-as-usual practice would be to separate and vent into the atmosphere. We could use it, but there are no oil fields there so we could not take advantage of it for EOR. Or we could look to store it."

Meziane says there was a commitment by the shareholders to manage down the emissions footprint of the project and not to employ atmospheric venting of the CO_2 stream. Thus, CCS was identified as a solution. The result was a decision that hinged on the intelligent and coordinated use of technology. It required a solution that separated the In Salah gas from the CO_2, which is then

An installation at Krechba.

compressed and re-injected through three injection wells, back into the same geological formation in which it was stored for the previous 20 million years.

The choice for storage

Sonatrach says that several opportunities for storage were evaluated during the design stage, ranging from distributed storage at each field location, to a single centralised facility and storage site. It adds that the high cost and increasing system complexity associated with distributed storage, primarily around the need to use multiple CO_2 stripping units, precluded this as an option. It meant that a single facility was the preferred option and the Krechba field was selected to be the location.

Krechba was chosen for a variety of reasons. Firstly, because all processing facilities would be located on one site, secondly, because of seismic data availability, thirdly, because of the existence of exploration and appraisal wells, and finally, because the reservoir option (carboniferous structure) has a big storage capacity with good insulation.

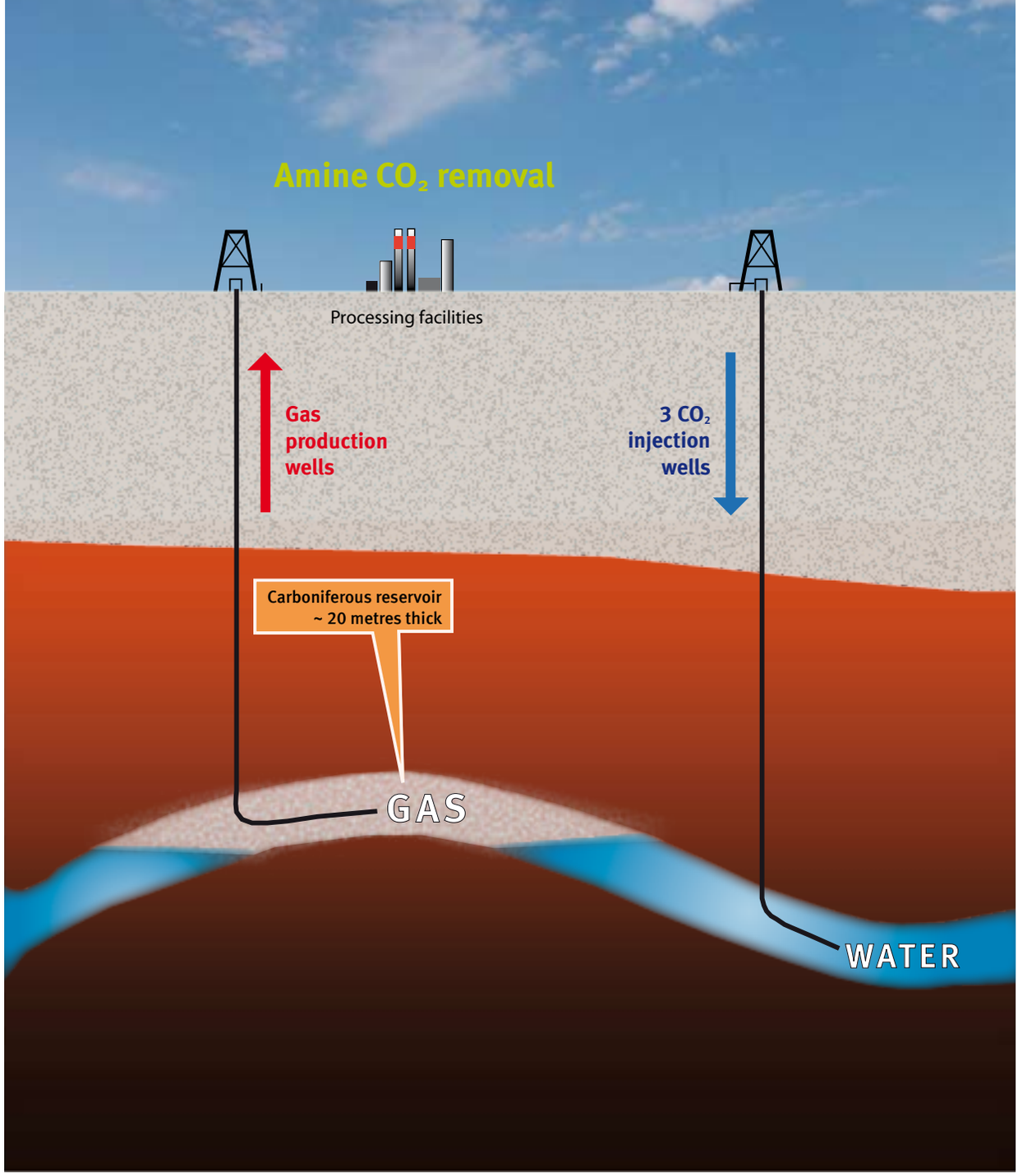
Today, the In Salah Gas-CCS is an industrial-scale demonstration of CO_2 geological storage, where CO_2 is stored about two kilometres below ground in a large underground aquifier where it should remain indefinitely. It is expected that 1.2 million tons per year of CO_2 will be geologically stored there.

That is not to say that the project has been completed. Any new technology takes time to evolve and the importance of monitoring, evaluation, and the technical study still taking place, are emphasised by all the project partners. The In Salah Joint Industry Project (JIP) is currently carrying out detailed monitoring of injection pressures, injection rates, surface fluxes and track subsurface migration of CO_2 using a permanently installed seismic array. The 4D Seismic technology provides a clear picture of what is going on underground at any point in time.

The overall objectives of the project are first to demonstrate to stakeholders that industrial-scale geological storage of CO_2 is a viable greenhouse gas mitigation option, second, to assure people that secure geological storage of CO_2 can be cost-effectively verified and that long-term assurance can be provided by short-term monitoring, and third, to set precedents for regulating and verifying geological storage of CO_2, and ultimately allowing eligibility for greenhouse carbon credits, under the Clean Development Mechanism (CDM). The latter is viewed as very important in promoting CCS in developing countries.

The benefits

Meziane states that the benefits are many, and upfront, he says, it adds value to Algeria's export markets as the produced gas now meets market standards and regulations and can thus be transported from Algeria for sale in southern Europe. Additionally, the environmental benefits are numerous as about 20m t of CO_2 will be re-injected during the whole life of the project, which, Sonatrach says, is the equivalent of taking 250,000 cars off the road.



The process for CO_2 injection.

The overall project cost is in the region of $100 million, and whilst this represents a significant upfront cost, the benefits, both environmentally and economically, could be huge in the long-term. It is the world's first full-scale CO_2 capture project at a gas field, and if the objectives highlighted above are met, and the signs are positive as the project gradually demonstrates that greenhouse gas mitigation is a viable, safe and cost effective option for CO_2 storage, then the technology could be used or exported elsewhere.

Meziane says the next step would be to use the technology at other selected gas fields in Algeria, and then take it further afield with Sonatrach's partners. "We are seeing much interest from other countries and companies, as well as research and development institutions, and we are discussing and presenting at various fora," says Meziane.

The technology might be complex, but the company, or companies, that come up with a cost-effective solution will uncork a huge commercial opportunity — and one that is a win-win, for both energy security and the environment.

Unless otherwise credited, photographs on pp22–35 courtesy of Sonatrach.

Hassi R'Mel:
The hub for Algerian gas

The In Salah gas project is located in the south of Algeria and before it hits consumers in Europe it travels through Hassi R'Mel, the hub for Algerian gas. It is here where the National Centre for Dispatching Gas, a huge complex of multi-coloured pipes, is located.

Hassi R'Mel is, in fact, much more than a dispatching centre. It is Sonatrach's 'giant' Algerian gas field — one of the world's largest. The first field was discovered in 1956 and production started in 1961. Today, the field extends 70 kilometres from north to south and 50 km from east to west and contributes to around 65 per cent of Algeria's gas production. Each year, it also has a capacity of 12 million tons of condensates, 3.5m t of LPG and 700,000 t of raw oil.

On the pipeline side, at present there are the Enrico Mattei and Pedro Duran Farell gas pipelines. The first was built to meet the objective of upgrading fields and to supply the Italian market. It has a capacity of 32 billion cubic metres. The second is a connection to Spain and Portugal, through Morocco. It has a capacity of 11.5bn cu m. Its position as a hub, however, is

expected to grow. Looking towards Europe, there is the Medgaz pipeline, linking Algeria to Europe, via Spain, as well as the Galsi project, linking Algeria to Sardinia, via Italy.

Medgaz was formed by Sonatrach and the Spanish group, Cepsa, as an engineering company in August 2000. Since then, the group has been joined by Iberdrola, Gaz de France and Endesa. Following all the necessary feasibility studies and approvals, the project was launched in July 2005, and is expected to be completed for 2009. The pipeline will depart from Béni-Sarf in Algeria, cross the Mediterranean over a distance of 200 km and at a maximum depth of 2,160 metres, and reach Almeria on the Spanish coast. It is expected to have a capacity of between 8–10bn cu m per year.

Galsi is shared by Sonatrach (36 per cent), Edison Gas (18 per cent), Enel Power (13.5 per cent), Wintershall (13.5 per cent), EOS Energia (nine per cent), Progmesia (five per cent) and SFIRS (five per cent). The pipeline will cover a total distance of around 1,470 km, crossing from Hassi R'Mel via El Kala to Sardinia, and then onto the Italian region of Castiglionne Della Pescaia, north of Rome. Its initial capacity will be 8bn cu m per year and it will supply Italy, southern France, as well as the European countries to the north of the Alps.

Going forward, however, there is also much interest in its position as the focal point not only for the distribution of Algerian gas to Europe, but for gas from other countries to the south of Algeria. The proposed pipeline being much talked about is the Trans-Saharan Gas Pipeline (TSGP), which is hoped will open up a new route to export African natural gas to Europe by connecting Algeria and Nigeria, through Niger.

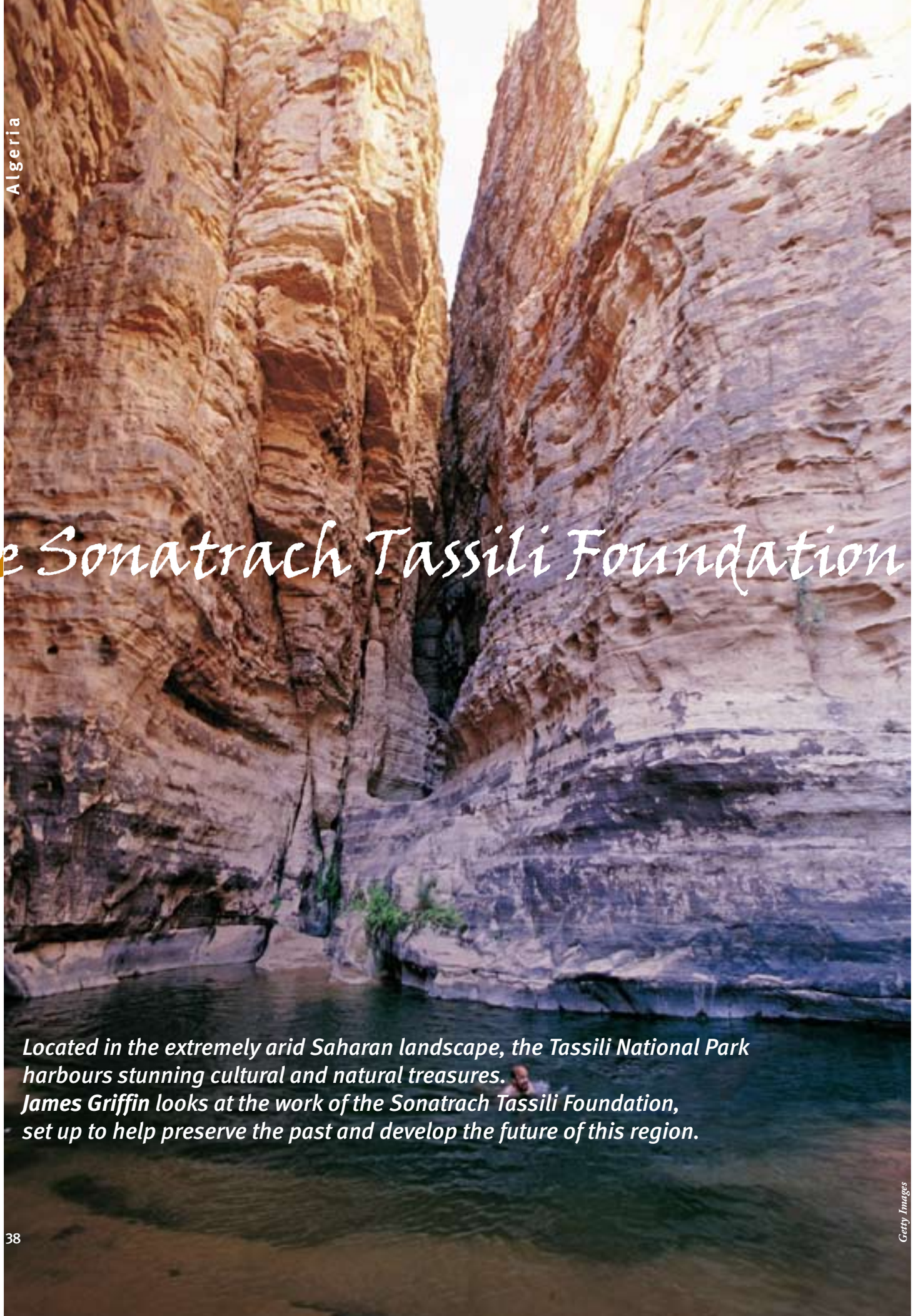
The project is currently under feasibility study, but positive noises have been made from the African nations involved, as well as the European Commission. The 4,300 km pipeline, with an expected capacity of 30bn cu m, would have Brass in the Niger Delta as its departure terminal. Its arrival terminal would be located on the Algerian coast.

Hassi R'Mel's position as the transitional and dispatching point for Algerian gas, and in the future for gas from its African neighbours, looks very much secure: a focal point for both producers and consumers, and an essential element in both security of supply and security of demand.

Sonatrach staff at the Hassi R'Mel plant.

Photographs: James Griffin.

The Sonatrach Tassili Foundation



Located in the extremely arid Saharan landscape, the Tassili National Park harbours stunning cultural and natural treasures.
***James Griffin** looks at the work of the Sonatrach Tassili Foundation, set up to help preserve the past and develop the future of this region.*

Getty Images

The Tassili National Park is one of the wonders of the world. Covering an area of 80,000 sq km — larger than Scotland — this desert, almost lunar-like region of Algeria, is blessed with stunning scenery, many prehistoric remains and is perhaps most well-known for its famous rock paintings, thousands of which adorn the rocks and caves, a real cultural treasure of information about the lives of the people who lived there many thousands of years ago. It is also home to many wild animals, as well as many species of flora, some of which are in danger of extinction.

Its importance, locally, nationally, and globally, can be viewed in the protection it has been designated in recent decades. After being made a National Historic Monument in July 1972, the national park was designated a World Heritage site by UNESCO in 1982 for its cultural treasures and joined the MAB network as a Man and Biosphere Reserve in 1986. In 2001, the Ihrir Valley was included as a wetland of world importance on the RAMSAR World Wetland Convention's list.

Yet the region's vast area, all of which have to be managed, protected and preserved, presents a significant challenge. It was something recognized by the Algerian national oil company, Sonatrach, and led to the creation of the Sonatrach Tassili Foundation. Its strategy is to "pursue efforts already engaged by Sonatrach throughout the national territory for sustainable development, the protection and preservation of natural and cultural heritage, as well as the improvement of the isolated population's living conditions." And all its projects are based on the interdependence of environmental, patrimonial and socio-economic approaches.

Open-air museum

Algeria's Minister of Energy and Mines, Dr Chakib Khelil, who is also chairman of the foundation, says that the "Tassili is a wonderful place and it is our duty to help the region look after its past, present and future."

Khelil says the region is "an open-air museum" and it is easy to see why archaeologists, geologists, historians and tourists are drawn to the area. For many, it is the rock paintings that are the initial draw. Among dull red and black desert rocks, more than 15,000 paintings and engravings — and nowhere is prehistoric art to be found in such abundance — tell a story of a verdant past. It is an illustrated history book showing that the desert then was no desert at all. It was a place of flourishing community life, of flowers and waterholes, herds of cattle and large wild animals, including crocodiles. Images bound up in the politics and economics of their existence: the animals they hunt, the forces, natural and supernatural, that sustain their lives, the battles they fight.

Khelil also highlights the numerous rock carvings and sculptures from the region and makes specific reference to 'The Crying Cow'. The carving pictures a cow with a tear drop, but Khelil says that "we still do not know why."

But it is not just a spectacular lesson in rock art history and human development that can be viewed there. There is much wildlife to view, such as the cheetah, mouflon (a kind of wild sheep), gazelle, the caracal and the fennec, and fauna, some of which have been part and parcel of the region for many thousands of years.

In this regard, Khelil is keen to highlight one of the initiatives of the Sonatrach Tassili Foundation. This concerns the preservation of Cupressus dupreziana, the Tassili Cypress, which is a very rare coniferous tree native to the region, where it forms a unique population of trees hundreds of kilometres from any other. The majority are estimated to be over 2,000 years old, but its future is unsure as today there are only just over 230 specimens of the tree remaining. Khelil says the problem is its regeneration as this is not happening naturally. The foundation is thus funding research into the *in vitro* culture of the Tassili cypress, in partnership with the University of Tizi Ouzou, as a means to help reproduce this critically endangered tree.

Khelil also mentions the importance of educating and arousing the consciousness of the younger generations to the importance of preserving the fragile ecosystem and maintaining the way of life. With regard to the latter, he underlines the promotion of local products, and supporting the preservation of crafts, songs and traditional musical instruments. He highlights the story of one old lady from the region who plays music on a one stringed, guitar-like instrument. "If her knowledge is not passed on, it will be lost," he says. So the foundation helps support the teaching of young girls in the art of playing this instrument, so the knowledge remains for future generations.

The foundation is also looking at partnerships and associations to help push these actions forward, with Khelil last year addressing an invitation to all "oil companies, their associates and all other private and public companies operating in Algeria or abroad to lend their support," in whatever way they think is useful. The call was also addressed to the foreign institutions and embassies based in Algeria.

The Sonatrach Tassili Foundation's motto is to help "preserve, protect, restore, valorize and develop." They are all goals of paramount importance to the region, a place of much beauty, heritage and culture. And one that provides links to the past, and possibly, insights for the future.

Right: The painting illustrates the four styles of Tassili painting.

Getty Images

The Bali Roadmap

Over 180 nations at the UNFCCC Conference agree on negotiating mandate for future climate change talks

Indonesia's President, Susilo Bambang Yudhoyono, strikes a gong, to mark the opening of one of the high-level sessions at the Climate Change Conference in Bali.

Reuters

We have a roadmap! That was the proclamation made by a delighted Rachmat Witoelar, President of the United Nations Climate Change Conference, held in Indonesia in December 2007, following news that, after two weeks of difficult negotiations, delegates from over 180 nations had come up with a negotiating mandate on future environmental discussions.

"I am delighted to say that we have finally achieved the breakthrough the world has been waiting for — the Bali Roadmap," he told weary delegates at the closing session of the conference.

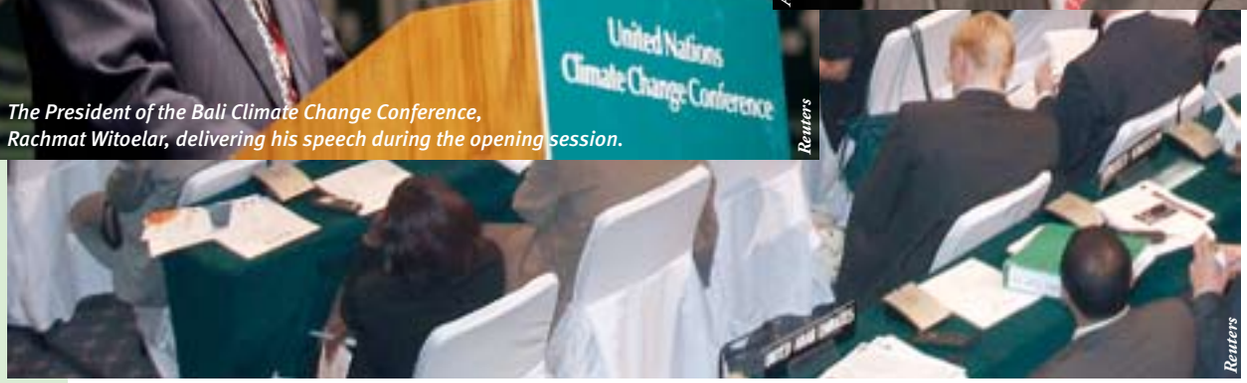
"I realize that you have been waiting a long time for this moment and, I can assure you that it was well worth the wait," he said.

"The world was expecting us to show true vision and leadership and I have no doubt that we have proven equal to that task. It is said that leaders are those who create the future. Here in Bali, you have demonstrated the lead-

The President of the Bali Climate Change Conference, Rachmat Witoelar, delivering his speech during the opening session.

Reuters

AP Photo



Reuters

Above: The Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC), Yvo de Boer, also speaking during the opening session.

UN Secretary General, Ban Ki-moon (l), pictured in Bali with Indonesia's President, Susilo Bambang Yudhoyono.

ership needed to create a sustainable future for us all," he added.

An equally delighted Yvo de Boer, Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), agreed: "This is a real breakthrough, a real opportunity for the international community to successfully fight climate change.

"Parties have recognized the urgency of action on climate change and have now provided the political response to what scientists have been telling us is needed," he commented after key participants worked through the night to reach an agreement.

Witoelar, Indonesia's State Minister for the Environment, said the decisions taken in Bali together create the world's road map to a secure climate future.

"The governments assembled here have responded decisively in the face of new scientific evidence and significant advances in our thinking to collectively envision, and chart, a new climate-secure course for humanity," he professed.

"The Bali Roadmap is a testament to the remarkable spirit of cooperation that Parties have displayed in these last two weeks. It is also a tribute to the solidarity with which we have come together to address climate change — the defining human development challenge of the 21st century," he affirmed.

The world's largest energy consumer — the United States — not a Party to the existing Kyoto Protocol — joined the Bali initiative after intense pressure that took the scheduled talks past their deadline into the early hours.

The Bali Action Plan will govern climate change talks held by the UNFCCC over the next two years. These negotiations are intended to lead to the signing, in December 2009, of a global climate change action plan that will come into effect in 2013, when the provisions of the existing Kyoto agreement expire.

Four further UNFCCC meetings will be convened in 2008 to pursue these negotiations, with the first to be held in March or April.

The talks will look at efforts by developed countries to take "measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances."

Similarly, they will cover efforts by developing countries to take "measurable, reportable and verifiable

nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported by technology and enabled by financing and capacity-building."

The Action Plan does not specify any clear emissions reduction goals, but loosely refers to scenarios drawn up by the Intergovernmental Panel on Climate Change, which include a goal of halving global emissions by 2050, compared with 2000 levels.

The meetings in 2008 will also look at ways and means of adapting to the negative consequences of climate change, such as droughts and floods, and seek methods for reducing greenhouse gas emissions, deploying climate-friendly technologies and financing both adaptation and mitigation measures.

In addition, the Plan will study possible financial support to halt deforestation and forest degradation, which account for roughly one fifth of global greenhouse gas emissions today.

"The Bali Roadmap consists of a number of forward-looking decisions adopted today. These decisions represent various tracks that are essential to reaching a secure climate future," commented Witoelar.

"As we begin our work for the future, we should not forget that we are only a few weeks away from the start of the first commitment period. And whilst we have made an excellent start in Bali ... we must also ensure that existing commitments are fully implemented. The road from Bali to Poznan and Copenhagen must be paved not with good intentions, but concrete actions and rigorous implementation."

Developed countries should lead

During the two weeks of talks, developing nations called on the developed economies to agree to firm emissions reduction commitments in the period after 2012.

The Chairman of the Group of 77 (G77) plus China, Munir Akram, told reporters that the G77 is "looking for major new commitments from Annex 1 (developed) parties to the Kyoto Protocol — commitments that would "take them down the path that has been outlined in the Intergovernmental Panel on Climate Change's report, which in our view would require reduction commitments of at least 25–40 per cent from 1990 levels by 2030."

He stated that it was important that all Annex 1 Parties met the target of at least a 25–40 per cent reduction, because then "we may have a chance to get to the levels that have been indicated in the IPCC report."

Added Akram: "This in our view would be the single most important contribution to the stabilization of climate change. All other actions by developing countries, by other countries, are a fraction of what the contribution could be from Annex 1 countries."

Meanwhile, UN Secretary General Ban Ki-moon, who launched the Bali conference, also urged developed countries to continue to take the lead in achieving emissions reductions.

"Any agreement must look to developed countries to continue to take the lead in curbing emissions, and developing countries must be given incentive to cut emissions," he said.

Ban urged all nations to work towards cutting greenhouse gas emissions responsible for climate change. He said he favoured a binding cap on such harmful emissions, but stressed that the focus right now should be to set a time line for a deal by 2009.

"Climate change is as much an opportunity as it is a threat. It is a chance to usher in a new age of green economics and truly sustainable development," he said.

"This shift to a greener future is in its infancy and needs urgent nurturing. There is no trade-off between fighting climate change and pursuing development. In the long run, we can prosper only by doing both. Already there is an emerging consensus on the building blocks of a climate change agreement. It must be more comprehensive and involve all nations, developed and developing," Ban said.

"The Earth cannot tell the difference between emissions from an Asian factory, an American SUV, or deforestation in Africa. Our response must be fair and reflect common but differentiated responsibilities. Equity is crucial. Climate change affects us all, but does not affect us all equally," Ban added.

"Those least able to cope are hit hardest; those who have done least to cause the problem, bear the greatest consequences. We have a duty to protect the most vulnerable," he added.

The Bali Conference, hosted by the Indonesian Government, took place at the Bali International Convention Centre and attracted more than 10,000 participants from over 180 countries, together with observers from intergovernmental and non-governmental organizations and the media.

The two-weeks of talks included the sessions of the Conference of the Parties to the UNFCCC, its subsidiary bodies, as well as the Meeting of the Parties to the Kyoto Protocol.

Technology can play significant role in helping to protect the environment — OPEC

The following text is the OPEC Statement to the United Nations Climate Change Conference — delivered by Abdalla Salem El-Badri (pictured below), OPEC Secretary General, to the high-level segment of the 13th session of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) and the Third Session of the Conference of the Parties (COP), acting as the Meeting of the Parties to the Kyoto Protocol.

AP Photo

Let me begin by expressing my deep appreciation to the Government and people of Indonesia for hosting this Conference on this wonderful island of Bali and for their warm hospitality. I am delighted to be here today and participate in such an important conference, taking place in an OPEC Member Country and tackling the issue

of our time "climate change", an issue widely covered at the OPEC Summit recently held in Riyadh.

Here in Bali, there has been much discussion concerning where the Kyoto Protocol is today, and what the future holds for a post-Kyoto agreement. However, in all these discussions, we must move forward by learning from our past experience. The key question in this regard is a simple one: why were we able to reach an agreement for the creation of the Kyoto Protocol?

We reached agreement after years of negotiation because everyone had a stake, but perhaps more importantly, everyone perceived that their issues were recognized and taken on board.

For developing countries in general, it was of fundamental importance that the principle of "common, but differentiated responsibilities and respective capabilities" be central to this agreement since developed countries have a historical responsibility to take the lead in combating climate change.

Developed countries are largely responsible for the historical build-up of global greenhouse gas emissions and even to this day continue to emit close to half of all emissions, despite representing only 20 per cent of the planet's population.

The Kyoto Protocol is not exempt of shortcomings, but overall it is a good compromise. It envisaged flexibility mechanisms to facilitate the meeting of emission reduction quota commitments by developed country Parties, while promoting cleaner development in countries that do not have specific emission reduction quotas.

Over the years, we have witnessed how many voluntary initiatives from the developing world have been launched with climate change in mind. Most recently, a number of OPEC Member Countries — namely Saudi Arabia with $300 million and Kuwait, Qatar and the United Arab Emirates (UAE), each with $150m — created a fund aimed at investing in technological solutions to protect the environment.

For developed countries, however, many are still far from meeting their commitments to reduce their overall emissions levels. Other obligations remain unrealised too. We need to build upon the existing Convention and its Protocol. This is paramount if we are to build trust and move forward in a constructive way.

We take note that the latest IPCC report points to the need for political responses that match the climate change science. Yet, we need to balance this out and emphasise that these political responses must also encompass the other two pillars of sustainable development — social progress and economic advancement — or stated in another way, the right to develop and hence to make greater use of energy.

For the 2.4 billion people that have no means of acquiring modern fuels for cooking and heating, emissions reductions are not on the agenda. Their daily struggles are focused on combating the worst pollutant of all — poverty. For these people, our goals must be to make sure they have access to modern energy services that are reliable, affordable, economically viable, socially acceptable and environmentally sound. This will not only enhance their living standards, but also help them adapt better to the inevitable consequences of climate change.

We do not believe that any new deal will succeed if it simply seeks to put additional economic burdens on developing countries. Even though climate change is clearly a challenge for the international community at large, there must be no losers, and it is unfair and unrealistic to ask for more stringent commitments for developing countries over and above those already embraced by them in the Kyoto Protocol.

OPEC believes that technology can play a significant role in helping us find solutions, but this technology must be shared on a level playing field, just like we "share" the negative effects of climate change. If we truly regard this as a global threat, we cannot treat climate change as simply another business opportunity; hence, technology transfer must be viewed in a more inclusive manner.

With fossil fuels expected to continue in the foreseeable future to play a dominant role in the energy mix, it is important to promote the development and dissemination of cleaner fossil fuel technologies, in particular for oil and gas. One such technology is carbon capture and storage, a mature technology and perhaps the single best means to reduce CO_2 emissions.

However, technology solutions will be varied and no one solution will apply to all countries, nor will technology alone solve this problem. We must not loose sight of this. Cooperation, unity and dialogue also have a very important role to play.

OPEC remains committed to its longstanding policy of promoting market stability and providing a reliable and regular supply of a very valuable resource to the world. It also appreciates the positive role that oil has played in the past and will play in the future to raise the living standards of people all over the world.

We acknowledge the interrelationships between energy production and consumption, environmental protection and preservation and economic growth and social development. And we will continue to work with the international community towards all global efforts aimed at bridging the development gap and making energy accessible to the world's poor, while protecting the environment through the avoidance of the unwanted side effects of the wasteful use of these energy resources.

What we need in place is a fair agreement that addresses the issues and challenges in a comprehensive, balanced and effective manner. One that takes into account the past, present and future; one where current commitments are fulfilled; one in which we can all see the benefits to be gained from our own efforts; and, one based on principles of solidarity with those least able to help themselves.

To these ends, we have witnessed some very interesting initiatives from various quarters. It has given me a positive feeling and I hope that we can continue to engage and work together in meeting the climate change challenge in a manner that will provide benefits for us all.

Secretariat hosts 7th Working Party on Flow of Statistics

Direct and accurate oil data a must for OPEC's credibility — Qabazard

The provision of accurate and reliable data on OPEC's oil production levels and capacity expansion plans is of critical importance to the Organization and its credibility in the international energy sector.

That was the message ***Dr Hasan M Qabazard*** *(pictured left), Director of the OPEC Research Division, had for delegates attending the 7th Working Party on the Flow of Statistics from OPEC Member Countries, held at the Organization's Secretariat in Vienna at the end 2007.*

OPEC Secretary General, Abdalla Salem El-Badri, greets delegates from Member Countries attending the statistics workshop.

Dr Qabazard pointed out that OPEC is often criticized for not supplying accurate data regarding its production levels and capacity expansion plans.

"This is where the importance of this workshop and your statistics and work lies. It is of critical importance to the Organization and affects our credibility.

"I cannot really overemphasize the importance of meetings on this subject and the exchanges we have with our Member Countries in this regard."

Qabazard said the statisticians at the OPEC Secretariat work diligently with the numbers sent to them by Member Countries. "The more numbers you give them, the more they appreciate it and the more efficient their work will become. In fact, everybody will appreciate it — including the Member Countries themselves, who ultimately depend on the data for their work."

In his opening address to the workshop, he said the main purpose of the annual working party meeting is to exchange and strengthen the flow of information with Member Countries.

"A major component of the research carried out by the Secretariat, and reflected in our regular and *ad hoc* reports, constitutes analysis of raw data supplied in one form or another," he stated.

He explained that the major part of publications produced by OPEC, especially the Annual Statistical Bulletin (ASB), depend to a significant extent on data which is gathered from various sources.

"The uniqueness of the ASB and other publications, of course, depends on the data pertaining to our Member Countries. In addition, as with other international organizations, OPEC also publishes data about the petroleum and economic activities of its Member Countries. Hence it is of great importance that we publish data that is first hand and directly provided by our Members."

Data submission

Qabazard stressed that such working parties are, without doubt, beneficial to both sides. For the OPEC Secretariat, they offer an opportunity to clarify outstanding points and problems limiting the flow of statistical data from Member Countries, while for Member States, they represent an opportunity to increase their awareness of the importance of their support in providing direct information to the Secretariat.

Besides the working parties, regular visits to Member Countries are carried out and these combined efforts have led to a significant improvement in data submission to the Secretariat, Qabazard pointed out.

OPEC Secretary General, Abdalla Salem El-Badri (second right), pictured with some of the delegates before a group photo was taken.

He noted that this year's meeting registered the highest number of Member Country delegates since its inception over seven years ago, adding that this is indicative of the great importance Member Countries attach to the subject of data gathering and analysis.

"Without this workshop, it would not be possible to find answers to the various issues and questions regarding Member Countries' statistics," he said.

Fuad A Al-Zayer, Head of the Secretariat's Data Services Department, also said that OPEC, in the past, was criticized for keeping its data to itself.

That has changed, he noted, since 2005, when the OPEC Conference directed that Member Country capacity expansion programmes, as well as other data of interest to the industry, be published and updated regularly on the OPEC website and in OPEC publications.

Making this data public has in no small measure helped to inform industry stakeholders about current and future developments taking place in the industry.

Al-Zayer pointed out that the annual statistics workshop is one of the products used to improve data quality.

"We see great benefit in this and a great correlation between the improvement and the face-to-face meetings we have," he stressed.

"We also visit Member Countries — we try to cover each Member once every two years and we have managed that with most Countries. We do this to meet the people, to share the knowledge and to get to know the problems and benefit from each other."

Al-Zayer said the five-year work plan adopted by the OPEC Secretariat stipulates there should be an increase in the exchange of data between Member Countries and the Secretariat.

"We should have more direct access to data to improve the information, to collect more data on the environment, to continue to support the Joint Oil Data Initiative (JODI) and to follow up on other issues," he stated.

Al-Zayer told the meeting that they are aiming to further improve the ASB for 2007. The 2006 edition was a milestone in that it was published for the first time in July.

"We encourage Member Countries to further improve their submission and timeliness of data. We also encourage them to be involved in the development of the data by further enhancing coordination and collaboration among themselves to overcome present and future data restraints."

Al-Zayer said they are also encouraging the assignment of a coordinator in each Member Country. This person would be responsible for collecting the data from the various sources.

"This is already working well in some Member Countries and we hope others will follow suit. Our long-term goal is to utilize more of the official data we receive from Member Countries," he asserted.

In giving an overview of his Department's work in relation to the various data collection systems used, as well as some of the challenges it is facing, Al-Zayer said the main objective is to identify, collect and process different energy-related information.

"Our task here is to identify and collect data from the various sources, process the data and use it within

the research activity of the Secretariat. This also forms the data provider for Member Countries and serves as a reference point for data for the international community. The information is also used on the OPEC website and on the Intranet.

"We are basically collecting the data, adding the necessary intelligence and then sharing it with our Members," he explained.

Al-Zayer said the Secretariat represents OPEC and its Member Countries in all data-related international cooperation efforts, such as JODI, based in Riyadh, Saudi Arabia.

He said the data is generally acquired from two sources — direct communications with Member Countries, the preferred method, or from secondary sources, such as think-tanks outside of the Secretariat.

Data usage

"Hence, the need for such meetings and workshops. We would like to use more data from official sources, such as Member Country oil and energy ministries, and central banks. We would like to reduce our need to use secondary sources," he affirmed.

Al-Zayer noted that the data received is then processed at the Secretariat — in the Research Division's database — and then disseminated in-house, primarily for research, where it is used for analysis, forecasting and the preparation of various studies.

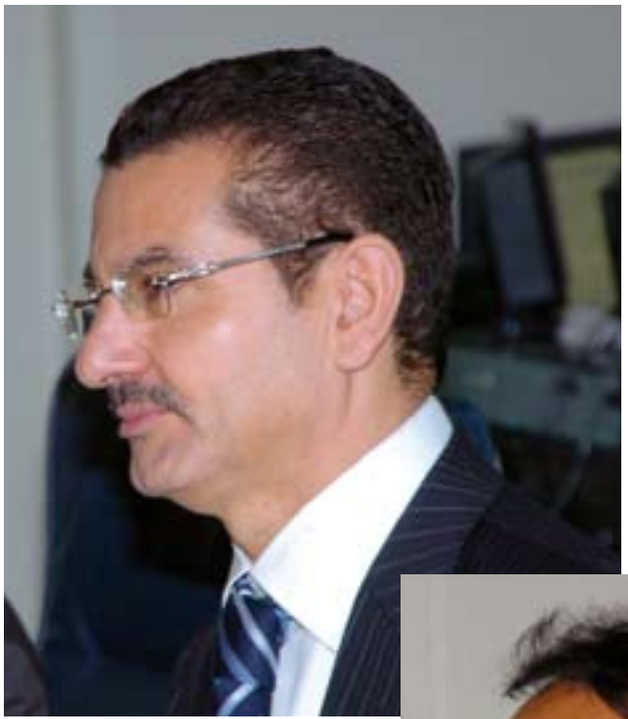
"We also use the data in our various meetings — the Conference, the Ministerial Monitoring Sub-committee, as well as the Board of Governors and the Economic Commission Board. In addition, it is used in various publications — comprising daily, weekly, monthly, quarterly and annual reports."

Al-Zayer said the Secretariat also gets many requests from Member Countries for data that can be used for their analysis.

"We publish some of the information on the website, while others are published on our Intranet. We actively encourage Members to visit these sites."

Another avenue of dissemination, he said, is through JODI — under the International Energy Forum Secretariat (IEFS) initiative that has been in operation for several years.

"We also get reports from Member Countries, the data from which we use in our official sources. We deal with international organizations, such as Platts for price data, and others on production. We spend a lot of resources in the Research Division in subscribing to the publications we need to gather this data."



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

Turning to the problems the Secretariat is facing, Al-Zayer said it goes without saying that with any process there are always ways to improve it.

"We have delays in the publication of data, and there is always a time lag, which affects the publication of our own reports. Some Member Countries do not have the necessary systems in place yet, so there are also difficulties with missing data. We also suffer from inconsistency over the sources of data, which means we have to harmonize the data and double-check it.

"However, improvements are being made and we hope that eventually all Member Countries will be able to provide the data we require," he added.

Puguh Irawan, Statistical Systems Analyst at the Secretariat, reinforced the view that OPEC should ideally rely

Puguh Irawan, Statistical Systems Analyst in the Data Services Department.

on data received from Member Countries for its reports and analyses.

Quality of information

In a presentation on *The importance of improved oil flow data from Member Countries,* he stated: "We know the advantages and strengths of having direct communication because Member Countries obviously have direct access to the oil data we require. We are aware there are some constraints — that is why we have to resort to the option of using secondary sources."

However, the lack of reliable direct communication data from Member States undermines the overall quality of the information, he maintained.

"Even small changes in the data can impact on the world oil market," he observed.

"We need to develop a regular monitoring system for encouraging improved direct communication data quality.

Delegates in a presentation during the workshop.

This could be done through a report card, which would be for each individual Member Country and would in no way be used to compare one Country's performance with another."

Irawan said the card would contain a set of indicators to provide an overall assessment of the data received from Member Countries. It would give feedback on the timeliness, completeness and quality of the submitted data.

"We can then visualize the performance of each Member Country on a quarterly, semester and annual basis and simply compare the performance to the previous period. Again, there would be no comparison done with other Members.

"From my previous experience in other international organizations, this kind of report card is very useful and very efficient. It would not only inform the statisticians of the performance, but also the policy-makers who directly deal with the energy data we are looking to secure," he explained.

Al-Zayer pointed out that such a report card system is in operation in JODI, where faces are used to gauge the effectiveness of a country's performance — smiling faces, or sad faces as warranted by each individual case.

Speaking briefly on JODI, he said: "The initiative provides us the opportunity to have a concrete dialogue with consumers and we can contribute to oil market stability by providing data that has less ambiguity. Being part of JODI is a good thing — we are an Organization that is still misunderstood in some quarters. OPEC has shown the world in the last few years that we are serious about data transparency."

Appropriate software

Javad Yarjani, Iran's OPEC National Representative, said the idea of the report card could be tabled at the next meeting of the OPEC Economic Commission Board in March 2008.

"I would also recommend that the Secretariat start thinking about acquiring software that can be applied in all 13 Member Countries, which, when backed by the appropriate training, would be a great boost in preparing the statistics required.

"It would encourage our Member Countries to adopt the same procedures and methodologies, which maybe would increase efficiency. It might be a long-term project, but it would be a good idea to study the idea now. If we all use the same software, it would help harmonize data collection and the people responsible for this would speak the same language as far as the data collection is concerned," he added.

Yarjani also told delegates that OPEC definitely needs to clear up many of the misunderstandings concerning the willingness of the Organization to provide transparent data.

"But I feel that we need not be so defensive all the time … to say that there is a lack of cooperation from the consuming countries' side in giving the important timely and efficient data to us as producers and export-

Dr Yahyai Aziz, Senior Research Analyst at the Secretariat.

Iran's OPEC National Representative, Javad Yarjani (r).

ers. They are not providing their demand numbers clearly. The demand numbers given by the International Energy Agency (IEA), for example, are always misleading and this is one of the sources of the problems in the oil market. If we see a fault in their data, and that is hurting the producing countries, we have to be vocal and not always be on the defensive," he affirmed.

Impact on the oil market

In a presentation on the *World oil supply demand balance — better data, better decisions,* Dr Yahyai Aziz, Senior Research Analyst at the Secretariat, said it was a given fact that OPEC's production decisions have a significant impact on the oil market.

"However, there are major problems in finding the right decisions, mainly due to the revisions of historical data, discrepancies between various sources and lack of reported information, especially in non-OECD countries," he noted. Aziz said these discrepancies give misleading signals about the fundamentals and have an accentuated impact on market sentiment, and therefore an increase in price volatility.

"The problem of oil data discrepancies has been an acknowledged fact for many years. But joint efforts to improve the transparency and quality of data should be intensified by all parties involved in the oil industry.

"Even though the oil market is complex, better data will ensure a more accurate understanding of the market and lead to more effective decisions," he asserted.

Participants of the workshop take time out to pose for a group photo.

Reliable data, transparency vital for oil's future success

*One of the delegates to attend the statistics workshop was **Javad Yarjani** (pictured), Iran's OPEC National Representative and General Manager of the OPEC and Energy Affairs Department at the Iranian Petroleum Ministry. With extensive experience in international oil industry affairs, the OPEC Bulletin asked the former Head of the Petroleum Market Analysis Department (PMAD) at the OPEC Secretariat in Vienna about the importance of oil transparency and making more reliable and accurate data available to both producers and consumers.*

How important is the provision of accurate and timely data to the future welfare of the oil industry, especially in forecasting supply and demand scenarios?

In recent years, the importance of reliable data, its accuracy and transparency, has found its real place. More and more people are realizing that for producers and consumers, and for exporters and importers, accurate data is a vital and important issue. From the producers' side, when there is blurred or inaccurate data, maybe there is activity in the market, especially from the speculators, then this can affect the price level. This would not be very good for them. From the exporters' side, they have to put aside a large portion of their yearly income for the development of their upstream and downstream activities, but ideally they need to do this with accurate data on future demand. If this information is not available, or it is blurred, it means it is difficult to make the right deci-

sions. So, from every angle that one looks at it, accurate data is vital. I am very happy that the OPEC Secretariat is paying a great deal of attention to it. However, this subject is not a one-way street — it needs to be tackled from all directions. Clear data and transparency is not only important from the producers' side, but also from the consuming side — and in every aspect. In an environment of clear and transparent data, we can make far better decisions.

Is this lack of clear and reliable data contributing to oil market volatility?

Yes, the lack of information is definitely contributing to market volatility. For example, one of the seemingly clearest and up-to-date sources of data is the weekly report concerning United States oil stocks. But, today, at this workshop, we learned that even this information needs to be revised. Now if we are not sure about the accuracy of this particular data, then one can imagine how damaging other data, which is not that accurate, and not up-to-date, can be. But it is a fact that the price fluctuations we witness in the market today sometimes happen because of the release of inaccurate and misleading data. Again, this shows just how important the provision of accurate data is for all decision-makers.

We heard during the workshop that improvements have been made since the OPEC data acquisition initiative was set up, but where do the main problem areas still lie?

There are still two main problems. The first is the fact that unfortunately the infrastructure for the provision of such data in some OPEC Member Countries may not be up to standard and still needs to be developed. Here the Secretariat can be the role model for these Countries to help them develop the infrastructure necessary for gathering and disseminating the data. Secondly, several different sources are available for obtaining the data and balancing the information, which adds to the difficulty of having accurate data. But as more and more people become aware of the growing importance of this issue, they will hopefully make the resources available to provide better and more transparent data acquisition.

You talked in the workshop about "going on the offensive" to get consumers to provide more accurate and timely data concerning their demand patterns. How important is this information to the producers in OPEC?

It is very important. OPEC Member Countries are all developing countries. It might look as though they are making an awful lot of money at this juncture, but in real terms they still have to pay back for importing commodities and machinery. Out of this income, and given the rise in populations, especially young people, these Countries have to put a huge amount of money into developing their upstream oil sectors and sometimes downstream operations. If they do not have a clear idea before making this investment whether there is going to be sufficient demand, it will put them in a real dilemma. Should we invest or not? That will be the question they will have to face. So, in order to give a clear-cut idea, OPEC Countries, who hold a big share of world oil reserves, will need to know the upstream development needs for the future, in line with demand expectations, for which accurate data is essential.

We heard from delegates that the Joint Oil Data Initiative (JODI), which has been described by the head of the IEF Secretariat as being a "work in progress", appears to be moving in the right direction. What are your impressions of its success so far?

Concerning JODI, as far as the data itself is concerned, at the moment it may not be the ultimate source. But the idea that this is something shared by producers and consumers and the whole energy industry — from that point of view it is very important. The initiative shows that we are all in this together. We are not separating consumers from producers, or exporters from importers — we are all working together. JODI itself is the manifestation of the fact that we are all together and the fact that we need to have transparent data. From that point of view, JODI is a good initiative.

Do you see it becoming more effective in the future?

I feel that the International Energy Forum (IEF) in Riyadh, when it meets, needs to give more impetus to JODI (which it oversees) and ensures it has sufficient budget to develop accordingly. I believe very much in sharing the knowledge with those that have it in the developed countries. But I also believe that for this part we need training. The developing countries can benefit strongly if consuming countries can scientifically inject their resources into JODI — then we can see JODI becoming very effective indeed.

What is the position with data flow to the Secretariat from OPEC Member Countries — is it improving?

The Secretariat is moving in the right direction. There are more meetings on this issue, more trainees from Member Countries, and the Secretariat is also visiting Member States and taking the message to them about how important this data is. We are also getting some help from the JODI side. It is also an important fact that our Secretary General is a firm believer in this process of transparent data. It is not only the OPEC Ministers, Governors and National Representatives that are coming here (to the Secretariat), but also many other people who are dealing daily with this information. In addition, OPEC Member Countries should become convinced that disseminating this information will not jeopardize their national security in any way. So, by doing this, by training people and having the workshops and visits, I think we are moving in the right direction. With training and utilizing the same computer software we can perhaps get one step closer to the unification and dissemination of the data we all need.

Saudi Arabia: A journey through the Kingdom

On the occasion of the Third OPEC Summit of Heads of State and Government, held in Riyadh on November 17–18, 2007, the Kingdom of Saudi Arabia organized a week-long programme for a group of former OPEC Secretary Generals, opinion leaders and journalists from OPEC Member Countries, together with some senior members of the OPEC Secretariat. It was a unique opportunity for a diverse group of people from varying countries and backgrounds to become acquainted with the Kingdom's culture, economic development and petroleum industry. The participants from the OPEC Secretariat, Ramiro Ramirez, Fuad Siala, Safar Keramati, Esam Al-Khalifa, Omar Al-Dukair and Garry Brennand, provide a personal report.

The warm welcome we received on arrival in Dammam, in the Kingdom's Eastern Province, set the scene for the wonderful hospitality extended to us throughout our stay. This was immediately apparent on our first evening when we sampled some evocative singing and drumming, with our group soon getting the hang of dancing with swords. It also became clear from the start that the opportunity for stimulating discussion among participants would be a key factor of this trip, improving, along the way, our mutual understanding of important matters as they relate to the petroleum industry.

The first of our technical trips was to the headquarters of Saudi Aramco in Dhahran. This impressive tour took in the research and operations facilities at the Exploration and Petroleum Engineering Centre (EXPEC). We were immediately struck by the cutting edge technologies and

The 'ardha' sword dance, with former OPEC Secretary Generals Rene G Ortiz (second right) and Dr Alvaro Silva-Calderón (r), both from Venezuela; and other delegates (photos courtesy Abdulrahman Al-Mutlag).

the massive scale of activities. EXPEC links top-of-the-line computer, exploration and petroleum-engineering facilities with expert manpower to create a world-class technical facility whose primary purpose is to find and produce oil and gas with maximum efficiency.

Through EXPEC, Saudi Aramco has introduced new technologies, such as advanced three-dimensional seismic surveying, which provides better data for exploration and field development, and horizontal drilling. EXPEC underscores the company's commitment to use the most modern computer technology to develop the Kingdom's oil industry and has figured centrally in Saudi Aramco's campaign to boost its crude production capacity.

We were also treated to a presentation of Saudi Aramco's Oil Supply Planning and Scheduling (OSPAS) Department, which includes the largest display wall ever used in the hydrocarbon and power industry. OSPAS is a central planning organization that manages and optimizes hydrocarbon system capacities and inventories.

The day's tour continued at the impressive Saudi Aramco Oil Exhibit, an educational museum that explores the history of Saudi Aramco from its beginnings in 1933 through to today, focusing on exploration, drilling and production, refining and shipping. The day was complemented by a tour of the King Fahd University of Petroleum and Minerals, and the Sultan Bin Abdulaziz Science and Technology Centre. The University produces engineering graduates that are sought throughout the world. One of the aims is to establish leadership in many areas, not only in oil and gas technologies, but also renewables and water desalination.

The following day began with a trip to the Jubail Industrial City, north of Dammam. This massive undertaking has seen the development of a complete city, for predominantly petrochemicals and refining. Again, the scale is hard to take in: alone the volume of sand that was moved to chisel out the shore line was equivalent to 137 Cheops pyramids. This massive industrial complex on the Gulf, along with Yanbu, its twin on the Red Sea, stands as a symbol of the government's vision of Saudi Arabia's future development. The Royal Commission for Jubail and Yanbu was established to plan and administer all installations in these two 'cities'.

From Jubail to the 'Empty Quarter'

An ancient centre of the Eastern Province and a caravan junction, the city of Jubail was famed for pearling. Located near the oil-producing area, however, it was also found as a suitable site for the world's largest petrochemical complex. The industrial zone has 19 main factories with 136 ancillary installations, and produces steel, aluminum, plastic and fertilizers. This zone covers an area of 8,000 hectares, or around 80 square kilometres. In catering to diverse needs, the Saudi Basic Industries Corporation (SABIC) leases fully developed and fully equipped industrial sites. The residential area is composed of eight localities built on an adjacent island linked to the mainland.

From Jubail, we flew over mountains and canyons of sand to the Shaybah oil field in the middle of the red dunes of the so-called 'Empty Quarter', Rub Al-Khali — the biggest sand desert in the world. Shaybah stands out as a marvellous achievement. As one of the largest oil developments ever undertaken, it was brought onstream in 1998, and is currently capable of producing 500,000 barrels/day, with capacity set to further expand.

It is located 400 km from the nearest township and an 800 km road was built from Dhahran to transport all the materials needed for the establishment and construction of the installation. The crude at Shaybah is extra light, with a specific gravity of 42° API and a sulphur content of less than 0.7 per cent.

After touring the site, we were treated to an unforgettable sunset across the red desert, from the top of an extremely tall sand dune. The peace and serenity of this spectacular setting stunned us all. Everybody, including the pilot of our plane, desperately tried to capture the moment on film.

Human resource development

We spent the following day in Jeddah, with most of the group earlier doing Umrah in Mecca. The key feature of the day was a visit to the Jeddah Chamber of Commerce, where we were treated to a talk from Dr Lama Al-Sulaiman on the changing role of women in Saudi Arabia. We also heard of the unemployment challenge confronting the Kingdom, and the huge efforts that are being made to develop human resources, by, *inter alia*, improving training for job-seekers and advancing vocational training. The role of the soon-to-opened King Abdullah University of Science and Technology (KAUST) was also highlighted. KAUST will be an international, graduate-level research university dedicated to inspiring a new age of scientific achievement.

The 25 km long King Fahd Causeway.

Below: Visiting the museum and village of Rijal Alma.

Shaybah, in the 'Empty Quarter'.

OPEC delegates (l–r) Fuad Siala, Ibrahim Alturki (OFID), Garry Brennand and Omar Al-Dukair.

OPEC delegates, Ramiro Ramirez (l) and Safar Keramati at the Tarut Citadel, Qatif.

Old Jeddah.

The final leg of our tour took us to Abha, in the mountainous Asir province of south-western Saudi Arabia. This area is surprisingly verdant. The region is situated on a high plateau that receives more rainfall than the rest of the country and contains the country's highest peaks, which rise to almost 3,000 metres at Jebel Akhbar near Abha. We visited the Alma museum, via cable car, followed by a trip to the Al-Hammsan traditional village in Khamis Mushayt.

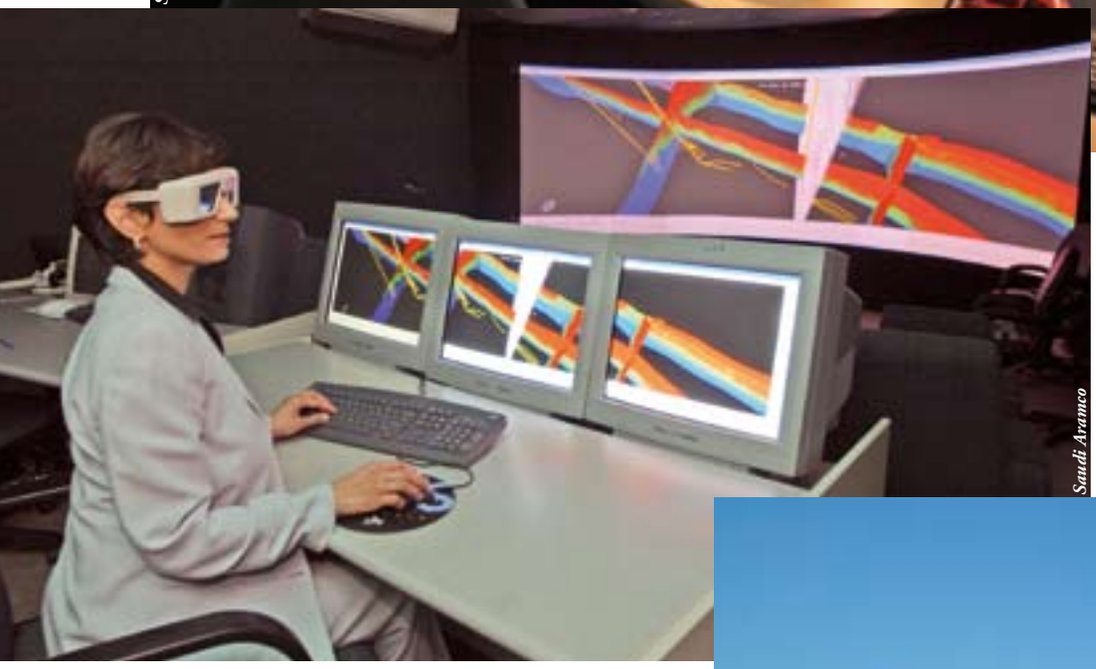
Arriving in Riyadh, we felt privileged to have spent these fascinating days in the Kingdom of Saudi Arabia. The country showed many sides, the warm hospitality was overwhelming, and the opportunity to interact with counterparts from all OPEC Member Countries proved valuable and enlightening. With these few words, we hope to convey a little of the wonder of this country and its people.

Above: The mountains of Asir province.
Below: Saudi Aramco Research and Development Centre, Dhahran.

Saudi Aramco

Saudi Aramco

Above: OSPAS control room.



Saudi Aramco

Above: Saudi Aramco reservoir simulation 3-D visualization centre.

Below: Monuments in Dammam.

Unless otherwise credited, photos courtesy Garry Brennand.

Staff members honoured

Twelve OPEC Secretariat staff members were honoured with long-service awards by the Organization's Secretary General, Abdalla Salem El-Badri, at a ceremony held in Vienna in December.

El-Badri, who referred to the event as being "certainly one of the most pleasurable events of the year," stressed that it was an occasion when the Secretariat could reward its staff, "something I feel is richly deserved".

He stated: "I can see many faces here that have contributed to the Secretariat's tremendous output in 2007. As Secretary General, I would like to take this opportunity to thank you all for your efforts. We have achieved much over this past year and it has been a delight to lead such a hardworking group of people."

El-Badri pointed out that the evening was not only about the past year — it was an opportunity for the Organization to honour those staff members who had helped the Secretariat grow, strengthen and develop over many years.

"The Organization values the diligence and support of those who have given many years to the Secretariat. We understand that a loyal and experienced body of staff forms our backbone and offers us a sense of continuity through the regular management changes. Without you, we would not have the strong and stable platform required for us to continually push and develop the aims and objectives of our Organization," he said. El-Badri explained that the awards recognize the vitally important contribution made by long-serving staff members towards the smooth running of OPEC and its Secretariat.

"Through these awards, we show our appreciation for the role our long-serving staff members play in helping the Secretariat run effectively and efficiently," he added.

Staff members honoured in 2007 had spent the last 15, 25 or 30 years working for OPEC. "With 18 colleagues receiving awards last year, it delights me that so many of our colleagues have stayed with us for so long," commented El-Badri.

Jane Marchl

Vivien Pilles-Broadley

Olga Spasojevic

Kurt Zach

Monika Psenner

Stojka Tomasevic

Bernard Gyane

30 years

at OPEC long service awards

"The 12 here tonight have all contributed to the Secretariat's work in a variety of ways, for example secretarial support, organizing schedules, administrative activities, speechwriting, editing, researching trends in the oil market, typesetting and maintaining computer and IT systems. Each and every one of those being rewarded this evening fully deserve the accolade they are about to receive," he stated.

Seven staff members were recognized for 30 years' service — Jane Marchl from the Secretary General's Office, Vivien Pilles-Broadley from the Research Division, Monika Psenner, Bernard Gyane and Kurt Zach from the Data Services Department, and Olga Spasojevic and Stojka Tomasevic from Administration and Human Resources.

Two staff members were awarded after 25 years' service, namely Keith Aylward-Marchant from the Public Relations and Information Department and Silvana Mahrhofer from Administration and Human Resources.

Finally, three staff members were recognized for completing 15 years' service — Andrea Birnbach from the Public Relations and Information Department, Ismail Zeidan from Administration and Human Resources and Christian Pold from the Data Services Department.

Keith Aylward-Marchant

25 years

Silvana Mahrhofer

OPEC Secretary General, Abdalla Salem El-Badri, presented the awards to staff.

Layla Abdul-Hadi (l), Head of OPEC's Human Resources Section; with Alejandro Rodriguez, Head, Administration and Human Resources Department, who arranged and organized the event.

Christian Pold

Ismail Zeidan

Andrea Birnbach

15 years

UN refugee agency

partners OFID to help refugees in Liberia, Côte d'Ivoire

Recently, the United Nations High Commissioner for Refugees, Antonio Guterres, was at the OPEC Fund for International Development (OFID) Headquarters to sign a $500,000 grant agreement. Specifically, the aid is to support refugees, displaced persons and returnees suffering from HIV/AIDS in Côte d'Ivoire and Liberia. In the following interview with **Farouk U Muhammed**, Officer-in-Charge, Department of Information, Guterres highlights the UNHCR's partnership with OFID, as well as other activities and challenges.

The Geneva-based United Nations High Commission for Refugees (UNHCR) has, as its core mandate, the provision of protection and assistance to refugees and other displaced persons, now numbering about 20.8 million globally. As part of its longer-term activities, the Commission also assists in the repatriation of displaced persons to their homeland, or helps them integrate and resettle in countries of asylum, as well as third countries. The Commission works with diverse partners and donors.

The UNHCR undoubtedly welcomes institutional donations in support of its numerous humanitarian activities around the world. The Commission works with varied donors, in order to carry out its huge tasks. However, while it appreciates the generosity of supporters, it attaches great worth to partners who share the same concerns and will to find the best solutions to those being cared for.

Guterres described as very important OFID's support to his organization over the years. He cited the HIV/AIDS grant as an exemplary cooperation and partnership between OFID and the UNHCR. According to him, "there has been a permanent commitment of OFID in relation to humanitarian solidarity," stressing that, "OFID has been

United Nations High Commissioner for Refugees, Antonio Guterres (r), being interviewed by Farouk U Muhammed, Officer-in-Charge, Department of Information.

paving the way for meaningful cooperation between economic organizations and the humanitarian world."

He added that OFID has been promoting such cooperation with a strong commitment and perspective - not based on narrow interest, but rather on a clear commitment to solidarity and partnership.

Guterres said it was important for OFID's examples of solidarity and partnership to be known and emulated by others.

OFID grant

The OFID HIV/AIDS grant was extended to help displaced persons and returnees in Côte d'Ivoire and Liberia, two of Africa's most troubled countries. According to Guterres, who sees Liberia as an important success story owing to peace prevailing over war and the establishment of democracy, the UNHCR has been supporting "a massive return of about 300,000 internally displaced persons and more than 100,000 refugees from Côte d'Ivoire, Guinea and Sierra Leone."

Meanwhile, the returnees are confronted with several problems, including limited employment opportunities and huge difficulties in their educational and health needs, all of which compound and limit the effective assistance the international community is able to provide during the transition period.

Although the international community is adept at dealing with emergencies and even sustainable development issues, the transition period for refugees when governance may still be limited, makes it difficult to define projects that are aimed at assisting the refugees.

Guterres said, however, that it becomes necessary to act quickly so that those concerned can understand that peace and democracy provide dividends to be cherished by the refugees. Accordingly, he said: "All the programmes that can be implemented in Liberia are very important," adding that, "effective prevention and treatment of HIV cases is essential for all the returnees, as well as the communities that are receiving them."

Guterres explained that while in Liberia a massive return had taken place. With Côte d'Ivoire, the challenge was to prepare such a return and also support it to ensure that "the prevention of HIV/AIDS and the guarantee of treatment before and after, can be established." He said the worst possible action would be "to support displaced people with, for example, antiretroviral medicines, but for them not to be able to continue with the treatment when they go back."

Returnees

The Liberia and Côte d'Ivoire refugee problems are among the latest challenges that the UNHCR is grappling with around the world. With more than 80 per cent of its 6,000-strong staff in the field, the Commission, last year alone, provided aid, support and protection to 700,000 refugees who returned home. "This is a remarkable figure and we have been able to react in massive return operations," said Guterres, adding: "In Afghanistan, more than 4.5 million people have already returned home, and 400,000 have done so in Angola, while 100,000 are scheduled to return to South Sudan."

However, while resettlement activities are taking place in several regions, unfortunately, the number of refugees worldwide registered more than a ten per cent increase in 2006. This was caused by, among other things, the crises in Somalia and Iraq. The situation is compounded by the problem of internally displaced persons. The issue becomes more complex as the UNHCR does not have an international mandate to deal with such developments, which, in turn, are not governed by international law.

Said Guterres: "These people are displaced in their own countries and providing them support is becoming one of the biggest challenges facing the Commission."

It is noteworthy that, apart from material support, the UNHCR provides other care to refugees and displaced persons. One of such is advocacy with the country of asylum. Commented Guterres: "I have been discussing with the Austrian Minister of the Interior, about the asylum procedures and how best to reduce the detention period for asylum seekers and also quicken the procedure."

He said other areas of activity include registration and documentation, as well as protective action in relation to the prevention of gender-based and other violence in refugee camps. Continuing, Guterres said the Commission's

state-of-the-art system of identification, called Profile, is very important in giving those affected a legal document, without which it would be as if the people did not exist.

Accordingly, for the most vulnerable situations, the Commission provides settlement opportunities in third countries. Guterres gave as an example the 70,000 people that the Commission helped resettle, especially in the developed countries. Top of the list were women, children and others with traumatic experiences. He said the Commission attaches great importance in helping to bring children to school, adding: "It is our objective to have every single refugee child in at least primary school everywhere; as well as providing them with health support in cooperation with the World Food Programme."

Guterres reiterated that the UNHCR is in constant dialogue with governments so that an enabling environment can be created for the refugees to farm and engage in some economic activity, rather than to be totally dependent on international assistance.

He explained that, at times, there are great difficulties in trying to mobilize other development agencies to provide the refugees with job opportunities and community development projects that might be relevant for the success of their integration.

New asylum policies

It is to be expected that new asylum policies by countries and inter-governmental institutions may impact not only the refugees themselves, but also the activities of the UNHCR. One such development is the future of the European Union's asylum policy, as the Union seeks to achieve a Common European Asylum System by 2010. As in the Schengen areas of Europe, where people move freely, it is important to have consistency within the different asylum systems. To buttress this point, Guterres gave the example that "Austria grants refugee status to about 70 per cent of Iraqi asylum seekers, but some countries in Europe grant such persons almost zero asylum."

He said it is essential to have a consistent European Asylum System, as there is more and more common space where people can travel freely. Said Guterres: "The most important objective for us and one to which we are deeply committed, is to ensure that when a European asylum system is being built, it should be based not on a minimum expectation, but rather, it should translate itself into an upgrade of the European protection capacity for refugees."

The former Prime Minister of Portugal said with emphasis: "We want Europe to remain a continent of asylum. We do not want Europe to dump on other continents the task of protection, but to fully assume its responsibilities."

In the implementation of its mandate, the field staff of the UNHCR operate at times in very dangerous environments. However, they have been coping with these daunting challenges and in spite of their encounter with danger, they have continued to extend their helping hand to millions of refugees and displaced persons around the world. Such commitment is not surprising as the UNHCR works on the premise that, concerning the human being, what the Commission gives is much more important than what it receives.

Guterres sees such huge motivation in his staff because "they feel they are doing something good and that their actions can translate into concrete improvements in the lives of sisters and brothers around the world."

The security conditions in some operations are so challenging that in several circumstances, it is difficult to strike a balance between the security of UNHCR staff and the need to believe and act. Guterres said that whenever he went to countries where security conditions were tough and when at times UNHCR compounds look like fortresses, he always saw that as a major impediment to contact and the capacity to establish confidence with the population.

He said that, in many instances, UNHCR staff live and work in conditions whereby they consider their personal security as secondary in relation to the capacity to deliver.

In conclusion, Guterres said: "Unfortunately, in some circumstances, we have casualties as people die as victims of violence. However, if you do not accept a certain level of risk, you will not be able to deliver protection to those who are in real need." He added: "If our staff are at risk, the population they try to support is at much bigger risk and we should never forget that."

Palestine:

Cultivating hope through micro-finance

L–r: Alex Pollock, Director Microfinance and Microenterprise Programme, UNRWA; Filippo Grandi, Deputy Commissioner-General, UNRWA; Audrey Haylins, Information Officer, OFID, during the interview.

Filippo Grandi, Deputy Commissioner-General of the United Nations Relief and Works Agency (UNRWA) for Palestinian Refugees in the Near East, visited the Headquarters of the OPEC Fund for International Development (OFID) in Vienna recently to take receipt of a $4.5 million contribution towards UNRWA's micro-finance programme in Palestine. In this interview, Grandi talks about the social and economic environment in Palestine, as well as the vital role played by micro-finance in sustaining lives and livelihoods.

By any definition, Palestinians today are enduring one of the most difficult periods of their turbulent history. Closures and other movement restrictions are slowly strangulating the economy, halting trade, creating massive unemployment and leading to unprecedented depths of poverty. The situation is particularly severe in Gaza, where a recent visit by Filippo Grandi, Deputy Commissioner-General of the United Nations Relief and Works Agency (UNRWA) for Palestinian Refugees in the Near East, prompted the dire warning: "Gaza risks becoming a virtually 100 per cent aid dependent, closed-down and isolated community … if the present regime of closures continues."

As the world wearies of the ongoing political impasse in Palestine, it can be all too easy to forget the ordinary people at the heart of the crisis. With their economy under siege and living conditions deteriorating by the day, what room can there be for hope among the men, women and children of the occupied territories?

Although the international community remains generous in its commitment to meeting the basic emergency needs of Palestinians, this, according to Grandi, can only be regarded as a stop-gap measure. "Humanitarian assistance does not tackle the longer-term future of the people and contributes to creating a sense of hopelessness and despair," he said. One

of the most serious consequences of this, he warns, is an increase in "political radicalism".

While certainly not providing all the answers, there is strong evidence that access to micro-financing is one way of giving Palestinians a vital lifeline. As Grandi explained: "Micro-financing helps to combat the dangerous symptoms of economic despair and loss of dignity, by providing crucial resources that households and businesses can use to build a better future."

Micro-finance has a particularly vital role to play in Palestine, where the economy is based almost exclusively on small enterprises, and micro-financing is one of the few resources available to people to create employment opportunities for themselves. The majority of businesses are family-owned, with all but a fraction employing less than ten people. Rather than being highly profitable, however, "many are informal in nature and are little more than survival mechanisms," Grandi pointed out.

As is often the case in crisis situations, it is the women of Palestine who shoulder the burden of survival. This is especially true in Gaza, where large numbers of street, home and market-based enterprises are run by women working to meet the basic needs of their families. According to Grandi, women's heavy involvement in the marketplace is largely due to historical reasons.

"Most of the women in Gaza come from coastal villages and have always been very close to the sea and to the trading markets. As a result, they have developed a certain expertise in finding economic opportunities where few seem to exist."

Unfortunately, most of these opportunities are small and informal, and therefore excluded from access to formal credit facilities.

Another key vulnerable group is the youth. With the ongoing economic decline in the West Bank and Gaza, youth unemployment of more than 50 per cent has become a major social problem. More and more young people are leaving school or university and entering the workforce with little or no hope of finding a job.

Unlike their parents and grandparents, who lived at a time when there were no borders, most of today's youth in Gaza have never left there. While the generation before them travelled daily to Israel to work, spoke some Hebrew and had a connection with and an understanding of Israeli society, these young people are growing up with the narrowest of horizons, in an environment of despair.

According to Grandi, the subsequent disenchantment has the potential to bring about grave consequences: "Young people (especially in Gaza) are starting to believe that there is no real willingness to find a solution to their problems. Their conclusion may be to make their case heard in a very dangerous way ... through the resumption of suicide attacks, for example."

UNRWA has long recognized the critical role of micro-financing in addressing some of Palestine's social and economic difficulties. It's micro-finance and micro-enterprise programme (MMP) has been running successfully in the West Bank and Gaza since June 1991. Today, the MMP comprises five revolving loan funds, each targeting different segments of the population, but with a strong focus on women and youth.

In explaining the programme, Grandi said: "We define UNRWA's focus as human development. The solution to the refugee problem belongs to the political domain and has to be addressed in that context. In the interim, UNRWA provides the refugees with opportunities, and the MMP is the most significant example of this approach. Nothing we do will solve the refugee problem, but, in the meantime, we can alleviate and improve conditions."

The diversity of products available under the MMP provides a wide outreach into all areas of Palestinian society. Designed especially for women, the *Solidarity group lending product* represents a scarce and vital resource for women seeking to develop micro-businesses and support their families. The *Small-scale enterprise product* offers support to business ventures operating predominantly in the manufacturing and services sectors. For micro-entrepreneurs, working capital is available through the *Micro-enterprise credit product.*

Two newer products include *consumer lending*, which provides short-term funds to assist families, especially young people, through periods of hardship, such as unemployment, and *housing loans,* which target middle-class salaried employees and help build or improve property.

Over the past 16 years, literally thousands of Palestinians have benefited directly from credit provided through UNRWA's MMP. Many thousands more have bene-fited as dependents of loan recipients. That alone is testa-ment to the programme's success. Grandi's concern at the present time, however, is how UNRWA's work in Gaza is being undermined by the current crisis.

"While demand for credit is on the rise in the West Bank, where the economy is enjoying a more positive dynamic. In Gaza people are taking fewer and smaller loans because of the fall-out from the siege and boycott," he explained.

It's a situation, Grandi fears that even micro-finance cannot help.

The PalFund

OFID's involvement in micro-financing in Palestine began in 2004, when it set up its own dedicated fund, the PalFund, and entrusted its administration to UNRWA, within the context of that agency's successful micro-finance and micro-enterprise program (MMP). Endowed with initial resources of $2.5 million, the PalFund has revolved four times since its inception, providing more than 9,000 loans with a total value of more than $10m.

PalFund loans are extended through two MMP products — *Solidarity group lending,* which targets women in the Gaza Strip, and *Micro-enterprise credit,* which is available to micro-businesses in both Gaza and the West Bank. First-time loans are very small, usually in the region of about $600, but the amount may increase with each subsequent loan cycle, providing the client has repaid his/her previous loan on time and the business can service a larger loan.

To date, more than 6,600 clients have benefited from the PalFund, which has financed enterprises in the commerce, services, industrial and agricultural sectors. Over one-quarter of all clients are women, who are engaged in street or market trade, or in home-based activities, such as sewing and baking. Youth outreach is another core focus of the fund, and aims to provide young people with income generating opportunities that will help support their households and enable them to marry. Currently, youths aged between 15 and 25 account for about one-fifth of the PalFund portfolio.

OFID's latest contribution to the PalFund brings its resources to $7m, making OFID the largest single sponsor of UNWRA's micro-finance activities.

Above and right: From reconditioned appliances to groceries, micro-enterprises form the backbone of the Palestinian economy.

Great oaks from little acorns grow

A small amount of money is often all it takes to turn a simple idea into a profitable business venture. One Palestinian who has done just that is Seham Al-Thayer, a 43-year-old refugee living with her husband and 14 children in Jabalia refugee camp in the northern part of the Gaza Strip.

Seham Al-Thayer runs a profitable film business in Gaza with the help of micro-financing.

This is her story:

In 1994, Seham noted that, due to the conservative community culture, there was a high demand for female camera-persons, especially during the summer season. Together with her husband, who is experienced in film photography, she decided to establish a video filming and video tape retail business. As she had no technical expertise, Seham undertook training alongside an experienced camera-person in Gaza. In 1995, using her family savings of just $3,000, she renovated part of her house to be used as a place for her new business.

Seham started to provide a video filming service for weddings and other occasions to neighbours and friends, while her husband took care of selling video tapes at home. As the business started to prosper, Seham used the profits together with an initial *Solidarity group lending* credit of 1,500 new Israeli sheqalim to purchase more equipment.

She has since succeeded in building a good business reputation in terms of quality, reasonable prices and timely service delivery, while demand for her services has grown rapidly. To cope with the increasing demand, Seham has invested in more advanced equipment, using part of her business income and additional UNRWA financing.

As UNRWA financing proved feasible, Seham continued to borrow and showed a high commitment in repaying her monthly installments in a timely manner. She has increased her business sales and subsequently her income, which has helped towards meeting growing household needs.

Using her business savings, Seham helped her son to cover part of his marriage costs, for example. Since joining the programme, Seham has received a total of 12 loans, the last of which is still active. Today, she has accumulated business assets of about $10,000 and makes a monthly income of about $500.

Text and photos provided by UNRWA.

This section includes highlights from the OPEC Monthly Oil Market Report (MOMR) for December 2007 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.

Crude oil price movements

OPEC Reference Basket

The OPEC Reference Basket averaged November at $88.99/b, $9.63 or over 12 per cent higher than the October figure and a monthly record high. The weak United States dollar and winter fuel demand dominated events with speculative funds moving further into the energy market. Perception over higher OPEC output and lower IEA demand growth failed to take the heat out of the market. In the early part of the month under review, the market, although remaining bullish, was characterized by sharp volatility. While Mideast geopolitical developments calmed the market, unrest in Pakistan ignited fears over supply disruptions.

On the US market, Nymex WTI crude averaged the month at a record $94.90/b for a gain of $9, or over ten per cent.

In the North Sea, crude prices were also firmer amid improved refining margins. Brent averaged the month at a record-high of $92.62/b for a gain of $10.12, or over 12 per cent, from the previous month.

In the Mediterranean market prices increased on the back of tight supply and rising demand and despite Iraq's sales of Kirkuk crude. Healthy refining margins also supported regional grades. The monthly average for Urals crude was $90.20/b.

In the Middle Eastern market, improved refining margins and continued winter demand from Northeast Asia supported regional crudes. Dubai averaged the month at $88.39/b.

World oil demand in 2007

In reviewing the oil demand picture for 2007, the report said world oil demand showed growth of 1.2 million barrels per day, or 1.4 per cent, year-on-year to average 85.74m b/d in 2007.

Non-OECD countries accounted for all of the 2007oil demand growth, while OECD oil demand showed a minus of 65,000 b/d y-o-y. The late arrival of winter in most OECD countries caused fourth-quarter oil demand to grow moderately in the region, reaching only 500,000 b/d y-o-y. "Eighteen months after the initial forecast, OPEC's oil demand forecast (for 2007) is still accurately reflecting market reality," commented the report.

World oil demand started 2007 with weak growth in the first quarter because of the warm winter in both OECD Europe and the Pacific. First-quarter oil demand growth lost more than half of its previous forecast. However, an increase in non-OECD oil demand led to total growth of 1.3m b/d and 1.2m b/d in the second and third quarters and as the winter is still mild in most of the Northern Hemisphere, oil demand is expected to grow by only 1.7m b/d in the fourth quarter.

Demand for OPEC crude in 2007 is expected to have averaged 31.71m b/d, an increase of 140,000 b/d over the 2006 figure. On a quarterly basis, demand is forecast to have averaged 31.75m b/d, 30.67m b/d, 32.03m b/d and 32.40m b/d, respectively. Ecuador figures are now included in OPEC supply.

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).

For 2008, demand for OPEC crude is expected to average 31.39m b/d, a decline of 322,000 b/d compared with the 2007 figure. On a quarterly basis, is forecast to average 31.91m b/d, 30.44m b/d, 31.27m b/d and 31.95m b/d, respectively.

As a result of a decline in demand in the first three quarters of the year, total OECD oil demand growth in 2007 is estimated to have declined by a marginal 70,000 b/d to average 49.25m b/d, with North American oil demand growth forecast at only 100,000 b/d y-o-y

Developing countries maintained their oil demand strength in 2007, accounting for 59 per cent of total global oil demand growth. Indian economic growth of 8.5 per cent yielded oil demand growth of 4.9 per cent, or 130,000 b/d. Robust car sales, along with booming industrial and agricultural activities, were the main drivers for the increased oil demand.

The strong Indian oil demand boosted other Asia demand to show growth of 180,000 b/d y-o-y for 2007.

The Middle East, which saw its gross domestic product (GDP) grow by five cent in 2007, 0.3 per cent down from 2006, is expected to have recorded a 290,000 b/d rise in its 2007 oil demand to an average of 6.48m b/d.

Among other regions, China's oil demand growth is expected to have exceeded six per cent, or 440,000 b/d, to an average of 7.6m b/d in 2007, with impressive economic activity again behind the strong demand for energy.

In OECD Europe, high gasoline prices, along with the shift towards diesel-powered engines, caused Europe's oil demand to show a strong decline during the summer. Gasoline demand in Germany, Italy and France fell by nine per cent, seven per cent, and five per cent y-o-y, respectively, in the first three quarters of 2007.

In addition to the warm winter early in the year, this strong loss in transport fuel across Europe sharply depressed oil demand. Hence, Europe OECD oil demand was revised down by 30,000 b/d for the year.

Strong economic growth of eight per cent in the Former Soviet Union (FSU) resulted in its apparent oil demand expanding by 2.3 per cent or 90,000 b/d y-o-y in 2007. Most of this demand growth is attributed to Russia.

World oil demand in 2008

World oil demand is forecast to grow by 1.3m b/d in 2008 to average 87.1m b/d, unchanged from OPEC's last estimate. Transport and industrial fuel use are the sectors growing most in world oil demand this year.

Non-OECD countries will account for 1.1m b/d, or 80 per cent, of total global oil demand growth in 2008, while OECD countries' oil demand growth will be mostly attributed to North America. China's oil demand is forecast to grow by 400,000 b/d y-o-y in 2008 to average 7.98m b/d. The Middle East and other Asia are expected to contribute 420,000 b/d, or 32 per cent, to 2008 world oil demand growth.

World oil supply in 2007

Preliminary figures for the month of November indicate that world oil supply averaged 85.72m b/d, almost the same level as in the previous month, with OPEC's share put at around 36.7 per cent.

Supply from non-OPEC producers in 2007 is expected to have increased by 720,000 b/d to a level of 49.62m b/d, following a downward revision of 103,000 b/d compared with last month's assessment. Downward revisions were made to the US, Canada, the United Kingdom, Australia, Vietnam, Brazil and Russia, with minor upward revisions in other countries.

The third and fourth quarters witnessed significant downward revisions of around 197,000 b/d and 179,000 b/d, respectively, while the first and second quarters have been revised down by 24,000 b/d and 10,000 b/d, respectively.

On a quarterly basis, non-OPEC supply for 2007 now stands at 49.79m b/d, 49.52m b/d, 49.08m b/d and 50.08m b/d, respectively.

Total OECD oil supply in 2007 is expected to have reached 20.23m b/d, an increase of around 43,000 b/d over the previous year. On a quarterly basis, OECD oil supply is expected to have averaged 20.47m b/d, 20.25m b/d, 19.86m b/d and 20.36m b/d, respectively.

North American supply is estimated to have expanded by 149,000 b/d over 2006 to reach a level of around 14.39m b/d, while the OECD Pacific is forecast to have seen supply growth of 67,000 b/d to 630,000 b/d in 2007.

However, Western Europe is slated to have seen a decline of around 173,000 b/d in its supply growth compared with 2006, reaching a level of 5.21m b/d in 2007. Most of the supply loss is attributed to Mexico, Norway and the UK which are estimated to have seen declines of 162,000 b/d, 221,000 b/d and 57,000 b/d, respectively.

World oil demand is forecast to grow by 1.3m b/d in 2008 to average 87.1m b/d.

Oil supply in the US is expected to have reached 7.49m b/d, representing growth of 136,000 b/d over 2006 and a downward revision of 12,000 b/d from OPEC's last assessment.

Canadian oil supply for 2007 is forecast to have averaged 3.37m b/d, an increase of around 174,000 b/d over the previous year and a downward revision of 10,000 b/d from the last OPEC report.

Mexico's oil supply for 2007 is unchanged from last month's assessment of 3.53m b/d, which represents a decline of 162,000 b/d from 2006.

Oil supply in Western Europe is expected to have sunk to a level of 5.21m b/d in 2007, representing a decline of 173,000 b/d from the 2006 figure and an increase of 12,000 b/d over last month's OPEC assessment.

Norway's 2007 supply remains unchanged from the previous month's assessment, averaging around 2.56m b/d, which represents a decline of 221,000 b/d from the 2006 figure.

The UK's total supply for 2007 is now expected at have amounted to 1.65m b/d, a decline of 57,000 b/d from the previous year and 5,000 b/d adjustment from last month's assessment.

In the Asia Pacific, 2007 oil supply is expected to have averaged 640,000 b/d, up by 67,000 b/d over the 2006 figure and a downward revision of 12,000 b/d from last month's OPEC assessment.

Australia's oil supply is forecast to have averaged 550,000 b/d in 2007, 39,000 b/d more than in 2006 and a downward revision of 16,000 b/d from OPEC's previous assessment.

New Zealand's performance is expected to have added 29,000 b/d to its 2007 supply total to a level of around 80,000 b/d.

In the developing countries, 2007 oil supply is expected to have reached 10.99m b/d, which represents growth of 54,000 b/d over 2006 and a downward revision of 41,000 b/d from OPEC's last assessment.

Non-OPEC supply is expected to average around 50.74m b/d in 2008, an increase of 1.12m b/d over last year.

Other Asia is expected to have experienced stagnant supply in 2007 at a level of around 2.71m b/d, a downward revision of 29,000 b/d from OPEC's last assessment.

Latin American oil supply is expected to have averaged 3.92m b/d in 2007, representing growth of 53,000 b/d over 2006 and a downward revision of 23,000 b/d from OPEC's last assessment.

Supply from African countries in 2007 is expected to have averaged 2.69m b/d, up by 84,000 b/d over the previous year and representing an upward revision of 7,000 b/d from OPEC's last assessment.

Oil supply in the FSU in 2007 is expected to have averaged 12.55m b/d, representing growth of 530,000 b/d over the previous year and a downward revision of 11,000 b/d from OPEC's last report.

Other Europe supply is expected to have remained flat from 2006 at 150,000 b/d, while China is forecast to have grown by 82,000 b/d to reach a level of around 3.78m b/d in 2007, a downward revision of 28,000 b/d from last month's OPEC report.

Russian oil supply is expected to have reached 9.88m b/d in 2007, representing growth of 227,000 b/d over 2006, while, in the Caspian, oil supply in Kazakhstan is expected to have grown by 56,000 b/d to 1.36m b/d, in 2007, unchanged from OPEC's last assessment.

Oil supply in Azerbaijan is expected to have expanded by 238,000 b/d to a level of 890,000 b/d in 2007, also unchanged from OPEC's last assessment.

Oil supply in China is expected to have averaged 3.78m b/d in 2007, representing growth of 82,000 b/d over 2006.

Non-OPEC supply is expected to average around 50.74m b/d in 2008, an increase of 1.12m b/d over last year and a downward revision of 15,000 b/d from last month. On a quarterly basis, non-OPEC supply is expected to average 50.69m b/d, 50.30m b/d, 50.35m b/d and 51.62m b/d, respectively.

World oil supply in 2008

In the US, the 2008 annual supply figure is forecast at 7.70m b/d, representing growth of 203,000 b/d over the 2007 estimate and unchanged compared with the previous month.

Canada's oil supply level has been revised down by 22,000 b/d since the previous month as a result of extended downward revisions to the 2007 figure. The annual average is now forecast at 3.39m b/d, representing growth of 15,000 b/d over 2007.

Western Europe was revised up by 5,000 b/d to reach a supply level of 4.91m b/d and representing a decline of 306,000 b/d below 2007, as the revisions made to the current year have been extended through 2008.

Russia's oil production has been revised down by 41,000 b/d, due to revisions to the 2007 figure, in addition to some slight changes in the ramping-up of some fields. Russia's oil supply is now forecast to reach 10.10m b/d in 2008, which represents growth of 222,000 b/d over 2007.

In China, supply is forecast to reach 3.83m b/d in 2008, which is 56,000 b/d more than the 2007 estimate and broadly unchanged from OPEC's last assessment.

OPEC oil production

Total OPEC crude oil production averaged 31.45m b/d in November, a decline of 131,000 b/d from the October figure, according to secondary sources. Excluding Iraq, OPEC output averaged 29.15m b/d in the month, representing a decline of 150,000 b/d from October.

A significant decline of around 481,000 b/d in the United Arab Emirates (UAE), due to maintenance at the Zakum field, was partially offset by increases of 125,000 b/d and 84,000 b/d from Saudi Arabia and Angola, respectively, with a minor decline seen in Iran. Following the resumption of its full membership in the Organization, Ecuador is now included in all OPEC figures.

In 2007, OPEC's production of natural gas liquids (NGLs) and non-conventional oils is expected to have averaged 4.39m b/d, an increase of 330,000 b/d over the previous year. In 2008, the annual output figure may reach 4.91m b/d, up by 520,000 b/d.

Downstream activity

Looking downstream, the report said that the perception of a tight distillate market, along with an early cold snap in the Atlantic Basin, caused product price increases to outstrip the sharp rise in crude oil prices, lifting refining margins across the globe.

However, the situation has eased as product stocks expanded, especially in the US, mitigating the perception of market tightness and putting pressure on both the physical and futures product markets.

Refining margins for benchmark WTI crude on the US Gulf Coast increased by $1.05/b to $4.85/b in November, from $3.80/b in October. In Europe, refinery margins for Brent in Rotterdam surged by $2.26/b to reach $5.42 /b, compared with $3.16/b in October.

In Asia, the market continued its previous upward trend as local refiners benefited from robust regional demand and strong arbitrage opportunities for middle distillates to Europe. Refining margins for benchmark Dubai crude in Singapore rose by $1.38/b to $6.36/b in November from $4.98/b the previous month.

Refinery operations have been facing planned and unplanned outages over the first ten months of 2007, which affected the entire petroleum complex. Most autumn maintenance schedules were completed in the latter part of November, which led to higher utilization rates in the month compared with previous months.

Although declining slightly from the previous month, the refinery utilization rate in the US increased by two per cent in the last two weeks of November, compared with the previous two weeks.

In Europe, refinery throughputs also surged with the utilization rate rising by three per cent to 85.4 per cent in November from 82.4 per cent the previous month.

Asian refineries saw a similar trend, with refinery operations improving in most countries. In Japan, the utilization rate jumped to 89.3 per cent from 81.1 per cent in October.

"Due to higher demand for middle distillates and the need to build gasoline stocks prior to the spring maintenance schedule, refinery utilization rates are expected to increase significantly over the coming months," said the report.

Oil trade

Regarding oil trade, US crude oil imports increased by more than three per cent in November from the previous month as refinery utilization rates improved. Declining crude oil stocks also supported the rise in imports.

However, continuing backwardation in the futures market, as well as improved refinery throughput, halted any significant stock-build in November, compared with a month earlier. On an annual basis, US crude oil imports registered a 1.5 per cent increase in November.

US product imports declined by around six per cent in November, compared with the previous month. The increased refinery throughput was attributed to the drop in US product imports.

All major product imports declined in November with gasoline imports decreasing by around six per cent from a month earlier. Imports of kerosene and distillates also declined in November, despite increased demand.

The rise in distillate production in November was one of the main reasons for the decline in imports. US fuel oil imports fell in November from the previous month as production increased and demand decreased.

US crude oil exports remained relatively steady in November, while product exports increased by more than three per cent to reach the highest level since January. Compared with the same period in 2006, US product exports registered an eight per cent drop in November.

As a result, US net oil imports increased slightly by less than one per cent in November from the previous month, but saw an annual increase of around six per cent. The increase in net crude oil imports supported total US net oil imports, offsetting the decline driven by net product imports.

According to estimated data, Japan's crude oil imports rose by around two per cent in November from the previous month to mark the highest level since July.

The increase came on the back of higher refinery throughput as some refineries returned from maintenance. Refiners' efforts to rebuild kerosene stocks for heating during the winter season supported crude oil imports as did direct burning requirements for power generation.

On an annual basis, Japan's crude oil imports registered an increase of more than seven per cent in November.

In contrast, Japan's product imports fell by around seven per cent in November from the previous month. The increase in refinery throughput supported the decline in product imports.

Refinery operations have been facing planned and unplanned outages over the first ten months of 2007.

On the export side, Japan's product exports fell by more than 14 per cent in November, compared with a month earlier. Limited arbitrage opportunities, as well as Japanese refiners prioritizing supplying products to the local market over exports supported the decline.

However, Japan's product exports surged by 61 per cent in November, compared with the same period last year.

Therefore, Japan's net oil imports increased by more than two per cent in November from the previous month, supported by rises in both net crude oil and product imports.

However, despite the monthly increase, Japan's net oil imports indicated a decline of less than one per cent in November, compared with the same period last year. Net product imports indicated a sharp annual decline of more than 70 per cent in November.

Stock movements

Regarding stock movements, US commercial oil stocks followed their seasonal trend, falling by a further 12m b to stand at 1,002m b at the end of November, which was around 4m b above the five-year average. The drop was roughly split between crude oil and products.

Commercial crude oil stocks dropped for the fifth consecutive month to stand at 305m b, a decline of 6.9m b from October. The bulk of the draw took place in the last week of the month when stocks lost almost 8m b, due to a decline of nearly 1m b/d in US imports. This was essentially the result of the disruption in Canadian supplies from the temporary closure of the Enbridge pipeline following a fire.

"Despite criticism that filling the SPR is contributing to higher crude oil prices, the US Department of Energy is expected to continue its policy ..."

With this drop, US crude oil stocks have lost some 50m b since the end of June and the gap with the five-year average has narrowed from around 40m b at that time to just 2.3m b at the end of November.

The backwardation in the market, although narrowed, continued to contribute to the draw on stocks. In terms of forward cover, commercial crude oil stocks represented more than 20 days, which was above the five-year average.

Following the same trend, product inventories fell by 5.2m b. Gasoline stocks surged by 5.5m b to offset the draw of the previous month, standing above 200m b for the first time since last July. This significant build was attributed to the combination of strong imports and lower demand.

When expressed in terms of forward cover, gasoline stocks represented about 21 days, or one day below the five-year average.

In contrast, distillate stocks reversed the upward trend, falling by 3.2m b in November to stand at 132.2m b. Despite the draw, distillate stocks remained above the five-year average and close to the upper end of the range. In terms of forward cover, they were one day lower than the five-year average.

Comparing the products, the picture remained almost the same with diesel showing a surplus of around 20 per cent with the five-year average, while heating oil saw its deficit with the five-year average increase as stocks followed a downward trend, helped by the cold snap in the US Northeast, the main consuming region.

Similarly, residual fuel oil and jet fuel stocks fell by 10,000 b and 1.6m b, respectively.

The US Strategic Petroleum Reserve (SPR) increased by a further 1.4m b in November to hit a figure of 695.4m b, the highest level in more than two years.

"Despite criticism that filling the SPR is contributing to higher crude oil prices, the Department of Energy is expected to continue its policy of filling the SPR with a programme of more than 12m b of royalty-in-kind over a period of six months starting next January," commented the OPEC report.

Contracts to deliver crude oil have already been awarded to Shell, Sunoco, and BP.

EU-16 (EU-15 plus Norway) total oil stocks continued their downward trend in November, falling by 13.8m b, or 1.2 per cent, to 1,114m b, almost the same level as the five-year average, but the lowest level since April 2005.

The overhang with the five-year average narrowed rapidly over the previous six months, falling from 75m b at the end of May to just 1m b at the end of November. The drop was attributed to middle distillates, which accounted for more than 85 per cent of the total draw.

The recovery in crude oil stocks, which took place in October after four consecutive declines, did not continue in November and inventories fell to 481m b, but remained 9m b, or two per cent, above the five-year average. The surplus with the five-year average also narrowed after having reached 30m b last May. The draw of 2.6m b was driven by growing refinery runs as some refineries started to return from maintenance.

Product stocks fell by a further 11m b in November to stay below the five-year average for the first time this year. At 633m b, product stocks showed a deficit of around 8m b, or one per cent, with the five-year average in November from a surplus of 56m b, or ten per cent, at the end of the third quarter.

Middle distillates, which fell by a substantial 11.8m b to 370m b – the third decline in a row – were the main driver of the draw, due to the combination of healthy demand and tight supply, as a result of refinery shutdowns from the previous months.

Gasoline stocks continued to decline, although at a slower pace, on the back of low production from refineries, to remain just below the lower end of the five-year range. They dropped in November by around 1m b to 122.5m b, leading to an increase in the deficit to the five-year average, corresponded to 15m b, or 11 per cent.

Following the same trend, residual fuel stocks inched down by 300,000 b to 112.7m b, almost the same level as a year earlier. The only exception came from naphtha, which saw a stock-build of 1.8m b, or around seven per cent, to 28.2m b.

In Japan, preliminary data from PAJ show that, for November, the country's commercial crude oil stocks remained virtually unchanged at around 188m b, whereas major product inventories rose to around 90m b at the end of the month.

Table A: World crude oil demand/supply balance														*m b/d*
World demand	**2003**	**2004**	**2005**	**2006**	**1Q07**	**2Q07**	**3Q07**	**4Q07**	**2007**	**1Q08**	**2Q08**	**3Q08**	**4Q08**	**2008**
OECD	48.6	49.4	49.7	49.3	49.8	48.2	48.8	50.3	49.3	50.3	48.2	48.7	50.8	49.5
North America	24.5	25.4	25.5	25.3	25.7	25.4	25.4	25.7	25.6	26.0	25.6	25.6	26.0	25.8
Western Europe	15.4	15.5	15.6	15.6	15.3	15.0	15.4	15.8	15.4	15.5	14.9	15.4	15.9	15.4
Pacific	8.6	8.5	8.6	8.4	8.8	7.8	7.9	8.8	8.3	8.9	7.7	7.7	8.9	8.3
Developing countries	20.6	21.8	22.5	23.3	23.7	24.0	24.1	24.2	24.0	24.3	24.6	24.7	24.8	24.6
FSU	3.7	3.8	3.9	3.9	3.9	3.7	4.0	4.3	4.0	3.9	3.8	4.1	4.4	4.0
Other Europe	0.8	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	1.0	1.0	0.9	0.9	1.0
China	5.6	6.5	6.5	7.1	7.5	7.8	7.7	7.4	7.6	7.8	8.1	8.2	7.8	8.0
(a) Total world demand	**79.3**	**82.3**	**83.5**	**84.5**	**85.8**	**84.6**	**85.5**	**87.1**	**85.7**	**87.4**	**85.6**	**86.5**	**88.7**	**87.1**
Non-OPEC supply														
OECD	21.7	21.3	20.5	20.2	20.5	20.3	19.9	20.4	20.2	20.6	20.0	19.8	20.6	20.2
North America	14.6	14.6	14.1	14.2	14.4	14.5	14.3	14.5	14.4	14.6	14.3	14.4	14.8	14.5
Western Europe	6.4	6.2	5.8	5.4	5.5	5.2	5.0	5.2	5.2	5.2	4.9	4.6	4.9	4.9
Pacific	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.8	0.8	0.9	0.8
Developing countries	10.3	10.5	10.8	10.9	11.0	10.9	10.9	11.1	11.0	11.3	11.4	11.6	11.7	11.5
FSU	10.3	11.1	11.5	12.0	12.5	12.4	12.5	12.8	12.5	12.9	13.0	13.1	13.3	13.1
Other Europe	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.4	3.5	3.6	3.7	3.8	3.8	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Processing gains	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	1.9
Total non-OPEC supply	47.7	48.5	48.5	48.9	49.8	49.5	49.1	50.1	49.6	50.7	50.3	50.4	51.6	50.7
OPEC NGLS and non-conventionals	3.7	4.0	4.1	4.1	4.2	4.3	4.4	4.6	4.4	4.7	4.8	5.0	5.2	4.9
(b) Total non-OPEC supply and OPEC NGLS	**51.4**	**52.5**	**52.6**	**53.0**	**54.0**	**53.9**	**53.5**	**54.7**	**54.0**	**55.4**	**55.1**	**55.3**	**56.8**	**55.7**
OPEC crude supply and balance														
OPEC crude oil production[1]	28.3	30.6	31.6	31.4	30.5	30.6	31.1							
Total supply	79.7	83.1	84.3	84.4	84.5	84.5	84.5							
Balance[2]	**0.4**	**0.8**	**0.8**	**-0.1**	**-1.3**	**-0.1**	**-0.9**							
Stocks														
OECD closing stock level *m b*														
Commercial	2517	2547	2597	2679	2600	2669	2648							
SPR	1411	1450	1487	1499	1503	1504	1517							
Total	3928	3998	4083	4177	4103	4173	4165							
Oil-on-water	882	905	958	910	911	905	895							
Days of forward consumption in OECD														
Commercial onland stocks	51	51	53	54	54	55	53							
SPR	29	29	30	30	31	31	30							
Total	**80**	**80**	**83**	**85**	**85**	**86**	**83**							
Memo items														
FSU net exports	6.5	7.3	7.7	8.1	8.6	8.7	8.5	8.4	8.6	9.0	9.2	9.0	9.0	9.0
[(a) – (b)]	**27.9**	**29.8**	**30.9**	**31.6**	**31.8**	**30.7**	**32.0**	**32.4**	**31.7**	**32.0**	**30.5**	**31.2**	**31.9**	**31.4**

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

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

Table A *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 Nov	Dec	2007 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Weeks 45–49 (week ending) Nov 9	Nov 16	Nov 23	Nov 30	Dec 7
Arab Light – Saudi Arabia	55.53	57.70	50.86	54.29	58.08	62.83	64.15	65.92	71.05	68.76	74.28	79.31	89.02	89.62	87.46	90.84	88.73	83.99
Basrah Light – Iraq	52.31	55.23	47.64	51.19	55.99	59.74	61.79	64.09	70.53	66.83	72.14	77.47	86.26	87.12	84.58	88.38	85.35	80.19
BCF-17 – Venezuela	46.86	48.56	42.68	48.04	50.27	54.93	56.06	60.68	65.79	62.78	66.35	72.20	81.87	82.98	81.46	83.52	80.04	77.30
Bonny Light – Nigeria	60.32	64.28	56.18	59.58	64.59	70.01	70.03	74.45	79.21	73.34	79.87	85.60	95.32	96.48	93.36	96.88	95.00	91.24
Es Sider – SP Libyan AJ	57.32	60.73	52.08	55.83	60.60	66.06	66.03	70.25	75.81	69.84	76.07	81.80	91.92	93.08	89.96	93.48	91.60	88.44
Girassol – Angola			51.99	56.66	60.77	66.44	66.52	69.00	74.42	69.81	75.48	80.23	90.21	91.00	88.02	92.28	90.11	87.11
Iran Heavy – IR Iran	53.97	55.75	47.91	51.87	56.39	61.41	62.72	64.77	69.65	66.60	72.63	77.30	87.17	87.69	85.56	88.77	87.37	84.15
Kuwait Export – Kuwait	53.56	55.69	48.42	52.33	56.22	61.07	62.06	63.61	67.73	65.91	71.94	76.33	86.23	86.76	84.57	87.80	86.44	82.22
Marine – Qatar	57.33	59.25	52.58	55.86	59.39	64.79	65.34	66.15	70.20	69.43	73.78	78.68	87.94	88.35	86.35	89.37	88.43	85.17
Minas – Indonesia	56.93	62.55	55.39	58.44	62.83	68.74	68.12	68.41	76.88	73.67	76.98	84.96	93.64	94.00	91.37	94.96	94.38	93.13
Murban – UAE	60.94	63.12	56.42	59.58	63.19	68.39	69.21	70.74	74.40	71.80	77.16	81.98	90.95	90.95	89.14	92.72	91.70	88.55
Saharan Blend – Algeria	59.77	63.55	55.78	59.58	64.30	69.71	70.13	74.05	78.21	73.44	78.60	84.45	94.57	95.73	92.61	96.13	94.25	90.84
OPEC Reference Basket	**55.42**	**57.95**	**50.79**	**54.56**	**58.59**	**63.55**	**64.48**	**66.89**	**71.89**	**68.71**	**74.18**	**79.36**	**88.99**	**89.68**	**87.35**	**90.71**	**88.78**	**84.97**

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

Crude/country	2006 Nov	Dec	2007 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Weeks 45–49 (week ending) Nov 9	Nov 16	Nov 23	Nov 30	Dec 7
Arab Heavy – Saudi Arabia	51.54	53.72	46.15	50.21	54.40	59.16	60.07	61.44	64.99	63.55	69.86	73.99	83.96	84.46	82.24	85.39	84.44	80.44
Brega – SP Libyan AJ	58.62	62.23	53.78	57.53	62.30	67.71	67.73	71.90	77.36	71.29	77.42	83.10	93.22	94.38	91.26	94.78	92.90	89.54
Brent – North Sea	58.62	62.23	53.78	57.43	62.15	67.51	67.38	71.55	77.01	70.74	76.87	82.50	92.62	93.78	90.66	94.18	92.30	88.94
Dubai – UAE	58.92	62.33	53.68	55.61	58.80	63.97	64.59	65.79	69.49	67.36	73.36	77.12	86.96	87.47	85.27	88.39	87.44	84.04
Ekofisk – North Sea	56.72	58.69	51.92	58.41	62.84	67.73	68.36	72.09	77.76	72.00	78.08	83.38	93.24	93.92	91.29	95.35	92.98	89.85
Iran Light – IR Iran	59.15	62.17	53.93	53.64	57.92	63.87	64.05	67.99	73.70	69.34	74.88	79.74	89.92	90.28	88.21	92.21	89.75	87.20
Isthmus – Mexico	55.39	56.98	49.12	53.48	56.78	60.60	60.60	65.40	71.11	66.60	72.65	78.79	88.59	88.54	87.24	91.94	87.44	84.46
Oman -Oman	53.34	56.82	48.90	55.82	59.19	64.45	65.04	66.08	70.09	68.34	73.56	77.55	87.16	87.64	85.42	88.59	87.65	84.43
Suez Mix – Egypt	57.37	59.35	52.38	51.38	56.16	61.27	61.34	65.42	71.44	66.94	71.41	76.90	87.60	88.52	86.00	89.85	86.81	83.53
Tia Juana Light[1] – Venez.	53.60	55.05	47.19	51.82	54.90	58.60	58.54	63.31	68.98	64.93	70.69	76.90	86.55	86.50	85.23	89.82	85.43	81.76
Urals – Russia	51.63	54.89	47.83	53.82	58.81	63.92	64.29	67.83	73.90	69.25	73.78	79.52	90.24	91.11	88.53	92.45	89.59	86.43
WTI – North America	55.95	57.95	50.13	59.21	60.63	63.85	63.46	67.44	73.98	72.37	79.69	85.87	94.91	95.80	93.69	97.74	92.50	88.74

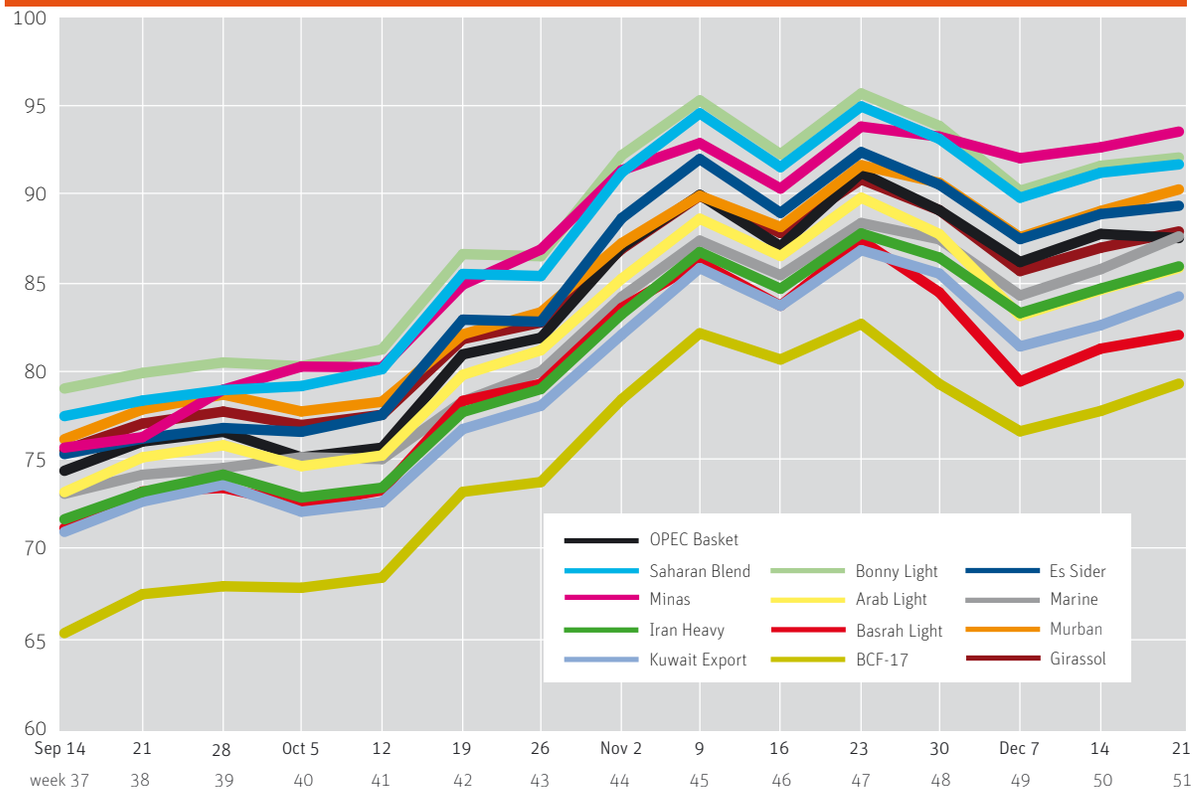
Note: As per the decision of the 108th ECB, the basket has been recalculated including the Angolan crude Girassol, retroactive January 2007. As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 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.

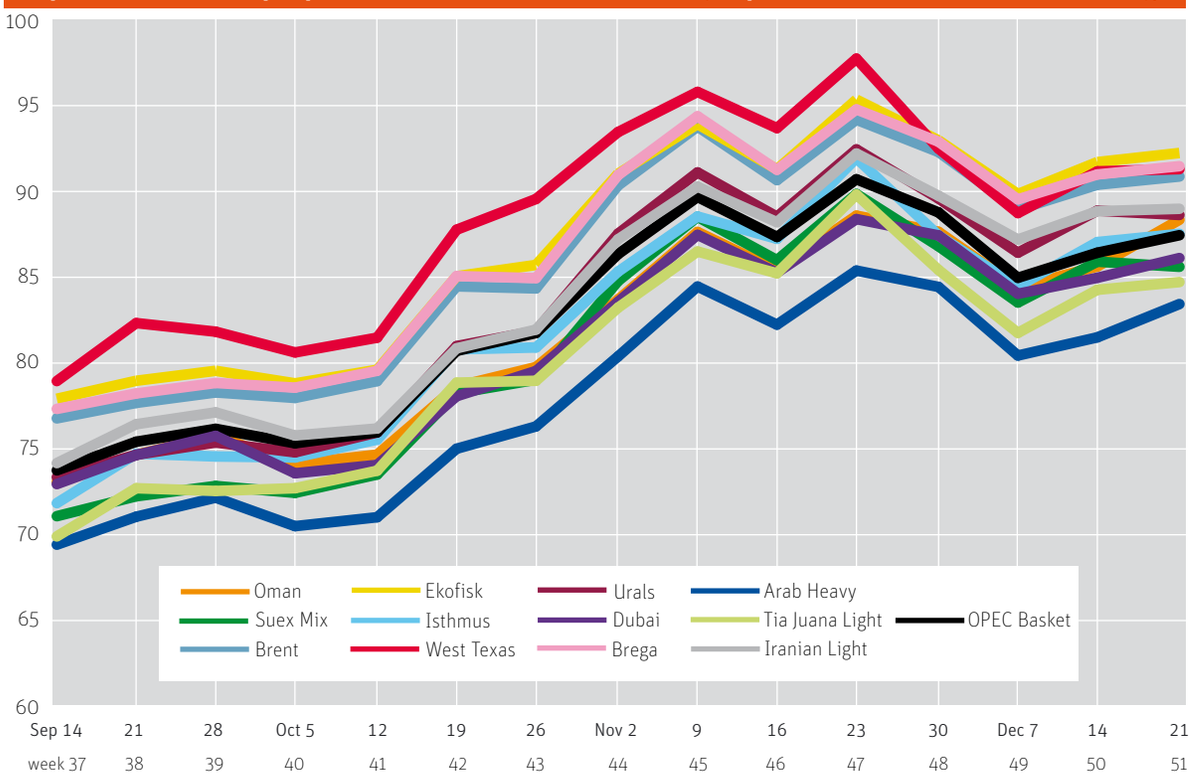
Brent for dated cargoes; Urals cif Mediterranean. All others fob loading port.

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, September to December 2007 *$/b*



Graph 2: Evolution of spot prices for selected non-OPEC crudes, September to December 2007 *$/b*



Note: As per the decision of the 108th ECB, the basket has been recalculated including the Angolan crude Girassol, retroactive January 2007. 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	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
	June	87.58	85.13	97.59	85.50	87.00	46.72	48.83
	July	89.84	84.15	96.78	89.12	90.01	52.66	54.01
	August	84.70	78.85	90.16	86.40	87.03	54.39	52.23
	September	91.24	84.36	94.47	94.83	93.42	54.49	55.65
	October	97.94	86.55	97.25	99.44	100.40	64.34	62.26
	November	108.46	97.79	109.03	118.34	115.45	72.16	70.61

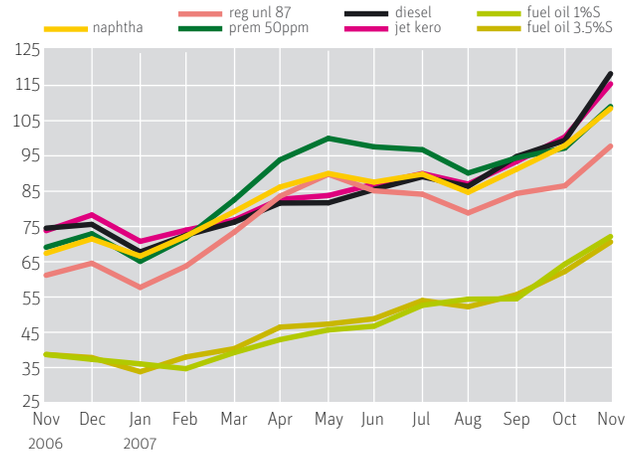


Table and Graph 4: South European market — spot cargoes, fob Italy

$/b

		naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1%S	fuel oil 3.5%S
2006	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
	June	72.68	97.63	85.44	52.59	48.68
	July	75.51	96.51	89.63	58.29	53.68
	August	71.54	89.06	87.56	55.92	52.70
	September	77.52	93.63	95.31	58.59	56.10
	October	82.97	96.73	99.29	64.04	62.37
	November	90.71	109.76	117.22	74.37	70.01

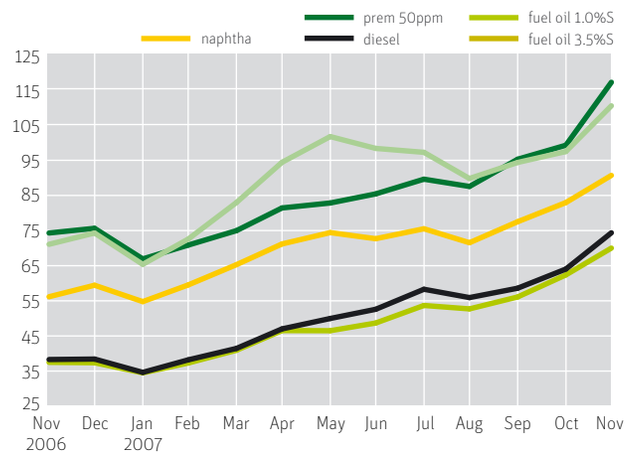
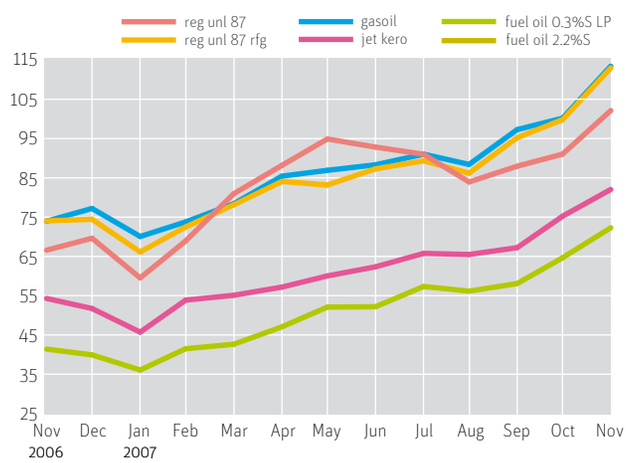


Table and Graph 5: US East Coast market — spot cargoes, New York

$/b, duties and fees included

		regular gasoline unleaded 87	gasoil	jet kero	fuel oil 0.3%S	fuel oil 2.2%S
2006	November	66.58	74.04	73.96	54.29	41.40
	December	69.62	74.46	77.21	51.73	39.92
2007	January	59.52	66.13	70.07	45.71	36.07
	February	68.93	72.49	73.77	53.86	41.49
	March	80.96	78.14	78.39	55.10	42.63
	April	88.17	84.08	85.43	57.18	47.06
	May	94.90	83.17	86.92	60.03	52.09
	June	92.84	87.29	88.32	62.34	52.18
	July	91.00	89.34	91.03	65.76	57.33
	August	83.95	86.19	88.42	65.49	56.16
	September	87.97	95.23	97.29	67.22	58.08
	October	91.05	99.82	100.20	75.24	64.66
	November	102.14	113.00	113.45	82.05	72.30



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	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	38.22
	March	75.60	72.12	78.27	38.63	38.22
	April	77.36	77.36	86.11	43.06	42.90
	May	81.49	81.02	87.42	48.09	48.03
	June	78.14	83.37	88.28	48.18	48.05
	July	77.87	86.29	90.57	53.33	53.28
	August	74.95	83.03	88.49	52.16	52.11
	September	84.08	91.46	96.31	54.06	54.03
	October	85.92	95.79	100.35	60.66	60.61
	November	95.46	108.38	112.97	68.30	68.09

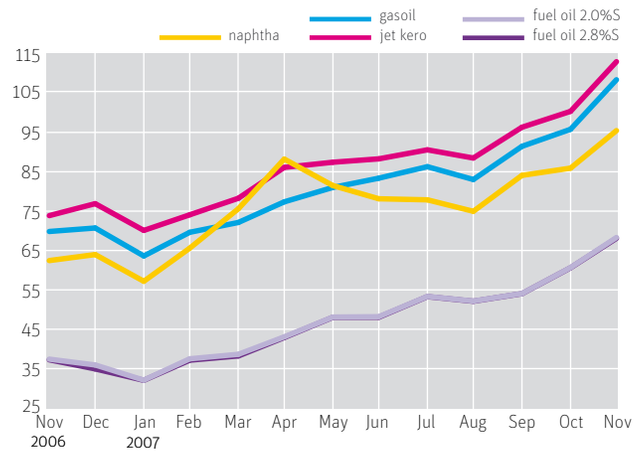


Table and Graph 7: Singapore market — spot cargoes, fob

$/b

		naphtha	premium gasoline unl 95	premium gasoline unl 92	diesel ultra light	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2006	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	75.02	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
	June	73.12	84.79	83.82	85.67	83.75	53.37	53.03
	July	75.10	85.35	84.36	89.57	87.16	57.53	57.39
	August	71.34	77.15	76.05	86.33	84.28	56.34	55.71
	September	75.28	82.51	81.35	93.78	90.44	58.90	58.15
	October	81.18	88.71	87.46	98.11	96.62	65.70	65.67
	November	91.38	100.29	98.94	112.26	112.77	74.21	73.95

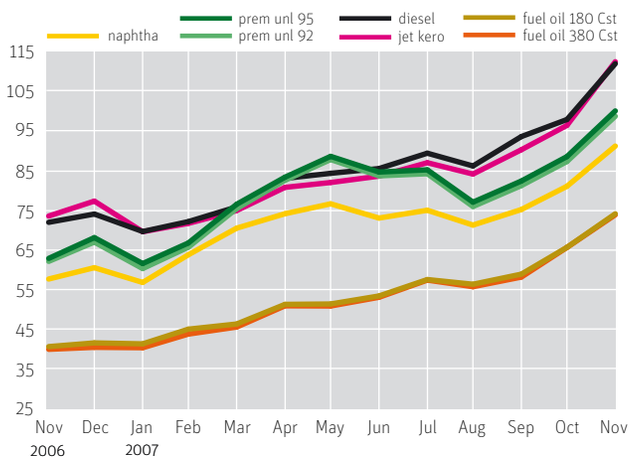
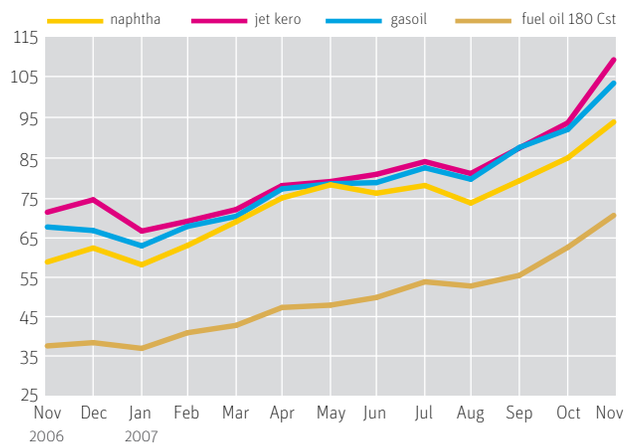


Table and Graph 8: Middle East Gulf market — spot cargoes, fob

$/b

		naphtha	gasoil	jet kero	fuel oil 180 Cst
2006	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
	June	76.39	79.09	81.19	49.86
	July	78.36	82.85	84.43	53.85
	August	73.90	79.95	81.40	52.78
	September	79.57	88.02	87.89	55.48
	October	85.38	92.62	94.29	62.64
	November	94.50	104.39	110.34	70.75



Source: Platts. Prices are average of available days.

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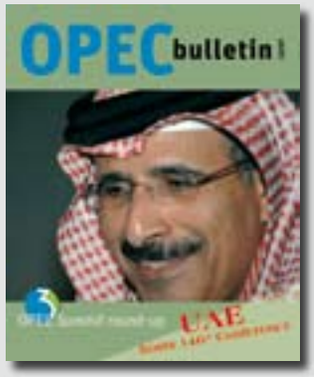

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