# OPEC bulletin

11–12/14

## United Arab Emirates to host World Energy Congress

## 166th OPEC Conference meets in Vienna

# 6th OPEC International Seminar

## Petroleum: An Engine for Global Development

3–4 June 2015

Hofburg Palace
Vienna, Austria

www.opecseminar.org

Contact:
+44 7818 598178
monique.quant@informa.com

# Case for cooperation never stronger

When OPEC's Oil and Energy Ministers gathered in Vienna for the 166th Meeting of their Ordinary Conference towards the end of November, they were confronted by the largest assembly of journalists, photographers and analysts the Organization's relatively-new Headquarters in the Austrian capital's historic First District has ever seen. In fact, such was the response to the end-of-year Ministerial talks that the customary 'meet and greet' of the Ministers, held especially for the media ahead of the plenary session, had to be staggered for safety reasons.

For the past few years OPEC Ministerial Meetings have, by comparison, been quite muted affairs, as far as the international press is concerned. But the fact is that since the aftermath of the global economic collapse — specifically from around 2011 onwards — the oil market has been performing well. Supplies have been more than ample, stocks acceptable and, most importantly, prices averaging at just over $100/barrel have been a good fit for the producers and consumers, as well as for the investors. As far as the Organization and its 12 Member Countries were concerned, there was no need to make any adjustment to existing policy measures at their successive Conferences. Rolling over their production ceiling of 30 million b/d proved time and again to be the best option.

As a result, media coverage of their Meetings began to take on a lesser relevance. But this was somehow reassuring. There was a feeling of calm — instilled by a relatively stable oil market. That all changed for OPEC's November Meeting with the Organization's Secretariat finding itself inundated with requests for accreditation.

OPEC has long stood on a pedestal — a reflection of its 54 years of experience. When problems occur in the oil market — the most recent disturbance being the slump in crude oil prices — the spotlight invariably falls on the Organization for an answer. Hence, the increased media interest at OPEC's latest Meeting. Expectations were high ahead of the talks that the Organization would react to the current price decline by cutting its 30m b/d ceiling. It is a sacrificial measure the Organization has made on several occasions in the past. Not this time, however. After over three hours of intense deliberation, the Ministers decided that in the current uncertain climate, maintaining the *status quo* was again the best course of action to take. The Conference *communiqué* read: "... in the interest of restoring market equilibrium, the Conference decided to maintain the production level of 30m b/d, as was agreed in December 2011."

But there are some pertinent facts to consider here. As OPEC Secretary General, Abdalla Salem El-Badri, pointed out at the press conference — for the past few years, the Organization has more or less been producing what it said it would — 30m b/d. That has been the call on the Organization's oil and that is what its Members have produced — and will continue to produce in the first half of 2015. The epitome of stability, one would say. But what of the oil producers outside the Organization? Again the OPEC *communiqué:* "... although world oil demand is forecast to increase during the year 2015, this will, yet again, be offset by the projected increase of 1.36m b/d in non-OPEC supply ... giving indications of an extremely well-supplied market." Already in 2014, non-OPEC output growth stands at 1.72m b/d, as stated by the OPEC Secretariat in its *Monthly Oil Market Report (MOMR)* for December. It means that total non-OPEC oil supply for the year will now be 55.95m b/d.

So, given this scenario, who should be expected to cut production to put a floor under prices?

As to the reasons behind the recent price decline, OPEC Conference President, Abdourhman Ataher Al-Ahirish, Libya's Vice Prime Minister for Corporations, pointed to a combination of key factors in his opening address to the Ministers: ample supply, moderate demand, a stronger United States dollar, uncertainties about global economic growth, as well as the impact of speculative activity in the oil market. He warned that if the current situation with prices persisted, the long-term sustainability of capacity expansion plans and investment projects may be put at risk. He also asserted that the recent price developments were a sign that the oil market was currently searching for stability and balance. Well, in adhering to its long-established 30m b/d ceiling, OPEC, for one, is making its contribution.

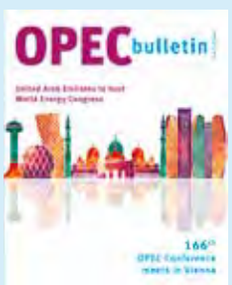
Dialogue and cooperation have long been watchwords for OPEC. Over the years, it has taken part in various discussions with leading non-OPEC producers — and they have been reasonably successful. The Organization has repeatedly stressed — and rightly so — that it cannot singlehandedly solve the problems of the oil market and nor should it be expected to. OPEC Secretary General, El-Badri, has said at international energy fora that the Organization stands ready to talk to anyone — if it achieves the common desire of attaining a fair and orderly oil market that benefits all stakeholders. Surely, in this growing multilateral world, and particularly at this testing juncture, a combined and coordinated approach is increasingly required if the current challenges are to be overcome.

# Contents

| | | |
|---|---|---|
| **Conference Notes** | **4** | 166th Meeting of the OPEC Conference convenes in Vienna |
| | **10** | OPEC warns of risk to capacity expansion plans from lower oil prices |
| | **14** | "Good outcome" to Meeting — OPEC Ministers |
| **Interview** | **22** | Algeria's ambitious oil and gas development programme already paying dividends |
| **Saudi Aramco** | **24** | 'Youth dimension' a vital asset in Saudi Aramco's transformation |
| **Presentation** | **28** | The importance of data and analysis |
| **IEA Outlook** | **32** | IEA points to growing importance of Middle East producers |
| **JODI Meeting** | **34** | OPEC hosts JODI Technical and Inter-Secretariat Meeting |
| **Research Lecture** | **36** | Chinese analyst shares outlook information with OPEC officials |
| **Energy Diversification** | **40** | Saudi Arabia's energy diversification ambitions on track |
| **Focus on Africa** | **46** | Mozambique has potential to become top LNG producer |
| **World Energy Congress** | **52** | Abu Dhabi to host 2019 World Energy Congress |



OPEC bulletin


**Cover**

*This month's cover depicts the skyline of Abu Dhabi, capital of the United Arab Emirates, which is to host the World Energy Congress in 2019 (see feature on p52).*

*Cover image courtesy Shutterstock.*


**Vol XLV, No 9, November/December 2014, ISSN 0474—6279**



**Publishers**

**OPEC**

Organization of the Petroleum Exporting Countries
Helferstorferstraße 17
1010 Vienna
Austria
Telephone: +43 1 211 12/0
Telefax: +43 1 216 4320
Contact: The Editor-in-Chief, OPEC Bulletin
Fax: +43 1 211 12/5081
E-mail: prid@opec.org
Website: www.opec.org


**Website: www.opec.org**

Visit the OPEC website for the latest news and information about the Organization and back issues of the *OPEC Bulletin* which are also available free of charge in PDF format.

**OPEC Membership and aims**

OPEC is a permanent, intergovernmental Organization, established in Baghdad, on September 10–14, 1960, by IR Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. Its objective — to coordinate and unify petroleum policies among its Member Countries, in order to secure a steady income to the producing countries; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the petroleum industry. Today, the Organization comprises 12 Members: Qatar joined in 1961; Libya (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); Nigeria (1971); Angola (2007). Ecuador joined OPEC in 1973, suspended its Membership in 1992, and rejoined in 2007. Gabon joined in 1975 and left in 1995. Indonesia joined in 1962 and suspended its Membership on December 31, 2008.

**Newsline**

54 Agreement between Iraqi Government, KRG hailed as “major breakthrough”

56 Kuwaiti Emir urges diversification, KOC set to explore offshore in 2015

57 Qatar’s Barzan gas field to see first production in 2015

58 Saudi Arabia committed to securing oil market stability — Naimi

59 UAE’s Ruwais refinery to reach full output capacity in early 2015

**Secretary General’s Diary** 60 Visitors to the OPEC Secretary General

**Briefings** 62 Students at the OPEC Secretariat

**Arts & Life** 64 Vineyards and pumpjacks — all in a day’s work in the province of Lower Austria

**Visits** 70 OPEC delegation visits OMV’s exploration, production and refinery sites

**OPEC Fund News**

72 OFID initiates concrete step in alleviating energy poverty

74 OFID signs loan agreements worth over $60 million

76 OFID to strengthen partnership with Austrian Development Bank

Noticeboard 78

Obituary 79

Market Review 81

OPEC Publications 89



**Secretariat officials**

**Secretary General**
Abdalla Salem El-Badri
**Director, Research Division**
Dr Omar S Abdul-Hamid
**Head, Energy Studies Department**
Oswaldo Tapia
**Head, Petroleum Studies Department**
Dr Hojatollah Ghanimi Fard
**General Legal Counsel**
Asma Muttawa
**Head, Data Services Department**
Dr Adedapo Odulaja
**Head, PR & Information Department**
Hasan A Hafidh Hamid
**Head, Finance & Human Resources Department**
Jose Luis Mora
**Officer-in-Charge, Admin & IT Services Department**
Badreddine Benzida


**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.

**Editorial policy**

The *OPEC Bulletin* is published by the OPEC Secretariat (Public Relations and Information Department). The contents do not necessarily reflect the official views of OPEC nor its Member Countries. Names and boundaries on any maps should not be regarded as authoritative. The OPEC Secretariat shall not be held liable for any losses or damages as a result of reliance on and/or use of the information contained in the *OPEC Bulletin*. Editorial material may be freely reproduced (unless copyrighted), crediting the *OPEC Bulletin* as the source. A copy to the Editor would be appreciated.


**Editorial staff**

**Editor-in-Chief**
Hasan A Hafidh Hamid
**Editor**
Jerry Haylins
**Associate Editors**
James Griffin, Alvino-Mario Fantini, Maureen MacNeill, Scott Laury
**Production**
Diana Lavnick
**Design & layout**
Carola Bayer and Tara Starnegg
**Photographs** (unless otherwise credited)
Diana Golpashin and Wolfgang Hammer
**Distribution**
Mahid Al-Saigh

Indexed and abstracted in PAIS International

Printed in Austria by Ueberreuter Print GmbH

*166th Meeting of the OPEC Conference convenes in Vienna*

# Ministers express "unity and solidarity" in maintaining existing output ceiling

*OPEC Ministers seen during their closed session talks.*

OPEC's Oil and Energy Ministers have demonstrated their unity and solidarity in agreeing to maintain the Organization's current production ceiling for the first half of 2015.

Speaking at the end of the 166th Meeting of the OPEC Conference, held in the Austrian capital, Vienna, towards the end of November, one of the leading delegates attending the end-of-year talks — Iranian Petroleum Minister, Bijan Namdar Zangeneh — said it had been "a good Meeting".

Against a backdrop of falling crude oil prices and market uncertainty, the Organization decided to maintain the status quo and retain its output ceiling of 30 million barrels/day for the first six months of next year.

"We exchanged views and consulted with each other. It was not the best result for some of the Member Countries, but it was felt that we needed more time, so we decided to carry on with our consultations over the next few months," Zangeneh told the OPEC Webcast team.

## "We are together"

He stressed that the main issue for the Ministers was the unity and solidarity of OPEC.

"With this unity, I feel we can face the difficulties in the market," he stated, in reference to the recent decline in international crude oil prices and concerns over a growing oversupply in the market.

His comments were echoed by Venezuela's Head of Delegation to the Conference, Rafael Ramirez, Minister of Popular Power of Foreign Affairs, who declared after the Meeting: "We are together."

*Algeria — Dr Youcef Yousfi (c), Minister of Energy; with Mohamed Benhocine (l), Ambassador of Algeria to Austria; and Said Sahnoun (r), Acting Chairman and Chief Executive Officer of the Algerian national oil company, Sonatrach.*

*Angola — Eng José Maria Botelho de Vasconcelos (c), Minister of Petroleum; with Amadeu Azevedo (l), Delegate; and Maria Sandra Júlio (r), Delegate.*

*Ecuador — Eng Pedro Merizalde-Pavón (c), Minister of Non-Renewable Natural Resources; with Wilson Pástor-Morris (r), Ambassador of Ecuador to Austria and Ecuador's Governor for OPEC; and Dr Andrés Miño Ron (l), Ecuador's OPEC National Representative.*

*Iran — Bijan Namdar Zangeneh (c), Minister of Petroleum, seated at the table with Reza Najafi (r), Ambassador, Permanent Representative, Permanent Mission of Iran to the United Nations and other International Organizations in Austria; and Jafad Sadounzadeh (l), Delegate, Member of the Iranian Parliament. Seated behind: Dr Mehdi Asali (l), Iran's OPEC National Representative; and Gholamreza Tajgardoon (r), Delegate, Member of the Iranian Parliament.*

*Iraq — Adil Abd Al-Mahdi (c), Minister of Oil; with Dr Surood Najib (l), Ambassador of Iraq to Austria; and Dr Falah J Alamri (r), Iraq's Governor for OPEC.*

Ahead of the one-day Conference, which attracted feverish media attention, speculation was rife as to what OPEC might do in response to a 30 per cent drop in crude oil prices since the summer months.

Feelings were split as to whether the Organization would resort to cutting its oil production ceiling for the first time in several years, with the associated risk of losing valuable market share for its crude, or again opting to exercise caution and adhere to its current production policy.

Saudi Arabian Minister of Petroleum and Mineral Resources, Ali I Naimi, told reporters a day before the Meeting that he was very confident OPEC's Ministers would adopt a unified position.

"The power of convincing will prevail tomorrow ... I am confident that OPEC is capable of taking a very unified position," he was quoted as saying, explaining that the six-member Gulf Cooperation Council (GCC) — comprising Kuwait, Qatar, Saudi Arabia, the United Arab Emirates (UAE), Oman and Bahrain — had already reached a consensus on the market situation.

Naimi said he was confident the oil market would "stabilize itself eventually".

Further support for the OPEC decision to retain current output allocations came from Kuwait's Oil Minister, Dr Ali Saleh Al-Omair, who said it was the right thing to do and was based on a thorough study of the global oil market.

## Best solution at the moment

"OPEC ministers' discussions about the developments of the oil price and production led to a concurrence that keeping the Organization's production ceiling at 30m b/d is the best solution at the moment," he was quoted as saying by the Kuwait News Agency (KUNA).

Al-Omair expressed optimism that the recent price deterioration would end soon.

"Extra supply in the oil market and the slowdown in global economic growth will not last for a long time. The market will gradually absorb the oversupply, which will reflect positively on prices," he maintained, in highlighting the importance of the restoration of global economic growth to the oil market's welfare.

Meanwhile, Suhail Mohamed Al Mazrouei, Minister of Energy of the UAE, stressed in reference to the oil price decline that it was not the time to panic.

"We need to allow enough time for market stability," he said in comments made on his Twitter account. He pointing out that OPEC Member Countries were in

the position to compensate for any decline in world oil supply.

Al Mazrouei also told Al-Arabiya television that "this is not the first time we have seen a drop in prices. The market will return to stability."

And in comments to Reuters, he stated: "This is not a crisis that requires us to panic ... we have seen (prices) way lower. The oversupply came from the evolution of unconventional oil production ... I think everyone needs to play a role in balancing the market, not OPEC unilaterally."

## Talks with non-OPEC producers

In this regard, two of OPEC's Founding Members — Saudi Arabia and Venezuela — held talks about the oil market situation ahead of the Conference with leading non-OPEC producers, the Russian Federation and Mexico. The parties agreed to meet again in three months' time.

At the customary press briefing after the Conference, OPEC Secretary General, Abdalla Salem El-Badri, in giving an overview of the talks, stated that, in keeping with the Ministers' decision, he was also happy with the agreement.

He pointed out that the 30m b/d production ceiling had been in place with OPEC for quite a few years, but when one looked back over that time only in 2012 did the Organization distance itself from that output level.

"Apart from that time, compliance by Member Countries to the ceiling was not far off the 30m b/d. I am sure they will abide by this level," he asserted.

El-Badri explained that he had presented the ministers with his usual report covering information on the global economy, oil supply and demand, as well as stocks.

"We then debated the oil market situation for two-three hours and the Conference decided to keep the 30m b/d for the first six months of 2015."

In fielding questions from journalists, El-Badri refuted a suggestion that the Ministers, through their actions, were trying to send a signal to the market over crude oil prices.

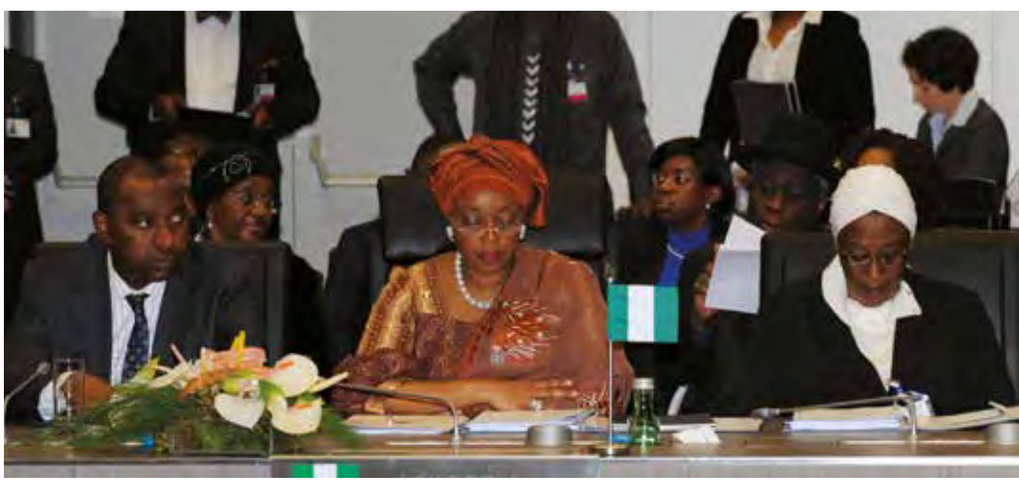
"We are not sending a signal to anybody. We are just trying to maintain a fair crude oil price," he contended.

Over the last four years, he said, the producers had enjoyed a very decent crude oil price, but now it had fallen.

"But this does not mean that OPEC has to rush and do something ... we want to wait and see how the market

*Kuwait — Dr Ali Saleh Al-Omair (c), Minister of Oil; with Sadiq Marafi (l), Ambassador of Kuwait to Austria; and Nawal Al-Fezaia (r), Kuwait's Governor for OPEC.*

*Libya — Abdourhman Ataher Al-Ahirish (c), Vice Prime Minister for Corporations and President of the OPEC Conference for 2014; with Dr Ibrahim Al-Besbas (l), Ambassador of Libya to Austria; and Mohamed Mahemed M Oun (r), Libya's Assistant Vice Prime Minister for Energy.*



*Nigeria — Diezani Alison-Madueke CON (c), Minister of Petroleum Resources; with Ambassador Bashir Yuguda (l), Nigerian Minister of State for Finance; and Dr Jamila Shu'ara (r), Nigeria's Governor for OPEC.*

*Qatar — Dr Mohammed Bin Saleh Al-Sada (c), Minister of Energy and Industry; with Ali Khalfan Al-Mansouri (l), Ambassador of Qatar to Austria; and Issa Shahin Al Ghanim (r), Qatar's Governor for OPEC.*

*Saudi Arabia — Ali I Naimi (c), Minister of Petroleum and Mineral Resources; with Mohammed Abdulrahman Al Salloum (r), Ambassador, Permanent Representative to the United Nations and other International Organizations of the Royal Embassy of Saudi Arabia to Austria; and Dr Mohammed S Al-Madi (l), Saudi Arabia's Governor for OPEC.*

*OPEC Management — (l–r) Oswaldo Tapia, Head, Energy Studies Department; Asma Muttawa, General Legal Counsel; Hasan A Hafidh Hamid, Head, PR and Information Department; and Abdullah Al-Shameri, Consultant, Office of the Secretary General.*

settles. We want to see now how it behaves. As I have repeatedly said, we do not want to panic. As far as we see it here in OPEC, the price decline we have witnessed does not reflect the change in the fundamentals of the market."

El-Badri stated that OPEC did not have a target price for its crude oil, neither a minimum nor a maximum — "we just want a fair price".

Asked what a fair price would be today, he replied that one that allowed producers to invest for the future, gave them a decent income and one that consumers were happy with too.

The OPEC Secretary General said that when crude oil was at $100/b, everyone was happy with it. "But now things have changed and we have to live with the new circumstances.

"We are going to produce 30m b/d and we will watch and see how the market behaves. We will follow it accordingly," he said.

## Oil market reports

According to the Conference's official *communiqué*, the Ministers reviewed the oil market outlook, as presented by the Secretary General, in particular supply/demand projections for the first, second, third and fourth quarters of 2015, with emphasis on the first half of the year.

The Conference, in also reviewing the report of the OPEC Economic Commission Board (ECB), considered forecasts for the world economic outlook and noted that the global economic recovery was continuing, albeit very slowly and unevenly spread, with growth forecast at 3.2 per cent for 2014 and 3.6 per cent for 2015.

"The Conference also noted, importantly, that, although world oil demand is forecast to increase during the year 2015, this will, yet again, be offset by the projected increase of 1.36m b/d in non-OPEC supply," the *communiqué* stipulated.

It said the increase in crude oil and product stock levels in OECD countries, where days of forward cover were comfortably above the five-year average, coupled with the ongoing rise in non-OECD inventories, were indications of an extremely well-supplied market.

Recording their concern over the rapid decline in crude oil prices in recent months, the Ministers concurred that stable oil prices — at a level which did not affect global economic growth but which, at the same time, allowed producers to receive a decent income and

to invest to meet future demand — were vital for world economic wellbeing.

"Accordingly, in the interest of restoring market equilibrium, the Conference decided to maintain the production level of 30.0m b/d, as was agreed in December 2011.

"As always, in taking this decision, Member Countries confirmed their readiness to respond to developments which could have an adverse impact on the maintenance of an orderly and balanced oil market."

The *communiqué* said that in agreeing on the need to be vigilant, given the uncertainties and risks associated with future developments in the world economy, the Ministers directed the Secretariat to continue its close monitoring of developments in supply and demand, as well as non-fundamental factors, such as speculative activity, keeping Member Countries fully briefed on developments.

The Conference decided to extend the tenure of Abdalla Salem El-Badri as Secretary General for a further period of six months, until December 31, 2015.

The Ministers elected Diezani Alison-Madueke CON, Minister of Petroleum Resources of Nigeria and Head of its Delegation, as President of the OPEC Conference for one year, with effect from January 1, 2015.

Dr Mohammed Bin Saleh Al-Sada, Minister of Energy and Industry of Qatar and Head of its Delegation, was elected Alternate Conference President for the same period.

In addition, the Conference appointed Dr Bernard Mommer, Venezuelan Governor for OPEC, as Chairman of the OPEC Board of Governors for the year 2015, and Ahmed Messili, Algerian Governor for OPEC, as Alternate Chairman for the same period, with effect from January 1, 2015.

In other matters, the Conference exchanged views on developments in the multilateral environment negotiations, including preparations for COP20/CMP10 in Lima, Peru; the status of the Organization's ongoing energy dialogue with the European Union (EU); its continued cooperative work with various other international organizations for the G20; as well as its energy dialogue with the Russian Federation and others.

The Ministers also approved the budget of the Organization for the year 2015.

The next Ordinary Meeting of the OPEC Conference will convene in Vienna on June 5, 2015, immediately after the OPEC International Seminar on *'Petroleum: An Engine for Global Development'*, which will take place at the Vienna Hofburg Palace on June 3–4, 2015.

*The United Arab Emirates — Suhail Bin Mohamed Al Mazrouei (c), Minister of Energy; with Salem Hareb Al Mehairi (r), the UAE's OPEC National Representative; and Mubarak Suhail Al Ketbi (l), Delegate.*

*Venezuela — Rafael Ramirez (c), Minister of Popular Power of Foreign Affairs; with Alí Uzcátegui Duque (l), Ambassador of Venezuela to Austria; and Dr Bernard Mommer (r), Venezuela's Governor for OPEC.*

*OPEC Management — (r–l) Dr Omar S Abdul-Hamid, Director of OPEC's Research Division; Dr Hojatollah Ghanimi Fard, Head, Petroleum Studies Department; Dr Adedapo Odulaja, Head, Data Services Department; and Jose Luis Mora, Head, Finance and Human Resources Department.*

*OPEC delegates and members of the international press and media listen to the OPEC Conference's opening address.*

# OPEC warns of risk to capacity expansion plans from lower oil prices

If the recent trend in international crude oil prices continues, the long-term sustainability of capacity expansion plans and investment projects may be put at risk.

That was the warning issued by OPEC Conference President, Abdourhman Ataher Al-Ahirish, to the 166th Meeting of the OPEC Conference in Vienna at the end of November.

In his opening address to the one-day Meeting, Al-Ahirish, Libya's Vice Prime Minister for Corporations, said that, in terms of prices, the situation had changed in recent months.

He noted that although the OPEC Reference Basket had been fairly stable during the last three-and-a-half years, with the annual average ranging between $105 and $110/barrel, since mid-June, this year, it had lost nearly 30 per cent of its value — or more than $30/b.

"A careful look at the current situation suggests the recent fall in prices may not be exclusively attributed to oil market fundamentals," he affirmed.

Al-Ahirish said ample supply, moderate demand, a stronger United States dollar and uncertainties about global economic growth had been key factors in the recent price trend.

In addition, he said, as OPEC had noted in the past, the impact of speculative activity in the oil market had also been an important factor.

"The recent price developments are a sign that the oil market is currently searching for stability and balance. At today's meeting, OPEC will consider these issues — and discuss the market outlook for 2015," he said.

"As always, our deliberations will be focused on contributing towards stability in the market. This is what most benefits global economic growth — and it is what matters most to all stakeholders, producers and consumers alike.

"We also recognize that dialogue has always been instrumental for the achievement of such goals. That is why OPEC is committed to engaging further in international dialogue and cooperation efforts — through participation in meetings, symposia and workshops.

These, said the Minister, included dialogue with the G20, the European Union and Russia, as well as working programmes with the International Energy Forum, the International Energy Agency and other international institutions.

"I should like to reiterate that such opportunities for dialogue and collaboration — with oil companies, non-OPEC producers, investors and consumers — make an important contribution to our common endeavour of attaining stability in the oil market," he stressed.

Al-Ahirish said it had been a little more than five months since the Conference last convened in Vienna to discuss the oil market situation. He reminded Ministers that, at that time, they spoke of improving stability in the oil market resulting from the ongoing recovery of the world economy.

"Since then, the global economic recovery has continued, although at lower levels, while the global oil market has seen ample supplies."

He said that, given this backdrop — and even though some uncertainties remained — global economic growth in 2015 was expected to grow to 3.6 per cent from 3.2 per cent in the current year.

In line with this economic outlook, world oil demand in 2015 was forecast to grow by around 1.1 million b/d, with total world consumption at around 92.3m b/d.

"The bulk of this net oil demand growth will continue to come from non-OECD countries," he stated.

Al-Ahirish said non-OPEC oil supply was anticipated to rise next year by 1.4m b/d to average 57.3m b/d.

"The region of 'OECD Americas' is expected to be the main non-OPEC contributor to this supply growth — supported by some increases in Brazil," he observed.

Al-Ahirish also used the occasion to extend a special welcome to Adil Abd Al-Mahdi, the new Minister of Oil of Iraq, who was attending a Meeting of the Conference for the first time as Head of his country's Delegation.

"On behalf of all the Heads of Delegation, I would also like to thank his predecessor in office, Abdul-Kareem Luaibi Bahedh, for his service to his country and for his valuable contributions to the work of the Organization. We wish him further success in the future," he added.

*Seated at the press conference are: Abdalla Salem El-Badri (c), OPEC Secretary General; Dr Omar S Abdul-Hamid (l), OPEC's Research Division Director; and Hasan A Hafidh Hamid (r), Head of OPEC's Public Relations and Information Department.*

*The Conference elected Diezani Alison-Madueke CON (above l), Minister of Petroleum Resources of Nigeria and Head of its Delegation, as President of the Conference for one year, with effect from January 1, 2015; and Dr Mohammed Bin Saleh Al Sada (above r), Minister of Energy and Industry of Qatar and Head of its Delegation, as Alternate President, for the same period.*

*The Conference decided to extend the tenure of Abdalla Salem El-Badri as OPEC Secretary General for a further period of six months, until December 31, 2015.*

# OPEC Conference under intense media spotlight

*OPEC's Secretariat in Vienna's first district saw a record number of journalists and photographers at the 166th Meeting of the OPEC Conference.*

*The Conference appointed Dr Bernard Mommer (l), Venezuelan Governor for OPEC, as Chairman of the OPEC Board of Governors for the year 2015, and Ahmed Messili (r), Algerian Governor for OPEC, as Alternate Chairman for the same period.*

*The Oil Market Insight team discussed the latest oil market situation and the likely outcome of the Meeting.*

# "Good outcome" to Meeting — OPEC Ministers

## *Eng José Maria Botelho de Vasconcelos*

*Minister of Petroleum, Angola*

Asked for his impressions about the Conference, Eng José Maria Botelho de Vasconcelos, Minister of Petroleum, Angola, said the talks had been a little long, but what transpired was a good meeting.

"Before the meeting, everyone had some expectation about the outcome. Our discussions were very clear and we achieved the result that I personally think was satisfactory for all Member Countries," the Minister affirmed.

The Minister agreed with other OPEC Ministers that the Organization should wait some months to see the response of the market before taking any further action.

"Maybe the tendency will be for prices to move up again. This is our expectation over the next three months," he said.

De Vasconcelos stated that if one looked at the average crude oil price for 2014, it stood at around $100–102/barrel "and this is good. But now, of course, we are thinking about next year."

Concerning Angola's domestic oil operations, he said that production right now was based on deep offshore and ultra-deep offshore. Together these areas were accounting for about 99 per cent of the country's total crude oil output.

"We had a bidding round in 2011 in pre-salt and right now 11 blocks are the subject of the latest bidding round, which we hope will prove to have good results."

The Minister said five discoveries had already been made and this is was important for maintaining the country's level of crude oil production going forward.

"Our objective and strategy is to reach a production level of 2 million b/d in the next three to four years," he added.

## *Eng Pedro Merizalde-Pavón*

*Minister of Non-Renewable Natural Resources, Ecuador*

Concerning the outcome of the Conference, Eng Pedro Merizalde-Pavón Minister of Non-Renewable Natural Resources, Ecuador, said OPEC had demonstrated its union as a group in retaining its 30m b/d production ceiling for the first half of 2015.

"We will maintain this production level; the market will set the price. We will wait and see what happens, but we hope the price will improve," he said.

Asked about Ecuador's domestic oil developments,

*The following brief interviews were conducted by the OPEC Secretariat's Webcast team with high-level OPEC officials and analysts from outside, who attended the 166th Meeting of the OPEC Conference on November 27.*

the Minister said things were going well and output had increased by 60,000 b/d.

## *Eng Bijan Namdar Zangeneh*

*Minister of Petroleum, Iran*

Regarding the outcome of the Conference, Eng Bijan Namdar Zangeneh, Minister of Petroleum, Iran, said it had been a good meeting.

"We exchanged views and consulted with each other. It was not the best result for some of the Member Countries, but it was felt that we needed more time so we decided to carry on with our consultations over the next few months," he affirmed.

"The main issue for us is the unity and solidarity of OPEC," stressed the Minister.

He said Members needed to remain united and "with this unity I feel we can face the difficulties in the market."

Looking back over 2014, Zangeneh said, overall, it had not been a bad situation for the oil market, but in 2015 "everything depended on the market's reaction to the level of price we are facing today."

He pointed out that some analysts believed that some of the inefficient producers in the market would come under pressure next year, adding that he hoped prices would improve again.

The Minister confirmed that OPEC was talking to leading non-OPEC producers, such as Russia, Mexico and Norway.

Asked about domestic oil developments in Iran, he said they had many plans in the pipeline, but they preferred to announce them step by step.

## *Adil Abd Al-Mahdi*

*Minister of Oil, Iraq*

Asked for his impressions on the OPEC Ministerial talks, Adil Abd Al-Mahdi, Minister of Oil, Iraq, said that in his opinion the meeting was good. It was very transparent and all sides expressed their views. "The decision (to retain the existing production ceiling), I think, responds to the actual market situation. For the time being, it is a good decision".

Questioned as to what he would like to bring to his new position as Iraqi Minister of Oil, he replied that his and his country's participation in OPEC was very important. "We have a lot of programmes to follow up, a lot of

meetings, conferences to attend ... studies, papers to prepare — the Oil Ministry in Iraq will participate effectively in all these. I think we will add things to OPEC," he affirmed.

Concerning the Iraqi government's recent agreement with the Kurdistan Regional Government, the Minister said discussions on this matter were ongoing. "That was a first step of a long process. We are waiting for the Prime Minister (Nechirvan) Barzani to come to Baghdad for negotiations to reach a final resolution and vision," he disclosed.

Regarding developments in Iraq in 2014, Al-Mahdi said they were doing well with the security issue and also on the economic front. The cabinet was deciding on the budget, which would be presented to parliament. "Last year, parliament was not able to really vote on the budget, due to the crisis in the country, so overcoming these difficulties is a success.

"I think the new government is doing some good things. In 2014, we had a good and negative side, but I hope that 2015 will be much better."

Concerning the state of the oil industry over the past year and the upcoming 2015, the Minister said it was difficult to know how things would develop "as we discussed today in OPEC's Meeting.

"But it is very difficult. We have to be very careful to avoid certain behavior by both the consumers and producers because any imbalanced situation that will impact either side will fire back on the other side. We have to keep in sight the interest of the others, not only the interest of one side."

Asked for his opinion as to what was responsible for the price drop, Al-Mahdi stated that there were some real economic reasons for the decline. Also, supply went very high and much more than demand. "I think this was very well explained in our analysis and the papers we saw... this is no secret. This is normal.

"This has happened many times. But I think the market will correct itself and once again things will go ahead," he maintained.

## *Diezani Alison-Madueke CON*

*Minister of Petroleum Resources, Nigeria*

Asked for her reaction to the Conference's decision, Diezani Alison-Madueke CON, Minister of Petroleum Resources, Nigeria, said the Meeting had been very fruitful.

"We had critical discussions and deliberations and reached the agreement to maintain our current production ceiling."

Concerning her election as OPEC Conference President for 2015, she said it was a privilege for her.

"I hope we can introduce many innovative and creative things for the Organization in the year."

Mrs Alison-Madueke said the Organization was hoping that with its present production volumes "we will be able to stabilize the markets to a certain extent."

Turning to domestic oil developments in Nigeria, she said they were taking steps to ensure they could be as competitive as they needed to be at this point in time.

## *Suhail Mohamed Al Mazrouei*

*Minister of Energy, United Arab Emirates*

Asked for his impressions of the Meeting, Suhail Mohamed Al Mazrouei, Minister of Energy, the United Arab Emirates, replied that it had been very good. The most important thing was that the Ministers reached a decision which everyone was convinced of. "We believe it is very good for the Organization."

Concerning developments in the oil market in 2014, the Minister said OPEC had been consistent in its dealings, supplying the market with the amounts of crude it said it would.

"Others were not so consistent in delivering supplies, which hurt the market. I feel that in the future everyone needs to act responsibly about the market and about supply for the benefit of market stability, the benefit of the consumers and the producers."

Asked if he was optimistic about developments in 2015, with projections of some economic growth being made, Al Mazrouei said he thought the impact of the current level of prices would be positive for the economy.

"We are expecting next year to be better and that economic growth will require more oil demand for sure," he affirmed.

Regarding planned investment in the UAE oil industry in the upcoming year, the Minister stated that the government's investment plan for the oil sector was continuing with the aim of reaching a crude production capacity of 3.5 million barrels/day in the future.

This level, he stressed, was required to guarantee "that we can supply the market. At the same time, we are expanding our refining capacity in the country."

Concerning the UAE's diversification plans, the Minister said the country was trying to diversify its energy sources, especially in the field of electricity, to three forms: nuclear, renewable and gas.

"These are the three forms of energy that we are working on. By 2020 we will have around 24–25 per cent of our energy from nuclear, plus five per cent from renewables. The rest is going to be from natural gas," he revealed.

## *Ehsan Ul-Haq*

*Senior Market Consultant, KBC*

Asked about developments in the international oil market in 2014, Ehsan Ul-Haq, Senior Market Consultant, KBC, noted that oil supply had been seen increasing at a fast pace, especially in the United States.

"Every six months we have seen an additional supply of around 500,000 b/d, causing over-supply in some areas. But at the same time, in other areas, there were some outages, which led to higher prices. So the supply picture has been rather unstable."

He said some economies had also shown signs of weakening, particularly China, which was previously moving at a very fast rate, but had now slowed, even though it was still much higher than in many Western countries.

"China is still forecast to have growth of seven per

cent this year, which many countries would be happy to have. However, India is now doing better and perhaps in the years ahead, it can enjoy some of the economic benefits that China had a few years ago."

Ul-Haq said this all depended on the steps the Indian government took, but on the whole "we are likely to see much stronger Indian oil demand."

He also agreed with OPEC Ministers that there was no need to panic right now because of lower crude prices.

OPEC, he continued, had invested a lot in future supply and even with the lower crude prices he had not heard of any cancellation of the Organization's upstream development projects.

He considered that, despite growing oil production in the United States, OPEC would always be on hand to balance the market.

## *John Hall*

*Chairman, alfaenergy*

Questioned about the state of the oil market in 2014, John Hall, Chairman, alfaenergy, said that for the first six

months of the year the OPEC Reference Basket of crudes had achieved a price of over $100/b.

"At the time of the last OPEC Conference in June, I said I thought the price might drop by up to $10/b. But I am really surprised to see where it is today."

He said that he had spoken to a few OPEC Ministers in Vienna and they all appeared pretty relaxed about the current situation.

"They said they were selling all the oil they needed to and even though they had lost market share as a result of the output surge in the United Stataes, they were finding other outlets for their oil."

Of course, said Hall, in reality, "I think they would rather see a higher price."

He said it was interesting to see that shale oil production in some areas had already been put on hold and companies were going to review the situation in 2015.

"So even though the majority of shale oil production will continue, we are seeing some parts of it going on hold. We have to wait and see how things go, but my belief is that prices will pick up again."

Hall maintained that from OPEC's point of view, "I think that if it decides to hold its current position, it will be the right decision.

"There are signs that global economies are picking up, but they are not strong enough. And we still have the European Union countries not doing particularly well. I think the lower oil prices right now may help them.

"One has to look ahead to the longer term. There is a market for shale oil and it may slow down a bit now, but certainly I think it will be sustained.

"The other element in the equation is climate change and how countries will respond to it," he added.

## *Neil Atkinson*

*Head of Analysis, Lloyd's List Intelligence*

Asked to comment on the general oil market situation outlook, Neil Atkinson, Head of Analysis, Lloyd's List Intelligence, said: "What we need to do is wait and see what happens — what the response will be — given the fact that prices have fallen quite sharply since the summer and may fall a little bit further."

He maintained that the lower prices could mean lower growth in non-OPEC oil production in 2015 and going into 2016. "It could also mean a response on the demand side — will demand in these years now be higher than we thought?"

"If we get lower non-OPEC supply and higher demand, then that means the market will start to rebalance naturally."

Atkinson said he thought it was very important that during the period of low oil prices that OPEC and non-OPEC producers came together to cooperate.

## Previous oil price declines

"If you look back through history, we have had previous periods when oil prices have fallen dramatically and there was involvement between OPEC and the leading non-OPEC producers.

"And before this latest Conference, we have seen Mexico and Russia engage directly with OPEC Members.

There is an informal arrangement for them to meet again. I would expect that over the next few months OPEC will reach out to non-OPEC producers.

"That is because they have a common interest — everybody wants to see stability in the market so that we have a crude price with which people can plan their investments and one that consumers can feel comfortable with."

Asked about the challenges facing OPEC going into 2015, Atkinson said that, short term, as one progressed out of the northern hemisphere winter, demand customarily fell.

"The problem with that is that if you have oil markets that are already well supplied then demand is likely to fall, leaving the market vulnerable to further erosions in the price," he maintained.

"As OPEC said in its *communiqué*, they will have to monitor the market extremely closely and be prepared to hold an emergency meeting if the market does not turn out to be as comfortable as they would like.

"OPEC has said it will continue to produce 30m b/d of crude over the next six months — that is a clear fact. Now

we will have to wait and see how the market responds to that.

"But, to me, it would not be a complete surprise to see some of the leading OPEC producers making adjustments to their production in response to market forces."

Atkinson stated that OPEC's agreement to adhere to its 30m b/d production ceiling would go some way towards calming the market because Member Countries needed to adhere to the ceiling strictly to boost the Organization's credibility.

"So as the next six months progresses and as we see how the market responds to the lower price environment, OPEC at least will be credible and coherent and will have done its bit by sticking to the 30m b/d ceiling to bring stability to the market," he added.

## *Cornelia Meyer*

*Chief Executive Officer, MRL Corporation*

Asked if the situation in the oil market right now helped countries trying to remove subsidies, Cornelia Meyer, Chief Executive Officer, MRL Corporation, said for many nations, such as India, Indonesia and Malaysia, "it was a wonderful once-in-a-lifetime opportunity to get rid of the subsidies."

She said that since international oil prices were lower, it did not hurt the populations so much when the subsidies were removed.

"At some stage, the oil price will go back up again and then it will be harder to do," she asserted. "And subsidies are just bad economics."

Concerning the oil market, Ms Meyer said it had seen crude prices of between $100/b and $120/b for a long time and the average for 2014 so far was about $100/b, "so that is pretty good".

She pointed out that some of the Gulf OPEC Member Countries could produce oil quite cheaply so they were not that affected by the lower oil prices seen currently.

"But now is not the time to pull back with investments because oil is an incredibly long cycle business and if one was to pull back now, one would feel it in three or four years' time when demand will be up again," she affirmed.

"These lower oil prices will be especially felt by the shale oil producers in the US because they are very cash-flow driven and now they are receiving less cash.

"Also, with their production, they need to keep on producing new wells. So when they do not invest, they will feel it very quickly in their production rates."

### Saudi Aramco investment

Ms Meyer said that when one looked at the Arab OPEC Members in the Gulf region, Saudi Aramco was perhaps one of the best run companies in the world.

"This company has long-term investment programmes that continue. They do not depend on whether prices are up or down — they just continue steadily with their investment progammes."

But she said that if one looked at the greater Middle

East and North Africa (MENA) region, 100 million jobs needed to be generated over the next decade to keep all the young people employed.

"To do that, one needs a lot of investment, a lot of new infrastructure and a lot of things happening. If you look over the next 20 or 30 years, we see a 25 per cent increase in demand for oil.

"And all the projects point to the fact that 70-80 per cent of this will still be carbon-based, meaning oil and coal."

Ms Meyer maintained that the lower oil prices right now were certainly a boost for the consumer.

"In the US, for example, I am sure it would be one of the best Thanksgiving holidays with many people using their cars to go see their friends and relatives," she added.

## *Johannes Benigni*

*Managing Director, JBC Energy*

Reviewing the oil market situation in 2014, Johannes Benigni, Managing Director, JBC Energy, said that even though prices had now dropped, the average price for 2014 was still good.

"We really benefited from the higher prices seen in the first half of the year, but now in the second half, even though demand remains strong, supply has been stronger. That is why prices are lower today."

### Reactions from investors

He maintained that, short term, the current price drop did not really matter that much, but, concerning investments, if one had oil-production projects planned, then investors immediately reacted.

"We have already seen some workers being laid off and investment being pulled back as the price falls. The concern is when you have investors pulling back that will be felt four or five years later on."

Benigni said that, right now, there was a lot of uncertainty about shale oil and the impact it was going to have going forward.

"It has been a surprise that the production of shale oil in the US has been holding up so strongly over the past three years. Now we have to see how these producers react with the lower prices."

"And next year, we are only talking about an oversupply in the first half, since demand will be stronger in the second half. We have a demand outlook growth for next year of around 1.1m b/d to 1.2m b/d and that is quite solid.

"There is certainly no problem on the demand side. Overall, we see oil demand coming back and all the numbers that did not look great three months ago are looking better right now.

"So overall, demand is healthy and it can get even better with the lower prices we are seeing. And more supply will be needed in the second half of 2015," he added.

# Algeria's ambitious oil and gas development programme already paying dividends

*Almost two years on from a terrorist attack at one of its leading gas installations, Algeria is impressively back on track with its oil and gas expansion plans. Under an ambitious development progamme, the North African OPEC Member Country is busy drilling around 100 exploration wells a year to boost its petroleum reserves. And the next big thing could be shale oil, which the country is starting to develop in earnest.* ***Said Sahnoun****, the Interim Chairman and Chief Executive Officer of state energy concern, Sonatrach, spoke exclusively to the* OPEC Bulletin's *Maureen MacNeill on Algeria's future plans on the sidelines of the 166th OPEC Conference in Vienna at the end of November.*

**Question: Algeria has announced plans to invest $100 billion in the domestic energy sector between now and 2020. What do these investments entail and how will they affect Sonatrach's activities?**

Answer: Well, we have a really ambitious development plan. Starting with the upstream, the first leg of this programme is to reinforce and strengthen our reserves base. This starts with exploration. We have been drilling an average of 100 exploration wells per year. And it has paid off as we have made discoveries of new reserves that are quite encouraging. In 2013, we made 30 discoveries. The volume of the discoveries stood at 533 million tonnes of oil equivalent. This year, that same trend has been developed and up to the end of October we had made 29 more discoveries for volumes amounting to 363m t of oil equivalent.

So that is exploration. The idea is to spend $2–3 billion per year on exploration. We have also been very busy developing fields that have been discovered in recent years. We have three main fields that are being developed in partnership with international oil firms. They are Touat with Gaz de France, for gas of course, Timimoun with Total and Cepsa, for gas as well, and finally Reggane with Repsol. These are all located in the southwest part of Algeria. Sonatrach has been involved in building a pipeline to transport the production that will come from these fields. The national energy concern is also busy developing upstream projects. As part of this programme, we have the Tinhert project that is due to produce 7bn cubic metres of gas per year. We also have Hassi Bahamou and Hassi Mena that will also be developed. The idea is by developing six to seven fields we can have an additional 35bn cu m of gas available by 2020.

With exploration, I did not cover the whole span. We are also addressing our shale resources. We have a pilot programme that is already underway. We have successfully drilled and completed the first well. We have started drilling the second one, but our plan is to have production starting first. So far we are producing data, or information, if I may say. But the idea is to have production starting in 2022. Hopefully, this will start at around 4bn cu m, ramping up to 20bn cu m in 2025. By 2027, we are likely to have output of 30bn cu m. Two deals are about to be signed with foreign partners who we feel have mastered the technology and have a well-established track record with regards to the activities. We have a huge potential and as part of our assets Algeria is a good place to carry out shale development. We have material shale resources, proximity of water, also proximity to existing and expanding transportation facilities, or infrastructure. We have a skilled workforce and we have also terms and conditions that are fit for that kind of activity.

We are also addressing the offshore. We have just completed 5,000 square kilometres of 3-D seismic acquisition. The processing of the acquisition has been completed and we are currently working on locating a first well. We intend to have this drilled by the fourth quarter of 2015.

Transportation is also something we are addressing quite seriously. The plan is to invest $3.5bn over the next five years to expand our existing capacity. We are also investing $1.5m in revamping or upgrading existing facilities for pipeline transportation. We are also addressing the activities on liquefaction. We have two plants that have been started this year. I would say they are two world-class

trains. These two trains are bringing an additional 21m cu m of liquefied natural gas (LNG) per year. Combined with the existing capacities, we are close to 57m cu m of LNG/year. That is our capacity.

We are also addressing refining of course. Our current capacity for refining is 25m t/yr. The plan is to sign dual-feed contracts to speed up the process of constructing new refineries. The idea is to have three contracts signed this year for two refineries that will each produce 3–4m t/yr. The third one would produce 3m t/yr. The idea by 2019 is to have a refining capacity in place in Algeria of around 36–37m t/yr.

Last but not least, we are also seriously considering petrochemicals. We have three plants that are working and those are for fertilizers, urea and ammonia, principally. We have one developed under the Fertial joint-venture with Fertiberia, our Spanish partner, while the second one was done with Orascom. The third plant was with AY, of the Omani group, SBGH. These three plants are producing 4m t per year of ammonia. But we want to expand our petrochemicals further. The idea is to have a major plant built at Skikda. That plant would cover a very wide range of petrochemical products. The plan is to have something that may cost up to $8bn. Discussions are underway with AP, our partner, and I am hopeful that we can have the contract signed by the end of 2015. We are also thinking of having methanol plants for our refineries, depending on how we are going to design the plant. The cost of developing such a plant may vary between $2.5bn–6bn.

*Said Sahnoun*

**Are you intending for most of this production to be used domestically, or will it go for export?**

Exports would be the main idea. So this is what our plan consists of in terms of developing Sonatrach. As part of our strategy, I would say we want to do five things mainly: make sure we are having a very strong reserves base, and that starts with exploration in the upstream. Secondly, we want to have diversification so that we can capture profits all along the value chain. We want also to diversify our markets. We will make huge investments in our human capital. This is the next thing. We have this year hired up to 1,000 engineers and we have a special programme to enable these workers to be performing as per our expectations as quickly as possible. They are engineers, but they need to be trained. As we want to address our shale resources, we have a very ambitious plan to hire 8,000 engineers. That exercise has started already and we are selecting people. Human capital is also something we are investing very heavily in. Of course, we will also make sure that the environment will be duly taken care of.

**Are you hoping to have these educational facilities in-country?**

In-country, we have started discussions with our partners because we would like to have training sometimes being offered locally and not too far from the production facilities or drilling rigs. That is for the upstream. For the rest, we also want to be very close to the plants, I mean for refining and for petrochemicals. We are very clear and we do reckon there are areas where we have to obtain ownership of certain specialties. For example, if we want to consider the shale development business, we would want our people to come with an innovative mindset, I mean have people that are fit for the job that are supply-chain-management oriented, as opposed to the technology-oriented business. We also understand that for petrochemistry there is a lot we need to learn. This is why we consider the human capital element as something we need to be very careful with.

**Are you considering the American example in terms of shale development?**

We are working with American companies, those who have delivered very, very encouraging results. And as part of our strategy, we want what has worked in the United States, in terms of know-how, in terms of expertise, and in terms of experience, to be transferred to Algeria. We understand that when you do shale there is a period of failure and you have to accept that. We want that period of failure to be as short as possible.

**A final question about Algeria's production next year, in terms of oil and gas. What are your expectations?**

Primary production in 2014 has increased by six per cent, as opposed to 2013, so we are close to 200m t of oil equivalent for this year. The plan is to have a four to five per cent increase in 2015. But we will reach, I would say, a plateau of about 210–220m t, starting in 2017, I mean by the time most of our projects are completed and delivered.

# ‘Youth dimension’ a vital asset in Saudi Aramco’s transformation

Reuters

*Khalid A Al-Falih, President and Chief Executive Officer of Saudi Aramco.*

An entirely new generation of men and women is sweeping through state oil company Saudi Aramco as the Gulf region experiences a “youth bulge” of unprecedented proportions.

That is the view of Khalid A Al-Falih, President and Chief Executive Officer of Saudi Aramco, who said that as a result of “this incredible transformation” some 60 per cent of the Saudi national oil company’s workforce would be 35 years old, or younger, by the end of the decade.

In a keynote address to the 9th Annual Gulf Petrochemicals and Chemical Association Forum in Dubai, the United Arab Emirates (UAE), in November, he gave an intriguing overview of the ‘youth dimension’ in Saudi Aramco.

Speaking on the subject ‘The Future Middle East Petrochemical Industry: A Vision for the Entire Value Chain’, he told the Forum there was a realization that these young people were a different breed than previous generations of ‘Aramcons’, as he defined them.

“Most of my colleagues and I started our careers content with a narrowly defined job working a shift at a plant or in a cubicle at the office.

“But today, young people have what I call a ‘positive rebelliousness’ hardwired into their worldview: they think less along the lines of organizational hierarchies and more in entrepreneurial terms, and see creative disruption as a way to produce something new and better.

“They have an appetite for risk; they thrive on rapid change and constant mobility; and many are simultaneously more skeptical and more hopeful than my generation was at their age,” he said.

## Lateral thinking

Al-Falih said that while these individuals were driven to better themselves, they were equally convinced they could do that while making a difference for their community and their company.

“They think laterally and multi-dimensionally and want to tackle challenges and explore the possibilities for improvement in whatever they do,” he affirmed.

He said they represented a generation that grew up with a baby bottle in one hand and an electronic device in the other!

“They are, therefore, a hyper-connected generation whose lives are lived on social media and not just in their own social circles.

“So, for many of them, a cubicle in an office is not just small or impersonal — it is irrelevant, somewhere to recharge a smart phone or iPad, rather than a place to start a career.”

But Al-Falih pointed out that this different worldview was one reason the company viewed the potential contributions of these young employees to Saudi Aramco “as our most prized future opportunity and why we take connecting with this new generation and directing their energies so seriously.”

He stated: “We at Saudi Aramco enjoy a proud heritage. But we also recognize that our corporate culture must evolve with the times and we have a number of initiatives to reinvigorate our corporate systems and streamline our processes, while engaging this generation of young talent.”

Listing the advantages, Al-Falih said that, first of all, they invested heavily in skill development through college and advanced

degree programmes; apprenticeships; the three-year, on-the-job Professional Development Programme; and other development and onboarding initiatives.

"Our veterans have embraced the mentorship of this new generation with enthusiasm because they see their enormous potential. Our younger employees, on the other hand, are stretching themselves and at times their organizations as they want to set higher benchmarks and goals than their predecessors and supervisors."

Al-Falih said the company also wanted its newest Aramcons to be fully engaged in the evolving corporate ecosystem the firm was developing, "so that even as we get these young people ready for the company, we are also getting the company ready for them.

"We are allowing their perspectives to shape Saudi Aramco and to make our company better, stronger and more agile."

For example, he said, Saudi Aramco wanted to leverage their entrepreneurial spirit, encourage them to employ their creativity towards organizational effectiveness, and utilize their love of technology to better connect across organizational and functional lines transcending professional disciplines.

"In my view, because they have grown up multi-tasking and want their organizations to do the same, they are best qualified to make a large corporation be just as agile and entrepreneurial as a start-up," he professed.

The Saudi Aramco head stated that to maximize these benefits, the firm had created systems and structures to channel the inputs and harness the incredible energy of the young people.

## Specially tailored programmes

Individual company organizations had their own, specially tailored programmes, but at a corporate level the best example was Saudi Aramco's Youth Leadership Advisory Board (YLAB).

This, explained Al-Falih, comprised a group of 16 young employees who, during their 18-month term, conducted studies on topics of significant importance, both to the company and to young people.

"They provide advice to management, ideas and insights to senior management and engage other young employees in the changes taking place throughout Saudi Aramco.

"We are now on our third YLAB cycle and it has become a self-sustaining programme that is both highly competitive and highly respected within the company."

Al-Falih revealed that 'mini-YLABs' were taking root at various levels and locations within company organizations and professional societies. "In fact, we have seen young people create their own self-directed 'youth-only' groups to tackle issues of importance to them."

He said participants gained a good deal of insight, experience and maturity during their time in YLAB, "but we as leaders also gain even greater insights from listening to these young men and women throughout Saudi Aramco."

Said Al-Falih: "Likewise, I see youth as one of the Gulf chemical industry's biggest sources of competitive advantage and many of the traits we see in these young people — a flair for entrepreneurship, a passion for technology, a desire to connect and collaborate, and a daring drive for growth and development — are the characteristics we need in our regional business." He said that, just like in "these incredibly talented youth", he saw substantial untapped potential in the Gulf chemicals sector.

"We have multiple advantages, such as a large and diversified pool of gas and liquids feedstocks; world-scale assets; modern infrastructure; a globally competitive workforce, an ideal geographic location for exports to both East and West; and supportive government policies."

Al-Falih said this would be further bolstered by a growing degree of both vertical and regional integration, as well as enormous opportunities to advance in innovation.

"As the global leader in petroleum, our region should be among the foremost players in petrochemicals and specialty chemicals as well," he pointed out.

Al-Falih said he remained convinced that this was a pivotal decade—indeed a golden decade—for the Gulf region and its chemicals sector.

"We are in the midst of a once-in-a-generation opportunity for a true transformation. So let us seize that opportunity and make the most of our enviable competitive position of considerable resources and our wealth of young talent," he added.

***"... I see youth as one of the Gulf chemical industry's biggest sources of competitive advantage and many of the traits we see in these young people — a flair for entrepreneurship, a passion for technology, a desire to connect and collaborate, and a daring drive for growth and development — are the characteristics we need in our regional business."***

***— Al-Falih***

Looking at the overall regional development, Al-Falih said that this had focused on the manufacturing of commodities for export by leveraging its strong feedstock advantage, its economies of scale and its extensive industrial infrastructure.

"We have tended to grow horizontally, rather than through vertical integration, and while primary petrochemical capacity has grown admirably, the strengthening of functional capabilities has tended to lag," he observed.

"To date, our advantages have carried us through, but the existing model will not realize our full potential because the global

industry landscape is changing rapidly and creating stronger competition around the world."

Al-Falih pointed to North American chemicals and plastics production, which, he said, would virtually double over the next decade on the back of growing volumes of unconventional oil and gas.

This, he said, would lead to a substantial increase in exports to markets "that we have, over the years, assumed were ours for the taking."

## Things changing in Asia

The European petrochemical industry, he continued, was closing less efficient plants, integrating assets into cross-regional networks, and altering its product portfolio.

"Things are changing in Asia as well, as Japan rationalizes its petrochemical sector, while China undergoes a relative economic slowdown, places an intensified emphasis on the environment, and struggles with existing overcapacity, while also pursuing opportunities for coal to chemicals."

Al-Falih said that closer to home they were seeing constrained gas-based feedstocks, while recent crude oil price volatility underscored yet again the value of vertical integration and greater diversification which provided greater resilience and adaptability.

"While our efforts are commendable and are already proving their worth, I want to outline four major opportunities where we can do much, much more," he said.

The first of these concerned supplies of ethane, which were becoming tighter in the region, while supplies of alternative feedstocks, such as naphtha and other liquids, were plentiful.

"I believe that we should not think of these feedstocks as mutually exclusive choices, but rather view them as a mixed pool of feedstock that can be used to leverage each other. Liquids are more versatile than pure ethane and when used in mixed-feed crackers, offer a broader product slate, including opportunities to produce specialty chemicals, which in turn can help spawn new industries and consequently many new jobs.

"Collectively, we need to keep in mind that demand for chemicals is growing at a faster rate than nominal economic growth, and that not all that new demand can be met with gas light feedstocks.

"Longer term, I foresee the creation of new, groundbreaking technologies to enhance the competitive position of liquids, such as the direct conversion of oil to chemicals."

The second opportunity, said Al-Falih, involved enhancing the Gulf region's existing chemicals facilities, since applying the mixed feedstock cracker strategy and other enhancements only to future projects would certainly limit their full impact and potential.

"Considering the massive scale of the region's petrochemical asset base built in the 1970s and 1980s, it would generate enormous additional value if we pursued opportunities to restructure and upgrade these legacy assets, some of which are fully depreciated and offer limited added value to local economic development and profitability of companies in the future.

"This retrofit would include changes to the feedstock mix, deployment of more energy efficient technologies and the addition of high value specialty products. But to succeed in specialties, we will need to leapfrog in knowledge intensity and accelerate our innovation engines."

Al-Falih said the third opportunity concerned multiplying the number of industry participants and jobs. Many past efforts had focused on large-scale commodity petrochemical projects, which offered the benefits of scale economies, allowed meaningful penetration into export markets and "gained for us a prominent position on the global industrial landscape.

"But there are tremendous advantages in combining the scale of mega-facilities with the high value addition and job creation potential of small and medium-sized enterprises, including the strengthening of an entrepreneurial ecosystem here in the region.

"So, rather than being content with just a handful of major players, we ought to have thousands of small and mid-size chemicals companies in the Gulf, just like we find in the United States, Europe, Japan or South Korea."

Al-Falih said that all of this would be more easily accomplished if the fourth opportunity — greater regional integration — could be attained. "We should think of the entire Gulf as a unified whole rather than as a collection of individual chemical industries walled off from one another. The picture I have in mind of the future Gulf Cooperation Council (GCC) is a booming, cross-connected region, buzzing with chemicals-related activity.

"And while we need to maintain a healthy dose of competition, we should also creatively collaborate at the regional level to create potential synergy and the essential qualitative edge in terms of innovation, education and technical excellence," he maintained.

## Importance of the downstream

Concerning Saudi Aramco, Al-Falih said that the company's actions reflected its belief in the continued importance of the downstream.

"We want to be as strong a downstream player as we are in the upstream. Over the coming decades we intend to become a top global refiner and a leading chemicals enterprise.

"This will allow us to capture commercial opportunities and profitable growth, while diversifying our business portfolio. Over the next decade, we will invest tens of billions of dollars around the world and all along the value chain," he stated.

The company had already engaged in integrated manufacturing complexes through a series of joint ventures at home and abroad, all of which utilized liquid feedstocks and produced a diverse set of value added derivatives.

"Our industrial value parks at PetroRabigh, Jazan Economic City, SADARA in Jubail (our joint venture with Dow Chemical) and SATORP, our joint venture with Total, demonstrate our commitment to integrated downstream conversion, value addition, and the use of petrochemicals to spur new industries, and create investment opportunities for our customers," he asserted.

Saudi Aramco was also providing start-up SMEs, including companies devoted to cutting edge research and innovative products, with both capital and corporate sponsorship, through its entrepreneurship center (Wa'ed) and Saudi Aramco Energy Ventures (SAEV) initiatives.

"And we are expanding our research and development spending and research manpower, while employing an Open Network model to make the most of in-house R&D centres, satellite research centres in the Kingdom and around the world, and strategic alliances with leading universities and research institutions, like King Abdullah University of Science and Technology (KAUST) and the Dhahran Techno Valley.

"Together, these investments, initiatives and programmes are transforming Saudi Aramco. But that transformation is taking place alongside a major demographic shift in the region, and we are also embracing that shift at Saudi Aramco and the tremendous opportunities it presents," added Al-Falih.

# Saudi Aramco opens important new head office in Beijing

Saudi Arabia's national energy company has opened a new head office in the Chinese capital, Beijing, as part of its expansion plans to meet the growing demand coming from the Asian region and China in particular.

The new office — Aramco Asia — is a wholly owned subsidiary of the world's largest oil company, Saudi Aramco. It will be supported by the firm's two existing branch offices in China — in Shanghai and Xiamen. The new office will serve as the business and cultural exchange portal between Saudi Aramco and China.

According to reports, it will provide a range of services in the region, from marketing in crude oil and chemicals, joint-venture coordination, procurement, inspection, research and development, project management, human resources development and communications.

Abdulrahman F Al-Wuhaib, Saudi Aramco's Senior Vice President (Downstream), said at Aramco Asia's inauguration ceremony in November that the firm's new Asia office in Beijing would act as a hub for facilitating the company's joint activities in general and in particular investment and other business opportunities arising out of capital projects in Saudi Arabia and Asia.

"The Kingdom is open for business for Chinese and other Asian companies as there are abundant opportunities across many sectors," he pointed out.

Dawood M Dawood, Saudi Aramco's Vice President for Marketing, Supply and Joint Venture Coordination, was quoted as saying that Aramco Asia brought together the company's business operations "in this fast-growing region under one entity and to be unified in carrying out Saudi Aramco's vision and strategy for Asia."

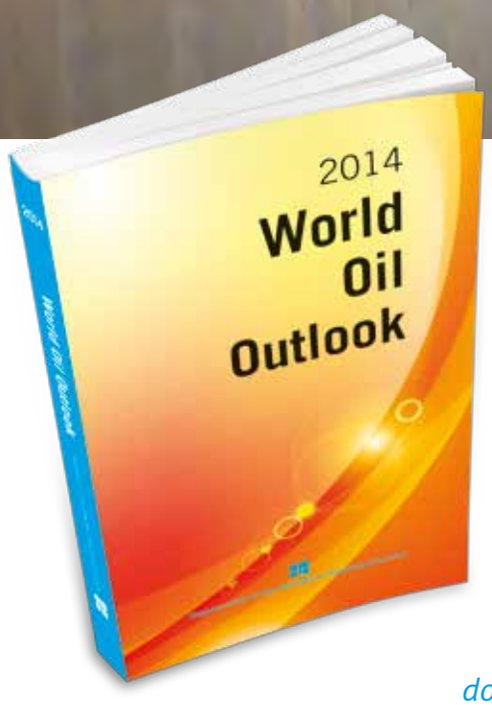
He continued: "Aramco Asia will play an important role and be part of the building blocks that will contribute to Saudi Aramco's corporate transformation to become a global leader in energy and chemicals by 2020."

Sulaiman M Ababtain, President of Aramco Asia, stated: "Aramco Asia will offer a full range of services and resources for the handling and management of robust business between Saudi Aramco and our partners and companies in China, and the wider Asia region."

China has surpassed the United States as the largest importer of Saudi Arabian crude oil. Asia is considered the most important market for the Kingdom's crude.

According to its 2013 Annual Review, Saudi Aramco sold almost 54 per cent of its crude to Asian customers in that year, compared with 17 per cent in the US. Saudi Aramco already has considerable joint-venture investments in China and is looking to expand on these in the coming years.

# The importance of data and analysis




*Seen here during the press conference is the OPEC launch team headed by Abdalla Salem El-Badri (c), Secretary General; and comprising (l–r), Hasan A Hafidh Hamid, Head, PR & Information Department; Dr Adedapo Odulaja, Head, Data Services Department; Dr Omar S Abdul-Hamid, Director, Research Division; Oswaldo Tapia, Head, Energy Studies Department; Dr Jan Ban, Senior Research Analyst; and Dr Jorge Leon, Energy Demand Analyst.*

*In OPEC's ongoing work, one of the key elements has always been data — good, solid data that is verifiable, can be measured and which has integrity, and that can serve as fodder for the analytical work of the Secretariat. Given the importance of data, OPEC has continually strived to provide sound and timely oil market data and analysis to the public — and to the energy stakeholders with whom it works. And it does this through the release of many different publications which consider specific aspects of the global oil industry. In this, two of the Organization's flagship publications stand out: the* **World Oil Outlook** *and the* **Annual Statistical Bulletin**. *Below, the* **OPEC Bulletin** *offers a summary of the November 6 launch of the 2014 editions of these publications, held at the OPEC Secretariat in Vienna.*

The *World Oil Outlook (WOO)* and the *Annual Statistical Bulletin (ASB)* gather statistical data and provide analysis of many aspects of the global oil industry. The former considers different scenarios, explores potential impacts to supply and demand, and generally develops a sophisticated approach to understanding the global oil markets.

The latter provides time-series data on specific aspects of the industry, including pipelines and transportation, production and export levels, and reserve figures for both oil and gas. The two publications were formally announced at the November press conference presided over by OPEC Secretary General, Abdalla Salem El-Badri, which included presentations of the main parts of each publication.

## World Oil Outlook

As noted in the Secretary General's Foreword to this year's edition, the *WOO* "demonstrates once again the key role that energy plays in the expansion of the world economy, poverty alleviation, food security, access to water, the rise of the middle-class in developing countries and the improvement of living standards everywhere."

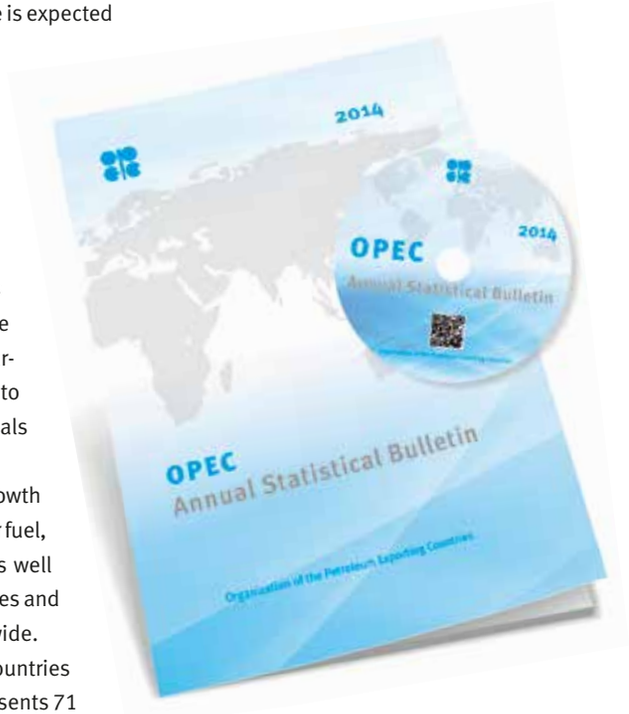
In considering this, the *WOO* highlights the many possible future developments that could take place in the global energy scene. And through various scenarios, it examines different possible outcomes, while also identifying the principal challenges and opportunities that could exist.

In order to give the public and the media in attendance an overview of the publication's contents, two presentations were made corresponding to the two main sections of the *WOO*: The first focused on the upstream sector, while the second focused on the downstream.

Dr Jorge León, Energy Demand Analyst in the Energy Studies Department at the OPEC Secretariat, spoke about the first of these, giving the main points and highlights, and describing the main assumptions of the new Reference Case used. He also examined some of the most important outcomes for the medium- and long-term outlook for supply and demand.

After outlining some of the key assumptions used in the elaboration of the *WOO*'s Reference case — which include a specific level of oil prices, economic growth rates and the ongoing rebound from recession in developed countries, and the uncertainty of pending and/or proposed energy policies in consuming countries — León considered energy use patterns worldwide.

Basing his comments on the insights provided by the publication, he described how energy use is expected to rise by 60 per cent by 2040 and that, in this, fossil fuels are expected to remain a key source of energy. And oil, specifically, will retain the largest share of this, he noted. After 2030, he said, fossil fuel shares tend to converge.




Turning to the world demand outlook, León discussed some patterns and trends examined in the *WOO*. In the long term, he said, "oil demand reaches 111 million barrels/day by 2040," with upward revisions to oil use levels in the area of petrochemicals and aviation fuels.

On the other hand, constraints to growth may be seen in the areas of marine bunker fuel, due to new regulatory considerations, as well as the increasing use of hybrid technologies and ongoing efficiency improvements worldwide.

In future oil demand, developing countries remain key, particularly Asia, which represents 71 per cent of the oil demand growth among developing countries worldwide.

In addition, the transportation sector that remains central for long-term oil demand growth, as developing countries increasingly see the poor rising to middle class status, and growing numbers of people in countries such as China and India turn to automotive transportation.

In the medium-term, León explained further, the outlook for oil demand rises by 1m b/d per annum and by 2019, "oil demand is 96m b/d." Again, in this, developing countries are a key to growth, he added.

Turning to supply, León briefly outlined some of the main points in the *WOO*. The primary recent driver of supply growth, he said, explaining data on a chart, are tight crude and unconventional natural gas liquids (NGLs). "But they peak and decline in time," he added, noting that factors such as rising costs, environmental concerns, decline rates and well productivity are all issues.

Overall, non-OPEC crude supply rises to 62–63m b/d, with Brazilian supply, as well as supply from the Caspian Sea, biofuels and oil sands, all serving as increasingly important sources of supply.

OPEC's crude supply, meanwhile, is expected to be over 39m b/d, representing a share of 36 per cent of world liquids supply by 2040.

The downstream sector was next presented by Dr Jan Ban, Senior

*Abdalla Salem El-Badri, OPEC Secretary General.*

Research Analyst in OPEC's Energy Studies Department. He examined some of the issues facing the downstream sector, and outlined some of the trends seen recently in world refining.

Among the most important downstream related highlights from the *WOO* was the significant expansion in medium-term refining capacity that is expected.

"More than 9m b/d of new distillation capacity will be added globally in the period 2014–19," he stated, while discussing graphs on additions and crude runs.

The new capacity will appear increasingly in the Asia-Pacific region, he noted, once again illustrating the global shift from West to East. The resulting incremental crude runs open up 3m b/d in excess capacity, he added, versus the required level based on demand increases.

The trend towards the Asia-Pacific is one of the themes running much of the *WOO*. In terms of distillation capacity, Ban explained that the region "comprises the largest share of total additional crude distillation capacity required by 2040."

In addition, beyond any current projects, he outlined that the remaining additions after 2020 will all be fairly equally distributed among Latin America, the Middle East and Africa. Of course, the shift towards Asia is accompanied by growing demand there for crude imports to the region. "Asia-Pacific crude oil imports are set to increase by 11m b/d between 2013 and 2040, reaching a level of almost 30m b/d by 2040," noted Ban.

In this, the Middle East is on track to remain the biggest major crude exporting region and will supply almost 20m b/d of the Asia-Pacific's crude oil by 2040.

Ban noted that this year's *WOO* highlights the need for continued capacity rationalization, in order to stave off any idle capacity. At least 5m b/d of closures are needed, he said, by 2020 in order to maintain a refinery utilization rate of at least 80 per cent in any sub-region.

In the long-term, "the need for closures could potentially be in the order of 10m b/d," he also noted, with an emphasis on industrialized regions.

Amid all these trends affecting the downstream, Ban noted that there is also a trend to additional complexity in the global refining system. This is being driven by the growing demand for lighter and cleaner products, which require additional refining processes and secondary processing units.

These include new conversion units, desulphurization capacity and octane units, as well as other enhancements to existing refineries worldwide.

## Annual Statistical Bulletin

Highlights and key findings from the 2014 *ASB* were next presented by Dr Adedapo Odulaja, Head of the OPEC Secretariat's Data Services Department.

This year's edition, which includes statistical data through the end of 2013 — and which also included a pocket version with some of the most important features of the full size version — included various key messages, he said.

First, the data show that proven crude oil reserves were on the rise. "Proven conventional crude oil reserves have continuously been on the rise, reaching almost 1,500 billion barrels worldwide in 2013," he said. However, he added that over the previous year of 2012, the increase is only marginal, at around 0.4 per cent.

Odulaja noted that in OPEC Member Countries, reserves have risen by a similar modest rate of 0.4 per cent, with reserves reaching 1,206bn b in 2013. This, he noted, represents 81 per cent of worldwide reserves.

At the same time, additions to non-OPEC proven reserves in 2013 were seen mainly in Western Europe, with Norway and the United Kingdom in the lead, followed closely by Colombia, Brazil and Argentina.

In terms of production, the data indicate a flat trend. "Worldwide, crude oil production increased only slightly," he said, "by 0.1 per cent over 2012." Although there was some dramatic increase in production in some very specific regions, such as North America, an almost equal reduction in output was seen in most other regions.

Production in OPEC Member Countries, in particular, still constituted about 43 per cent of total global production at an average of 31.6m b/d," added Odulaja.

Turning next to oil demand, he noted that "world oil demand rose by 1.2 per cent in 2013, with the largest increases in North America, particularly the United States, and in emerging economies."

In OPEC Member Countries, oil demand increased for another year by 4.1 per cent year-on-year, with gasoline

and gasoil constituting the most consumed products, he said. Oil demand in the Middle East, Africa and Latin America also continued on an upward trend.

Odualaja added that while oil demand also rose in Asia and Pacific countries, particularly China, Thailand and Indonesia, in some of the largest consuming countries, demand stayed flat. "Total OECD oil demand remained stagnant during 2013," he said.

Odulaja also discussed recent trends in oil prices, and the performance of the OPEC Reference Basket compared to previous years. He also considered other recent trends, particularly those related to changing oil trade patterns, which he described as continually evolving. "While more crude oil is going to the Asian region, North American imports are on the decline," he said.

At the same time, net crude imports to Asia have been increasing at a rate of 0.5m b/d since 2007, while that of North America have been declining at a rate of 0.57m b/d during the same period.

And in terms of products, Odulaja noted that North America had become a net product exporter back in 2008, while Latin America and Africa more recently became net product importers in 2010.

Looking OPEC crude oil exports and their destinations, Odulaja said that in 2013 most of the oil was going to the Asia-Pacific region. About 14.3m b/d, or 59.3 per cent, of crude oil from OPEC Member Countries was exported to Asia and Pacific countries, with 4.1m b/d, or 17.2 per cent, going to Europe, and 3.9m b/d, or 16.3 per cent, to North America.

More generally, OPEC Member Countries exported a total of 4.5m b/d of petroleum products in 2013, with the largest share of 3.1m b/d, or 68.5 per cent, going to Asia and Pacific countries.

In contrast, European and North American countries received smaller shares of OPEC petroleum product exports (0.6m b/d, or 14 per cent, and 0.2m b/d, or 5.2 per cent, respectively).

In closing, Odulaja noted that in total, "Asia remains the biggest destination with about 62 per cent imports of OPEC oil, a 4.1 per cent increase over the 2012 level."

There was much more data that could have been presented and discussed. But what was presented were just some of the highlights, to give the public a sense of what recent trends are apparent from the statistical data published.

In fact, Odulaja noted that the data in the publication is an important way to ensure transparency of OPEC's Member Countries, since the majority of the data contained in the *ASB* is derived from the extensive OPEC *Annual Questionnaire* which is used by all Member Countries.

He also presented a revised version of another OPEC publication, the pamphlet '*Who Gets What from Imported Oil?*', which is published nearly every year. It shows in very clear terms how much of the price paid for oil goes to oil producers and how much goes to the governments of oil-consuming countries, with the latter reaping most of the revenue benefits.

Discussing several graphs comparing and contrasting tax revenues and oil export revenues, Odulaja noted that "it can be seen that while OPEC Member Countries' annual oil export revenues amounted, on average, to $95/b, OECD countries' tax revenues was an average of $116/b.

"This means that OECD nations earned, on average, about $21/b of oil more than OPEC Member Countries, over the past five years," he asserted.

It is important to disseminate such information widely so as to raise awareness of some of the misunderstandings that exist regarding oil, the price of oil, and the role of OPEC in helping to bring stability to the market.

In fact, publications such as the *WOO* and the *ASB* are critically important to the work of all energy stakeholders. OPEC will continue to strive to gather data, conduct research and provide analysis — for the benefit of all those who work and participate in the energy field.

The World Oil Outlook and the Annual Statistical Bulletin are both available for free download at: *www.opec.org*. The latter publication is also available as an interactive on-line version with time-series data going back to 1960.

*Dr Adedapo Odulaja, Head of the OPEC Secretariat's Data Services Department.*

*Dr Jorge León, Energy Demand Analyst in the Energy Studies Department at the OPEC Secretariat.*

*Dr Jan Ban, Senior Research Analyst in OPEC's Energy Studies Department.*

*Oil to remain key fuel source for foreseeable future*

# IEA points to growing importance of Middle East producers

*The world faces huge challenges in the future energy sector, in which oil will be a key fuel for some time to come, with Middle East producers set to take centre stage from 2020 onwards. That was the prediction made by the International Energy Agency's Chief Economist,* ***Fatih Birol,*** *at the launch of the IEA's World Energy Outlook (WEO) for 2014 in Vienna in November. The* **OPEC Bulletin's Maureen MacNeill** *was in attendance.*

"The WEO raises new issues — for me the most important is energy security," Fatih Birol, Chief Economist at the Paris-based IEA, stated at a press briefing marking the launch of the WEO 2014, which this year provides energy trends through to 2040 for the first time.

Global oil demand is seen rising by 14 million barrels/day in 25 years — from 90m b/d in 2013 to 104m b/d in 2040 — driven primarily by emerging markets in Asia, Africa, the Middle East and Latin America, while production of United States unconventional oil is expected to slow after 2020, he said.

"It is important to understand that the reserves for shale oil are much less than for shale gas," he said. "The predictions of the US are similar ... it will not last forever — the reserves are limited."

In addition, unconventional oil in the US has steep decline rates, due to the geology, thus investment must be constant in order to keep production at a certain level. "It is not like other oil," Birol pointed out.

Gerhard Roiss, Chief Executive Officer of Austrian state energy company, OMV, called shale gas a "disappearing option" in Europe. Replicating shale oil extraction outside of North America is expected to be difficult, according to the IEA.

How can growing demand be met? he asked. Birol sees the solution resting upon four strong shoulders: the US, Canada, Brazil and the Middle East.

"These are greater than all other producers put together, for whom total production will slightly decline," said Birol.

Canada is exploiting its oil sands, but transport of the product remains a challenge, especially to Asia, he said, while Brazil has huge discoveries, huge offshore projects and investment. "But around 2020 we will need the major producers to fill demand and there is only one region which can meet this challenge — the Middle East.

"It is imperative to understand the crucial job of Middle East production growth, especially post-2020. If you want to see production growth, you have to invest today, if not yesterday," he asserted.

Furthermore, noted Birol, in the Middle East, Iraq is extremely important as about half of the production from the area is expected to come from this country.

However, in order to see modest growth in Iraq, $15 billion of investment per year is required, said Birol. "When I see the security situation today, investment is low and there is instability and insecurity... my main worry is that investments in the Middle East needed ... to meet demand in the 2020s are not happening."

In fact, geopolitical issues in general represent a growing risk to energy security, whether in Iraq, the Middle East, Libya or Russia, he contended.

Birol stated that $900bn worth of investment per year is required in oil and gas development by the 2030s to meet demand, adding that although oil prices have taken a plunge and may stay at lower levels for a few years, there will be upward pressure again.

"Today's $80/barrel price is a comfort zone for consumers, but offers no reassurance for the long term.

"A well-supplied oil market in the short-term should not disguise the challenges that lie ahead, as the world is set to rely

more heavily on a relatively small number of producing countries," explained Birol.

The current prices may stimulate many companies to cut their budgets for investment in 2015–16, he warned, which would have implications for future supply growth.

Oil security issues will not only affect Europe, but Asian countries as well, he said, adding that although currently 60 per cent of Middle Eastern oil goes to Asia, by 2040 it will be 90 per cent.

In general, the world's primary energy demand will be 37 per cent higher in 2040, putting more pressure on the global energy system, according to the WEO 2014.

However, it stated that the pressure would be even greater if not for efficiency measures, which are expected to play a vital role.

The scenario shows that world demand for coal and oil will essentially reach a plateau by 2040 and that renewable energy technologies will rapidly gain ground, due to falling costs and subsidies.

Gas demand will also rise by more than 50 per cent by 2040, with the US remaining the largest global gas producer, though production will level off by the late 2030s, as output starts to decline, predicts the WEO.

Reinhold Mitterlehner, Austrian Vice Chancellor and Federal Minister for Science, Research and the Economy, stated in his opening address to the briefing that the key to a stable energy market lies in research and development.

"This is food for thought … the IEA should focus on research and development in the energy sector in the next years and keep its eyes open for game-changers that alter energy systems and offer groundbreaking solutions," he advised.

The European Commission's Director General for Energy, Dominique Ristori, also sees the answer in technology. "Nothing is possible without a big effort of the best technology, speaking about generation, transportation, distribution, storage," he said.

Birol also talked about shifting demand patterns. Although China has been the engine for global energy demand for some time, its pace of growth will slow because of huge efforts in energy efficiency, a slowdown in the Chinese economy and a change in nature from heavy to light industry.

## Main drivers of demand

As China's contribution slowly fades, the main drivers will become India, East Asia and the Middle East, claimed Birol.

How much the average person pays for energy in different parts of the world will also become an issue, he said. "The US will stay for many years a country where the cost of energy is lower than the rest of the world," said Birol. In Europe and Japan, costs will rise and although future prices will increase all over the world, US prices will be even lower than in China.

"This will be an important competitive advantage for the US," maintained Birol. He stated that natural gas consumption is expected to rise strongly, with the exception of Europe, which will go back to 2010 levels in 2030.

Production will double from 300bn cubic metres today to 600bn cu m in 2040, but LNG will remain very expensive in Europe, due to the high cost of shipping, though it will provide more energy flexibility.

A huge challenge will remain LNG use in Asia, where the fuel will compete with coal, said Birol. Currently, a new power plant in Asia using LNG costs 2.1 times more to operate than a coal-based plant, though worldwide demand for coal is expected to slow.

European coal demand peaked in the 1980s, in the US in 2005, while China's growth has slowed to five per cent annually over the last two years, rather than the ten per cent per year it was previously.

However, this will be compensated by growth in India, which will overtake the US and become the world's second-biggest coal consumer.

## Power sector faces challenges

The power sector in general faces challenges, stated Birol: about 40 per cent of power plants are retiring in the next 25 years and renewables are expected to fill half of the new capacity built by 2040, but there are challenges with their intermittent nature.

Renewables will overtake coal in this time as the largest contributor to new power supply; wind will account for the largest share of renewable-based power generation, followed by hydro and solar technologies. Solar is expected to increase six fold by 2040, said Birol. "Subsidies will be important.

"For the OECD region, the main challenge will not be to meet growth in demand, but to replace retiring plants. But it is also an opportunity; retiring power plants are high emitters. Now there is room to come up with other solutions."

Another significant issue for the world remains fossil fuel subsidies, according to Birol. Today, in many countries, there are subsidies on coal, oil and gas, to the tune of an estimated $550bn in 2013.

"This sends a message to consumers; they are given money in order to use energy inefficiently … this is one of the biggest problems in the emerging world," he stated, along with the fact that fossil fuel subsidies are about four times higher than alternative energy subsidies.

Birol also spoke at length about the climate change challenges facing the world today.

"The world is on a 3.6°C temperature increase track right now, which would completely change our planet and lifestyle," he said. Next year's United Nations COP21 meeting in Paris to address climate change is the last chance to make a change if life is to continue as it has over the last centuries, stated Birol.

JODI

# OPEC hosts JODI Technical and Inter-Secretariat Meeting

A *Technical/Inter-Secretariat Meeting of the Joint Organizations Data Initiative (JODI),* with the theme of *'International cooperation in oil and gas statistics',* was held at the OPEC Secretariat in Vienna, Austria, on October 20–21, 2014.

Organized by the Secretariats of OPEC and the Riyadh-based International Energy Forum (IEF), the main aim of the meeting was to exchange information on present issues and future endeavours of both JODI's initiatives — JODI Oil and JODI Gas.

The meeting, which was represented by delegates from all JODI's partner organizations — the Asia Pacific Economic Cooperation (APEC) group, the Statistical Office of the European Communities (EUROSTAT), the International Energy Agency (IEA), the IEF, OPEC, the United Nations Statistics Division (UNSD), the Gas Exporting Countries Forum (GECF), and the Latin American Energy Organization (OLADE) — included an additional session aimed at addressing all technical issues.

The morning session of day one started with the technical meeting, during which technical issues relating to both JODI Oil and JODI Gas were discussed among the partner organizations.

The afternoon session of day one was split into two parts. The first was dedicated to dealing with oil-related issues, while the second addressed natural-gas related topics.

With regard to both JODI Oil and JODI Gas, each partner organization provided an overview of the status on country participation and highlighted the progress made in data quality performances regarding the submission, timeliness and coverage of the respective Member Countries.

During the deliberations, delegates were given a presentation on the importance of the JODI Oil database in which it was stated that the initiative's information is already considered a major source of reference, not only in the oil industry, but also in other energy-related research institutions.

*Dr Adedapo Odulaja, Head of OPEC's Data Services Department.*

*Fuad AlZayer, Chairman of the Meeting, from the IEF.*

*Above, delegates attending the JODI meeting and below, posing for a group photo.*

Day two of the Meeting was split into several parts, comprising sessions on the JODI Conference to be held in India in early February; proposals to enhance the visibility of JODI; updating the partners on the latest deliberations and guidelines received from G20 regarding JODI; a pre-assessment of a JODI Coal database; an update by the IEF on capacity-building; while the partner organizations were also briefed on the newest features and progress made regarding the JODI website.

## Impressive progress

JODI has made impressive progress since the initial six international organizations — APEC, EUROSTAT, the IEA, OLADE, OPEC and the UNSD — launched the Joint Oil Data Exercise in April 2001.

According to the JODI website, the primary goal at that time was not to build a database, but to raise awareness among oil market players about the need for more transparency in oil market data.

It stressed that in the late 1990s, energy ministers identified the lack of transparent and reliable oil statistics as a key contributor to oil price volatility.

The first priority of the six organizations was to assess the oil data situation in their respective member countries. The assessment included the collection of monthly oil statistics from each organization's member countries through a harmonized questionnaire on 42 key oil data points.

Progress was immediate. Within six months, 55 countries were participating in the exercise. Six months after that, there were over 70 participating countries, representing 90 per cent of global oil supply and demand.

Since then, the evolving JODI, which has seen its name change from the Joint Oil Data Initiative to the Joint Organizations Data Initiative, has gone from strength to strength.

Two more organizations have joined — the IEF, which took over the co-ordination of JODI in January 2005 and now hosts its Secretariat, while the GECF became a partner in April this year.

There are now JODI World Databases for both oil and natural gas open to the public. Some 77 countries and economies are participating in JODI Gas, representing nearly 90 per cent of global natural gas supply and demand.

*Latest speaker in Secretariat lecture series ...*

# Chinese analyst shares outlook information with OPEC officials

*The Secretariat's Director of Research, Dr Omar S Abdul-Hamid, with Xiaojie Xu.*

The head of the World Energy Programme of China's Institute of World Economics and Politics (IWEP), part of the Chinese Academy of Social Sciences, visited OPEC's Vienna Headquarters in November to share his organization's energy outlook insights about China with OPEC analysts and staff.

"This is a unique opportunity. I have been seeking for years to be here," said Xiaojie Xu enthusiastically, adding that the information he presents comes from ongoing studies at his institute. Xu worked for the China National Petroleum Corporation (CNPC) previously, including a nine-year stint as Director for the Institute of Overseas Investment. He also currently advises the National Energy Administration on international policy and state-owned companies on global expansion.

Xu stated that the IWEP outlook for China is similar to that of International Energy Agency (IEA) projections, but with slightly lower figures for demand.

"According to our own database, there is a bigger gap between demand and supply ... we believe energy demand will continue to increase, but not as fast as others forecast."

He said that according to their figures, coal demand will remain flat this year, while oil consumption will rise

slightly by 1.8 per cent and natural gas demand by 13 per cent.

Xu said there are changing drivers in the Chinese economy and that GDP growth will likely be lower than estimated by other institutions.

"We believe that economic GDP growth will slow down, though we believe in 2020 China will be a well-off society and income per capita will double by then."

## Chinese oil demand to rise

OPEC's *World Oil Outlook* predicts an increase in China's demand for oil between 2013 and 2040 from 10.1 million barrels/day to 18.8m b/d.

Xu said China does not have many predictions to 2040. "It is a bit hard for us to imagine. Our policy focuses to 2017, then 2020, 2025 and 2030. We have not looked beyond that."

China's own oil supply has been flat for years, he said. Although more oil may be found in deep basins, or with tight oil production, there is not expected to be much of an output increase inside the country up to 2025–30. Foreign oil supplies about 60 per cent of the country's needs currently and that may increase in the years to come, said Xu.

"We will have to rely very much on the outside, especially the Middle East, but also Central Asia," he affirmed.

One area in which China will be increasing oil consumption is in its blossoming strategic petroleum reserve (SPR), which it wants to increase to 500m b. It currently has 250m b and wants to build another 250m b, he said.

"SPR is very important. It was launched in 2006 — from 2006 to now we have built half our capacity. In the next five years we will build the other half of our capacity.

"We believe that by 2020 we will have over 80 million tonnes, almost equal to 90 days (of supply). It would be a critical move to increase capacity reserves, and it also acts as a market adjustment tool."

Natural gas will become important to China, with a focus on unconventional gas such as tight gas, CPN and shale gas, though a cautious attitude is needed, he said, as extracting these gases is not simple and faces both technical and infrastructure issues and barriers. "Shale gas in China will not be big before 2020, but could be big after that."

The country's foreign gas dependence is currently around 30 per cent and Xu stated that this will likely rise to 40 per cent by 2020.

One element behind a lower GDP rate will be a rise in energy intensity and energy efficiency, he said. Less electricity will be used by the local economy and per person. Part of the efficiency drive will include harsher regulations on emissions from coal plants; the country's recently announced 2014–20 Energy Development Strategy Action Plan states that emissions of new plants must be close to those of gas-fired plants. It forces old plants with coal consumption of more than 300g/kWh to close.

"2014 to 2017 will be a tough period for many in the coal industry — they must increase efficiency."

Xu continued that although China still relies heavily on oil, it is unclear what the energy mix will look like in the future. Coal use could peak by 2020, he stated, making room for other kinds of energy sources, such as natural gas and alternative energies, including nuclear, hydro, wind and solar.

"Now there is a low amount of nuclear in the energy mix — less than one per cent — but we believe it could increase sharply by 2020 to 2030, wind and solar too.

"But we cannot live without coal; we will have to think how to make coal cleaner."

Because of its affordability, coal may be used as a source for other sectors and industries, such as citigas and chemicals, stated Xu. Currently, nearly 78 per cent of power generation is coal-based, but the belief is that it could be reduced slightly, not sharply.

A pilot project is underway to examine how coal can achieve higher efficiency, not only to reduce carbon dioxide ($CO_2$) emissions, but other emissions as well, he said. "$CO_2$, $SO_2$ and $NO_x$ could be reduced to levels similar to that of natural gas," said Xu, adding that it may take some time before these technical solutions are available.

Energy demand is also very much linked to direction, including energy use per person, he said, adding that the IWEP still feels very uncertain about the future. "Even in 2021 … we are uncertain about the environment. There is smog facing Beijing and other parts of China — it is a big question mark for the future."

The Chinese forecast is also different from others because it strongly addresses environmental concerns, stated Xu, adding that the environment has become a huge issue both economically and politically. Talk about cutting coal use began in earnest in the second half of last year.

Xu said the country is hoping to reduce its carbon intensity by 40–45 per cent by 2020 compared with 2005. "We believe it must be reduced. Our research shows it can be reduced very much … even 47–48 per cent by 2020."

Coal to liquids or gas should move ahead because it is cleaner, but the future is uncertain in this area and the technology is immature compared with coal to power.

"The technology is not there. West China lacks water and there are also some emissions with coal, so it will not be fast. We must take a very cautious attitude with coal to liquids."

## Energy consumption

Demographics will definitely have an impact on the future energy scene, he stated, reducing momentum somewhat as the country reaches its population peak soon and the middle class expands. Changes in organization and structure will also be significant, as many people are moving from the countryside to the cities and a big question will be how to build new cities.

"So far there are many studies by my team concerning energy consumption in big cities," he affirmed.

"We have low-carbon projects with the hope of building a new type of city and environment. Policy needs to be generated for a new type of consumption mode."

China is working on restructuring its transportation system, which, said Xu, is currently in terrible shape, adding that there is big potential to increase efficiency. "Exhaust from cars has become a major source of smog… the street is a parking lot already."

He added that new innovations will reduce domestic oil consumption, such as the electric car. Meanwhile, the number of CNG trucks is growing and will continue to expand.

Xu said a recent Chinese-American announcement at a press conference in Beijing, at which the two countries agreed to reduce $CO_2$ emissions, will help pave the way for the world to make an agreement by the end of next year. China agreed to a concrete ceiling for the first time, promising emissions would fall after 2030.

It is the first time that a concrete statement has come from a Chinese president on climate change. Xi Jinping also agreed that one-fifth of China's energy should come from zero-carbon sources by 2030.

Xu commented: "It is good for the G20, for China's own interest and for our own world, including energy security. I believe energy security will be important."

He then went on to underline the importance of dialogue.

"I believe China is ready to work with the rest of the world, including major energy producers in the Middle East and OPEC … our outlook now very much supports dialogue with the rest of the world."

OPEC's Research Division Director, Dr Omar S Abdul-Hamid, confirmed that OPEC is also interested in establishing a dialogue with China.

Xu later said that China is struggling with data issues, including transparency and data base harmonization, which must be dealt with so that meaningful data exchanges can take place with major institutions.

"We need a channel between China and other international organizations. A scholarly exchange is one thing, but that is not enough. We need stable dialogue and systems between China, the IEA and OPEC.

"We should have similar methodology, database, research approach; this is a common language, not only English."

Xu discussed working closer with analytical teams and offered to supply data to OPEC colleagues, adding that his institute is independent from the government and acts as a research body or advisor to the government.

Analysts later had the chance to discuss OPEC predictions about China with Xu, as well as to ask some questions.

The Secretariat's analysts presented Xu with outlooks on China in the WOO, which sees the country's energy use rising by 60 per cent to 2040, with fossil fuels remaining key, though oil, gas and coal will converge after 2030 and gas will become the dominant fuel post-2040.

The WOO sees the Chinese economy exceeding that of any other in the OECD region by 2040 with long-term growth of seven per cent from 2014–20 and 5.3 per cent from 2021–40 by the end of which the economy will have grown by almost 450 per cent over 2013.

By 2028, India's population will likely overcome China's, with China's population numbers peaking in 2030. Urbanization will change the picture strongly, according to the WOO. In 1950, nearly 90 per cent of people lived in the countryside; by 2040, about 73 per cent of the population will live in cities.

## Professional Experience

### Research

- Engaged in various research in Beijing for the energy industry and Government Energy Agency since 1983 and Teaching at East China Normal University (Shanghai, 2005), Petroleum Management College, University of Petroleum, China (Beijing, 1993–98); and James Baker III Institute for Public Policy's Energy Forum (Houston, 1997).

### Positions

- Advisor, World Expo 2010, Energy Forum Section, Shanghai.
- Editorial Member, Journal of World Energy Law & Business, Association of International Petroleum Negotiators, Oxford University Press.
- Editorial Member, International Petroleum Economics Journal, Beijing.
- Chief Professor and Director, Institute of Geopolitics of Energy, East China Normal University.
- Participating Fellow, the James Baker Institute's Energy Forum at Rice University, Houston.

### Consulting areas

- Chinese oil and gas strategies, reform, and policy along with strategies for national oil companies, other state-owned energy companies, and private companies.
- Global and key regional oil and gas industrial review and geopolitical analyses.
- Oil and gas new venture development along with commercial opportunities monitoring.
- Petroleum contract model review and fiscal term analysis.
- Country investment climate, including legal, regulatory, taxation, investment policy. Key countries include Russia, Kazakhstan, Turkmenistan, Venezuela, Ecuador, Nigeria, Algeria, Libya, Iran and Iraq.
- Risk evaluation and management.
- Management and geopolitical analyses of cross border oil and gas pipelines on the Eurasian continent.
- NOCs and INOCs analyses.

### Publications

- Xu has extensively published monographs in leading energy and economics journals, as well as government and industry consultation reports and working papers. His topics have included market economics, labour management, geopolitics of energy, Chinese oil and gas past and present, international energy politics and diplomacy, Chinese energy policy, climate change and environmental policy in China, Chinese NOCs overseas strategies, the rise and future of CNPC, petroleum competition, global energy security, China's looming oil crisis, deregulation of the Chinese oil and gas sector, and China's future oil industry, among others.

# Saudi Arabia's energy diversification ambitions on track

Shutterstock

*Despite being one of the largest oil-producing nations in the world, Saudi Arabia has been experiencing growing energy problems domestically. From water desalination to electricity generation, all energy requirements have been supplied through the burning of the Kingdom's most valuable resource — crude oil. But that is all changing. Now the government is spearheading an ambitious programme utilizing nuclear and renewable energy to help satisfy its growing need for power in the years ahead. Nawaf AlSalloum, a Saudi national, who is spending time as an intern at the OPEC Secretariat in Vienna, reports on the Kingdom's plans for the* OPEC Bulletin.

Saudi Arabia is burning approximately one billion barrels of oil every year in order to keep up with its expanding domestic energy demand, and this is often highly subsidized by the government. The fact is the Kingdom's energy usage is increasing at an annual rate of eight per cent with demand expected to double to 120 gigawatts of electricity (GWe) by 2030.

In order to tackle this burgeoning energy demand from a rapidly growing population, where soaring temperatures and high levels of water desalination are exacerbating the problems, the Kingdom is taking crucial steps to diversify its domestic energy sources, primarily through the use of nuclear power and renewable energy.

In 2010, a royal decree was issued stating that "development of atomic energy is essential to meet the Kingdom's growing requirements for energy to generate electricity, produce desalinated water, and reduce reliance on depleting hydrocarbon resources."

Saudi Arabia today stands determined to have 54 GWe of its future energy provided by means other than hydrocarbons, with 15 per cent of its total domestic energy requirements provided by nuclear power, 33 per cent by solar power, eight per cent by wind power, with another two per cent coming from waste-to-energy.

These ambitions are to be realized through the King Abdullah City for Atomic and Renewable Energy (KACARE), which was established by the government in 2010, and with the aid of private companies.

Solar energy seems like an obvious choice for the Kingdom as the Saudi desert is home to some of the highest solar irradiation levels in the world and is primarily covered in flat cloudless landscape.

Solar projects are expected to generate 40 GWe of domestic capacity by 2032 at a cost of approximately $109bn.

With the majority of residential energy usage attributed to cooling during the hot summer months, the Kingdom also aims to export surplus energy to Italy and Spain during the winter when energy demand drops by up to 45 per cent.

Solar energy will take advantage of the national climate and geography in order to alleviate domestic oil use. It is also planned to power desalination plants from the sun's rays in increments over the next decade.

Wind power will mainly be used to power desalination plants with 9 GWe of capacity planned to be in place by 2032.

However, solar and wind energy will not be enough to satisfy domestic needs. The Kingdom has announced plans to build a total of 16 nuclear reactors over the next 20 years that will cost between $80bn and $112bn, with the final costs depending on technological advancements and international negotiations.

The nuclear reactors will be instrumental in bringing about more cost-effective water desalination.

According to the atomic energy team leader of KACARE, Muhammad Garwan, nuclear energy is essential in reducing the Kingdom's dependency on oil for domestic energy. He said it is also economically viable in the long term and will provide jobs for the rising numbers of Saudi youth.

Construction of the first nuclear reactor after the final round of scouting is expected to begin in 2017 and be completed by 2022.

## Solar

Saudi Arabia's harsh and arid climate is far from hospitable as temperatures can reach a scorching 50 degrees Celsius in the summer months and the lack of natural water resources make water more expensive than oil domestically.

However, with 500,000 square metres of arid cloudless land and some of the highest solar irradiation levels in the world of 1,800–2,200 kWh/m2/year, the Kingdom seeks to use the desert landscape to its advantage.

*Some 33 per cent of future requirement for domestic energy use will come from solar energy.*

Shutterstock

Shutterstock

*KACARE has recognized 40 sites in the Kingdom to serve as wind farms.*

## Challenges

The two most important challenges the Kingdom has faced to realize its solar ambitions for the past two years have been policy and technology.

Policy framework and the lack of effective regulation have delayed initial progress, while advancements in technology are essential in order to lower costs and boost efficiency.

However, the Kingdom and KACARE are not sitting idly by and are taking firm steps to combat these obstacles. The King Abdullah University of Science and Technology is receiving millions of dollars in government funding for research and development, as dust still has a significant negative impact on the efficiency of solar cells.

Also, KACARE has recently developed the Renewable Resource Monitoring and Mapping (RRMM) programme, which is a massive boost to the industry's research capabilities as it accurately predicts solar patterns, dust levels and other important information.

## ACWA R2IIP

One of the many companies venturing into solar energy is ACWA Power International, which recently entered into an agreement with the Saudi Electric Company for funding, constructing and operating the Rabigh 2 Independent Power Project (R2IPP).

According to the ACWA Power website, the project will provide energy for 2.5 million people and more than 400,000 households. R2IPP will be located on the western coast of the Kingdom in Rabigh, and, says the Chairman of ACWA Power, Mohammad A Abunayyan, "will be the most efficient power plant in the Kingdom and the Middle East and North Africa (MENA) region."

It will cost $1.6bn and has already acquired loans from several national and international banks. R2IIP will have a gross thermal efficiency of 58.8 per cent, due to its sophisticated engineering and use of the most advanced technology.

Its net generation capacity is 2,060 megawatts and the plant will run on natural gas as the primary fuel source, with Arabian Super Light crude as a back-up source.

Not only does the advanced engineering and technology greatly improve power generation efficiency, it will also have a significant reduction on fuel consumption, an impact on sea water temperatures, and on carbon emissions.

## Solar powered water desalination

Despite early setbacks, the government has launched the King Abdullah solar water initiative. This seeks to power some desalination plants with solar energy through a three-step programme.

According to WorldNuclear, the first phase will comprise the construction of two solar plants with the capacity to generate 10 MW of power in Khalifa. The second phase is the construction of a larger 300,000 cu m/d desalination plant. The final phase is the implementation of solar power to fuel these plants, with high hopes of all desalination plants becoming solar-powered by 2020.

## Wind

With approximately 9 GWe planned to be provided by wind turbines in the coming years, KACARE has already started the initial stages of its Wind Energy Resources Measurement Project.

According to KACARE, the project has recognized 40 sites to serve as wind farms. It is also planning on

constructing three towers, each measuring up to 100 metres high and equipped with sensors to establish an accurate map to measure wind resources.

Because wind is unpredictable, this project is designed to work in tandem with solar schemes in order to maximize efficiency. In 2013, the Saudi Arabian Basic Industries Corporation (SABIC) acquired a licensing deal with Blade Dynamics of the United Kingdom, whose blades have high resistance to dust erosion and are effective in low wind conditions.

Technology is a key focus in the Kingdom's renewable energy development, in order to boost efficiency and potentially lower costs. Wind power will be solely allocated towards powering water desalination plants in the region, along with solar energy.

## Nuclear

According to author, Tom Lippman, water desalination is one of the two largest uses for domestic power, with Saudi Arabia being the world's largest producer with 3m cubic metres a day at the expense of millions of barrels of oil.

The Kingdom desalinates over 250bn gallons of seawater annually and levels are expected to reach 500bn gallons by 2024. Water in the Kingdom is often more expensive per gallon than oil and desalination uses up 1.5m b of oil daily, according to MIT Tech Review.

The Kingdom has appropriated $16.6bn solely for the purpose of desalination and pursing its plans to have future desalination plants solar-powered in the coming decade.

Electricity production in the Kingdom is very costly as it requires the burning of so much crude oil. It is heavily subsidized by the government to make it affordable. With high temperatures in the summer, up to 30 per cent of Saudi Arabia's electricity is used on air conditioning.

While solar energy will help alleviate some of the domestic energy demand in the coming decades, nuclear energy will still be needed as current demand is over 200bn kWhs a year and is expected to double by 2030, driven by population growth.

## International Agreements

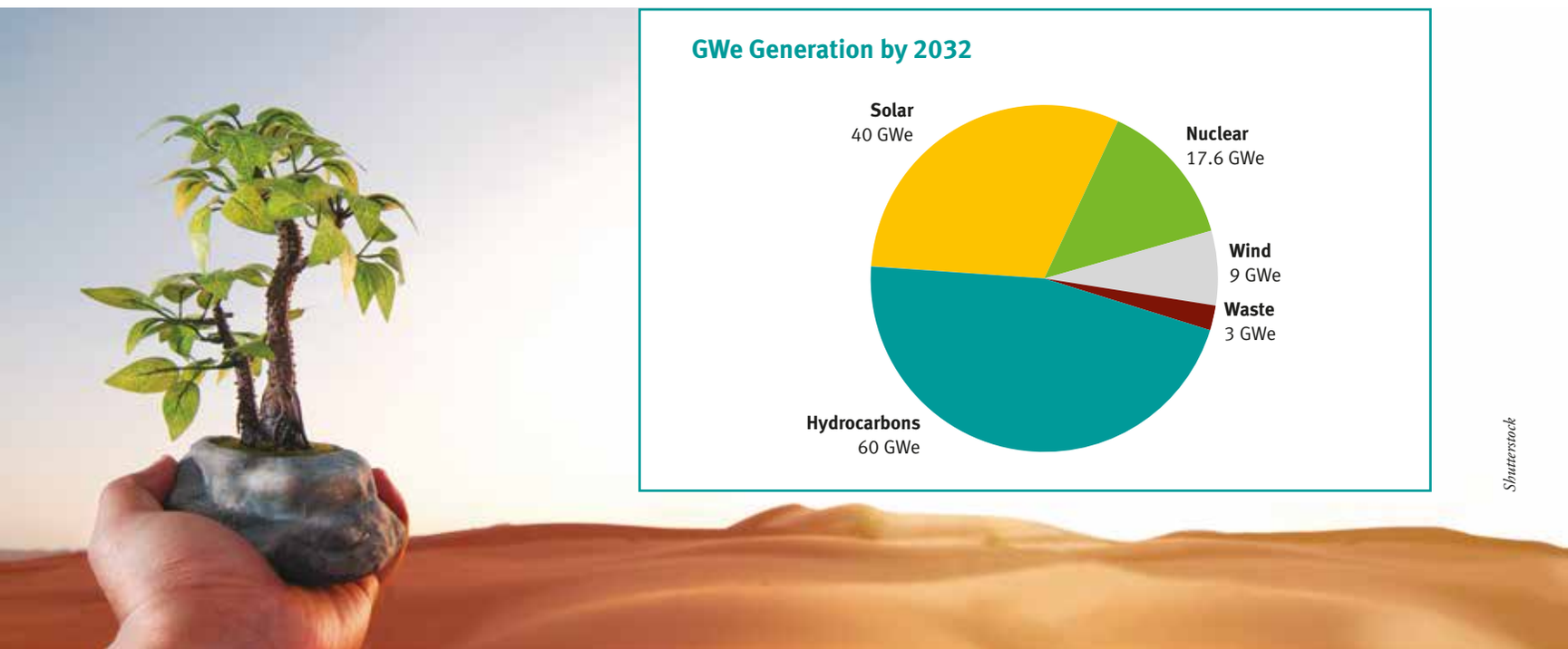
Saudi Arabia has already signed three nuclear cooperation agreements with France, Argentina and South Korea in 2011 and a fourth agreement with China in 2012. According to WorldNuclear, Argentina will help in desalination, South Korea will provide equipment and training, and China will aid in development and maintenance.

Nuclear cooperation negotiations are also currently underway with Japan. However, agreements are yet to be signed with Russia, the Czech Republic, the United Kingdom, and the United States as negotiations are ongoing.

According to Dania Saadi of TheNational, Section 123 of the US Atomic Energy Act is a special agreement required for "significant transfers of nuclear material, equipment, or components from the US." However, this has not yet been agreed to by the Kingdom.

According to the Chief Executive Officer of Toshiba, Danny Roderick, Westinghouse Electric, a US firm, sees the Kingdom as a "very fertile market as a supply chain development," but stressing that the Kingdom must sign the 123 agreement in order for anything to be finalized.

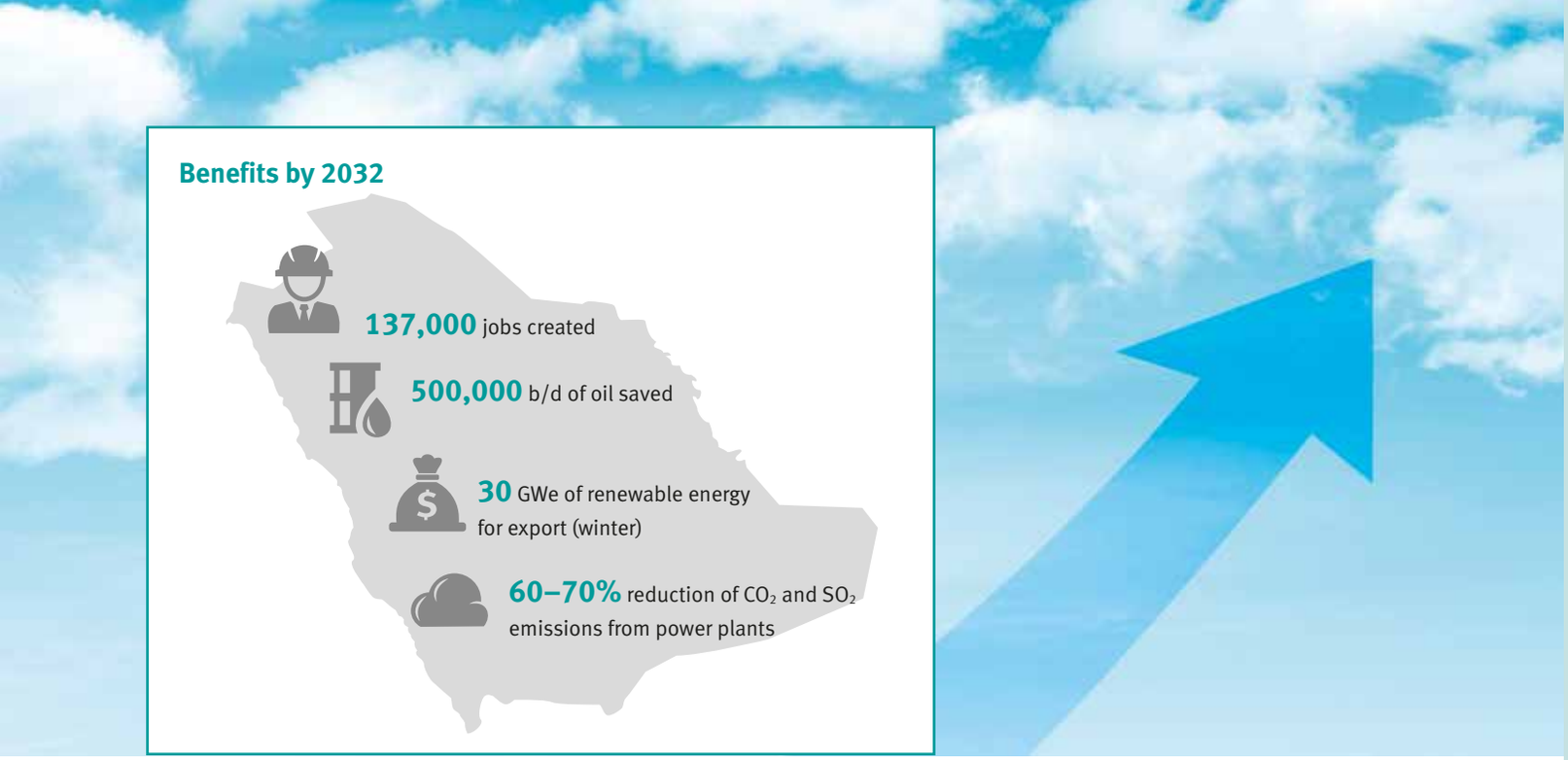
However, Saudi Arabia has had precautions with the International Atomic Energy Agency (IAEA) since 2009 and is cooperating with the Nuclear and Radiation Safety



### GWe Generation by 2032




Shutterstock




Organization in Finland. In addition, KACARE has drafted the Saudi Nuclear Law and the Law of Civil Liability for Nuclear Damages in its efforts towards attaining nuclear security.

## Waste-to-energy

With increasing levels of pollution and waste in Saudi Arabia, as a result of increased urbanization, industrialization and population growth, waste management provides an opportunity to not only reduce the Kingdom's carbon footprint, but also provide much needed energy.

According to the CEO of BioEnergy, Salman Zafar, the Kingdom produces more than 15m tons of solid waste on a yearly basis. Also, the concentration of urbanization in three cities places even more pressure to deal with waste management and recycling in an efficient manner.

Saudi Arabia already spends roughly $8bn a year on waste management. The Kingdom is pinning its hopes on waste management projects generating between two and three GWe by 2032.

The Kingdom's waste is primarily made up of solids, which also provide a valuable opportunity as the waste-to-energy process is considerably cheaper than solar energy by around 65 per cent, according to a 2012 report released by the Sustainability Energy Technology Department of King Saud University.

Saudi Arabia is also poised to be the first Middle Eastern nation to use plasma technology to convert waste to thermal energy with less negative environmental harm than other non-thermal methods.

## Sustainable mindset

Saudi Arabia's focus on technology, efficiency and environmental awareness signifies a massive shift towards a more long-term and sustainable mindset.

With the implementation of renewable energy and nuclear power projects in the future, the Kingdom estimates the creation of 137,000 jobs, saving approximately 500,000 b/d in crude oil use, and boosting renewable energy exports by up to 30 GWe during winter.

Also, the environmental impact will be significantly minimized as KACARE expects emissions of carbon dioxide (CO2) and sulphur dioxide (SO2) from the Kingdom's power plants to be reduced by 60 per cent and 70 per cent, respectively.

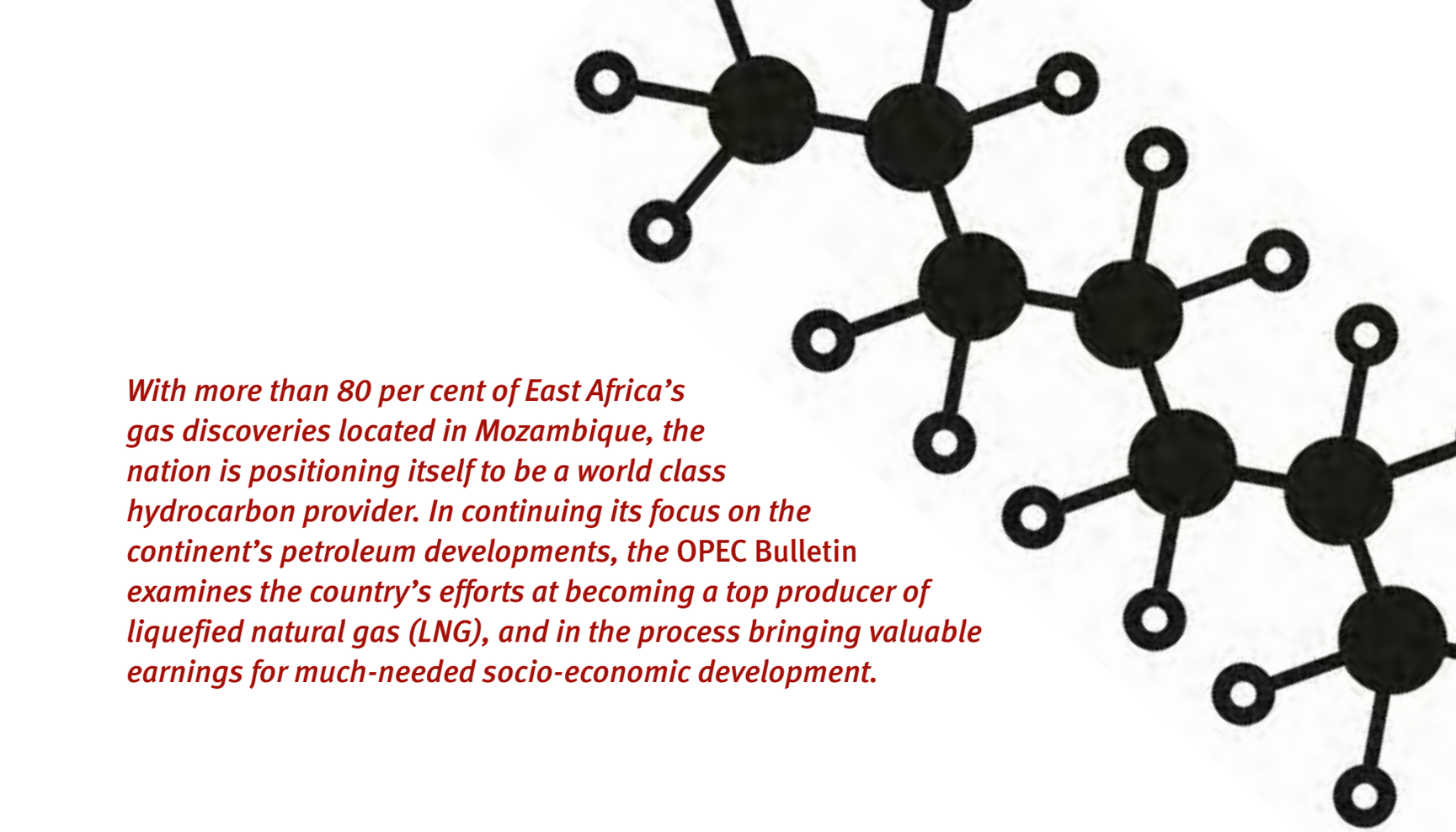
And with the implementation of the RRMM project and cooperation with international companies, in terms of advanced technology, Saudi Arabia is set to take the renewable energy industry by storm.

Not only do the policies of the Kingdom signal the government's intentions towards sustainability and being an environmentally responsible player, they also effectively preserve Saudi Arabia's abundant oil resources for future generations. And, importantly, they indicate a transformation from a nation once solely dependent on oil, to a nation with a diverse and thriving energy industry — and a sustainable energy future.

# G-astronomic!

## Mozambique has potential to become top LNG producer

*Mozambique today possesses over 100 trillion cu ft of gas resources.*



***With more than 80 per cent of East Africa's gas discoveries located in Mozambique, the nation is positioning itself to be a world class hydrocarbon provider. In continuing its focus on the continent's petroleum developments, the* OPEC Bulletin *examines the country's efforts at becoming a top producer of liquefied natural gas (LNG), and in the process bringing valuable earnings for much-needed socio-economic development.***

Who could have imagined, even a decade ago, that a country recovering from a bitter civil war could emerge as potentially one of the largest suppliers of gas in the world? Over the past 40 years, Mozambique has rapidly risen through the exploration ranks to today hold over 100 trillion cubic feet of gas resources.

And with great natural resources comes great economic opportunity that could place Mozambique as the world's third-largest exporter of liquefied natural gas (LNG) in the next decade after Australia and Qatar, according to Al Walker, President and Chief Executive Officer of the Anadarko Corporation, one of the companies to have made gargantuan gas discoveries there.

Exploration in Mozambique dates back to 1904, but a new wave of prospectors is on the cards with the recent-launching of the nation's fifth licensing round in London.

The Mozambican government has invited companies to submit applications for 15 onshore and offshore blocks — comprising an area of 76,800 square kilometres — was originally January 20, 2015. This has now been extended until April 30, 2015, because of the level of interest and requests by companies for additional time.

Unsurprisingly, hundreds of delegates attended the London event — representing over 200 companies — as the Rovuma Basin, where three blocks are up for grabs, is of particular interest considering existing gas discoveries: operators Eni of Italy and Anadarko have reported an estimated 85 trillion cubic feet and 70tr cu ft of gas, respectively.

Around 180tr cu ft of gas resources are within the Rovuma Basin to date, according to Empresa Nacional De Hidrocarbonetos (ENH), Mozambique's national oil company.

Six blocks are on offer in the offshore central Zambezi Delta. Two areas are available offshore Angoche; three are onshore around the Pande-Tamane producing concession; and one is in the Palmeira area *(see table on p51)*.

Previous drilling of shallow water wells in the Zambezi Delta has so far yielded gas shows in some of them. No deepwater wells have been drilled on the blocks.

"Petroleum systems analysis of the Zambezi Delta offshore area suggests high prospectivity," Marjosbet Uzcategui Salazar, a senior interpretation geoscientist at Schlumberger, wrote in a paper last year, in analyzing the potential of the region.

"Four possible source rocks are identified as having

been present in the offshore Zambezi Delta at the time of global periods of marine transgression and anoxia."

Mozambique supplies gas via an 865-km pipeline to South Africa from the Pande-Temane fields, operated by Sasol. The available blocks are nearby and plans are to increase Pande-Temane's output to 450 million cu ft/day from over 300m cu ft/d under a $1.2 billion expansion plan.

Deloitte said: "In 2003, Sasol also discovered the Inhassoro field, in the Pande Temane permit, with a commercial oil rim — the first light oil discovery in Mozambique, which produced over 236,000 barrels during an extended well test in early 2013." During the 1970s, drilling was carried out on the acreage in the Palmeira area near Mozambique's capital, Maputo, with no success.

Data rooms have opened in Henley-on-Thames, United Kingdom and Maputo. Successful operators are required to shoot 2-D or 3-D seismic over the blocks and at least one well needs to be drilled in the first phase of the work programme.

Mozambique's Minister of Mineral Resources, Esperanca Bias, called for operators to outline in their bids how they would tackle upstream exploration and equip Mozambicans with the skills and training to participate in the petroleum sector.

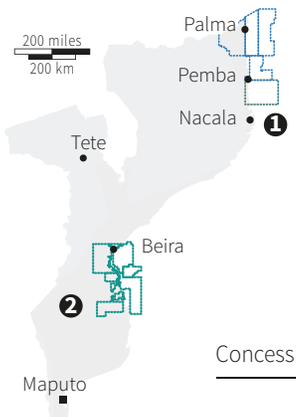
They will also have to team up with ENH at some point during the project, although it remains unclear as to how much ENH's stake would be.

## New rules

According to the International Monetary Fund (IMF), Mozambique's expected economic growth for 2014 will be eight per cent and "substantial LNG revenues" should come through by 2022.

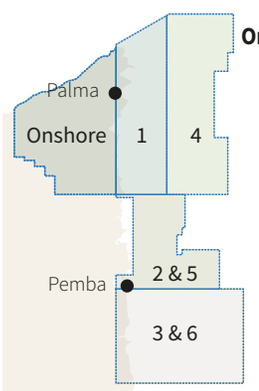
The government and operators hope to deliver first LNG in 2018 and the pressure is on to provide a stable fiscal and legal framework. In August, new laws came into force that shape how energy companies would participate in the oil and gas industry.

Although some clarity has been provided, things could




# Mozambique's gas blocks and consortia

More than 150 trillion cubic feet of gas have been discovered off Mozambique's shore, putting the country in line to become a major gas producer by the end of the decade




**1 ROVUMA BASIN**

| Concession | Ownership, in percent | | | | | |
|---|---|---|---|---|---|---|
| **Area Onshore** | Anadarko 35.7 | Maurel & Pron 24 | Wentworth 15.3 | ENH 15 | PTT 10 | |
| **Area 1** | Anadarko 36.5 | Mitsui 20 | ENH 15 | BPRL 10 | Videocon 10 | PTT 8.5 |
| **Area 4** | ENI 70 | | | ENH 10 | KOGAS 10 | Galp Energia 10 |
| **Area 2 & 5** | Statoil 65 | | | Tullow Oil 25 | | ENH 10 |
| **Area 3 & 6** | Petronas 90 | | | | | ENH 10 |

still change as so much expectation has been whipped up on the benefits that gas production, in particular, could bring.

Under the country's new Petroleum Law, local content requirements have been tightened so foreign companies are compelled to use Mozambican firms/personnel to supply goods or services, provided they are comparable in quality and their cost does not exceed that of foreign services or goods by more than ten per cent.

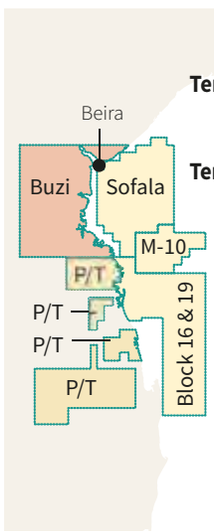
As local content is a key theme in government policy to create jobs, facilitate technology transfer and build local knowledge and skills, operators need to be wary that the government may demand even more of them in the future.

"It is likely that additional local content requirements be imposed in the regulations, as the Institute of National Petroleum (INP) has stated that one of the main purposes of the new law is to develop mechanisms to allow the participation of Mozambican businesses in the oil and gas sector," said associate partner, Natalia Camargobarros, at the Herbert Smith Freehills law firm.

Where the local population has not enjoyed the full array of economic and social payoffs from the petroleum

*Companies have been invited to submit applications for 15 onshore and offshore blocks.*

## ❷ MOZAMBIQUE BASIN




| Concession | Ownership, in percent | | |
|---|---|---|---|
| **Pande/ Temane (PSA)** | Sasol 100 | | |
| **Pande/ Temane (PPA)** | Sasol 70 | ENH 25 | IFC 5 |
| **16 & 19** | Sasol 50 | Petronas 35 | ENH 15 |
| **Baia de Sofala** | Sasol 85 | | ENH 15 |
| **M-10** | Sasol 42.5 | Petronas 42.5 | ENH 15 |
| **Buzi** | PT Kalila 70 | | ENH 30 |

P/T - Pande/Temane
Sources: National Petroleum Institute, Reuters

REUTERS

*Building the infrastructure and capacity to deliver 20m t/yr of LNG is expected to surpass a cost of $30bn.*

sector, the risk of social unrest heightens immensely. Mozambique is determined to escape the "oil curse" that has plagued its African counterparts.

According to Professor John Anyanwu, a lead research economist, Mozambique's challenges on implementing local content relate to overcoming its technical deficiencies.

"International companies have identified business and management practices as the main challenge," he said. "The hydrocarbon companies and governments have different priorities. Local participation should be planned early to create an enabling environment."

## Domestic supply obligation

The new law stipulates that operators must set aside 25 per cent of their produced oil and gas for the domestic market. This provision is controversial because details are yet to be provided by the government on the pricing methodology it will use.

Geological information about the fields is still being gathered which will affect how much gas is produced and the cost. And at what point in the process is the 25 per cent calculated: is it based on oil and gas extracted after refining or processing?

Rod Chooramun, senior associate at law firm, Andrews Kurth, said: "International oil companies (IOCs) looking to participate in Mozambique's oil and gas industry will require certainty that the price received for oil and gas produced and reserved under the 25 per cent quota is economically competitive for IOCs and ensures sufficient shareholder value for shareholders.

"Equally, the government will look to employ a pricing mechanism that is economically competitive and avoids any domestic concern that the government is 'overpaying' for the oil and gas reserved under the 25 per cent quota."

## LNG outlook

Building the infrastructure and capacity to deliver 20m tonnes/year of LNG is expected to surpass a cost of $30bn. The Anadarko-led consortium, which has Area 1 offshore Mozambique, has proposed building an LNG park in the Afungi peninsula area of Cabo Delgado province with initial output of 10m t per annum that could be expanded to 50m t annually in the future.

The group has lined up potential Asian buyers for about 7m t a year. Future pacing of Afungi depends on ratification of the decree law expected by year-end that will establish legal, governmental and contractual support for LNG developments.

Anadarko's Prosperidade field also extends onto Eni's Area 4 and similarly, Eni's Mamba complex straddles Area 1 so the Italian major will contribute to developing another 10m t a year of capacity at Afungi.

This partnership will slash development costs for each company and ease the risk burden. However, for the gas that is solely on Area 4, Eni and its partners are pursuing a floating LNG (FLNG) development option for its Coral South gas resources. But this proposal would utilize less local content.

"The primary concerns of governments is that liquefying and exporting LNG using FLNG will reduce the development of

domestic infrastructure, which is against the interests of developing country governments," cautioned independent LNG consultant, David Ledesma.

The KD Consortium, comprising KBR Inc and Daewoo Shipbuilding and Marine Engineering (DSME) Co Ltd, won the front-end engineering and design (FEED) contract in October for a turret moored double-hull floating vessel, on which gas receiving, processing, liquefaction, and offloading equipment will be mounted, together with LNG and condensate storage. This will be the first FLNG vessel in Mozambique.

The KD consortium will provide the FEED for the topsides, hull, and subsea by April 2015. Two other consortiums are competing to win the engineering, procurement, construction, installation, and commissioning contract to build the new FLNG vessel.

## Timetable challenges

When these liquefaction projects were first touted in 2012, the target date was 2018, but is that realistic? Other LNG facilities such as Nigeria LNG, Tangguh LNG, and North West Shelf took up to 20 years to come to fruition. And factors such as changing ownership structures with Anadarko selling a ten per cent stake to India's Oil and Natural Gas Corporation (ONGC) last year for $2.64bn in cash can delay progress.

Industry analysts have expressed reservation about the lack of LNG experience in the group. Intense competition from other suppliers in Australia, Africa, North America, and Russia point towards the increasing risk of destructive competition, warned Ernst and Young in a recent report.

Mozambique verges upon great transformation potential with oil production on the horizon as Sasol hopes to soon bring online the Inhassoro field. This would herald an oil era.

"The development will be included in the field development plan that will be submitted in February 2015 to the Mozambican regulators. The rates are still being ascertained due to the subsurface work still ongoing," a Sasol spokesman told the OPEC Bulletin.

If Mozambique can successfully capitalize on its gas reserves, these riches can drive domestic as well as export businesses and provide multiple opportunities for Mozambicans for many years to come.

Natznet Tesfay, head of Africa at IHS Country Risk, asserted: "The massive investment followed by the infrastructure boom will transform the northern Mozambican provinces, allowing the local governments to get involved. We expect that this will facilitate and attract the entry of foreign investors, exploring not only the opportunities in the energy sector, but also other areas, such as chemicals, power, manufacturing and mining."

### Licensing round timetable

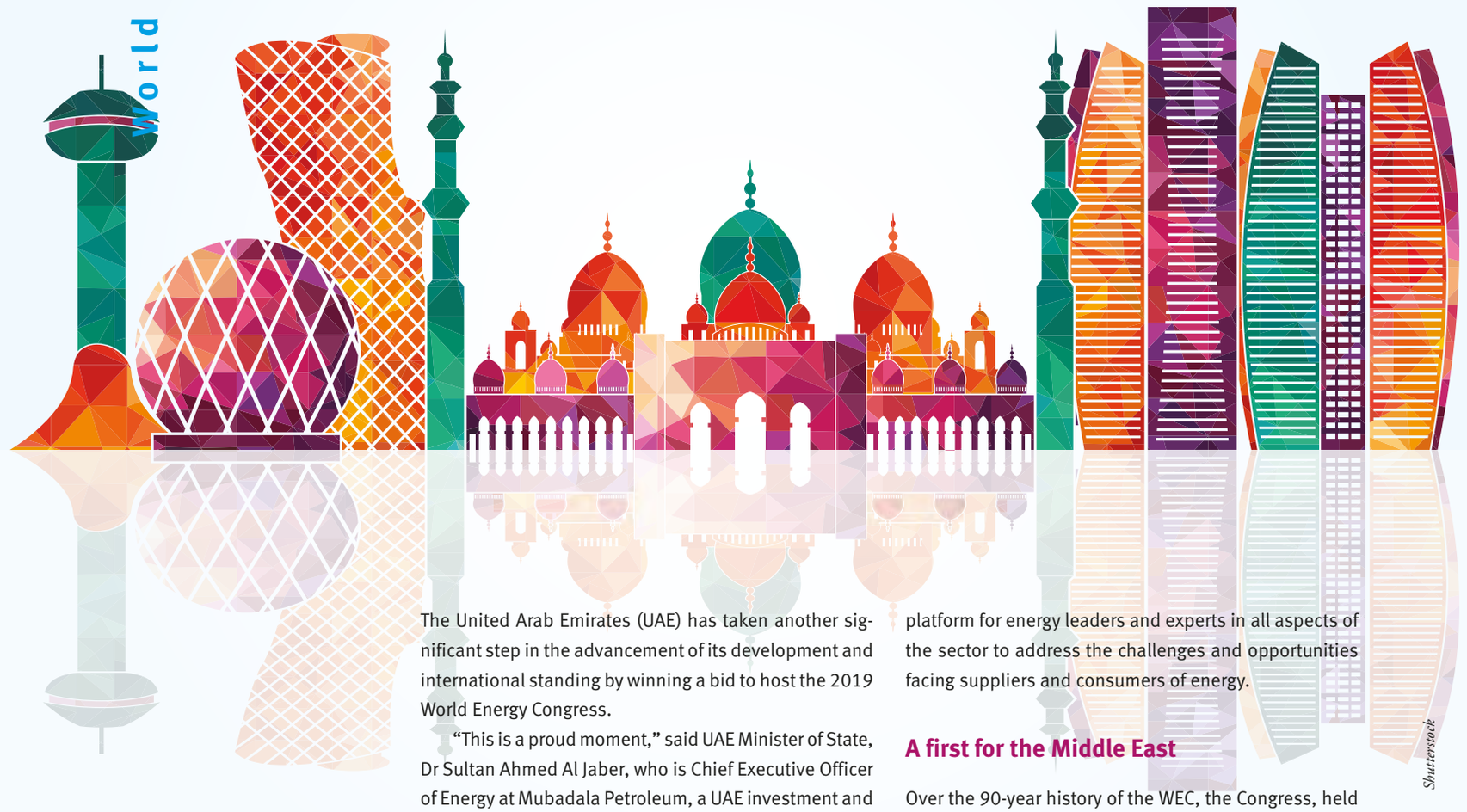
| Date | Activity |
|---|---|
| October 23, 2014 | Data room opens |
| January 20, 2015 | Deadline for block applications |
| February 2015 | Applicant bid clarification presentations |
| February/March 2015 | Bid evaluations |
| March 2015 onwards | Short-listed companies invited for EPCC discussions followed by EPCC awards |

### Available acreage

| Location | Name of block | Size (sq km) |
|---|---|---|
| Rovuma Basin (offshore) | R5-A | 3,456 |
| Rovuma Basin (offshore) | R5-B | 2,549 |
| Rovuma Basin (offshore) | R5-C | 5,207 |
| Angoche Basin (offshore) | A5-A | 5,630 |
| Angoche Basin (offshore) | A5-B | 6,080 |
| Zambezi (offshore) | Z5-A | 4,349 |
| Zambezi (offshore) | Z5-B | 5,796 |
| Zambezi (offshore) | Z5-C | 5,821 |
| Zambezi (offshore) | Z5-D | 4,384 |
| Zambezi (offshore) | Z5-E | 4,399 |
| Zambezi (offshore) | Z5-F | 2,928 |
| Pande Temane Area (onshore) | PT5-A | 6,779 |
| Pande Temane Area (onshore) | PT5-B | 4,356 |
| Pande Temane Area (onshore) | PT5-C | 2,992 |
| Palmeira (onshore) | P5-A | 9,982 |

*UAE's international standing given further boost*

# Abu Dhabi to host 2019 World Energy Congress



Shutterstock

The United Arab Emirates (UAE) has taken another significant step in the advancement of its development and international standing by winning a bid to host the 2019 World Energy Congress.

"This is a proud moment," said UAE Minister of State, Dr Sultan Ahmed Al Jaber, who is Chief Executive Officer of Energy at Mubadala Petroleum, a UAE investment and development company that supports the country's diversification efforts.

"We should embrace winning such a highly competitive bidding process," he stressed. "Hosting the Congress comes with tremendous responsibility."

The Congress, hosted by the World Energy Council (WEC), is the world's largest and most influential energy event, covering all aspects of the energy agenda.

Staged every three years, the gathering provides a platform for energy leaders and experts in all aspects of the sector to address the challenges and opportunities facing suppliers and consumers of energy.

## A first for the Middle East

Over the 90-year history of the WEC, the Congress, held every three years, has been key to the value of the organization. The prestigious event has so far been staged in 21 cities across the world

However, hosting the Congress in the UAE capital, Abu Dhabi, will mark the first time in the event's history that it will be held in the Middle East or an OPEC Member Country.

"We emerged victorious — up against Brazil and Russia (the two other candidates announced last year)

— not only because of our modern infrastructure and hospitality sector, but primarily because of our unprecedented efforts to help diversify and strengthen the global energy mix," commented Al Jaber.

The UAE is rapidly diversifying its energy portfolio, with 2,500 megawatts of renewable energy and 5.4 gigawatts of nuclear power under development, in addition to large-scale investments in energy efficiency, carbon mitigation and development assistance, which in 2013 alone saw the allocation of over $400 million of concessional finance for fellow developing countries.

## Competitive spirit

"Our success is also a testament to the UAE's competitive spirit and our government's bold vision to maintain its longstanding position as a responsible and reliable energy leader. This vision, put forth by our late founding father, Sheikh Zayed, remains a foundational pillar of our leaders' economic growth plans," said Al Jaber.

He pointed out that, as an energy leader, the UAE has an international responsibility to protect and shape future markets and to carve a pathway that delivers a sustainable supply of energy to the world.

"But we are neither strangers to responsibility, nor to the fast-evolving energy industry. In fact, our strategic economic development plans ensure that we remain in front as innovators and guardians of energy supplies to the world."

Al Jaber noted that since the discovery of domestic oil in 1958, the UAE has played a central role in supplying the world with energy.

"And ever since, we have embraced the responsibility and duty to deliver the energy necessary to ensure economic growth, both domestically and internationally," he affirmed.

However, he said, maintaining the country's role as a reliable energy supplier "requires us to innovate and diversify. Today, by adopting new technologies, the UAE is on track to lift its oil production and deliver peaceful nuclear and renewable energy.

"We stand prepared to share the knowledge and experience that has enabled us to establish and maintain our energy leadership. The arrival of the World Energy Congress in Abu Dhabi is an honour, a responsibility and an opportunity to shape the future of energy," he professed.

Al Jaber said that every three years the Congress unites global energy leaders from governments and businesses to discuss and shape the energy industry's evolution and growth.

"Hosting the Congress underlines the UAE's energy authority, our reputation for shaping ideas, for having a long-term vision of the industry and for innovating technology that improves the production and delivery of energy."

However, Al Jaber issued a reminder that this is not the first time that the world has acknowledged the UAE's instrumental role in the energy sector and in the broader geopolitical landscape.

In 2009, Abu Dhabi was selected as the permanent home of the International Renewable Energy Agency "a global vote of confidence for our pioneering efforts to deploy renewables and lead in an ever-more, interconnected energy landscape."

This milestone, he said, was recently followed by the UAE's successful bid to host Expo 2020 in Dubai, becoming the first Arab country to host the 'World Fair' in its 160-year history.

"Today, we are seen as a convener of dialogue and a broker of partnerships — the same reasons that Abu Dhabi Sustainability Week, the World Future Energy Summit and the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) have evolved into a few of the world's largest annual energy related events," he said.

## Close coordination

Al Jaber explained that the bid for the 2019 Congress involved close coordination among many of the country's national entities, underpinned by a fierce international lobbying campaign led by the Department of Energy and Climate Change at the Ministry of Foreign Affairs.

"The hard work and close collaboration among our entities, including the Ministry of Energy, the Abu Dhabi National Oil Company, the Emirates Nuclear Energy Company, Masdar, Mubadala Petroleum, the Abu Dhabi National Exhibitions Centre, the Abu Dhabi Tourism and Culture Authority and others, was crucial."

Al Jaber said the decisive factor, however, which always underpins the success of the UAE's international bids, "rests with our nation's strong political ties with the global community. These are deep-rooted relationships, carefully forged by Sheikh Zayed, that continue to benefit our nation today. It is these relationships — which we are thankful for — that enable us to achieve international success and recognition."

*With Iraqi crude oil production set to expand ...*

# Agreement between Iraqi Government, KRG hailed as "major breakthrough"

The Iraqi Government and the Kurdistan Regional Government (KRG) in November reached an initial agreement described as a "major breakthrough" and one that promises to improve bilateral relations between the two sides as Iraq continues with its oil expansion plans.

The tentative accord was reached after discussions in the Kurdistan region between Iraqi Oil Minister, Adil Abd Al-Mahdi, and Kurdish Prime Minister, Nechirvan Barzani.

Under the terms of the agreement, which is aimed at easing tensions over crude oil exports, the KRG will give 150,000 barrels/day of its oil to the federal budget. According to a report by *Reuters*, that amount represents around half of Kurdistan's overall oil shipments.

Iraqi Finance Minister, Hoshiyar Zebari, in announcing

*A view of the Baiji oil refinery, north of Baghdad.*

the accord, said the central government had also agreed to resume payments from the federal budget to cover the salaries of Kurdish civil servants.

He referred to the agreement as being a "major breakthrough" that would reduce tensions between Baghdad and the KRG. Iraqi authorities stopped paying the salaries in protest against the KRG exporting its oil to Turkey independently.

## Further talks planned

A KRG spokesman in Arbil confirmed the agreement. "What they have agreed is that Baghdad will release some funds — $500 million — and the KRG will give 150,000 b/d of oil to Baghdad," Safeen Dizayee was quoted as telling Reuters.

He noted that KRG officials, led by the prime minister, would soon hold talks in Baghdad to work out a more comprehensive and lasting accord.

Meanwhile, in further talks between the two sides in early December, *Reuters* reported that a revised deal will see 300,000 b/d of oil from Kirkuk being exported via a pipeline running through Kurdish territory to Turkey, in addition to 250,000 b/d from the region's own fields.

It said that the crude would be sold by Iraq's State Oil Marketing Organization (SOMO). In return, Baghdad will resume budget payments to the Kurds.

"It needs some technical work which starts immediately by the KRG," the Iraqi Finance Minister told *Reuters*, describing the deal as a "win-win" for both sides.

A KRG source said the region confirmed that it would sell 250,000 b/d of oil produced in areas under its control to SOMO at Ceyhan, but would be free to sell anything produced over and above that amount.

*Reuters* noted that the share prices of oil companies operating in Iraqi Kurdistan increased sharply on the news of the agreement.

Iraq's Oil Minister said in Vienna at the end of November that the country was looking to boost its crude oil exports to 3.2 million b/d next year, a figure that would include Kurdish exports. This new level was around 500,000 b/d above export figures today.

Meanwhile, Iraq's state-owned South Oil Company is targeting total crude oil production of 3.4m b/d within the next four years.

The extra output would be forthcoming from oil fields opened up as a result of Iraq's first and second post-conflict licensing rounds. Significant increases were expected from the southern region of the OPEC Member Country.

Reuters

## Production increase

SOC engineer, Mussab Abdullah, told reporters on the sidelines of an oil conference in Istanbul that output from Rumaila, Iraq's largest oil field, was slated to jump from the current level of 1.35m b/d to 2.1m b/d by 2018.

The company was forecasting additional amounts of crude production to come from the Zubair field, which was expected to see output rising from 390,000 b/d to 850,000 b/d, also by 2018.

Abdullah said that over the same time frame, production from the Majnoon field would reach 550,000 b/d, up from 210,000 b/d currently, while West Qurna-1 output would increase to around 700,000 b/d from the existing level of 428,000 b/d. In addition, production at the West Qurna-2 field was expected to rise from 350,000 b/d to 550,000 b/d.

# Kuwaiti Emir urges diversification, KOC set to explore offshore in 2015

The Emir of Kuwait, Sheikh Sabah Al-Ahmad Al-Sabah, has pointed to the need for the OPEC Member Country to diversify its sources of income.

In an address to the opening of parliament, he pointed out that the recent fall in the price of crude oil had cast a shadow over the country's economy, which relies heavily on petroleum earnings.

Quoted by the *Kuwait News Agency (KUNA),* he said: "I have appealed from this podium many times to work to develop and build productive economic activities that provide opportunities for the youth to work, diversify the state's sources of income and reduce the reliance of our economy on oil."

He added: "And here we are seeing another cycle of low oil prices as a result of political and economic factors shaking the global economy, casting a negative shadow on our national economy."

*Sheikh Sabah Al-Ahmad Al-Sabah, Emir of Kuwait.*

## Safeguard national wealth

The Emir called on the assembly and the government to draw up legislation to protect the country's national wealth and safeguard it for future generations.

He stressed that the government and assembly should "protect our oil and financial wealth, which is not only ours, but is also the right of future generations we have to utilize to ensure the continued growth of our national economy."

Meanwhile, Kuwait has announced plans to next year drill its first offshore exploration well in 50 years as part of an exploration programme being run by the Kuwait Oil Company (KOC), according to a report by Energy Intelligence.

Ahmad Al-Eidan, KOC's Exploration Manager, revealed that the country was planning to start the intensive exploratory drilling programme offshore by the middle of next year.

Speaking on the sidelines of the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) in the United Arab Emirates (UAE) in mid-November, he said they were now in the process of determining the number of platforms and rigs they would need for the programme.

Al-Eidan said that over a period of 12–18 months after drilling the first well, KOC expected to work on up to 20 offshore wells at an estimated cost of $1.5 billion. He disclosed that over the past three years, the company had invested around $500 million on gaining the necessary seismic information. It planned to spend a similar amount on retrieving more data in the next five years.

KOC, he said, was now processing the data so far acquired and intended to have all the information processed by the end of the year, in time for drilling to start in 2015.

Al-Eidan said the overall aim was to pinpoint and supplement additional oil and gas reserves, as well as to better acquaint themselves with the country's full resource potential.

"Our exploration roadmap is built on looking at conventionals and then moving to unconventionals because we still have a lot we have not looked at," he was quoted as saying.

Kuwait is on course to increase its crude oil production capacity to 4m barrels/day by 2020. And it is planning to boost its gas production capability to 4bn cubic feet/day by 2030.

The country's current oil output stands at around 2.9m b/d, out of total capability of 3.2m b/d, while its gas production is in the region of 1.5bn cu ft/d.

# Qatar's Barzan gas field to see first production in 2015

Qatar's Barzan gas field is on schedule to see first production early in 2015, as planned, according to Nasser Al-Jaidah, Chief Executive Officer of Qatar Petroleum International.

Speaking in the Qatari capital Doha in November, and quoted by the Platts news service, he said the field, which was costing some $10.3 billion to develop, would help satisfy the OPEC Member Country's growing domestic demand for energy.

He noted that Barzan was one of two major schemes nearing completion, the other one being the expansion of the Ras Laffan condensate refinery, which was due to be completed at the end of 2016. The expansion would boost the plant capacity to 292,000 b/d.

## Barzan project

The Barzan project, which is 93 per cent owned by state energy firm, Qatar Petroleum, with the remaining interest held by ExxonMobil of the United States, is slated to reach production of 1.5 billion cubic feet/day of gas.

The environmentally friendly fuel is in growing demand to help meet Qatar's expanding power generation requirements. Barzan will also produce around 20,000 b/d of condensates.

Meanwhile, Qatar expects to soon finalize a new condensate agreement with fellow OPEC Member Country, the United Arab Emirates (UAE).

The accord will be with the state-owned Emirates National Oil Company (ENOC), which is looking to diversify its sources of condensate imports.

"They are keen to renew the existing agreement and we are going to renew it soon," Saad Al-Kuwari, Chief Executive Officer of Qatar's state marketing firm, Tasweeq, was quoted as saying.

Qatar is currently supplying two cargoes of condensate monthly to ENOC's 120,000 b/d Jebel Ali refinery, under an annual term contract set to expire at the end of 2014. Tasweeq also ships one cargo each month to the Abu Dhabi National Oil Company (ADNOC) to feed its 280,000 b/d condensate splitter at Ruwais. Qatar produces a total of 700,000 b/d of condensate, of which around 500,000 b/d is exported, mostly to Southeast Asia.

Ibrahim Al-Sulaiti, Tasweeq's Condensate Marketing Director, was quoted as saying that the company was looking to finalize the 2015 contract with ENOC soon, adding that it would be a 12-month deal.

Shutterstock

*An oil pipeline in the Qatari desert.*

# Saudi Arabia committed to securing oil market stability — Naimi

Saudi Arabia's Minister of Petroleum and Mineral Resources, Ali I Naimi, has reiterated that the Kingdom is committed to maintaining its longstanding policy of establishing and maintaining a stable global oil market.

Addressing a conference in Acapulco, Mexico in early November he stressed that Saudi Arabia is determined to work with other oil producers to ensure that oil price stability is secured in the interests of producers and consumers alike, as well as the industry at large.

"Talk of a price war is a sign of misunderstanding, deliberate or otherwise, and has no basis in reality," he was quoted as telling delegates, in answer to comments made in industry circles that, following the recent drop in international crude oil prices, some of the Kingdom's actions had not been conducive to its stated policy objectives.

***"We do not seek to politicize oil, nor do we collude against anybody. For us, it is a question of supply and demand. It is purely business."***

Naimi referred to these comments as "a great deal of wild and inaccurate conjecture," stressing that Saudi Arabia's oil policy had remained constant for the past few decades, "and has not changed today."

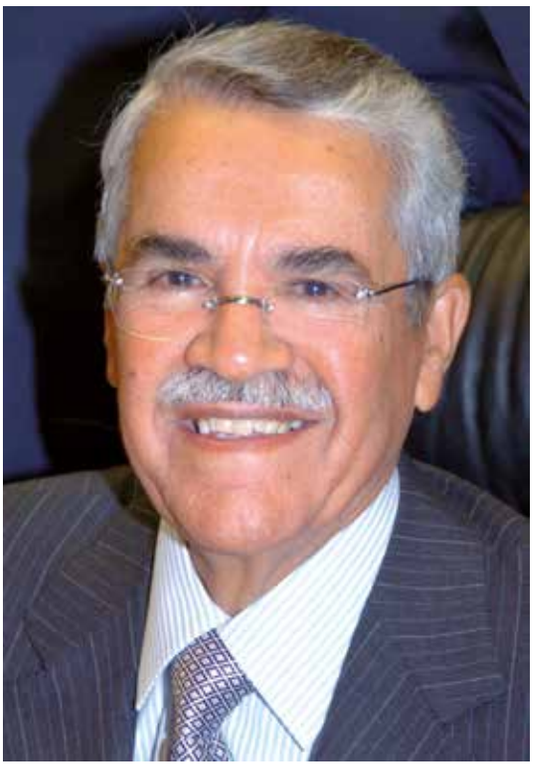
He continued in his speech: "We do not seek to politicize oil, nor do we collude against anybody. For us, it is a question of supply and demand. It is purely business."

## Aramco crude pricing

The Minister explained that the national oil company, Saudi Aramco, priced its cruude oil according to "sound marketing procedures, no more and no less."

These, he added, took into consideration "a host of scientific and practical factors, including the state of the market."

Professed Naimi: "We want stable oil markets and steady prices, because this is good for producers, consumers and investors, and also helps long-term global economic growth, especially in the developing nations."



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

In this regard, he said, it was vital for OPEC and non-OPEC nations, producers and consumers, to continue their dialogue.

"We want stable oil markets and steady prices, because this is good for producers, consumers and investors," he said.

Concerning domestic petroleum developments, Naimi told the conference that Saudi Arabia planned to more than double its gas output over the next ten years.

He revealed that the Kingdom's conservative estimates showed that it possessed reserves amounting to some 300 trillion standard cubic feet of conventional gas.

He added that the Kingdom also intended to exploit its unconventional gas resources.

# UAE's Ruwais refinery to reach full output capacity in early 2015

The Ruwais refinery in the United Arab Emirates (UAE) capital, Abu Dhabi, which was commissioned earlier this year, is expected to start production at the end of 2014 and reach full capacity early next year.

Jasem Ali Al-Sayegh, Chief Executive Officer of the Abu Dhabi Oil Refining Company (TAKREER), which is in charge of the Ruwais project, was quoted as saying by the *International Oil Daily* that the gasoline units at the plant would become operational in the first quarter of 2015, along with the facilities for most other major products.

TAKREER, the refining arm of the state oil concern, the Abu Dhabi National Oil Company (ADNOC), is operator of the $10 billion Ruwais refinery expansion scheme, which is slated to add 417,000 barrels/day to existing refining capability at the complex, located some 250 kilometers from the capital.

Initially, the company planned to commission the expansion project in February 2014, with full capacity forecast to be attained by August, but the work suffered delays. Four South Korean construction firms are working on the project — SK Engineering and Construction, GS Engineering and Construction, Daewoo Engineering and Construction and Samsung Engineering. They were awarded contracts in late 2009.

Asked about the delayed start-up, Al-Sayegh replied that it had been anticipated since, as a grassroots scheme, it had been a little complicated.

The report noted that Abu Dhabi's current refining capacity stood at around 508,000 b/d. However, once the Ruwais expansion was fully incorporated, that figure would increase to 925,000 b/d.

This total would be made up of the existing 423,000 b/d capacity at Ruwais — comprising 143,000 b/d of crude and 280,000 b/d of condensate — along with the 85,000 b/d output from the Abu Dhabi refinery. The Emirates National Oil Company (ENOC) also operated a 120,000 b/d condensate splitter in Jebel Ali, Dubai.

Meanwhile, ADNOC has renewed a crude storage deal with the Japanese government that will see the UAE storing one million kiloliters, or 6.3m b, of crude oil in the Asian nation for three years, with the option to extend for another two years.

A final contract is still to be signed, but the oil will be stored at the JX Nippon Oil and Energy's Kiira terminal in southern Japan.

The Japanese government said earlier this year that both ADNOC and Saudi Aramco, the other major crude supplier with storage in Japan, would be required to maintain at least half their storage capacity for use by Japanese refiners during emergencies.

Saudi Aramco has some 1m kl of crude stored at Okinawa in Japan under a deal that is valid until 2016.

According to local data, Saudi Arabia and the UAE are Japan's largest and second-largest crude suppliers, respectively, accounting for more than half of all the country's crude imports.

*Abu Dhabi's current refining capacity stands at around 508,000 b/d.*

*Shutterstock*

**In the course of his official duties, OPEC Secretary General, Abdalla Salem El-Badri, visits, receives and holds talks with numerous dignitaries.**

*This section is dedicated to capturing those visits in pictures.*

## November 3, 2014

Dr Jamila Shu'ara, Nigeria's newly appointed Governor for OPEC, visited Abdalla Salem El-Badri, OPEC Secretary General.

## November 13, 2014

Khaled Shamaa, Ambassador of Egypt to Austria, visited Abdalla Salem El-Badri, OPEC Secretary General.

A delegation from Libya visited Abdalla Salem El-Badri, OPEC Secretary General.

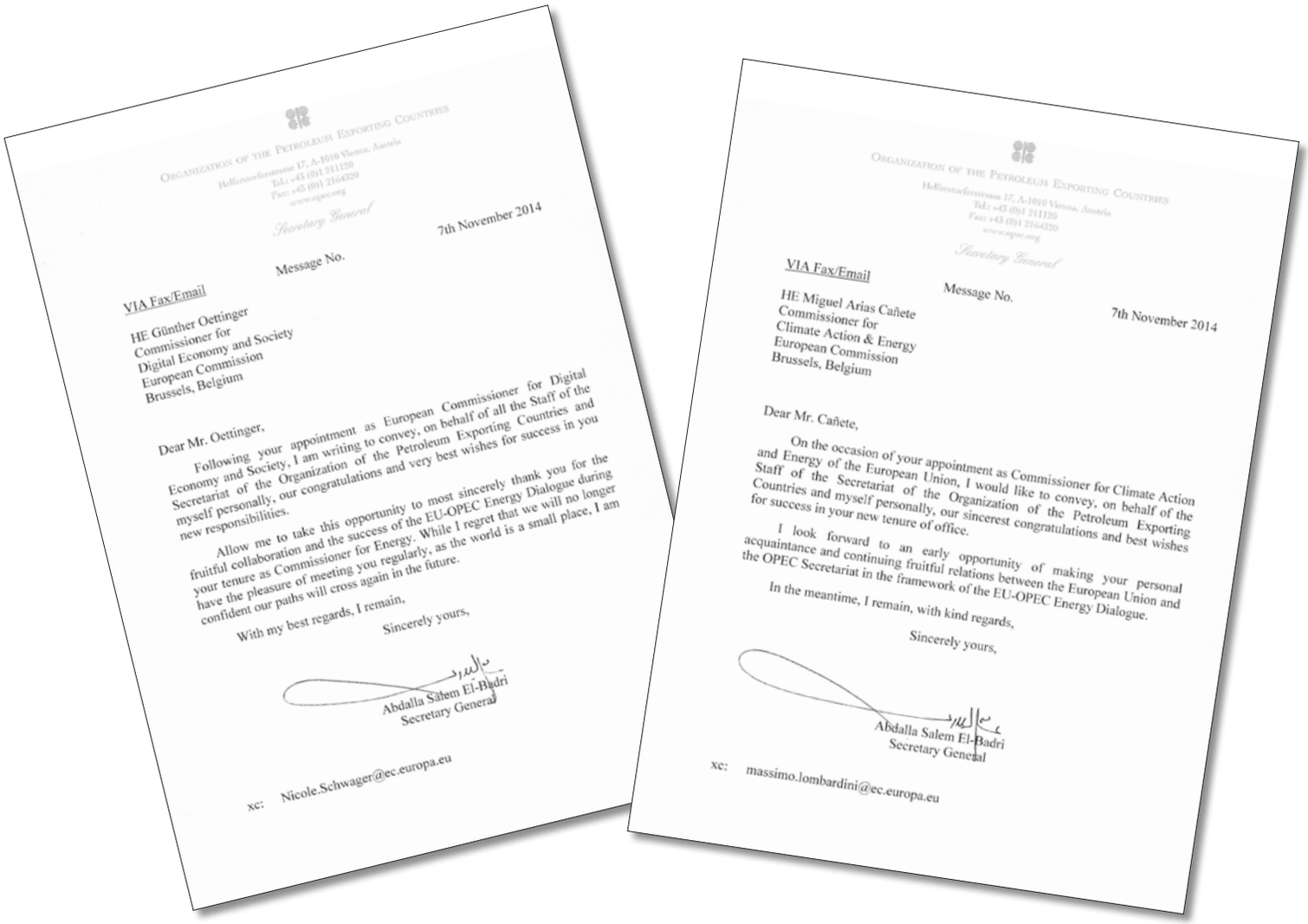
## November 17, 2014

Marios Ieronymides, Ambassador of the Republic of Cyprus, visited Abdalla Salem El-Badri, OPEC Secretary General.

## November 24, 2014

Ghazi Jomaa, the newly appointed Tunisian Ambassador to Austria, visited Abdalla Salem El-Badri, OPEC Secretary General.

# Letters of congratulation



Organization of the Petroleum Exporting Countries
Helferstorferstrasse 17, A-1010 Vienna, Austria
Tel.: +43 (0)1 211120
Fax: +43 (0)1 2164320
www.opec.org

Secretary General

7th November 2014

Message No.

VIA Fax/Email

HE Günther Oettinger
Commissioner for
Digital Economy and Society
European Commission
Brussels, Belgium

Dear Mr. Oettinger,

Following your appointment as European Commissioner for Digital Economy and Society, I am writing to convey, on behalf of all the Staff of the Secretariat of the Organization of the Petroleum Exporting Countries and myself personally, our congratulations and very best wishes for success in you new responsibilities.

Allow me to take this opportunity to most sincerely thank you for the fruitful collaboration and the success of the EU-OPEC Energy Dialogue during your tenure as Commissioner for Energy. While I regret that we will no longer have the pleasure of meeting you regularly, as the world is a small place, I am confident our paths will cross again in the future.

With my best regards, I remain,

Sincerely yours,

Abdalla Salem El-Badri
Secretary General

cc: Nicole.Schwager@ec.europa.eu

Organization of the Petroleum Exporting Countries
Helferstorferstrasse 17, A-1010 Vienna, Austria
Tel.: +43 (0)1 211120
Fax: +43 (0)1 2164320
www.opec.org

Secretary General

VIA Fax/Email

Message No.

HE Miguel Arias Cañete
Commissioner for
Climate Action & Energy
European Commission
Brussels, Belgium

7th November 2014

Dear Mr. Cañete,

On the occasion of your appointment as Commissioner for Climate Action and Energy of the European Union, I would like to convey, on behalf of the Staff of the Secretariat of the Organization of the Petroleum Exporting Countries and myself personally, our sincerest congratulations and best wishes for success in your new tenure of office.

I look forward to an early opportunity of making your personal acquaintance and continuing fruitful relations between the European Union and the OPEC Secretariat in the framework of the EU-OPEC Energy Dialogue.

In the meantime, I remain, with kind regards,

Sincerely yours,

Abdalla Salem El-Badri
Secretary General

cc: massimo.lombardini@ec.europa.eu

OPEC Secretary General, Abdalla Salem El-Badri, recently sent a letter of congratulation to European Energy Commissioner, Günther Oettinger, who has been appointed European Commissioner for Digital Economy and Society.

On behalf of the OPEC Secretariat, El-Badri thanked Oettinger for "the fruitful collaboration and success of the EU-OPEC Energy Dialogue during your tenure as Commissioner for Energy."

Oettinger, a keen supporter of the initiative, headed the EU side at the regular annual ministerial meetings of the Dialogue, held alternatively in Brussels and Vienna.

Said El-Badri in the letter: "While I regret that we will no longer have the pleasure of meeting you regularly, as the world is a small place, I am confident our paths will cross again in the future."

In a separate letter, the OPEC Secretary General congratulated Miguel Arias Cañete on his appointment as European Commissioner for Climate Action and Energy, adding: "I look forward to an early opportunity of making your personal acquaintance and continuing fruitful relations between the EU and the OPEC Secretariat in the framework of the Energy Dialogue."

The EU-OPEC Energy Dialogue, launched almost ten years ago, has, over the years, gone from strength to strength. More and more issues are being brought to the table for discussion, which can only spell good news for the future welfare of both producers and consumers of petroleum and the international oil industry in general.

In June this year, it was the turn of Brussels to host the Dialogue's annual ministerial talks — the 11th such edition — at which delegates confirmed their full commitment to ensuring the future success of the initiative.

The next ministerial talks are scheduled to be held in Vienna in 2015.

*Students and professional groups wanting to know more about OPEC visit the Secretariat regularly, in order to receive briefings from the Public Relations and Information Department (PRID). In some cases, PRID visits schools to give them presentations on the Organization and the oil industry. Here we feature some snapshots of such visits.*

# Visits

*Students from the 'webMun Group' of the Webster University, Vienna, visited the OPEC Secretariat on October 20, 2014.*

*A group of students from the University of South Carolina, US, visited the OPEC Secretariat on October 21, 2014.*

*Students from the University of Linkoepings, Sweden, visited the OPEC Secretariat on October 23, 2014.*

*Students from the 'Bundeswehr', Germany, visited the OPEC Secretariat on October 24, 2014.*

*Students from the Indian Institute of Management, visited the OPEC Secretariat on November 10, 2014.*

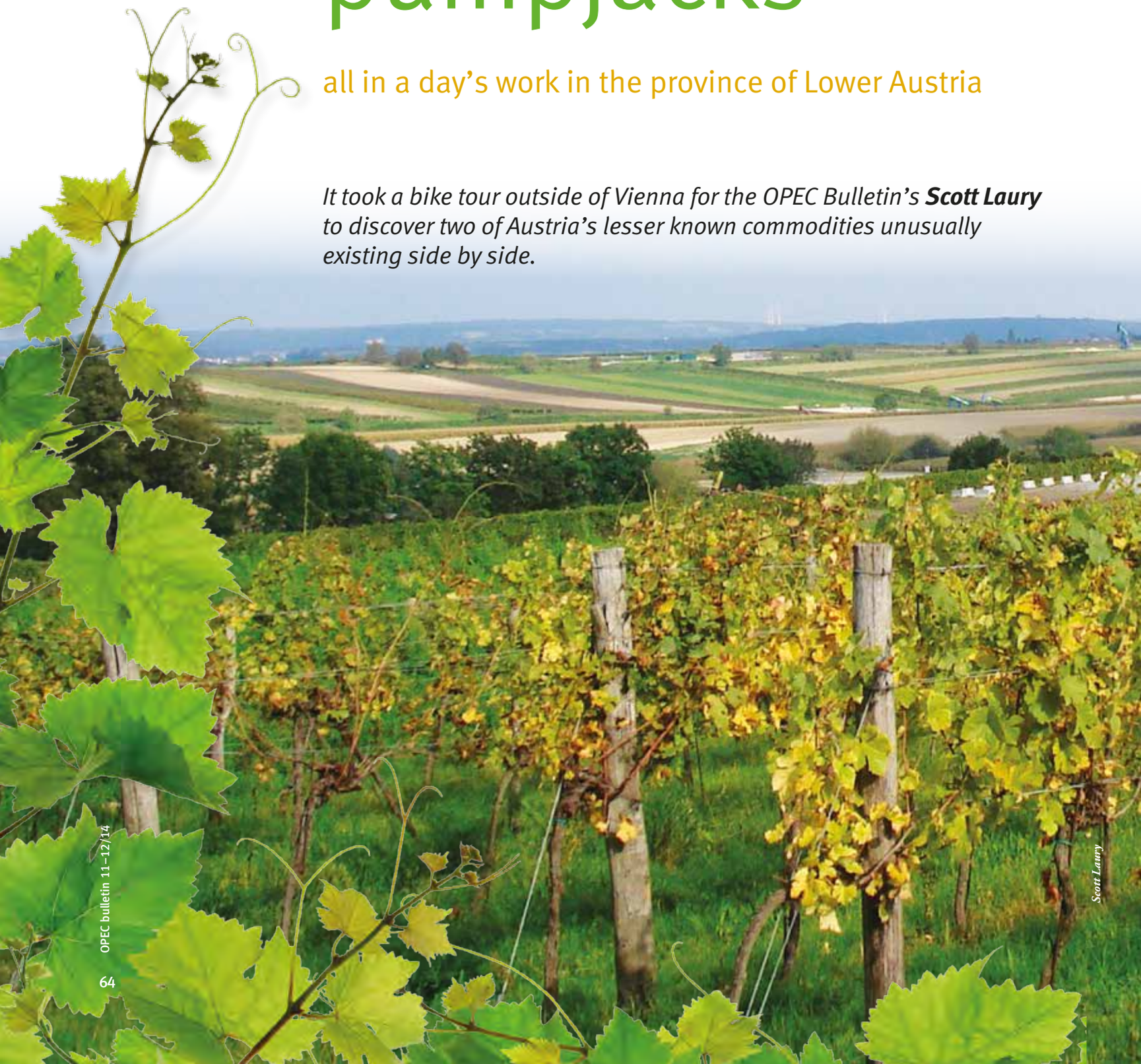
*Students from the Webster University, Vienna, visited the OPEC Secretariat on November 13, 2014.*

*Students from the Faculty of International Relations, University of Economics, Bratislava, Slovakia, visited OPEC on November 24, 2014.*

# Vineyards and pumpjacks —

## all in a day's work in the province of Lower Austria

*It took a bike tour outside of Vienna for the OPEC Bulletin's* ***Scott Laury*** *to discover two of Austria's lesser known commodities unusually existing side by side.*



Scott Laury

Normally, when one thinks of Austria, romantic visions of wintry, snow-covered Alps come to mind. Think of skiers descending those slopes with not a care in the world and swooping down the hill only to end up at a warm mountain chalet for a relaxing meal by the fire.

One may also remember the famous *Sound of Music* movie starring Julie Andrews and Christopher Plummer. The 1959 production, which was based on the Rodgers and Hammerstein musical of the same name, was filmed in and around Salzburg and, interestingly, has resonated more over the years in North America and other countries than in Austria. In fact, there are even Sound of Music tours that take the movie's worldwide devotees around Salzburg to visit locations where the movie was filmed. These tours are routinely sold out.

Despite the movie's grim backdrop set in wartime Austria, some scenes in the movie portray the bucolic, majestic scenery of Austria's alpine *Heimat*, or homeland, with the clean cut von Trapp family clad in traditional Austrian folk dress skipping over grassy, cow-dotted mountain meadows and playing music together in the fields.

This is the image of Austria that the world knows best.

## The other side of Austria

For many years, I too held this prevailing, perhaps somewhat limited view of Austria, until I relocated to Vienna for professional reasons.

Since arriving there several years ago, I slowly began to realize that the eastern part of the country was quite different indeed.

First of all, the most obvious change I noticed was the topography, with the western Alps slowly giving way to the flat plains, sometimes referred to as the Danube Basin or the Pannonian plains.

The climate is also remarkably different, especially considering the relatively small size of the country. Often times, this can be noticed around the town of St Pölten in Lower Austria, where, in winter, a sunny blue sky in the west can suddenly give way to a foggy, gray ceiling of clouds stretching far eastward. The east tends to be drier and warmer in the summer, but can often have more cloud cover and less snow in the winter. Thus, I've often concluded that spending summer in the east and winter in the west would be the ideal way to go.

*The opulent Hofburg Palace in Vienna is the former imperial residence hosting kings and emperors from around 1438 until 1918. Today, it is the official seat of the Austrian Federal President.*

## Vienna—the jewel of the crown

Perhaps the most distinguishing factor in the east is Austria's regal capital city of Vienna, which was the jewel of the crown for the Habsburg Empire. With its uniquely imperial feel, no other Austrian city can truly match its history, class and stature. Its age-old museums, prestigious cultural institutions, classic architecture and traditional coffee houses set it apart.

On top of this, you have the uniquely international and cosmopolitan side of Vienna, which has historical roots going all the way back to when it was the Empire's dynastic capital, uniting a widely diverse coalition of countries, cultures and languages under the Monarch's rule.

At the end of World War II, from 1945 to 1955, Vienna was again at the centre of world affairs as it was divided into four occupation zones governed by the United States, the Soviet Union, the United Kingdom and France.

Since then, Vienna and the eastern section of Austria have continued to play an influential role as an international crossroads by virtue of its strategic location at the heart of Europe, the lynchpin between the Western and Eastern halves of the Continent.

This international prominence has been reinforced over the last three decades as the United Nations, the International Atomic Energy Agency, OPEC, the Organization for Security and Cooperation in Europe and other international organizations have established their headquarters in the city, not to mention the countless diplomatic missions to Austria.

## Looking deeper

Besides these more obvious differentiating characteristics, it took a while longer for me to peel back a few more layers and discover some of the more subtle and unique aspects to be found in the eastern half of Austria.

For a few years, I lived in Vienna's 19th district of Döbling, which is known for its rolling hills and lush forests that form a green belt around the district and the city's other outlying neighbourhoods. This nature-friendly aspect is one factor that has helped boost Vienna up to the top of the worldwide quality of life rankings for the last few years.

In walking, hiking and biking through these areas, I was pleasantly surprised to discover vineyards covering the hillsides leading up to the forested hilltops.

I had moved to Vienna from Turin, the capital of the Piedmont region, which is one of the top wine-producing regions in Italy, famous around the world for its Barolo, Barbaresco, Barbera and Dolcetto wines. So, perhaps I arrived already somewhat jaded with the perception that for wine in Europe, there is really only Italy, France and maybe Spain. But, once again, my past perception was erroneous.

I began to realize that, though Austria produces less in quantity than the heavy-hitters, it produces several varieties of high-quality white and red wines. One often makes the mistake of assuming that Austria and Germany specialize mainly in white wines, but I soon realized that wasn't the case either. A fine Austrian red wine, including Zweigelt, Blaufränkisch or St Laurent, can compete with most of its Italian or French counterparts.

This discovery of Austrian wine was made even more exciting due to the fact that the Austrians have traditional wine taverns, called *Heuriger*, where you can taste the winery's offerings and sample some local food from a buffet. Austrian law mandates that

these establishments can only serve wine that they produce themselves, which is also a unique concept.

## From Vienna to the Marchfeld

Fast forward several years later to a time when I moved from Vienna to an area outside of Vienna called the Marchfeld, which is an important agricultural region, supplying the country with carrots, sugar beets, potatoes, onions, asparagus and other crops. The region is also known in history for the battles that took place there between Austria and Napoleon's French army in 1809, part of the Napoleonic Wars.

After getting settled, I decided it was time to explore some of the surrounding areas. Looking far beyond the flat farmland, I had spotted a hilly area that looked interesting. So, I hopped on my bike and pedalled north for about 10 kilometres before arriving at a town called Bockfließ. Passing the town's cathedral, I ascended the first hill, which was lined with wine cellars on both sides. At the crest of the hill, I stopped and was astounded to see a gorgeous horizon of rolling hills covered with vineyards as far as the eyes could see.

I would later come to find out that this was Lower Austria's Southern Wine Region (Südliches Weinviertel), which starts there and spans north all the way to the border with the Czech Republic.

After reflecting for a moment on the beauty of the sweeping scenery in front of me, I noticed something that seemed a bit out of place located in the vineyards. I was not certain, but it looked just like a pumpjack used to extract oil from the ground.

## Pumpjacks and vineyards

As I moved closer, I realized that my eyes were not playing tricks on me. It was indeed an oil pumpjack, moving up and down in its characteristically steady rhythm. Now, as I stopped in front of it, I saw that it had the OMV logo on it, painted in the company's colours of blue and green. As I looked farther into the distance, I saw that there were many more of these oil horses bobbing up and down.

I then came to a sign that put this unusual and perplexing scene into perspective. Translated from German, it read: "Biking among black and white gold." Logically, the 'black gold' refers to the oil produced in the region, and the 'white gold' alludes to the variety of white wines that are typical in this area.

It was also news to me that I was actually on a bike trail aptly called the Wine Tour with Energy. The trail meanders for 58 km through Austria's main oil-producing region, which, again, happens to share the same land with Austria's largest wine growing area.

It still took a while for me to get used to this strange paradox — this odd mix of resources cohabitating side-by-side.

But, my curiosity was piqued, and as I began to research these two colliding worlds, I realized how valuable and important this 'white and black gold' really is for Austria.

## Austria's 'black gold' underground

According to the Austrian Petroleum Industry Association, in 2013, Austria produced 917,149 tonnes of crude oil and natural gas liquids (NGLs) combined. Crude oil production, without the NGLs, totaled 847,952 t. The majority of this crude (729,589 t) was extracted from the Vienna Basin, a sedimentary basin near Vienna, with the remainder (118,363 t) coming from the molasse zone of Upper Austria and Salzburg.

*Biking among black and white gold — the OMV pumpjack is a surprise to anyone visiting the spectacular countryside.*

The two main oil and gas companies responsible for exploration and production in Austria are OMV and RAG. Out of the 917,149 t of crude and NGLs produced last year, OMV provided 85 per cent (781,815 t) and RAG 14.8 per cent (135,333 t).

As far as imports go, Austria imported 7.78 million tonnes of crude oil in 2013 from 17 countries, with most of it originating from Kazakhstan, Nigeria and Russia. It arrives mostly via ship and pipeline to the oil harbour in Trieste, Italy, then continues north through the Transalpine Line (TAL) to Austria's Carinthia province and finally through the Adriatic-Vienna pipeline. In addition to this, around 6.3m t of products are imported, namely diesel (4m t), fuel oil (0.6m t) and petrol (0.5m t), arriving mostly from Germany, Slovakia and Italy.

Crude oil and NGLs are processed at Austria's Schwechat Refinery, the country's only refinery, which is located on a 1.42 sq km plot of land near the Vienna International Airport. One of Europe's largest and most modern onshore refineries, it has a production capacity of 9.6m t of crude oil per year. In 2013, it processed 8.7m t of crude, ten per cent of which came from domestic production and around 90 per cent from other countries. The facility also processed 0.6m t of products, producing diesel (40 per cent), petrol (21 per cent), fuel oil (14 per cent), petrochemical basics (12 per cent), jet A1 fuel (eight per cent), bitumen (four per cent) and other products (one per cent).

Looking at consumption in Austria, 10.9m t of petroleum products (including fuels, lubricants and bitumen, but excluding petrochemical basics) were consumed in 2013, an increase of 2.1 per cent over the year before, but less than the peak of 12.9m t reached in 2005.

On the retail side, Austria had a total of 2,640 petrol stations in 2013, with a ratio of around 3,200 people per station. The annual average price at the pump for Eurosuper was €1.39/litre, down by 4.1 per cent from the year before. The EU-wide weighted average in 2013 was €1.58/l for Eurosuper, which is 19¢ higher per litre than the Austrian average.

## Secretary General's visit to the region

In 2011, OPEC Secretary General, Abdalla Salem El-Badri, was invited to visit the region by RAG, Austria's oldest oil and gas exploration and production company, which celebrated its 75th anniversary that year.

After a walking tour of the site where Austria first discovered oil in 1937 and then through the adjacent vineyards, the day was capped off with a visit to one of the local wine cellars.

El-Badri was impressed with the balance and harmony achieved between the oil and gas industry and the natural beauty surrounding it.

"The decades-old RAG production areas are a positive example of how oil can be produced in an environmentally friendly, efficient and sustainable manner," he commented at the time. "And this is all happening within one of Austria's most beautiful wine producing regions."

## A bright future

Considering the future of oil and gas in Austria, OMV Executive Board Member, Jaap Huijskes, made this comment on the company's website, "Austria is an important cornerstone of our oil and gas production and is making a significant contribution to securing natural gas supply." Based on its current reserves, the company estimates that production of oil and gas will continue for at least an additional 20 to 30 years.

## The 'white gold' on the vine

The 'white gold' growing on the vine surely evokes a more romantic vision than the adjacent pumpjacks and oil derricks producing the 'black gold', but don't be fooled by its beauty. It is still an industry, and an important one for Austria.

According to the Austrian Wine Marketing Board (AWMB), Austria has around 45,900 hectares of vineyards, mostly located in the east and southeast of the country.

*A strange paradox — an odd mix of resources cohabitating side-by-side.*

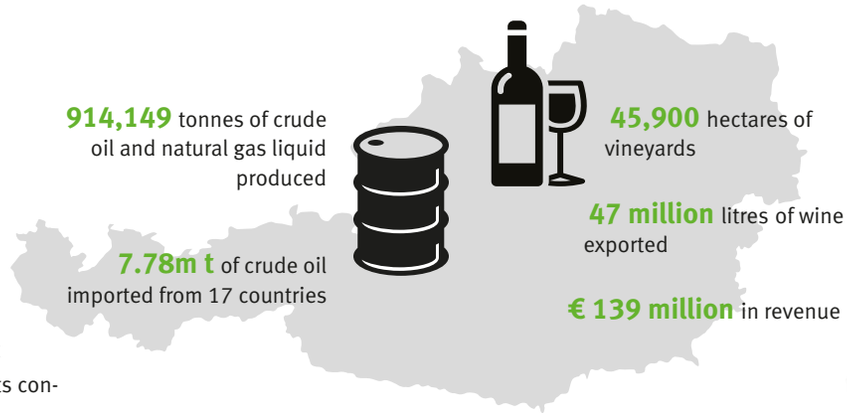
Tara Starnegg

The largest wine growing regions are Lower Austria with a 59 per cent share of the territory in hectares, Burgenland with 30 per cent, Styria with 9.2 per cent and Vienna with 1.3 per cent.

Some 66 per cent of the overall territory is devoted to growing 24 varieties of white wine, and the remaining 34 per cent is occupied by 15 varieties of red wine. The average total yield is 240m l, most of which is consumed in Austria. However, exports continue to increase.

As of July 2010, the top three most widely grown white wines were the Grüner Veltliner, Welschriesling and Müller Thurgau. In terms of red wines, the Zweigelt, Blaufränkisch and Blauer Portugieser varieties made up the highest share.

## Austria's oil and wine industries in numbers, 2013




## A shift to exports

The wine industry in Austria has been undergoing a major transformation over the last two decades from many small wineries producing little amounts of wine to fewer yet larger wineries producing greater quantities, with an increasing share of production being exported.

"Now it is not enough to be successful in a few export countries like Germany, Switzerland or the US," said Willi Klinger, General Manager of AWMB, in a recent press statement. "Austrian wine is a niche product in all countries. Therefore, we have to increase the number of countries in which this niche will be successful. There, on one hand, we must defend the top of the premium segment, yet on the other hand, we have to succeed at price levels where there are reasonable quantities and where the average export price is between €3 to €5/l. We have already accomplished this in many European countries."

According to Statistik Austria, the country exported 47m l of wine in 2013, bringing in revenue totalling €139m. The main export markets have traditionally been Germany, Switzerland and the United States, but the trend has been changing in the last few years.

"This is remarkable because the increase did not come from the traditionally strong markets of Germany, Switzerland and the US, but from the former 'problem children' like Scandinavia, the Benelux countries and the United Kingdom," Klinger added. "Plus the markets in the Central European neighbourhood gave optimistic signals as well."

China is also becoming an increasingly lucrative market for Austrian wine with exports rising by more than 23 per cent in 2013. An impressive €7/l average price was also achieved for exports to China, more than double the overall export average price of €3/l. China is expected to continue growing as an export market.

## A fruitful coexistence

So, whether it is producing the finest Grüner Veltliner white wine from picturesque vineyards above ground, or extracting high-quality crude oil or gas from deep underneath those very vineyards, Austria has proven that these two diverse resources can coexist successfully on the same land. This has helped the country maximize the development of its resources, while seeking to ensure environmental protection. It is indeed a testament to Austria's ingenuity and expertise when it comes to stewardship of its agricultural assets.

My discovery of 'white and black gold' in the rolling hills of Lower Austria has forever changed my perception of Austria and has given me a more complete understanding of the country and its many rich and varied aspects.

Perhaps you too have gained a new understanding, and the next time you visit Austria's gorgeous ski areas out west and are sitting down to lunch at a mountain hut, you will be reminded that the wine in your glass and even the gas in your rental car very well may have come from the same beautiful country, just a little farther east.

# OPEC delegation visits OMV's exploration, production and refinery sites

On September 17 and 18, 2014, a delegation from OPEC visited Austria's largest oil and gas exploration and production sites, as well as the country's only refinery.

The first day featured a visit to OMV Austria Exploration and Production's facilities in Gänserndorf, located around 37 km north-east of Vienna. After arriving at the headquarters building, an OMV representative gave a detailed presentation on the company's core activities related to oil and gas exploration and production.

This was followed by a bus tour to the Gas Storage Facility in Schönkirchen-Reyersdorf. OMV operates three underground gas storage facilities in Austria with 160 storage wells in eight depleted gas reservoirs located 500 to 1,400 metres below the surface. Currently, the total reservoir capacity is around 2.6 billion cubic metres of natural gas, amounting to nearly 25 per cent of Austria's annual consumption.

The tour then continued past a Water Treatment Plant and arrived at a massive drilling rig located in Bockfließ. A detailed tour around and inside the rig provided participants with an up-close view of the high-technology being employed by OMV to recover and extract oil and gas at this and other sites.

Following this, the tour travelled by OMV's Tank Farm in Auersthal and made a short stop at the Gathering Station in Matzen, where participants were provided a briefing on the separation tanks and pumps.

The second day's tour took the delegation to visit OMV's refining and marketing operation, located in the town of Schwechat near the Vienna International Airport. An OMV representative from the Health, Safety, Security and Environment (HSSE) Department welcomed participants to the headquarters and provided a thorough presentation on the company's refinery and marketing operations, including the facility's history, its international activities and important facts and figures concerning crude oil production, investments, HSSE and capacities. In addition, a detailed explanation was given on the crude oil refining process, the operating procedures and the myriad safety measures that are vital to protect the health and safety of employees working at the facility. Bottled samples of the various types of crude oil were then shown to the participants, demonstrating the wide range of products that are being refined at the facility. Finally, the group went on a bus tour of the refinery during which the guide shared important facts and figures concerning the complex distillation and refining processes that transform crude oil into high-value petroleum products.

These tours, which have been organized in previous years, were again a great success, providing the OPEC delegation with a behind-the-scenes look at OMV's impressive oil and gas activities. They also served as valuable opportunities for OPEC to enhance its knowledge of, and relationship with its host country of Austria.

*The OPEC delegation's visit to OMV's Gas Storage Facility in Schönkirchen-Reyersdorf.*

Tara Serrano

# Visit our website

**www.opec.org**

# OFID initiates concrete step in alleviating energy poverty

*By Maureen MacNeill*

The first International Development Symposium on Petroleum Industry Support for Universal Energy Access — organized by the OPEC Fund for International Development (OFID), in cooperation with the World Petroleum Council (WPC) and held in November at OFID's headquarters in Vienna — is considered to be a first step on the long road to alleviating energy poverty.

The goal to eradicate energy poverty was strongly called for by the leaders of OPEC Member Countries at their Third Summit in Saudi Arabia in November 2007, in a document called the 'Riyadh Declaration'.

This called upon OFID to "continue to align the programmes of our aid institutions, including those of the OFID, with the objective of achieving sustainable development and the eradication of energy poverty in developing countries, and study ways and means of enhancing this endeavour, in association with the energy industry and financial institutions."

In his opening speech to the Symposium, OFID Director-General, Suleiman J Al-Herbish, stated: "OFID takes great satisfaction in the fact that its actions, combined with those of its partners, including the United Nations and the WPC, have helped thrust energy poverty into the global spotlight. Our reward will be to see universal access to energy services included in the post-2015 Sustainable Development Goals (SDGs). We are glad to host this pioneering event to emphasize the petroleum industry's corporate social responsibility (CSR) towards the billions of people who lack access to modern energy services."

Although the industry's activities in this area have until now been quite limited, Al-Herbish stated that "the industry's vast pool of resources and expertise puts it in an ideal position to contribute to achieving this worthwhile goal."

He called it a 'win-win' CSR opportunity for the petroleum industry, as it will not only improve the environment, but support the health and livelihood of local communities, in turn strengthening the relationships between local communities and operators.

Jósef Toth, President of the WPC and Kandeh Yumkella, Special Representative of the UN and Secretary General and Chief Executive Officer of the Sustainable Energy for All (SE4ALL) initiative, also gave statements.

## Population set to go

Yumkella's opening remarks focused on one of the poorest regions: sub-Saharan Africa. Currently, he said, 34 per cent of health facilities in the region lack electricity, while the population of the region was up to one billion in 2013, with 420 million in absolute poverty.

The population of the area is set to grow to 2.2bn by 2050, while the economy is expected to quadruple by 2040 and energy demand to increase by 75 per cent by that time. Currently, 70–80 per cent of the population relies on biomass for cooking.

"We need an integrated multi-stakeholder and cross-sector approach to energy poverty to achieve energy transitions in these countries," Yumkella asserted, adding that institutional barriers and a lack of coordinated effort of long-term vision for sustainable investment and development have been critical in hindering progress.

The meeting ended with a Memorandum of Understanding between OFID and the Alliance for Rural Electrification (ARE) to finance mitigation projects in the mini-grid area, which constitutes an estimated 40 per cent of the solution to energy poverty, according to Symposium participants.

In the wrap-up session, Yumkella stated: "I am happy this concludes in action … I think we can create projects. This partnership today begins to breach the gap in projects and financing."

OFID considers the Symposium a success; the most important thing is to keep the ball rolling. To this end, there will be two or three similar meetings held before the next WPC congress in 2017.

With the UN Decade for Sustainable Energy 2014–23 strong in the media and the adoption in September by the UN General

Assembly of a proposal prepared by the Open Working Group on 17 SDGs — intended to replace the Millennium Development Goals (MDGs) in 2015 — energy has been effectively launched into the public eye.

Matters related to energy are incorporated in the proposed list of SDGs, including SDG7 — "to ensure access to affordable, reliable, sustainable and modern energy for all." The intent is to integrate these into the post-2015 agenda and further work on identifying quantitative indicators will be ongoing in 2015.

Symposium participants, which included the Shell Foundation, Eni, ExxonMobil, OMV, Schlumberger, Total, Saudi Aramco, Qatar Petroleum, the WPC, Petroamazonas EP, the International Gas Union, ARE, the Global LPG Partnership, the UN Foundation, SE4ALL, Accenture, Royal Dutch Shell and the Saudi Fund for Development, combined to seriously and openly discuss the issue of energy poverty under Chatham House rules.

"The Symposium participants recognize that the widespread absence of modern energy access continues to hamper socio-economic progress in developing countries worldwide," stated an OFID *communiqué*. "With nearly 1.3bn people lacking access to electricity and 2.6bn people relying on biomass for their domestic cooking and heating needs, urgent action is imperative."

The proposal goes on to say that there is wide recognition that the oil and gas industry must play an important role in bringing modern energy to the poorest. In addition, participants discussed embedding energy poverty alleviation as a main element in many ongoing social responsibility programmes, which would make a "significant and visible contribution to creating an environment for replication and scaling up investments in sustainable energy."

Petroleum companies at the Symposium discussed working together to develop a 'High-Impact Opportunity (HIO)' for the petroleum industry and welcomed other petroleum firms to join in the initiative. "The HIO will provide a platform for the oil and gas companies to work together on specific actions that advance universal energy access within the framework of the larger global initiative," stated the *communiqué*.

Together with the SE4ALL initiative, the WPC will provide opportunities for ongoing engagement with global representatives from the oil and gas industry, it said. "We call upon all oil and gas companies to review their social responsibility programmes and develop projects that are replicable, scalable and sustainable to address universal energy access for all by 2030."

After the *communiqué* is agreed upon by all participants, a more detailed approach will be developed, said an OFID representative, adding that perhaps by the meeting in 2015 the position will be more advanced and some projects will already be on the ground.

One participant commented during the wrap-up session that the Symposium brought quality presentations, deep insight and lively discussion. "I am pleased to see how much this issue is captivating the audience. I hope that this is not just a small part of the industry, but throughout the industry."

He added that the challenge can also be seen as a business opportunity to be innovative and cutting edge. Energy poverty and economic growth are in a vicious cycle, "because if you do not have money you cannot invest," said the representative. "We have to think about how we can create a supply chain … one needs to help local infrastructure." He added that these actions do not only have to come from government institutions.

"We have seen good examples from companies of national/regional solutions, for example gas being flared instead of being used to address people's needs for energy. Companies can have a greater impact beyond their footprint. It is good for us as an industry."

The representative stated that he learned a lot about context at the Symposium. "There are many players active. I am encouraged by the convergence taking place. The recognition of the UN development goal is huge. It creates an enabling environment we so lack. SE4ALL deserves our support. We have to move away from stating the case to action and how to mobilize the correct actors around the right projects."

Many of the elements needed are in the Symposium room, he added. "If we combine our strengths, I am sure we can make a difference as an industry."

Another speaker said: "We are running behind the wave. The population is growing … we take some out of energy poverty and others move in. In order to get ahead of the wave we need a new and comprehensive approach.

"The oil industry is known for being creative, having money and people with special skills and abilities pertinent for a huge task like this. The oil industry should be deeply concerned. We are talking basically about their business. Demand is growing and so is the need to deliver oil and gas. Therefore, it is important that they play a key role …"

Another speaker said: "We are going to rely on the three powers: SE4ALL as a convener, industry power, and financial institutions like OFID. "If these three cannot do it, then nobody can. Let us take it to the next step."

Discussions over the two days about alleviating energy poverty focused largely on mini-grid technology and decentralized energy markets, which require technology and scaling-up to meet demand. Barriers have already been identified in the replication and up-scaling of mini-grid technology.

# OFID signs loan agreements worth over $60 million

## The OPEC Fund for International Development (OFID) in October signed loan agreements totalling over $60 million with the respective ministers of seven of the Vienna-based institution's partner countries.

The accords were inked by Suleiman J Al-Herbish, OFID Director-General, on the sidelines of the 2014 annual meetings of the World Bank and the International Monetary Fund (IMF). Al-Herbish led an OFID delegation to Washington DC to attend the various talks.

The loan agreements for the seven development projects are expected to benefit over 2.5 million people.

Under the accords, Benin will receive $3m for its Cotonou East Coast Protection (Supplementary Loan) scheme; Belize will benefit from $15.22m for its Southside Poverty Alleviation, Phase III, scheme; Lesotho will be loaned $12m for its Wool and Mohair Promotion project; Malawi will receive $13.15m for its National Cancer Treatment Centre scheme; Mauritania will benefit from $10m for its National Electricity Control Centre scheme; São Tomé & Principe will be loaned $3m for its Neves Water Supply project; and Seychelles will benefit from $4m for its Perseverance Island Infrastructure Project (Phase II).

Al-Herbish also signed a Memorandum of Understanding (MoU) with the Islamic Development Bank (IsDB). The OFID head highlighted the longstanding

cooperation that existed between the two institutions, stressing that the agreement would "galvanize the forces of both institutions, and mobilize their synergies for the benefit of Partner Countries."

The MoU will serve to expand and deepen the bilateral relationship, with the view of alleviating poverty and stimulating socio-economic development in their countries of operation.

Al-Herbish also attended the meetings of the G24 Ministers and the Development Committee, the Deauville Partnership Finance Ministers' Meeting, the Annual Meeting of the Bretton Woods Committee and the Meeting of Arab Governors with World Bank President Jim Yong Kim.

Several bilateral meetings were held to review the status of OFID's cooperation with other international finance institutions and partner countries and to identify potential private sector and trade finance transactions.

*The loan agreements are expected to benefit various development projects, including road development, cancer treatment and electricity control centres.*

# OFID to strengthen partnership with Austrian Development Bank

The OPEC Fund for International Development (OFID) and the Oesterreichische Entwicklungsbank AG (OeEB) – the Development Bank of Austria – have moved to strengthen their longstanding partnership with the signing of a cooperation agreement designed to encourage co-financing between the two Vienna-based institutions and promote the exchange of ideas and information.

The accord, which was signed by OFID Director-General, Suleiman J Al-Herbish and OeEB Executive Board Members, Andrea Hagmann and Michael Wancata, aims to provide a general framework for the development and implementation of joint projects.

Specific objectives include the exchange of information on new business opportunities and initiatives, the introduction of new counterparties and markets, and the co-hosting of joint events.

"We believe that OFID and OeEB have enjoyed an excellent relationship since 2008, on both a professional and a personal level. We are signing this agreement to scale up our joint activities which shall become more systematic and substantive," Al-Herbish commented at the signing ceremony.

"We hope that an enhanced cooperation in the area of energy access will be one concrete achievement from the agreement we have signed today," he added.

For OeEB, Mrs Hagmann stressed that the signing of the cooperation agreement makes already existing activities visible and puts them in a new dimension. She explained that the signing of the agreement was not a starting point but an intensification of existing activities.

"It is the next logical step and a signal to our partners that OFID and OeEB are placing their partnership on a new level," she affirmed.

Wancata further highlighted the common engagements: "We have worked in parallel in a lot of transactions which have shown a broad overlap of our interests," he stated.

Under the agreement, OFID and OeEB will focus on various sectors essential for the economic advancement of their common partner countries.

These areas include finance, infrastructure, industry, agribusiness and, especially, energy.

Said Al-Herbish: "The importance of energy access for sustainable development cannot be overstated." He expressed hope that an enhanced cooperation in the area of energy access would be one concrete achievement of the agreement.

## Common goals

According to a feature article in the October issue of the OFID Quarterly magazine, energy poverty eradication and access to sustainable energy sources are common goals shared by OFID and OeEB.

It said both institutions underline the importance of reliable access to energy, as it plays a key role in the development of poor countries and the wellbeing of their populations.

Wancata outlined the number of transactions that had shown a broad overlap of interests.

"Alleviating energy poverty is another area where we can join forces and combine our expertise to expand our reach and effectiveness," he stated.

OeEB finances projects that help developing countries and emerging markets gain access to their own sources of energy and use energy efficiently. In doing so, it focuses primarily on renewable energy.

"One of the values of Austria, which is a country with a major source of renewable energy, is to have a clean environment. We think that these kinds of values should also be transported to other countries as far as this is possible," Wancata said.

The newly initiated partnership with OeEB reflects the strong relationship that OFID enjoys with the Austrian government.

OeEB has been operating as the Development Bank of Austria since March 2008. It specializes in the provision of long-term finance for the implementation of private-sector projects which create sustainable development in developing countries.

Additionally, it provides technical assistance, which can be used to enhance the developmental impact of projects. As at the end of 2013, OeEB had committed a total €658 million.

Alongside its association with OeEB, OFID has long supported the work of various Austrian non-governmental organizations (NGOs) operating in developing countries. Over the last decade, this support has strengthened considerably.

Among the most notable are partnerships with Hilfswerk Austria, Care Austria, Doctors for the Disabled, SOS Kinderdorf, and the Society for Austro-Arab Relations.

"Alleviating energy poverty is another area where we can join forces and combine our expertise to expand our reach and effectiveness."

Since 2003, OFID's contribution to the development activities of Austrian NGOs has amounted to over $6m.

The cooperation with OeEB is the latest in a series of framework agreements that OFID has concluded in recent years with partners ranging from the World Bank Group, the Asian Development Bank and the International Fund for Agricultural Development (IFAD), to the Islamic Development Bank, the European Bank for Reconstruction and Development and the Inter-American Development Bank.

These agreements enable OFID to increase the impact of its activities and promote major issues related to the socio-economic development of its partner countries.

"OFID is determined to continue on a path of harmonization, coordination and joint actions with other development institutions for the good of its partner countries," professed Al-Herbish.

## Forthcoming events

**5th Annual middle distillates, January 19–20, 2015,** Antwerp, Belgium. Details: Platts, 20 Canada Square, Canary Wharf, London E14 5LH, UK. Tel: +44 207 1766142; fax: +44 207 176 8512; e-mail: cynthia_rugg@platts.com; website: www.events.platts.com.

**World future energy summit, January 19–22, 2015,** Abu Dhabi, UAE. Details: Reed Exhibitions Middle East, PO Box 77899, Abu Dhabi, UAE. Tel: +971 2 491 76 15; fax: +971 2 491 76 12; website: www.worldfutureenergysummit.com.

**8th Annual European oil storage, January 22–23, 2015,** Amsterdam, The Netherlands. Details: Platts, 20 Canada Square, Canary Wharf, London E14 5LH, UK. Tel: +44 207 1766142; fax: +44 207 176 8512; e-mail: cynthia_rugg@platts.com; website: www.platts.com/events/2015/pc579/index.

**Construction in oil and gas, January 25–28, 2015,** Abu Dhabi, UAE. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.constructionoilandgas.com.

**Cyber security for oil and gas summit Canada, January 26–28, 2015,** Calgary, Canada. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.cybersecurityoilgas.com.

**LNG bunkering 2015, January 26–28, 2015,** Amsterdam, The Netherlands. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.lngbunkeringsummit.com.

**Oil and gas IP summit, January 26–28, 2015,** London, UK. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.oilandgasip.com.

**European gas conference, January 27–29, 2015,** Vienna, Austria. Details: The Exchange Ltd, 5th Floor, 86 Hatton Garden, London EC1N 8QQ, UK. Tel: +44 207 067 1800; fax: +44 207 242 2673; e-mail: marketing@theenergyexchange.co.uk; website: www.europeangas-conference.com.

**7th annual SCADA Asia summit, January 27–30, 2015,** Kuala Lumpur, Malaysia. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.scadasummit.com.

**4th annual Bakken and Niobrara crude takeaway and markets congress, January 28–29, 2015,** Denver, USA. Details: London Business Conferences, First floor, 44–46 New Inn Yard, London EC2A 3EY, UK. Tel: +44 207 7033 4970; fax: +44 207 7749 0704; e-mail: info@london-business-conferences.co.uk; website: www.london-business-conferences.co.uk/c261/bakken-and-niobrara-crude-takeaway-and-markets-congress-2015.

**Black Sea O&G summit, January 28–29, 2015,** Vienna, Austria. Details: The Exchange Ltd, 5th Floor, 86 Hatton Garden, London EC1N 8QQ, UK. Tel: +44 207 067 1800; fax: +44 207 242 2673; e-mail: marketing@theenergyexchange.co.uk; website: www.theenergyexchange.co.uk/black-sea.

**Well site automation for unconventional oil and gas 2015, January 28–29, 2015,** Houston, USA. Details: London Business Conferences, First floor, 44–46 New Inn Yard, London EC2A 3EY, UK. Tel: +44 207 7033 4970; fax: +44 207 7749 0704; e-mail: info@london-business-conferences.co.uk; website: www.wellsite-automation.com.

**5th Myanmar oil and gas summit 2015, January 29–30, 2015,** Yangon, Myanmar. Details: 3rd Floor, Archway House, 1–3 Worship Street, London EC2A 2AB, UK. Tel: +44 207 127 45 01; fax: +44 207 127 45 03; e-mail: info@oliverkinross.com; website: www.myanmaroilexhibition.com.

**6th annual anti-corruption and compliance for the oil, gas and extractive industries, January 29–30, 2015,** London, UK. Details: Marcus Evans Conferences, 11 Connaught Place, London W2 2ET, UK. Tel: +44 203 002 3002; fax: +44 203 002 3003; e-mail: flaminiag@marcusevansuk.com; website: www.marcusevans-conferences-paneuropean.com/marcusevans-conferences-event-details.asp?EventID=21667&ad=6ACC_GOGwb&me_cid=34966&Date=11/6/2014 3:04:07 PM.

**Maintenance Kuwait summit 2015, February 1–4, 2015,** Kuwait City, Kuwait. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.maintenancekuwait.com.

**8th Middle East artificial lift forum, February 3–5, 2015,** Doha, Qatar. Details: MCI Group Holding, Office Suite No 902 Level 9, Dubai World Trade Centre Tower, Sheikh Zayed Road, 124752 Dubai, UAE. Tel: +971 4 311 6300; fax: +971 4 311 6301; e-mail: mealf@mci-group.com; website: www.mealf.com.

**2nd LNG supply, transport and storage Philippines 2014 forum. February 4–6, 2015,** Manila, Philippines. Details: All Events Group Pte Ltd, 52 Foch Road #02-02, 209274 Singapore. Tel: +65 6506 0965; fax: +65 6749 7293; e-mail: info@alleventsgroup.com; website: www.lng-world.com.

**4th annual European gas price structuring and market liquidity forum, February 5–6, 2015,** Berlin, Germany. Details: Marcus Evans Conferences, 11 Connaught Place, London W2 2ET, UK. Tel: +44 203 002 3002; fax: +44 203 002 3003; e-mail: flaminiag@marcusevansuk.com; website: www.marcusevans-conferences-paneuropean.com/marcusevans-conferences-event-details.asp?EventID=21599&ad=4Gasprice_GOGwb&me_cid=34969&Date=11/6/2014 3:49:49 PM.

**4th annual LNGgc Asia Pacific, February 9–12, 2015,** Singapore. Details: IBC Global Conferences, The Bookings Department, Informa UK Ltd, PO Box 406, West Byfleet KT14 6WL, UK. Tel: +44 207 017 55 18; fax: +44 207 017 47 15; e-mail: energycustserv@informa.com; website: www.lnggc-asia.com.

**Asset integrity management, February 10–12, 2015,** Stavanger, Norway. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.aimstavanger.com.

# In memory of the late
# Dr Saeid Serajmir

It is with profound sadness that we announce the death of Dr Saeid Serajmir who, during his career, was Iran's National Representative to OPEC on two separate occasions.

Born in Tabriz, Iran, in March 1954, he attained a PhD in Energy Economics at the University of Manchester, in the United Kingdom.

Serajmir joined the Iranian Petroleum Ministry in December 1986. He started out as a Petroleum Industry Analyst within the Ministry's OPEC and Energy Affairs Administration and, by demonstrating merit, gradually worked his way up the various ranks, including holding two terms as Head of OPEC and Energy Affairs and Iran's National Representative to OPEC.

His first term as National Representative was between December 2002 and August 2004. This was when current Petroleum Minister, Bijan Namdar Zangeneh, first held the petroleum portfolio during ex-President Mohammad Khatami's administration (1997–2005).

Serajmir's second term was between October 2013 and September 24, 2014.

Serajmir, who was also Iran's Representative to the International Energy Forum (IEF) between 2004 and 2008, published numerous articles, translations, and reports on oil, gas and energy related topics.

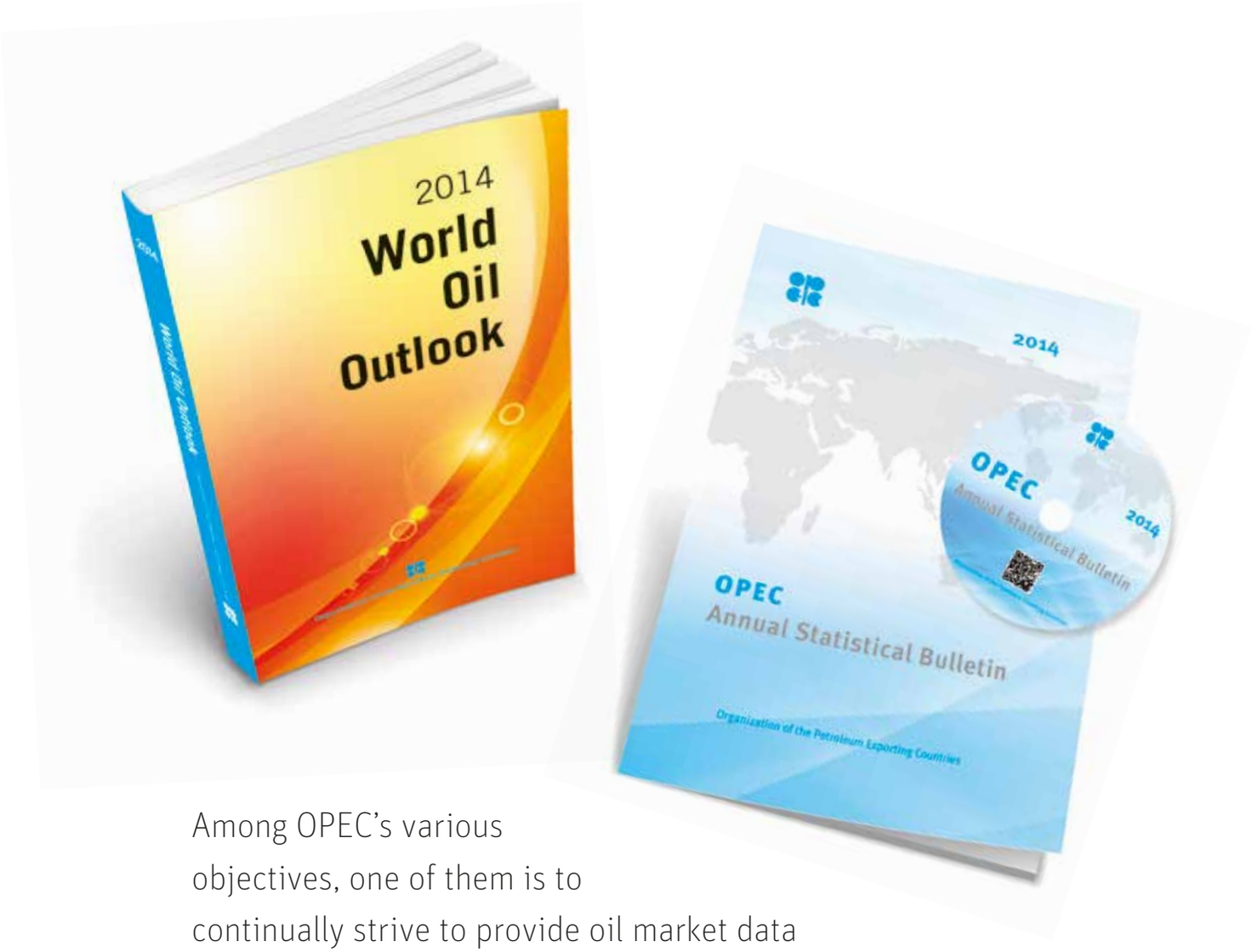
He was an astute petroleum industry researcher and, in his free time, was a calligraphy enthusiast.

Serajmir was described by his peers as being courteous to people of all ranks and was known for his friendliness and modesty.

During his long period of service, both in Iran and abroad, his generous nature and friendly disposition won the hearts of those who worked with him.

On the occasion of the unexpected and sudden passing of this venerable colleague, various individuals, government and non-government organizations, as well as international institutions, have offered sympathy and condolences to his family members and loved ones.

# Other OPEC flagship publications




Among OPEC's various objectives, one of them is to continually strive to provide oil market data and analysis to energy stakeholders and to the general public. It does this by publishing different monthly and annual publications, which consider many aspects of the global oil industry – with an emphasis on OPEC Member Countries. Two of the Organization's flagship publications are the **World Oil Outlook** and the **Annual Statistical Bulletin**. The 2014 editions can be downloaded free-of-charge from our website at: www.opec.org.

# OPEC Secretariat sees signs of continued economic recovery

## November 2014

With economic indicators pointing to a continued recovery in the global economy, any additional improvement in the economies of the major oil-consuming countries should support a further increase in oil demand, according to the OPEC Secretariat in Vienna.

Its *Monthly Oil Market Report (MOMR)* for November observed that figures for global manufacturing in October confirmed that the world economy continues to recover gradually.

It stated that the global manufacturing Purchasing Managers Index (PMI) for October stood at 52.2, unchanged from September, yet above the all-important growth indication level of 50.

"A similar index in the United States has hit a new three-year record high of 59.0, considerably higher compared to September when it stood at 56.6. In Japan, the manufacturing PMI also rose by 0.8 point to 52.5," a feature article in the publication said.

It maintained that even in the slowly improving Euro-zone economy, the manufacturing PMI index increased in October for the first time in six months to a level of 50.6, compared to 50.3 in September.

This, it said, was driven mainly by Germany, where the PMI rose to 51.4 from 49.9, while France and Italy remained at the contraction indicating level of below 50, with readings of 48.5 and 49.0, respectively.

"China's PMI reading also confirms that the most recent uptick in its economy continues. China's manufacturing gauge increased to 50.4 in October from the previous month's reading of 50.2."

At the same time, continued the *MOMR*, India's manufacturing PMI has also improved, reaching 51.6 in October, up from 51.0 in the previous month.

"Taken together, support from the continued improvement in US GDP, additional monetary stimulus in Japan and to some extent in Europe, as well as improvements in China and India, indicates that the global economic recovery will continue to pick up pace into the coming year, with growth expected at 3.6 per cent, compared to 3.2 per cent in 2014," it observed.

The report said the improvement in manufacturing activities is positively impacting oil consumption, especially in some emerging and developing economies.

Oil product demand in China has picked up with data showing an increase of 400,000 b/d in August, before surging by a further 600,000 b/d in September, taking demand to 10.4m b/d. The bulk of the growth has come from gasoline and LPG demand.

"At the same time, China's crude oil imports rose by 900,000 b/d in October, compared to the same month last year to average 5.7m b/d."

Since January, noted the *MOMR*, China's total crude oil imports have risen by 500,000 b/d, or 9.2 per cent year-on-year, to average 6.1m b/d – the highest rate of annual growth for this ten-month period since 2010.

"This has contributed to a substantial build of more than 50m b in the country's crude oil stocks over the same period. The bulk of this stock-build has come in the last three months, amounting to nearly 35m b as China is rapidly filling its strategic petroleum reserves."

The publication said oil demand in Brazil also saw some improvement, rising to around 3.2m b/d in September, higher y-o-y by a solid 200,000 b/d. Demand for diesel, gasoline and fuel oil represented the largest share of this increase.

"This increase is primarily related to the country's recent drought which has led to ethanol shortages, boosting gasoline requirements, and has also impacted hydroelectric power generation, resulting in a shift to thermal power generation, driving diesel and fuel oil consumption higher."

Meanwhile, said the *MOMR*, India's oil demand has also experienced some improvement, showing a y-o-y rise of 100,000 b/d to reach 3.8m b/d in September. Gasoline, LPG and fuel oil are the main products accounting for this increase.

# MOMR oil market highlights ... November 2014

The **OPEC Reference Basket** averaged $85.06/b in October, representing a decline of $10.92 from the previous month. Nymex WTI dropped by $8.83 to average $84.34/b and ICE Brent shed $10.52 to average $88.05/b. The Brent-WTI spread has contracted further in October to average $3.70/b, the lowest difference in 15 months.

**World economic growth** expectations for 2014 and 2015 remain unchanged from the previous report at 3.2 per cent and 3.6 per cent, respectively. The OECD forecast stands at 1.8 per cent for 2014 and 2.1 per cent for 2015, in line with the previous report, with the United States showing a continued improvement, while the Euro-zone and Japan are lagging in growth. Figures for both China and India remain unchanged from the previous report at 7.4 per cent and 7.2 per cent for China and 5.5 per cent and 5.8 per cent for India in 2014 and 2015, respectively.

The estimate for **world oil demand** growth in 2014 remains at 1.05 million barrels/day. Total oil consumption is expected to reach a peak for the year in the fourth quarter, resulting in total oil demand of 91.19m b/d for 2014. For 2015, the forecast for world oil demand growth stands at 1.19m b/d, in line with the previous report, with total world oil consumption expected to reach 92.38m b/d.

**Non-OPEC oil supply** is estimated to grow by 1.68m b/d in 2014. In 2015, non-OPEC oil supply is projected to grow by 1.24m b/d. The US, Canada, Brazil and China are seen to be the key contributors to next year's non-OPEC supply growth. Output of OPEC NGLs and non-conventional liquids are estimated to average 6.03m b/d in 2015, up from 5.83m b/d in 2014. In October, OPEC crude oil production averaged 30.25m b/d, according to secondary sources, a decrease of 230,000 b/d from the slightly upwardly revised September figure of 30.48m b/d.

Light distillate crack spreads narrowed in the Atlantic Basin with the return of several disrupted fluid catalytic cracking (FCC) units, mainly in the US Gulf Coast. Losses at the top of the barrel resulted in a decline in **refinery margins** despite a balanced middle distillate market. In contrast, the Asian market lost some ground in October due to lower crack spreads.

**Spot freight rates** for dirty vessels saw increases across various classes with Suezmax rates showing the strongest gains. VLCC, Suezmax and Aframax spot freight rates rose by 15 per cent, 19 per cent and 17 per cent, respectively, over the previous month. Freight rate gains were mainly driven by seasonal demand, Asian requirements and increased port delays.

**OECD commercial oil stocks** rose by 21.2m b in September to stand at 2,719m b. At this level, commercial oil stocks were still 8.1m b below the latest five-year average. Crude stocks showed a surplus of around 18m b, while product inventories remained roughly 26m b below the five-year average. In terms of days of forward cover, OECD commercial oil stocks rose 0.1 day over the previous month to stand at 58.7 days in September.

Demand for **OPEC crude** is estimated at 29.5m b/d in 2014. In 2015, required OPEC crude is seen averaging 29.2m b/d.

*The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for November 2014. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on OPEC Reference Basket and crude and oil product prices in general.*

# OPEC Secretariat urges close scrutiny of oil market developments

## *December* 2014

The OPEC Secretariat in the Austrian capital, Vienna, has warned that developments in the international oil market will need to be watched very closely moving into the New Year.

It said in its *Monthly Oil Market Report (MOMR)* for December that if the current oil price environment were to persist into the coming year, it could have implications for both the global economy and the world oil market over time, adding: "Although to what degree is not yet clear."

It was referring to the recent slump in international crude oil prices, which have fallen considerably since the summer months.

A feature article in the publication stressed that developments in oil supply and demand, as well as investments and non-fundamental factors, such as speculative activity, "should be followed closely over the coming period."

With 2014 coming to an end, the December *MOMR* carried a review of oil market developments in the year, stating that initial forecasts could provide an indication of the likely way ahead in 2015.

On a positive note, it observed that the world economy continued to recover in 2014, growing by 3.2 per cent, adding that it was expected to pick up pace to 3.6 per cent in the coming year.

"The United States, in particular, gained momentum in recent months amid an improving labour market."

It stated that while the situation in the Euro-zone had remained tentative this year, some relative progress in peripheral countries had helped to lift growth. Japan had been negatively impacted by its April sales tax increase and remained dependent on monetary stimulus.

The *MOMR* said that, overall, the OECD was seen growing by 1.8 per cent in 2014, increasing to 2.1 per cent next year. In the emerging economies, China's growth was expected to remain at around seven per cent in both 2014 and 2015.

India's economy, it maintained, had been supported this year by reforms encouraging investments amid slowing inflation.

"This may lead to a more accommodative fiscal and monetary policy in 2015, providing further room to accelerate growth to 5.8 per cent from 5.5 per cent in 2014."

The OPEC report said that upside potential for global growth in 2015 was seen coming primarily from the US, while headwinds were seen to be low inflation in the Euro-zone and a further rise in volatility in foreign exchange markets. Uncertainties included the outcome of monetary policies from major OECD central banks and geopolitical tensions.

The *MOMR* said world oil demand was estimated to grow by 930,000 barrels/day in 2014, some 100,000 b/d lower than the initial forecast first published in July 2013.

Demand in OECD Americas had been revised down as transportation and other sectors were impacted by greater efficiency and fuel substitution, despite improving economic activities and solid growth in distillate consumption in the US.

In OECD Europe and the Asia Pacific, a number of factors had contributed to the lower-than-anticipated oil demand growth this year, such as slower economic activity, the sales tax hike in Japan and increased fuel switching, commented the report.

In the non-OECD region, oil demand was revised down mainly in Latin America, Other Asia and the Middle East. This was due to slower economic momentum, the partial removal of subsidies and geopolitical tensions.

"At the same time, booming demand for petrochemical feedstocks, as well as an uptick in transportation fuel requirements, supported oil demand growth in China."

In 2015, it said, with global economic activity expected to increase, world oil demand was projected to grow at a higher rate of 1.12m b/d.

Non-OPEC supply growth in 2014 had been revised up by 580,000 b/d since the initial forecast to now stand at 1.72m b/d.

This adjustment was partly attributable to the upward revision to the 2013 base-year figure, which accounted for 310,000 b/d of the increase, while higher-than-expected supply contributed 270,000 b/d.

The *MOMR* said strong growth in US tight crude and non-conventional NGL production had further supported the upward revision, despite disruptions in some non-OPEC countries, mainly due to delays in new project start-ups; the postponement of production volumes, including Kazakhstan's Kashagan field; and declines in output in Mexico, the North Sea and Other Asia.

In 2015, non-OPEC oil supply was forecast to grow by 1.36m b/d. Growth was seen coming mainly from the US, Canada and Brazil, while declines were expected in Mexico, Russia and Kazakhstan.

Output of OPEC NGLs was seen increasing by 200,000 b/d in 2015, following growth of 180,000 b/d in 2014.

# MOMR oil market highlights ... December 2014

The **OPEC Reference Basket** finished down $9.49 at $75.57/b in November, amid increasing supplies and sluggish global growth. ICE Brent fell by $8.42 to $79.63/b, while Nymex WTI lost $8.53 to stand at $75.81/b. The Brent-WTI spread widened slightly to average $3.82/b in November.

**World economic growth** for 2014 and 2015 remains unchanged from the previous month at 3.2 per cent and 3.6 per cent, respectively. The OECD forecast has been maintained at 1.8 per cent for 2014 and at 2.1 per cent for 2015. Figures for both China and India remain unchanged from the previous report at 7.4 per cent and 7.2 per cent for China and 5.5 per cent and 5.8 per cent for India in 2014 and 2015, respectively.

**World oil demand** in 2014 is estimated to grow by 930,000 b/d to average around 91.13m b/d. These projections represent a decline of 120,000 b/d from the previous report, mainly as a result of lower-than-expected consumption in the OECD region. For 2015, world oil demand is expected to increase by around 1.12m b/d, some 70,000 b/d lower than the estimation in the previous report, with total world oil demand expected to reach 92.26m b/d.

**Non-OPEC oil supply** in 2014 is estimated to grow by 1.72m b/d to average 55.95m b/d. This represents an upward revision of 40,000 b/d over the last report and is 580,000 b/d higher than the initial forecast, of which 310,000 b/d is due to an upward revision to the 2013 base-year figure. OECD Americas is expected to be the main driver for oil supply growth, followed by Latin America. In 2015, non-OPEC oil supply is forecast to increase by 1.36m b/d to average 57.31m b/d, representing an upward revision of 120,000 b/d over the previous report. Output of OPEC NGLs and non-conventional liquids is estimated to average 6.03m b/d in 2015, up from 5.83m b/d in 2014. In November, OPEC crude oil production averaged 30.05m b/d, according to secondary sources, a drop of 390,000 b/d over the previous month.

**Product markets** showed a mixed performance in the Atlantic Basin in November. European margins were supported by middle distillate cracks. In contrast, US refinery margins fell as gasoline crack spreads declined sharply due to expectations of lower seasonal demand and rising US gasoline stocks. The Asian market showed a sharp recovery in November on support from seasonal winter demand, along with the positive performance seen at the top and bottom of the barrel.

The **tanker market** experienced positive sentiment across its various classes in November. Freight rates in both dirty and clean tankers showed an improvement over the previous month, supported by increased tonnage demand from West of Suez, driven by winter requirements, as well as limited availability and weather delays.

**OECD commercial oil stocks** fell in October by 5.1m b to stand at 2,716m b. At this level, inventories were around 15m b higher than the five-year average. Crude stocks saw a surplus of 52m b, while product inventories remained 37m b below the five-year average. In terms of days of forward cover, OECD commercial stocks stood at 59.0 days, around 0.9 day higher than the five-year average.

Demand for **OPEC crude** is estimated at 29.4m b/d in 2014. In 2015, required OPEC crude is forecast at 28.9m b/d.

*The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for December 2014. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on OPEC Reference Basket and crude and oil product prices in general.*

## Table 1: OPEC Reference Basket crude oil prices

*$/b*

| Crude/Member Country | 2013 Nov | Dec | 2014 Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Weeks 44–48/14 (week ending) Oct 31 | Nov 7 | Nov 14 | Nov 21 | Nov 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arab Light – Saudi Arabia | 104.84 | 108.07 | 105.74 | 106.30 | 104.80 | 104.87 | 105.80 | 108.61 | 107.15 | 102.24 | 97.23 | 85.93 | 76.07 | 83.29 | 79.09 | 76.89 | 75.04 | 73.25 |
| Basrah Light – Iraq | 101.63 | 105.12 | 102.70 | 103.38 | 102.10 | 102.11 | 103.16 | 105.80 | 103.83 | 99.20 | 94.49 | 83.57 | 73.94 | 81.03 | 77.19 | 74.72 | 72.83 | 71.01 |
| Bonny Light – Nigeria | 111.47 | 113.11 | 110.26 | 110.77 | 109.50 | 110.19 | 112.22 | 114.36 | 109.19 | 102.26 | 98.07 | 88.51 | 80.10 | 86.65 | 84.29 | 80.74 | 78.81 | 76.55 |
| Es Sider – Libya | 107.57 | 110.41 | 107.86 | 108.47 | 107.15 | 107.39 | 109.42 | 111.31 | 106.19 | 100.56 | 96.20 | 86.31 | 78.90 | 84.45 | 83.09 | 79.54 | 77.61 | 75.35 |
| Girassol – Angola | 108.83 | 111.31 | 107.96 | 109.54 | 108.67 | 108.80 | 110.21 | 111.23 | 107.02 | 101.52 | 97.15 | 86.78 | 78.68 | 84.85 | 82.38 | 79.65 | 77.64 | 75.05 |
| Iran Heavy – IR Iran | 106.87 | 108.96 | 104.89 | 104.96 | 104.01 | 104.32 | 105.40 | 107.45 | 106.21 | 101.42 | 96.14 | 84.61 | 74.46 | 82.05 | 77.67 | 75.18 | 73.11 | 71.90 |
| Kuwait Export – Kuwait | 104.73 | 107.30 | 103.79 | 104.17 | 103.05 | 103.13 | 104.21 | 106.56 | 105.50 | 100.57 | 95.30 | 83.99 | 74.04 | 81.31 | 77.08 | 74.83 | 72.89 | 71.34 |
| Marine – Qatar | 105.83 | 107.76 | 103.95 | 104.91 | 104.07 | 104.53 | 105.44 | 107.85 | 105.96 | 101.52 | 96.08 | 86.14 | 75.43 | 83.52 | 79.31 | 76.17 | 73.70 | 72.53 |
| Merey* – Venezuela | 94.83 | 96.61 | 93.72 | 94.00 | 93.23 | 93.99 | 96.06 | 98.71 | 95.06 | 92.31 | 88.61 | 76.17 | 68.42 | 73.50 | 71.01 | 69.53 | 67.05 | 66.10 |
| Murban – UAE | 109.36 | 111.22 | 107.66 | 108.69 | 107.60 | 107.75 | 108.35 | 110.74 | 108.87 | 104.33 | 98.93 | 89.10 | 77.85 | 86.39 | 81.69 | 78.62 | 76.12 | 74.95 |
| Oriente – Ecuador | 89.72 | 96.56 | 93.44 | 97.44 | 94.96 | 94.73 | 95.47 | 98.75 | 95.21 | 89.53 | 87.20 | 76.84 | 69.52 | 74.41 | 72.01 | 69.90 | 68.68 | 67.50 |
| Saharan Blend – Algeria | 109.27 | 112.66 | 109.96 | 110.52 | 108.95 | 108.09 | 110.36 | 112.66 | 106.74 | 100.86 | 97.10 | 87.61 | 79.60 | 85.75 | 83.79 | 80.24 | 78.31 | 76.05 |
| **OPEC Reference Basket** | **104.97** | **107.67** | **104.71** | **105.38** | **104.15** | **104.27** | **105.44** | **107.89** | **105.61** | **100.75** | **95.98** | **85.06** | **75.57** | **82.56** | **78.87** | **76.37** | **74.35** | **72.67** |

## Table 2: Selected OPEC and non-OPEC spot crude oil prices

*$/b*

| Crude/Member Country | 2013 Nov | Dec | 2014 Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Weeks 44–48/14 (week ending) Oct 31 | Nov 7 | Nov 14 | Nov 21 | Nov 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minas – Indonesia[1] | 104.28 | 106.38 | 110.60 | 108.46 | 113.60 | 111.12 | 107.22 | 112.13 | 105.06 | 99.94 | 95.07 | 84.46 | 75.92 | 82.14 | 78.87 | 77.04 | 74.52 | 73.25 |
| Arab Heavy – Saudi Arabia | 104.90 | 106.77 | 102.21 | 102.34 | 101.63 | 101.61 | 102.72 | 104.50 | 103.69 | 99.14 | 93.73 | 82.45 | 72.18 | 79.82 | 75.35 | 72.89 | 70.78 | 69.69 |
| Brega – Libya | 108.17 | 111.01 | 108.46 | 109.12 | 107.80 | 107.99 | 110.02 | 112.01 | 105.34 | 100.21 | 96.05 | 86.26 | 79.10 | 84.40 | 83.29 | 79.74 | 77.81 | 75.55 |
| Brent – North Sea | 107.97 | 110.81 | 108.26 | 108.87 | 107.55 | 107.69 | 109.67 | 111.66 | 106.64 | 101.56 | 97.30 | 87.41 | 78.90 | 85.55 | 83.09 | 79.54 | 77.61 | 75.35 |
| Dubai – UAE | 105.95 | 107.80 | 104.01 | 105.04 | 104.32 | 104.68 | 105.55 | 108.03 | 106.13 | 101.73 | 96.47 | 86.73 | 76.33 | 84.12 | 79.92 | 77.17 | 74.70 | 73.53 |
| Ekofisk – North Sea | 108.88 | 111.85 | 109.06 | 110.06 | 108.60 | 108.65 | 110.86 | 112.67 | 107.33 | 102.04 | 97.75 | 87.87 | 79.27 | 86.20 | 83.42 | 79.84 | 78.07 | 75.76 |
| Iran Light – IR Iran | 106.52 | 108.98 | 105.33 | 106.47 | 105.63 | 106.03 | 107.42 | 110.27 | 105.73 | 101.30 | 96.41 | 84.90 | 76.88 | 82.66 | 80.04 | 77.23 | 76.14 | 74.12 |
| Isthmus – Mexico | 93.83 | 98.39 | 96.35 | 100.47 | 98.87 | 101.29 | 102.59 | 106.47 | 102.20 | 96.78 | 93.70 | 85.40 | 79.04 | 83.14 | 81.56 | 79.76 | 78.38 | 76.44 |
| Oman – Oman | 105.95 | 107.83 | 104.01 | 105.04 | 104.34 | 104.93 | 105.71 | 108.06 | 106.15 | 102.15 | 97.18 | 86.77 | 77.81 | 84.12 | 80.57 | 78.39 | 76.65 | 75.64 |
| Suez Mix – Egypt | 105.15 | 107.56 | 103.02 | 104.77 | 103.92 | 104.12 | 105.14 | 106.81 | 103.41 | 99.34 | 93.48 | 83.91 | 75.58 | 82.29 | 79.44 | 76.21 | 74.46 | 72.20 |
| Urals – Russia | 107.73 | 110.44 | 106.40 | 107.43 | 106.66 | 106.91 | 107.84 | 109.44 | 106.23 | 101.98 | 96.13 | 86.63 | 78.92 | 85.08 | 82.43 | 79.36 | 78.21 | 75.66 |
| WTI – North America | 93.76 | 97.72 | 94.90 | 100.78 | 100.53 | 102.02 | 102.03 | 105.24 | 102.87 | 96.38 | 93.36 | 84.43 | 76.04 | 81.22 | 78.22 | 76.44 | 75.28 | 74.21 |

*Note: As per the decision of the 109th ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108th ECB, the ORB 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 ORB has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference. As of January 2009, the ORB excludes Minas (Indonesia).*

* *Upon the request of Venezuela, and as per the approval of the 111th ECB, BCF-17 has been replaced by Merey as of January 2009. The ORB has been revised as of this date.*

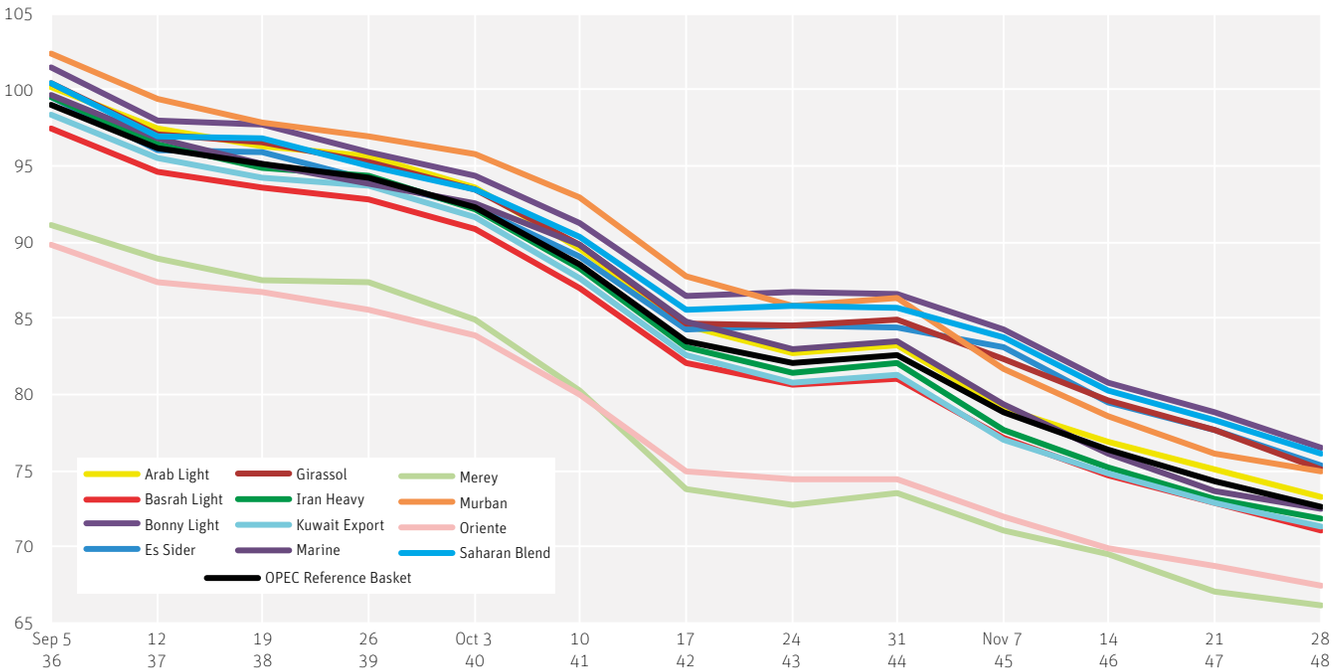
1. *Indonesia suspended its OPEC Membership on December 31, 2008.*

*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; Secretariat's assessments.*

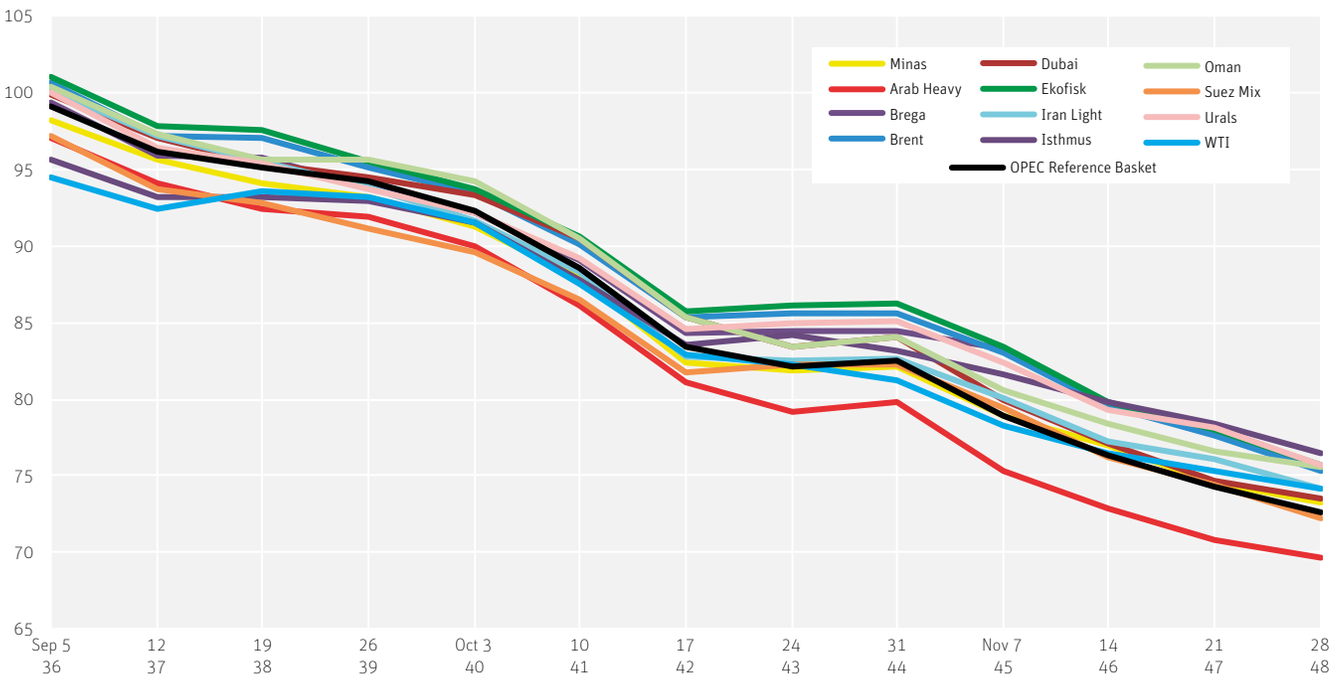
## Graph 1: Evolution of the OPEC Reference Basket crudes, 2014

$/b




## Graph 2: Evolution of spot prices for selected non-OPEC crudes, 2014

$/b

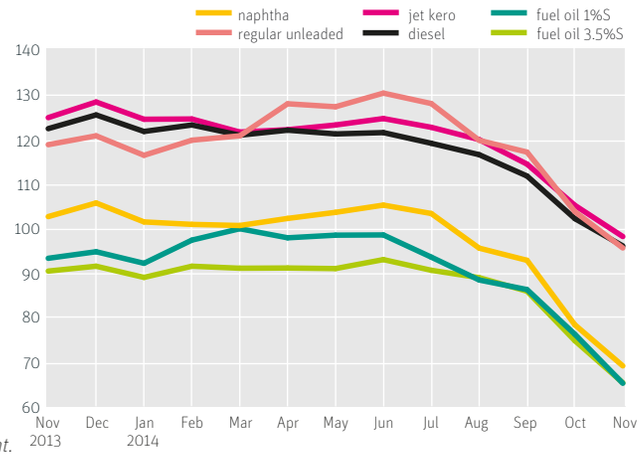



*Note: As per the decision of the 109th ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108th ECB, the basket has been recalculated including the Angolan crude Girassol, 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 ORB has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference. As of January 2009, the ORB excludes Minas (Indonesia).*
*Upon the request of Venezuela, and as per the approval of the 111th ECB, BCF-17 has been replaced by Merey as of January 2009. The ORB has been revised as of this date.*

## Table and Graph 3: North European market — spot barges, fob Rotterdam

*$/b*

| | | naphtha | regular gasoline unleaded | diesel ultra light | jet kero | fuel oil 1 per cent S | fuel oil 3.5 per cent S |
|---|---|---|---|---|---|---|---|
| 2013 | November | 102.81 | 118.89 | 122.47 | 124.93 | 93.49 | 90.63 |
| | December | 105.86 | 120.87 | 125.54 | 128.43 | 94.96 | 91.72 |
| 2014 | January | 101.62 | 116.51 | 121.84 | 124.57 | 92.37 | 89.22 |
| | February | 101.07 | 119.89 | 123.29 | 124.63 | 97.55 | 91.72 |
| | March | 100.82 | 120.86 | 121.01 | 121.71 | 100.10 | 91.27 |
| | April | 102.40 | 128.03 | 122.13 | 122.24 | 98.07 | 91.32 |
| | May | 103.76 | 127.36 | 121.29 | 123.29 | 98.66 | 91.19 |
| | June | 105.38 | 130.41 | 121.59 | 124.73 | 98.71 | 93.20 |
| | July | 103.50 | 128.08 | 119.20 | 122.77 | 93.75 | 90.81 |
| | August | 95.76 | 119.86 | 116.65 | 120.02 | 88.64 | 89.16 |
| | September | 93.04 | 117.23 | 111.88 | 114.54 | 86.50 | 86.14 |
| | October | 78.61 | 103.90 | 102.35 | 105.32 | 76.50 | 75.06 |
| | November | 69.44 | 95.79 | 96.25 | 98.35 | 65.55 | 65.66 |

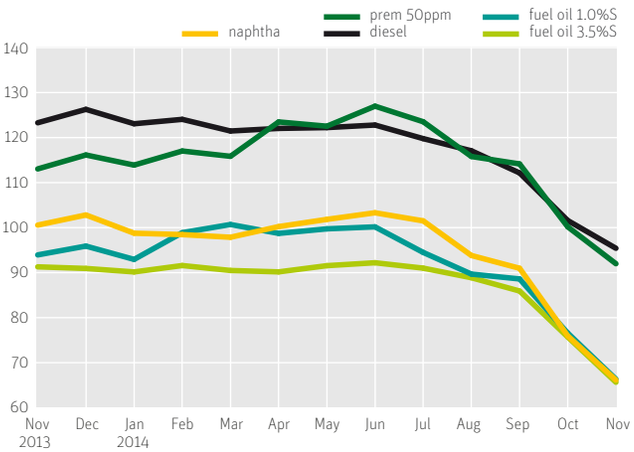



*Note: Prices of premium gasoline and diesel from January 1, 2008, are with 10 ppm sulphur content.*

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

*$/b*

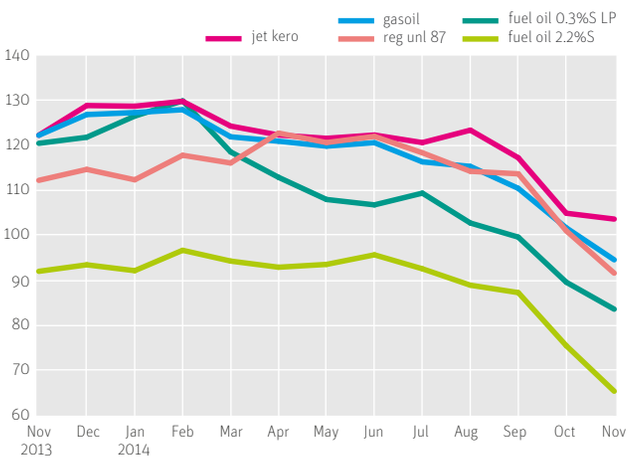
| | | naphtha | premium gasoline 50ppm | diesel ultra light | fuel oil 1 per cent S | fuel oil 3.5 per cent S |
|---|---|---|---|---|---|---|
| 2013 | November | 100.56 | 112.43 | 123.29 | 93.94 | 91.29 |
| | December | 102.81 | 115.53 | 126.27 | 95.90 | 90.93 |
| 2014 | January | 98.76 | 113.28 | 123.07 | 92.94 | 90.16 |
| | February | 98.45 | 116.41 | 124.05 | 98.88 | 91.58 |
| | March | 97.86 | 115.23 | 121.46 | 100.69 | 90.48 |
| | April | 100.23 | 122.87 | 122.04 | 98.72 | 90.17 |
| | May | 101.83 | 121.92 | 122.22 | 99.73 | 91.55 |
| | June | 103.30 | 126.37 | 122.79 | 100.17 | 92.20 |
| | July | 101.50 | 122.91 | 119.77 | 94.49 | 91.00 |
| | August | 93.81 | 115.19 | 117.07 | 89.68 | 88.87 |
| | September | 90.97 | 113.54 | 112.15 | 88.60 | 85.92 |
| | October | 75.96 | 99.57 | 101.58 | 76.56 | 75.70 |
| | November | 66.15 | 91.37 | 95.41 | 66.33 | 65.65 |




## 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 per cent S | fuel oil 2.2 per cent S |
|---|---|---|---|---|---|---|
| 2013 | November | 112.08 | 122.11 | 122.12 | 120.32 | 91.83 |
| | December | 114.52 | 126.72 | 128.73 | 121.67 | 93.28 |
| 2014 | January | 112.20 | 127.16 | 128.58 | 126.38 | 91.97 |
| | February | 117.66 | 127.80 | 129.67 | 129.77 | 96.51 |
| | March | 115.94 | 121.77 | 124.16 | 118.41 | 94.11 |
| | April | 122.60 | 120.79 | 122.17 | 112.75 | 92.74 |
| | May | 120.49 | 119.69 | 121.43 | 107.82 | 93.37 |
| | June | 121.86 | 120.46 | 122.17 | 106.62 | 95.50 |
| | July | 118.21 | 116.19 | 120.48 | 109.23 | 92.39 |
| | August | 114.09 | 115.18 | 123.25 | 102.58 | 88.74 |
| | September | 113.53 | 110.29 | 117.10 | 99.44 | 87.09 |
| | October | 100.85 | 101.51 | 104.76 | 89.41 | 75.28 |
| | November | 91.42 | 94.39 | 103.46 | 83.40 | 65.14 |

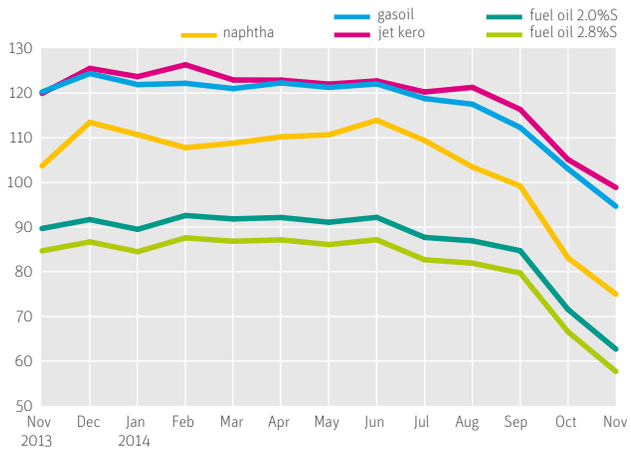



*Source: Platts. Prices are average of available days.*

## Table and Graph 6: Caribbean market — spot cargoes, fob

*$/b*

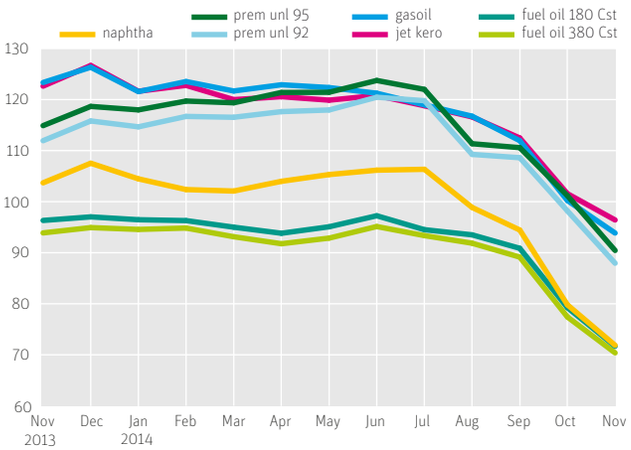
| | | naphtha | gasoil | jet kero | fuel oil 2 per cent S | fuel oil 2.8 per cent S |
|---|---|---|---|---|---|---|
| 2013 | November | 103.69 | 120.25 | 119.92 | 89.69 | 84.69 |
| | December | 113.46 | 124.38 | 125.53 | 91.69 | 86.69 |
| 2014 | January | 110.69 | 121.90 | 123.68 | 89.50 | 84.50 |
| | February | 107.77 | 122.19 | 126.34 | 92.60 | 87.60 |
| | March | 108.79 | 121.01 | 122.93 | 91.83 | 86.83 |
| | April | 110.21 | 122.28 | 122.90 | 92.15 | 87.15 |
| | May | 110.66 | 121.27 | 122.01 | 91.09 | 86.09 |
| | June | 113.92 | 122.06 | 122.73 | 92.18 | 87.18 |
| | July | 109.39 | 118.78 | 120.25 | 87.70 | 82.70 |
| | August | 103.46 | 117.51 | 121.28 | 86.93 | 81.93 |
| | September | 99.20 | 112.29 | 116.34 | 84.72 | 79.72 |
| | October | 83.11 | 103.03 | 105.12 | 71.56 | 66.56 |
| | November | 74.99 | 94.66 | 98.86 | 62.68 | 57.68 |




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

*$/b*

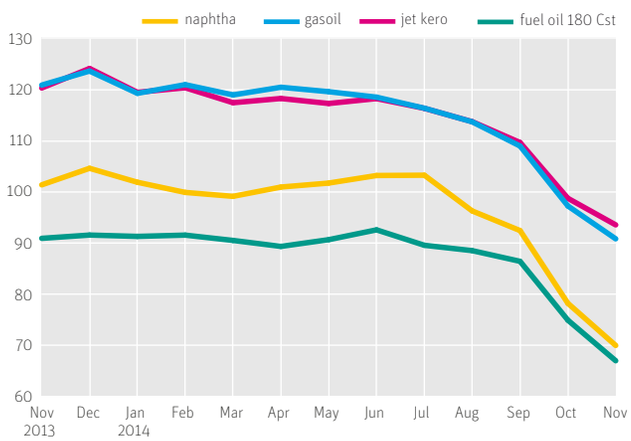
| | | naphtha | premium gasoline unl 95 | premium gasoline unl 92 | gasoil | jet kero | fuel oil 180 Cst | fuel oil 380 Cst |
|---|---|---|---|---|---|---|---|---|
| 2013 | November | 103.69 | 114.89 | 111.94 | 123.34 | 122.63 | 96.32 | 93.88 |
| | December | 107.53 | 118.66 | 115.81 | 126.33 | 126.68 | 97.02 | 94.92 |
| 2014 | January | 104.47 | 117.98 | 114.66 | 121.56 | 121.63 | 96.46 | 94.56 |
| | February | 102.37 | 119.71 | 116.70 | 123.53 | 122.78 | 96.29 | 94.83 |
| | March | 102.08 | 119.37 | 116.53 | 121.68 | 119.99 | 95.00 | 93.13 |
| | April | 103.99 | 121.39 | 117.64 | 122.90 | 120.56 | 93.81 | 91.76 |
| | May | 105.31 | 121.43 | 117.96 | 122.35 | 119.88 | 95.08 | 92.86 |
| | June | 106.17 | 123.74 | 120.46 | 121.24 | 120.80 | 97.24 | 95.13 |
| | July | 106.34 | 121.99 | 119.78 | 118.96 | 118.79 | 94.51 | 93.35 |
| | August | 98.87 | 111.35 | 109.26 | 116.74 | 116.60 | 93.50 | 91.86 |
| | September | 94.45 | 110.58 | 108.61 | 111.95 | 112.48 | 90.86 | 89.14 |
| | October | 79.79 | 101.17 | 98.19 | 100.22 | 101.56 | 79.24 | 77.41 |
| | November | 71.86 | 90.44 | 87.94 | 93.85 | 96.41 | 71.68 | 70.38 |




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

*$/b*

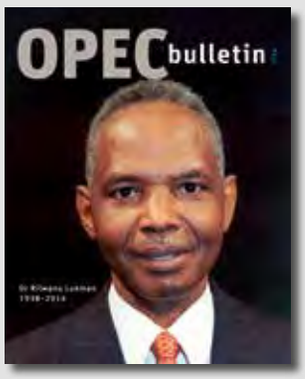
| | | naphtha | gasoil | jet kero | fuel oil 180 Cst |
|---|---|---|---|---|---|
| 2013 | November | 101.39 | 120.92 | 120.35 | 90.92 |
| | December | 104.63 | 123.67 | 124.18 | 91.56 |
| 2014 | January | 101.90 | 119.31 | 119.51 | 91.30 |
| | February | 99.91 | 121.01 | 120.40 | 91.55 |
| | March | 99.14 | 119.00 | 117.47 | 90.51 |
| | April | 100.96 | 120.50 | 118.30 | 89.34 |
| | May | 101.74 | 119.63 | 117.32 | 90.66 |
| | June | 103.22 | 118.56 | 118.28 | 92.58 |
| | July | 103.28 | 116.40 | 116.37 | 89.56 |
| | August | 96.28 | 113.73 | 113.76 | 88.51 |
| | September | 92.44 | 108.99 | 109.68 | 86.42 |
| | October | 78.20 | 97.26 | 98.76 | 74.90 |
| | November | 69.94 | 90.82 | 93.55 | 66.95 |




*Source: Platts. Prices are average of available days.*

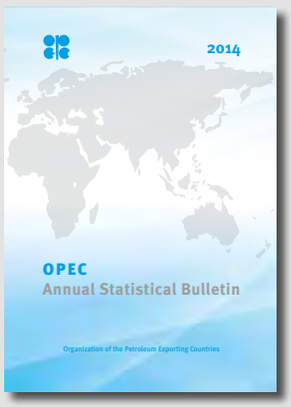
OPEC offers a range of publications that reflect its activities. Copies can be obtained by contacting this Department, which regular readers should also notify in the event of a change of address:

**PR & Information Department, OPEC Secretariat**
**Helferstorferstrasse 17, A-1010 Vienna, Austria**
**Tel: +43 1 211 12-0; fax: +43 1 211 12/5081; e-mail: prid@opec.org**



**OPEC Bulletin**
*(free of charge)*

## Annual Statistical Bulletin 2014 *(free of charge)*



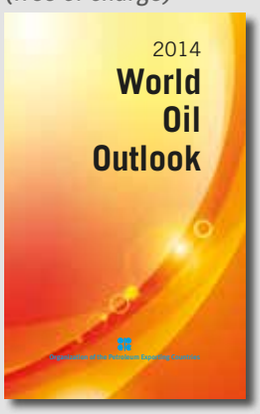

104-page book with CD
The CD (for Microsoft Windows only) contains all the data in the book and much more.
- Easy to install and display
- Easy to manipulate and query
- Easy to export to spreadsheets such as Excel

## OPEC Monthly Oil Market Report *(free of charge)*

- Crude oil and product prices analysis
- Member Country output figures
- Stocks and supply/demand analysis

## Annual Report 2013 *(free of charge)*

## World Oil Outlook 2014 *(free of charge)*




## OPEC Energy Review

Contains research papers by international experts on energy, the oil market, economic development and the environment. Available quarterly only from the commercial publisher. Annual subscription rates for 2013:

| | Institutional | | | Personal |
|---|---|---|---|---|
| | Online | Print & online | Print | Print & online |
| Americas $ | 720 | 827 | 720 | 191 |
| UK £ | 429 | 493 | 429 | 115 |
| Europe *(others)* € | 544 | 627 | 544 | £115 |
| Europe *(EU)* € | 544 | 627 | 544 | 170 |
| Rest of world $ | 840 | 967 | 840 | £115 |

**Orders and enquiries:**
Blackwell Publishing Journals, 9600 Garsington Road, Oxford OX4 2DQ, UK.
Tel: +44 (0)1865 776868; fax: +44 (0)1865 714591; e-mail: cs-journals@wiley.com; http://onlinelibrary.wiley.com/

www.opec.org