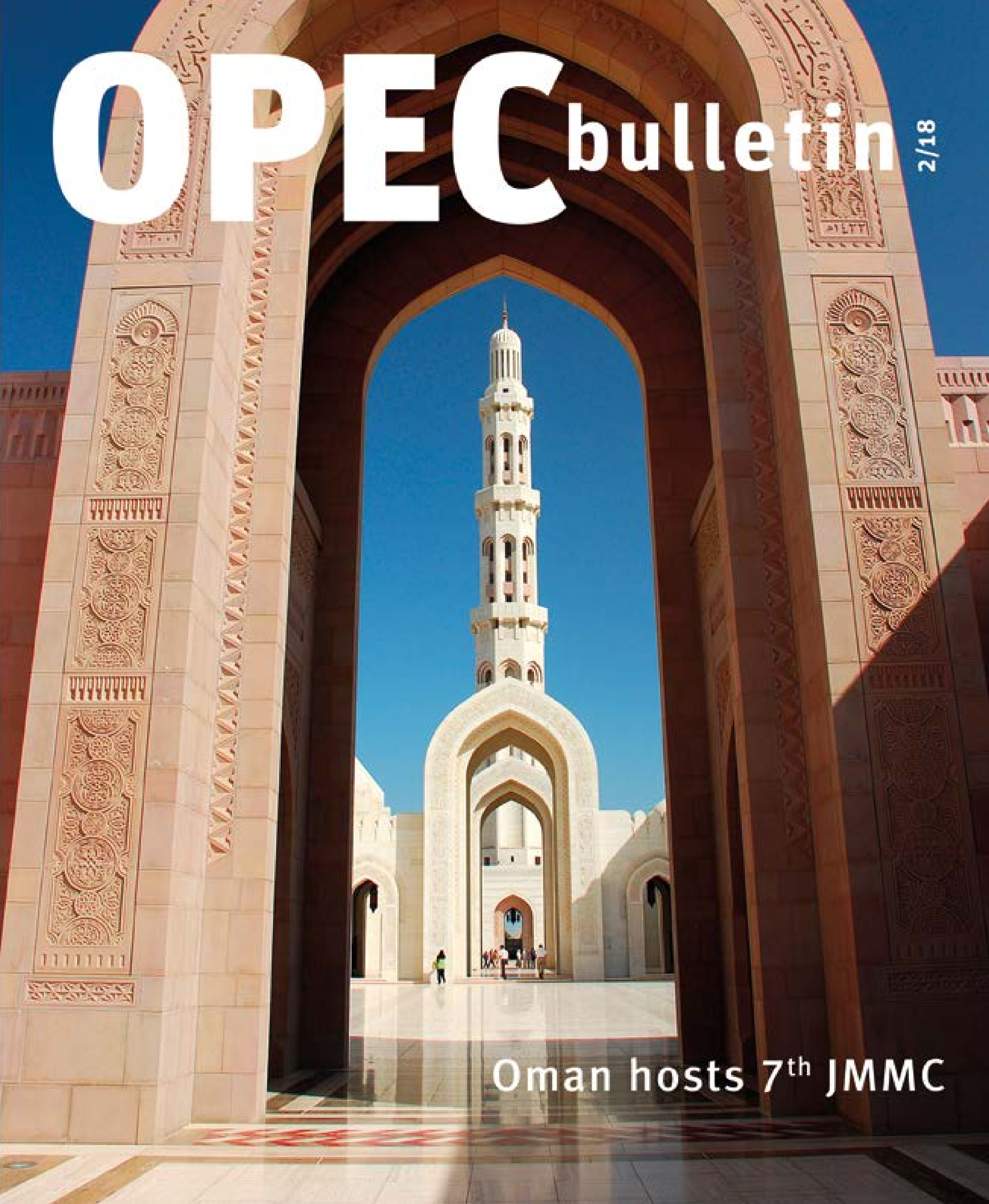
OPEC bulletin

2/18



Oman hosts 7th JMMC

7th

OPEC International Seminar

Vienna, Austria

Petroleum – cooperation for a sustainable future

20–21 June 2018

Hofburg Palace

www.opec.org

Relationships built to last

The new year got off to a positive start for OPEC and its non-OPEC partners of the 'Declaration of Cooperation' as the Joint Ministerial Monitoring Committee (JMMC) gathered in Oman on January 21, 2018, for its 7th Meeting.

For this inaugural meeting of the new year, the Sultanate of Oman graciously welcomed the Committee's members to its beautiful capital of Muscat as official hosts of the meeting. Oman is one of the ten non-OPEC participating countries of the 'Declaration of Cooperation', and has a long and rich history of collaboration with OPEC, spanning nearly three decades.

This issue's feature coverage of the JMMC highlights this enduring relationship, which dates back to March of 1986 when Oman first attended an OPEC Ministerial Conference as an observer at the 77th (Extraordinary) Meeting of the Conference held in Geneva, Switzerland.

In his opening remarks at the JMMC, OPEC Secretary General, Mohammad Sanusi Barkindo, gave much of credit for this long-lasting friendship to the country's oil minister.

"The greatest highlights in Omani-OPEC relations have occurred in the last 20 years. This is no mere coincidence," he said. "This is because of a very special gentleman, someone who we are honoured to call our friend — Dr Mohammed bin Hamad Al-Rumhy, Minister of Oil and Gas of this great country."

Oman's historical support for OPEC has continued in this latest round of collaboration, the 'Declaration of Cooperation', as it has achieved one of the highest levels of conformity with its voluntary production adjustments.

The OPEC-Oman relationship is a perfect example of what can be achieved through long-term dialogue and cooperation. This was not a one-off collaboration to achieve a particular goal, but rather a steady, long-term building of bridges, opening up of communication and exchange of mutually beneficial dialogue.

And, indeed, OPEC is hoping that these precious bonds of partnership that have been forged through the 'Declaration of Cooperation' will turn into long-term working relationships in support of a sustainable stability in the global oil markets. This will benefit producers and consumers alike, while boosting the world economy — it is a win-win scenario.

These sentiments were echoed by both the JMMC Chairman, as well as the Secretary General at the 7th Meeting of the JMMC.

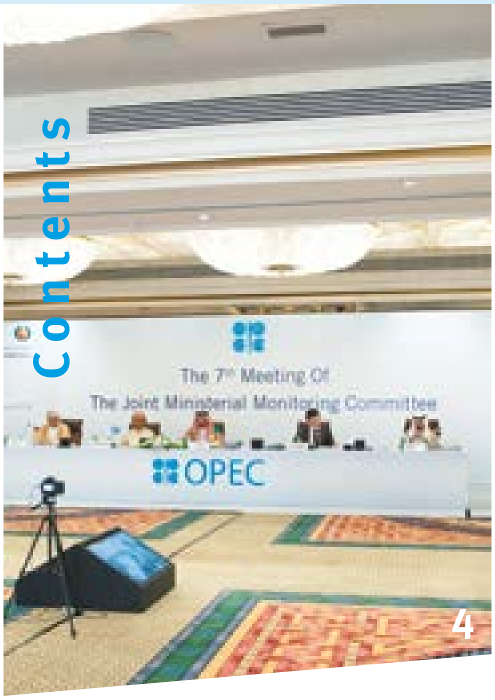
"I believe that, going forward, we will all benefit by further solidifying the JMMC platform, as we must look beyond the short and medium term to long-term stability in the market on a more sustainable basis," said Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources; and Chairman of the Joint Ministerial Monitoring Committee. "That is likely to require building on our current platforms and devising stronger mechanisms of data collection and ensuring their integrity and consistency for all participants."

In speaking to the press at the World Economic Forum in Davos, Switzerland, the Secretary General also proclaimed the benefits of institutionalizing this cooperation.

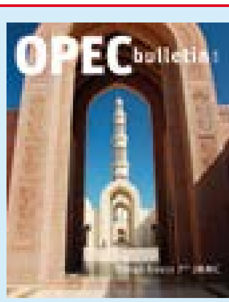
"OPEC and non-OPEC cooperation within the umbrella of the 'Declaration of Cooperation' will go beyond the rebalancing of the oil market — we want to institutionalize this relationship," he said during an interview with *Bloomberg TV.*

It is clear that this new chapter of collaboration in the international oil industry is on strong footing, and the close bonds formed between OPEC and its non-OPEC partners are here to stay.

Contents



OPEC bulletin



Cover

This month's cover reflects the Sultan Qaboos Grand Mosque in Muscat. Oman hosted the 7th Meeting of the Joint Ministerial Monitoring Committee.

Cover image courtesy Shutterstock.

Vol XLIX, No 2, February 2018, ISSN 0474–6279

Publishers

OPEC

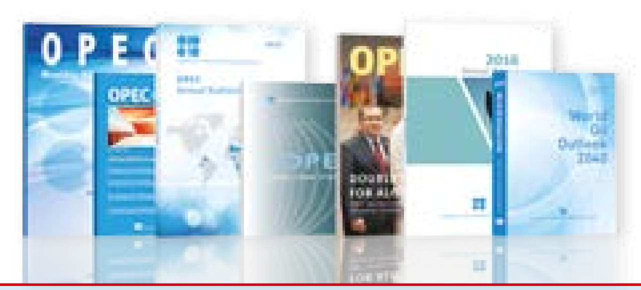
Organization of the Petroleum Exporting Countries
Helferstorferstraße 17
1010 Vienna
Austria
Telephone: +43 1 211 12/0
Telefax: +43 1 216 4320
Contact: Editor-in-Chief, OPEC Bulletin
Fax: +43 1 211 12/5081
E-mail: prid@opec.org
Website: www.opec.org

Website: www.opec.org

Visit the OPEC website for the latest news and information about the Organization, and for back issues of the *OPEC Bulletin,* which are 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 14 Members: Qatar joined in 1961; Libya (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); Nigeria (1971); Angola (2007); Equatorial Guinea (2017). Ecuador joined OPEC in 1973, suspended its Membership in 1992, and rejoined in 2007. Indonesia joined in 1962, suspended its Membership on December 31, 2008, reactivated it on January 1, 2016, but suspended its Membership again on December 31, 2016. Gabon joined in 1975 and left in 1995; it reactivated its Membership on July 1, 2016.



Secretariat officials
Secretary General
Mohammad Sanusi Barkindo
Director, Research Division
Dr Ayed S Al-Qahtani
General Legal Counsel
Asma Muttawa
Head, Data Services Department
Dr Adedapo Odulaja
Head, PR & Information Department
Hasan Hafidh
Head, Finance & Human Resources Department
Jose Luis Mora
Head, Administration & IT Services Department
Abdullah Alakhawand
Head, Energy Studies Department
Dr Abderrezak Benyoucef
Head, Petroleum Studies Department
Behrooz Baikalizadeh
Head, Office of the Secretary General
Shakir Mahmoud A Alrifaiey

Contributions
The *OPEC Bulletin* welcomes original contributions on the technical, financial and environmental aspects of all stages of the energy industry, as well as 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 or 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 Hafidh
Editors
Scott Laury, Mario Fantini
Associate Editors
James Griffin, Maureen MacNeill, Mathew Quinn
Contributors
Ayman Almusallam
Production
Diana Lavnick
Design and layout
Carola Bayer, Tara Starnegg
Photographs (unless otherwise credited)
Herwig Steiner, Wolfgang Hammer
Distribution
Mahid Al-Saigh

Indexed and abstracted in PAIS International
Printed in Austria

Year two of the 'Declaration of Cooperation' kicks-off in Oman

The city of Muscat in the Sultanate of Oman was a fitting location for the first meeting of the Joint Ministerial Monitoring Committee (JMMC) in 2018. Omani-OPEC relations have exemplified the best facets of the OPEC-non-OPEC partnership for three decades. The gracious hospitality and immaculate preparations by the Omani side ensured that the second year of the 'Declaration of Cooperation' got off to the best possible start. The OPEC Bulletin *reports.*

What a difference a year makes!

When the JMMC convened for the first time in Vienna, on January 22, 2017, the circumstances were very different than they were for the first JMMC meeting of 2018. Many voices in the industry had greeted the nascent 'Declaration of Cooperation' with a degree of skepticism, doubting that it would be effective or that conformity would be high. OECD inventories stood at 339 million barrels above the five year average. The institutionalization of the 'Declaration of Cooperation' was at a very early stage. In December 2016, world economic growth was forecasted at just 3.1 per cent for 2017.

As delegates, journalists and industry analysts descended on Muscat in January 2018, the story was very different. Not only had the 'Declaration of Cooperation' partnership held together; it was thriving. The JMMC, with the solid support of the OPEC Secretariat, had established a procedure which ensured high-quality technical exchange and sharp analyses, facilitating useful discussions on market developments. Some of the same commentators who cast doubts on the 'Declaration of Cooperation' when it was signed were calling for the extension of the voluntary adjustments in production to be continued and were supportive of expanding the partnership in new ways. Following stunning conformity levels with the voluntary adjustments in production, which averaged 107 per cent per month during 2017, OECD inventories had been reduced to 118m b above the five-year average by December 2017. The forecast for global economic growth had dramatically improved, rising to 3.7 per cent for 2017 and 2018. The dark clouds which

The successes of the JMMC have been due to hard work and a spirit of comradery.

The members of the JTC held their 11th meeting in Muscat, Oman.

had created a pessimistic atmosphere were beginning to clear; investments began to return to the oil industry.

How had this remarkable transformation in fortunes come about?

Hard work, sacrifice and team spirit

Participating countries knew that the 'Declaration of Cooperation' was not a short-term fix but rather a re-assertion of the maxim that we are always stronger together and that challenges can be surmounted by working as a team. Conformity levels have been the ultimate demonstration of this truism, increasing on a monthly basis, from 87 per cent in January 2017 to the outstanding current level. In the words of the Chairman of the JMMC, Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources, "it is this conformity which was the bedrock of our success as a group in 2017."

In implementing their voluntary production adjustments, participating countries have shown self-sacrifice and dedication. The medicine has been bitter, but the patient desperately required it. The medicine has also been extremely effective; to quote the Chairman once more: "Improved market stability and strength is apparent, which is underpinning more broadly an improving global economy as well as resulting in a return of investment flows into future supply, crucial for not only meeting growth in oil demand but also offsetting natural declines in several producing regions."

New Chairman

This 7th Meeting of the JMMC was Minister Al-Falih's first in his new capacity as Chairman of the JMMC. The Minister is set to continue the stellar work he did as President of the OPEC Conference last year. Minister Al-Falih paid tribute to his predecessor, Issam A Almarzooq, the former Minister of Oil and Minister of Electricity and Water of Kuwait, who did such an outstanding job as JMMC Chairman in 2017. Alexander Novak, the Minister of Energy of the Russian Federation, will continue his role as co-chairman of the Committee. Al-Falih said: "I am particularly pleased that my partner Alexander Novak will remain as a co-Chair in the year ahead." Kuwait's new Minister of Oil and Minister of Electricity and Water, Bakheet S Al-Rashidi, was warmly welcomed to the committee.

Minister Al-Falih acknowledged the pivotal role that the JMMC played in contributing to the successes of the 'Declaration of Cooperation' in 2017: "The success achieved in the past year can be put down in no small part to the remarkable work of this committee, building on the vital work of the Joint Technical Committee, the Joint Ministerial Monitoring Committee has provided the essential leadership, monitoring framework and signaling to the market of our determination to succeed."

Pictured from top to bottom: JMMC Chairman, Khalid A Al-Falih (r) with Mohammad Sanusi Bakindo (l); Co-Chairman of the JMMC, Alexander Novak; and President of the OPEC Conference, Suhail Mohamed Al Mazrouei.

Oman: an all-weather friend

Beyond the convening of the JMMC, the meeting was an opportunity to celebrate the enduring bonds of friendship between Oman and OPEC. Oman has been a regular observer at OPEC Conferences, often joining OPEC's market stabilization efforts. The country first attended the OPEC Ministerial Conference as an observer in March 1986, at the 77th Extraordinary Meeting of the Conference in Geneva, as well as actively supporting the OPEC and non-OPEC technical meetings since their inception in the 1980s.

Indeed, 2018 was not the first time an OPEC-non-OPEC meeting took place in Oman: on October 4, 2004, Oman hosted an informal meeting of high level experts from OPEC and non-OPEC producing countries. Mohammad Sanusi Barkindo represented his country Nigeria at that time.

Yet, as the Secretary General said: "The greatest highlights in Omani-OPEC relations have occurred in the last 20 years. This is no mere coincidence. This is because of a very special gentleman, someone who we are honoured to call our friend — Dr Mohammed bin Hamad Al-Rumhy, Minister of Oil and Gas of this great country."

The 'Declaration of Cooperation' is only the most recent entry on a long list of 20 years of collaboration between the Minister and OPEC. He attended his first OPEC Ministerial Conference as Minister in 1998. Furthermore, Oman has been one of the highest conforming countries with the voluntary adjustments in production, a further indication of the country's steadfast commitment to sustainable market stability in the interests of producers, consumers and the global economy alike.

Record-breaking conformity level

The JMMC also reviewed market developments in December, a month which saw a record breaking conformity level of 129 per cent. Not only did this conclude an extremely successful year, but started a new one in the most positive manner imaginable. Indeed, this further shows that the oil market fundamentally changed with the 'Declaration of Cooperation'. Producers know that there are limits to what can be achieved by working in silos; however, there are limitless possibilities to what can be achieved by working together. The 'Declaration of Cooperation' empowers participating countries to fulfil the words of the American author Earl Nightingdale, when he wrote "all you need is the plan, the road map, and the courage to press on to your destination."

Members of the JMMC answer questions from the media after the Committee's 7th Meeing concluded.

Mustapha Guitouni (l), Minister of Energy, Algeria; and Eng Mohamed Hamel, Algerian Governor for OPEC.

The delegation from Kuwait with Bakheet S Al-Rashidi (seated), Minister of Oil, Minister of Electricity & Water.

Mustafa Bulgasm Sanalla, Chairman of the NOC of Libya, with his delegation.

The delegation from Oman who were outstanding hosts; with Dr Mohammed bin Hamad Al-Rumhy (second r), Oman's Minister of Oil and Gas; and Mohammad Sanusi Barkindo (third left).

Roman Marshavin of the Russian delegation.

Chairman of the JTC, Eng Adeeb Al-Aama of Saudi Arabia.

Eng Ahmed Mohamed AlKaabi, United Arab Emirates Governor for OPEC.

Manuel Salvador Quevedo Fernandez, People's Minister of Petroleum and President of Petróleos de Venezuela SA.

Dr Mohammmed bin Hamad Al-Rumhy, Minister of Oil and Gas, the Sultanate of Oman.

OPEC and Oman: an enduring partnership

Each of the visionary Ministers who signed the 'Declaration of Cooperation' has made their own unique contribution to its success. The 7th edition of the Joint Ministerial Monitoring Committee (JMMC), held in Muscat, Oman, on January 21, 2018, offered an opportunity to honour a colleague who has been instrumental in helping bring together OPEC and non-OPEC producers: Dr Mohammmed bin Hamad Al-Rumhy, Minister of Oil and Gas, the Sultanate of Oman. The OPEC Bulletin *has prepared this tribute.*

Success always comes from teamwork. In fact, history is often made when people have the courage to collaborate.

Throughout its 57-year history, OPEC has been fortunate to have dependable and faithful non-OPEC partners. Oman has been particularly reliable and steadfast, and for the last 20 years, Minister Al-Rumhy has personified this spirit of cooperation.

Oman has consistently heeded the call for greater collaboration among oil producing countries for decades. In the 1980s, it was one of the pioneers behind OPEC-non-OPEC energy dialogues.

Champion of OPEC-Omani relations

At the end of 1997, over 20 years ago, Dr Al-Rumhy became his country's Minister of Oil and Gas, ushering in a new era of deepened OPEC-Omani relations.

Through his charm, charisma and wit, the Minister is beloved by the entire OPEC family. Oman has been one of the most passionate advocates for the OPEC-non-OPEC technical dialogues, participating in the 2002, 2003, 2004, 2007, 2015 and 2016 iterations of that forum.

In October 2004, Oman hosted the Fourth Informal Meeting of High-Level Experts from OPEC and non-OPEC Producing Countries, an indication of the nation's resolute commitment to advocating this type of cooperation.

The Minister has been a regular participant at OPEC Conferences, attending his first in a ministerial capacity in 1998, the 105th Meeting of the Conference. Indeed, at this conference, in what was to be a harbinger for the 'Declaration of Cooperation' 18 years later, Oman joined with OPEC and other non-OPEC producing countries in implementing voluntary production adjustments at the time.

In 2006, another harbinger for the Declaration of Cooperation occurred. At the 143rd OPEC Conference in Abuja, Nigeria, Minister Al-Rumhy was welcomed by Mohammad Sanusi Barkindo, who was acting OPEC Secretary General at the time.

Ten years later, both men would play pivotal roles in the historic decisions that would do so much to return stability to the oil market.

Another extremely significant meeting was the 151st Extraordinary Meeting of the OPEC Conference in Oran, Algeria, in 2008, which Oman again attended as an observer.

At that time, Minister Al-Rumhy thanked OPEC for what he described as the Organization's "continuous support for Oman's role in the non-OPEC observer status." The minister reminded the conference of how OPEC

Dr Mohammmed bin Hamad Al-Rumhy (r), Minister of Oil and Gas, the Sultanate of Oman, with Mohammad Sanusi Barkindo, OPEC Secretary General.

Dr Mohammmed bin Hamad Al-Rumhy.

— and indeed, non-OPEC countries — had rallied together in the past to increase production when the need arose.

Commitment to dialogue

Time and time again, the Minister has demonstrated his unwavering dedication to inter-industry dialogue, forging partnerships with a broad spectrum of stakeholders and advancing the cause of common action to overcome challenges.

His commitment, conviction and courage were instrumental in securing the adoption of the Declaration of Cooperation at the joint OPEC-non-OPEC Producing Countries' Ministerial Meeting held on December 10, 2016.

Following this, convinced of the need for a sound mechanism to monitor voluntary adjustments in production, Oman has been a proud and active member of the JMMC, as well as the Joint Technical Committee, and graciously served as host for both meetings held in Muscat in January 2018.

And at the centre of all this progress: Minister Al-Rumhy, a driving force for everything accomplished so far. Indeed, it is no coincidence that Oman has been one of the consistently highest conforming countries with the voluntary production adjustments over the last year.

The pace of change has been phenomenal over the last 20 years, especially in the energy industry. Having strong, experienced hands navigating the stormy waters makes the noble goal of enduring stability in oil market that much more reachable.

In his opening remarks at the 7th Meeting of the JMMC, the OPEC Secretary General, Mohammad Sanusi Barkindo, lauded Oman's long history of support and the key role played by Dr Al-Rumhy.

"Oman has been the very definition of 'an all-weather friend,' attending OPEC Ministerial Conferences as an observer for over 30 years, and supporting OPEC and non-OPEC technical meetings since their inception," he stated. "The greatest highlights in Omani-OPEC relations have occurred in the last 20 years. This is no mere coincidence. This is because of a very special gentleman, someone who we are honoured to call our friend — Dr Mohammed bin Hamad Al-Rumhy, Minister of Oil and Gas of this great country."

Barkindo then concluded on personal note by thanking Dr Al-Rumhy for his longtime support and, even more, for his loyal friendship.

"From the bottom of my heart, I thank the Minister for his courage, commitment, inspirational example, and, above all, his friendship."

Mohammad Sanusi Barkindo, OPEC Secretary General, speaks at the Atlantic Council Global Energy Forum.

Atlantic Council Global Energy Forum

Geopolitical exchanges

The Washington-based Atlantic Council held its 2018 Global Energy Summit for the second time in the United Arab Emirates in January. With delegates representing the public and private sector of oil producing and consuming countries, sessions at the event covered the geopolitics of the ongoing energy transformation, the impact of digitization and artificial intelligence on future energy systems, and the future of transportation, among others. The OPEC Bulletin *files this report on this stimulating two-day event.*

The impression one sometimes gets of foreign policy institutes and organizations — particularly in the United States — is that they are partisan ventures, seeking the achievement of specific objectives of interest only to their own narrow constituencies. This is why it is so refreshing — and wholly stimulating from a number of perspectives — to attend an event sponsored by the Atlantic Council.

Founded in 1961, the Council (as it is known by those familiar with its work) has consistently sought regional fora and other opportunities to discuss the world's many challenges with a view to ensuring geopolitical stability. Far from partisanship, what one encounters at events organized by the Council is a rigorous examination of economic, political, and social realities around the world and an assessment of the impact that these may have on broader concerns such as energy, security and stability.

This year, on January 12–13, the Atlantic Council organized another one of its regional events, this time, in the United Arab Emirates (UAE). Under the banner of 'Global Energy Forum', the Council organized two days of sessions, panels and meals with some of the leading figures from the media, financial services, energy exploration and production, and academia. And with the presence of some of the top energy leaders and government officials, it made for quite a memorable event.

Briefings and workshops

The morning of the first day was reserved for private, invitation-only briefings and workshops, each focusing on specific matters of the day or extant policy challenges. In the afternoon, things shifted into higher gear with the official opening of the Global Energy Forum.

Some of the themes that made up the high-level briefings and workshops that preceded the official start of the Forum included: ‘Challenges of a 21st century energy system: digitization, artificial iIntelligence and cyber security’ and ‘Regional geopolitics and energy markets: Europe and Eurasia’. There were also workshops on ‘The future of transportation, oil demand, and geopolitics’ and ‘The Nexus between conflict and energy and the peace potential of energy resources’.

Though all these sessions taking place before the official opening were strictly off-the-record and by invitation only, they were very well-attended. With keynote speakers, discussants and what the Council called “briefers”, each of these briefings and workshops focused on the interplay of various complex factors with which those who work in the field of energy have to grapple.

Speakers included experts from across different disciplines and professions, including government and the public sector, multilateral and international organizations, academic and research institutes, and private firms. This meant that audience members had opportunities to listen to people ranging from Anwar Gargash, State Minister for Foreign Affairs of the UAE, to Matar Al Neyadi, Undersecretary at the Ministry of Energy and Industry of the UAE, to Ana Palacio, Council of State and former Minister of Foreign Affairs of Spain. They could also choose to attend sessions with ‘thought leaders’ such as Sue Saarnio, Acting Special Envoy and Coordinator for International Energy Affairs at the US Department of State; David Hobbs, Vice President of Research at the King Abdullah Petroleum Studies and Research Center; Kamel Ben Naceur, Chief Economist at Abu Dhabi National Oil Company (ADNOC); and Nandita Parshad, Managing Director of Energy and Natural Resources at the European Bank for Reconstruction and Development.

If one’s interests ran more toward the financial, there was an excellent workshop with leading financial services representatives such as Robert Johnston, Chief Executive Officer of the Eurasia Group (founded by the brilliant Ian Bremmer); Maria Colangelo, Senior Analyst at The Vanguard Group; the trail-blazing Greg Sharenow, Portfolio Manager at the California-based PIMCO; and the ubiquitous Helima Croft, Managing Director and Global Head of Commodity Strategy at RBC Capital Markets.

From the academic and policy analysis world, luminaries included the eloquent Paula Dobriansky, Senior Fellow at the Future of Diplomacy Project, which is part of the John F Kennedy Belfer Center for Science and International Affairs at Harvard University; Carole Nakhle, Director of Crystol Energy and a Nonresident Scholar at the Carnegie Middle East Centre; and Neil Brown, Director of Policy and Research at the KKR Global Institute. In short, there was something for everyone — and this was all before the Forum’s official opening.

Opening of the Global Energy Forum

Though things started off at a very high level before the Global Energy Forum, the headline event itself did not officially begin until after the luncheon on the first day. During a plenary session for all participants and delegates, the esteemed President and CEO of the Atlantic Council, Frederick Kempe, former editor of *The Wall Street Journal*, offered some warm welcoming remarks to the audience before turning the floor over to General James L Jones Jr, USMC (Ret), who currently serves as Interim Chairman of the Council. Additional welcome remarks were made by Dr Sultan Ahmed Al Jaber, Minister of State of the UAE and Chief Executive Officer of ADNOC, Suhail Mohamed Al Mazrouei, Minister of Energy and Industry of the UAE, and Adnan Z Amin, Director General of the International Renewable Energy Agency.

Five different sessions followed the official opening, each one seeking to answer some of the industry’s most vexing questions. Under the overarching theme of ‘The geopolitics of the energy transformation’, each session considered topics ranging from the changes in policy, technology and consumer behaviour that have been occurring in producer and consumer countries around the world and which are shifting the global energy mix.

The rise of new energy resources (ie shale) was also was a recurring theme, with questions arising as to what the “new geopolitics” of energy will look like and how this will impact relationships, economic and otherwise. With the bright and energetic Meghan O’Sullivan — Jeane Kirkpatrick Professor of the Practice of International Affairs and Director of the Geopolitics of Energy Project at the Kennedy School of Government at Harvard — serving as facilitator, an introductory session to the afternoon was a stimulating ‘shot in the arm’ which helped to launch the Forum.

The other sessions that followed were equally stimulating, but each had a more wide-ranging purpose. In a session facilitated by John Defterios, Emerging Markets Editor at CNNMoney, a conversation was held exploring the role that policymakers must play in today’s energy landscape, and considering the question: What is the relationship between governments and markets, and what is the role of regulation in facilitating the energy transition?

There were clear and insightful interventions from Minister Al Mazrouei, as well as Wafaa Yousef Al Zaabi, Managing Director of Kuwait Petroleum Corporation. Rainer Baake, State Secretary at the Federal Ministry for Economic Affairs and Energy of the Federal Republic of Germany, also joined the stage, along with Fatih Birol, Executive Director of the International Energy Agency.

A similar session afterwards applied these same considerations to the private sector and comments were elicited from various private sector petroleum exploration and oil field services companies. Participants included CEOs of companies like Petrofac, Tellurian Inc, Hunt Consolidated Energy and the Daesung Group. The session, which was facilitated by Summer Said, Middle East Energy and OPEC Correspondent at *The Wall Street Journal*, and John Defterios, explored various interrelated questions such as: What does the energy market landscape look like in 2018 and what trends should we be watching?

Two other sessions — on investment and geopolitical strategies for doing business with IR Iran, particularly amid the uncertainty in the Gulf region, and a specialized session on 'next generation energy technology' (as well as broader trends in digitization, artificial intelligence, and automation, and how these might affect the energy industry) — also took place. Fittingly, four academics and researchers from the renowned Massachusetts Institute of Technology (MIT) participated in this panel, including Robert Armstrong, Director of MIT's Energy Initiative.

By the early evening, the time came for a little bit of fellowship, and the first day of the Forum was capped off by a visit for all participants to the Louvre Abu Dhabi. There, on a terrace and under a moonlit sky, officials mingled with scholars, while heads of organizations and analysts chatted animatedly with representatives from financial market firms and energy companies.

A dedicated OPEC session

The pace picked up on the second day of the Global Energy Forum as numerous sessions were held back-to-back. These varied widely in scope and content — but one stood out: a plenary session facilitated by John Defterios devoted entirely to discussing "The Future of OPEC and the Oil Markets". With the participation of Dr Abdalrahman Osman Abdalrahman, Minister of Petroleum and Gas, Republic of Sudan; Suhail Mohamed Al Mazrouei, Minister of Energy and Industry of the UAE; Helima Croft; Sun Xiansheng, Secretary General of the International Energy Forum and of course Mohammad Sanusi Barkindo, OPEC Secretary General, the session was lively.

Asked the first question of the panel about the future of OPEC, the Secretary General replied: "We have survived so many funerals ... [that] we are proud of being the proverbial cat with nine lives". He proceeded to explain how, in the past year and a half, OPEC has been able to make history with a series of consultations and voluntary adjustments to which both OPEC and ten non-OPEC countries have conformed.

"Thanks to the visionary leadership of our ministers from OPEC and non-OPEC countries, together for the first time we are building [a] global platform," he said. Looking back to the historic Declaration of Cooperation of December 10, 2016, which adjusted oil output by an aggregate 1.8 million b/d, and which has since been extended to the end of 2018, he noted its importance. "We have turned the page ... and when the final chapter is written, what we did with our non-OPEC friends will be written in gold."

Asked about the market outlook, especially in regard to growth and demand, Barkindo said the Organization continues to remain vigilant. "On the whole, demand has not been this robust for so many years, and global economic growth has not been this healthy since before the last financial crisis," he added, citing the IMF's estimates of 3.7 per cent growth for 2018. "The US is near full employment, and between now and then, an additional 1.8 billion people will be coming into this world," he said.

But the Secretary General also emphasized the need to address energy poverty. "Right now, we have over two billion people in Africa, Asia and South America without access to commercial energy. So, oil and gas will continue to dominate the energy basket. We have nearly 1.5 trillion barrels in total reserves. How can you leave those assets stranded while so many people are living in acute poverty?" These are the kinds of questions that those working on developing energy policy for countries around the world need to keep in mind.

The remains of the second day

In addition to the fascinating session focused on OPEC, there were nearly a dozen sessions, workshops or report launches on the second day of the Forum. It was heady, a bit dizzying and stimulating. There was an opening morning session titled 'America's role in the world: an energy strategy'. Afterwards, a special session dedicated to 'The future of transportation' and the impact of oil demand was held. It entertained questions ranging from the meaningfulness or usefulness of the term "peak demand", technological innovations in the transport sector, and questions about future oil demand trends, especially given the move away from fossil fuel-based vehicles in some countries.

The following session was dedicated to natural gas, and participants — who included Mohamed Bin Khalifa Al-Khalifa, Minister of Oil of the Kingdom of Bahrain, and Gabriel Mbaga Obiang Lima, Minister of Mines and Hydrocarbons of the Republic of Equatorial Guinea — explored what increased gas production from the United States and elsewhere is doing to prices and how we are moving toward a more global or integrated gas market.

Sessions on economic diversification followed, as well as the enhanced use of artificial intelligence to assure security at oil operations and facilities, as well as the changes taking place in electricity and renewable energy. In fact, discussions on the "electrification of everything" took place in one specialized session, which entailed a consideration of how the electricity sector is slowly becoming a

Delegates gather for a group photograph at the 2018 Global Energy Forum.

platform upon which many other sectors operate. Facilitated by the well-known Becky Anderson, Managing Editor and Anchor at CNN Abu Dhabi, and the Atlantic Council's President and CEO, Frederick Kempe, the session explored how such electrification can play out in different countries and what the implications might be for energy security and governance. The keynote for that session was given by Fatih Birol, who was joined by Minister Mazrouei and Dr Thani Ahmed Al Zeyoudi, Minister of Climate Change and Environment of the UAE.

There were also sessions on industry "best practices and business models", nuclear energy and even a country-focused session on the future of the oil and gas sector of Iraq. The country, which has been struggling to get back to former levels of production and stability, has taken important steps to increase its oil production despite many challenges. Several prominent Iraqi officials served on the panel, including Luay Al Khateeb, Executive Director of the Iraq Energy Institute, and Jabbar Ali Hussein Al-Luiebi, Minister of Oil of the Republic of Iraq. The consensus was that with the right support and partnerships continuing, the country could once more play a huge role in gas and oil — and in securing a more stable and prosperous energy future. Already there has been progress: "The industry is moving very fast and the country is now nearing production capacity of five million barrels per day," Al-Luiebi said.

Separately, Majid Jafar, CEO of Crescent Petroleum, one of the oldest private oil and gas companies in the Middle East, said his UAE-based company has already invested close to $2.5 billion in Iraq in the last decade — half of it in oil and gas — from the northern regions to the port of Basra in the south. He also noted the country remains vastly underexplored and that only a few thousand wells have been drilled in the country's entire history, compared to ten times that much in nearby Saudi Arabia and well over a million wells in the state of Texas. "Over 300 oil structures in Iraq's Western Desert have never even been drilled," he noted.

A borderless think tank

The Global Energy Forum closed on Saturday night with a Leaders Council Dinner under the theme 'Energy investment and diversification strategies'. The dinner, which was by invitation only, brought together the top leaders of the energy world for additional fellowship, and frank and open discussions about some of the biggest challenges facing exploration, production, transportation, the environment, public policies, technology and investments.

For those who attended, it was an opportunity to really exchange ideas and perspectives with people who might otherwise be limited by their academic profiles or their professional obligations. To not only share experiences but to compare notes from the field, while also bringing to bear the unique analytical perspectives of some of the smartest people in the industry, in government, and in academia, is a rare treat.

In this, the Atlantic Council seems to outperform so many other organizations and, with the Global Energy Forum, it seems to have carved out for itself a unique place as a kind of roving think tank. Though based in Washington, DC, it functions as an intellectual clearinghouse — a borderless think tank — bringing together all relevant actors for an intense two days. May it continue to prosper.

OPEC Secretary General meets with Kuwait's top leadership

On January 16 and 17, 2018, OPEC Secretary General, Mohammad Sanusi Barkindo, accompanied by a delegation from OPEC, held a series of high-level meetings with Kuwait's top leadership, including His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, the Emir of the State of Kuwait. The OPEC Bulletin *reports.*

HH Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah (c), the Emir of the State of Kuwait; met with Mohammad Sanusi Barkindo, OPEC Secretary General (l); at the Bayan Palace, Kuwait City.

L–r: Bakheet S Al-Rashidi, Kuwait's Minister of Oil & Minister of Electricity & Water; Anas Khalid Al-Saleh, Kuwait's Deputy Prime Minister and Minister of State for Cabinet Affairs; Mohammad Sanusi Barkindo, OPEC Secretary General; and Haitham Al-Ghais, Kuwait's Governor for OPEC.

On January 16, OPEC Secretary General, Mohammad Sanusi Barkindo, was graciously received by His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, the Emir of the State of Kuwait, for a meeting at the Bayan Palace in Kuwait City. The meeting with the Emir was also attended by Bakheet S Al-Rashidi, Kuwait's Minister of Oil and Minister of Electricity and Water and Kuwait's Governor to OPEC, Haitham Al-Ghais.

Themes discussed at the meeting included last year's implementation of the 'Declaration of Cooperation' by all participating countries and the role of Kuwait as Chair of the Joint Ministerial Monitoring Committee (JMMC) in 2017.

Kuwaiti support and cooperation

HH Sheikh Sabah pledged Kuwait's continued support of OPEC and the 'Declaration of Cooperation', and stressed the importance of institutionalizing OPEC and non-OPEC cooperation.

The Emir acknowledged the positive response of the oil market to the implementation of the 'Declaration of

Bakheet S Al-Rashidi (r), Kuwait's Minister of Oil & Minister of Electricity & Water; presents a gift to Mohammad Sanusi Barkindo, OPEC Secretary General.

Cooperation' in 2017 and lauded the unprecedented high levels of conformity with the voluntary production adjustments, which averaged above 100 per cent throughout the year.

HH Sheikh Sabah praised all 24 participating countries, both OPEC and non-OPEC, for their joint efforts towards restoring much needed oil market stability, adding that their collective determination and collaborative spirit were at the heart of the success achieved thus far.

HH Sabah added that all participating countries and the global industry have benefited from the positive outcome and the response of the oil market to the 'Declaration of Cooperation'. Furthermore, he encouraged participating countries to stay the course until the common objective of returning OECD inventories to the five-year average is achieved. This, he added, would ensure that the supply-demand balance is restored, paving the way for further investment in the industry.

His Highness concluded by commending OPEC and its Secretary General for successfully steering the affairs of the Organization during a difficult time.

Meetings with Ministry officials

Afterwards, discussions continued with Deputy Prime Minister and Minister of State for Cabinet Affairs, Anas Khalid Al-Saleh. Topics covered the current oil market outlook and the ongoing implementation of the 'Declaration of Cooperation'.

Earlier in the day, the Secretary General met bilaterally with Kuwait's newly appointed Minister of Oil and Minister of Electricity and Water, to discuss preparations for the 7th Meeting of the JMMC, which was held in Muscat, the Sultanate of Oman, on January 21, 2018. Other points on the agenda included the status of implementation, as well as the role of the JMMC in overseeing conformity levels. They also reviewed the response of the market to the 'Declaration of Cooperation's' implementation and prospects for 2018.

Kuwait will continue to serve as a member of the JMMC in 2018. Also present at the meeting was Kuwait's Governor to OPEC, Haitham Al-Ghais, who previously served as Chairman of the Joint Technical Committee.

The Minister pledged to continue Kuwait's valuable role a consensus builder within OPEC, reflecting not only its status as a Founding Member of the Organization, but also its commitment to OPEC's cohesion as a group and with its non-OPEC partners.

The day concluded with OPEC officials delivering a presentation to the Minister and other senior officials from the Ministry of Oil on the implementation of the 'Declaration of Cooperation' and the latest market situation.

Joint Press Conference by Bakheet S Al-Rashidi (l), Kuwait's Minister of Oil & Minister of Electricity & Water; and Mohammad Sanusi Barkindo (c), OPEC Secretary General; with Haitham Al-Ghais (r), Kuwait's Governor for OPEC.

Meeting with KPC

On January 17, 2018, the Secretary General and the accompanying delegation met with management of the Kuwait Petroleum Corporation, Kuwait's national oil company. OPEC officials presented on the current market situation and the impact of the 'Declaration of Cooperation' was having on the oil market.

Later in the day, the Secretary General held a joint press conference with Minister Al-Rashidi and gave press interviews to a number of local media outlets.

Davos 2018: drifts and dialogues

Once again, thousands of business leaders, politicians, as well as many Heads of State, converged on Davos at the end of January with the small Swiss town playing host to the annual World Economic Forum (WEF). With OPEC Secretary General, Mohammad Sanusi Barkindo in attendance, the* OPEC Bulletin *reports on the four-day meeting.

While snow is always expected in Davos in January, it is after all a ski resort, the 2018 edition of the annual WEF saw delegates confronted by the largest snowfall the alpine Swiss town has seen in about two decades. A thick blanket of snow greeted their arrival, with traffic often snarled up, pavements treacherous, and the mountains shrouded in a veil of white.

In fact, given the plethora of blogs and *Instagram* posts from the event, it was snow that was on everyone's minds as they arrived. There were various pictures of snow ploughs, drifts covering the whole sides of buildings, vehicles completely engulfed in snow, and security guards resembling ice-men. However, this did little to dampen the spirit of delegates, and as the meeting began, blue skies slowly began to peep through the blanket of clouds.

This year's annual meeting of the WEF was a four-day event that took place between January 23 and 26, attracting over 2,500 participants, including a who's who of leaders from the world of politics, business and civil society. The event takes in the whole of Davos, as well as neighbouring Klosters too. You cannot drive, or walk if that is your preference, without seeing some event related to the WEF experience.

Shutterstock

Reuters

Besides the main conference centre, there are many hotels and restaurants playing host to gatherings and themed days and evening events; there are an array of pavilions dotted throughout the town to promote various countries and companies; and of course, there is a huge media presence.

This year's 48th WEF Annual Meeting event took place under the title 'Creating a shared future in a fractured world', with a whole array of topics discussed and debated by attendees. The WEF said the event aimed to rededicate leaders from all walks of life to developing a shared narrative to improve the state of the world.

Secretary General's participation

OPEC Secretary General, Mohammad Sanusi Barkindo, took part in a series of bilateral meetings, high-level policy interactions and related sessions at the meeting.

Barkindo met bilaterally with Ilham Aliyev, President of Azerbaijan, where he thanked President Aliyev for the committed leadership role his country played in the run up to the landmark 'Declaration of Cooperation' in 2016.

In particular, he mentioned the late Minister of Oil of Azerbaijan, Natiq Aliyev, who was instrumental in bringing OPEC and non-OPEC together, and played an active role in co-chairing group meetings.

President Aliyev reiterated Azerbaijan's commitment to the process of oil market rebalancing and to remain an active partner in the 'Declaration of Cooperation'. He stated that this was consistent with his appeal at the WEF 2016 for producers to work together to restore market stability. He added that he was very pleased to see the successful accomplishments, specifically referencing the recent positive outcome of the 7th Joint Ministerial Monitoring Committee (JMMC) meeting in Oman, and the effective role that OPEC has played.

The OPEC Secretary General also met with Lars Løkke, Prime Minister of Denmark, where they discussed various issues related to energy and climate change following the Paris Agreement. This included positive discussions

Mohammad Sanusi Barkindo (l), OPEC Secretary General, meets with Ilham Aliyev (r), President of Azerbaijan.

Mohammad Sanusi Barkindo (r), OPEC Secretary General; with Lars Løkke (l), Prime Minister of Denmark.

Mohammad Sanusi Barkindo (l), OPEC Secretary General, meets with Professor Yemi Osinbajo, Vice President of Nigeria.

Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources.

Reuters

on the active participation of OPEC Member Countries in COP meetings and the United Nations Framework Convention on Climate Change (UNFCCC) process. This followed on from their engagement in a panel session titled 'Post-COP 21 cities', chaired by Carlos Pascual, Senior Vice-President, IHS Markit.

Prime Minister Rasmussen was President of UNFCCC COP 15 held in Copenhagen in 2009, the first time over 100 heads of state and government assembled at a summit to address climate change. At the same COP meeting, Barkindo served as Vice President of the COP and presided over the opening ceremony.

Barkindo also met with the Vice President of Nigeria, Professor Yemi Osinbajo, and held a number of other bilateral meetings, including with Daniel Yergin, Vice Chairman of IHS Markit, and Pedro Gomez Pensado, Head of the Oil and Gas Practice at the WEF, in which there were discussions about further enhancing cooperation with the Forum.

Working sessions

The OPEC Secretary General actively participated in a variety of other Davos sessions, including a 'Working dinner for the oil and gas industry', with the OPEC President and Minister of Energy & Industry of the United Arab Emirates, Suhail Mohamed Al Mazrouei in attendance, a 'Governors policy meeting for oil and gas' that focused on advancing dialogue on a number of industry issues, and a session titled 'The new energy equation'.

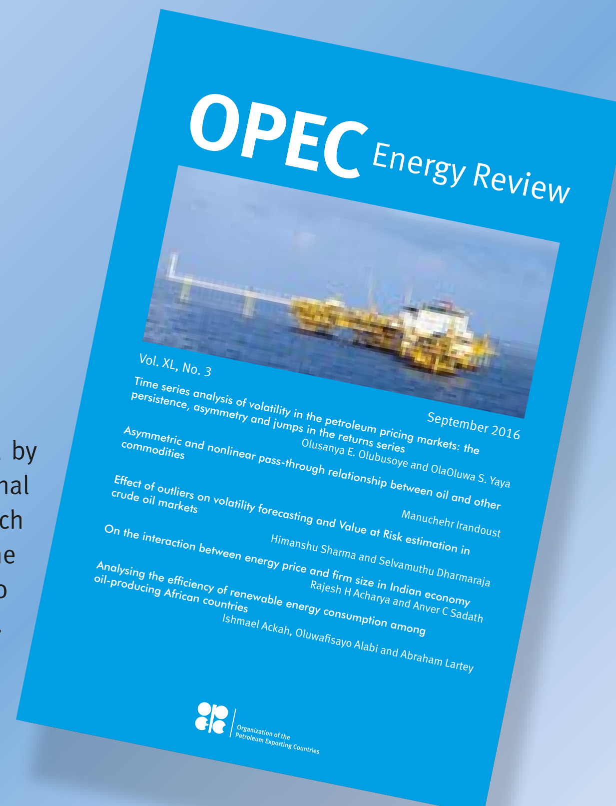
The latter event saw a number of prominent ministers share the stage, including Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources; Alexander Novak, Minister of Energy of the Russian Federation; and Rick Perry, US Secretary of Energy.

'Declaration of Cooperation'

The Davos gathering also gave the OPEC Secretary General the opportunity to share with delegates and the media the Organization's perspective on the ongoing oil market rebalancing, which is now well underway, as well as the importance of the landmark 'Declaration of Cooperation' between 24 OPEC and non-OPEC participating countries that has played such an important role in the rebalancing efforts over the past year.

In an interview with *Bloomberg TV,* Mohammad Barkindo, said that the cooperation between OPEC and non-OPEC countries had demonstrated beyond any reasonable doubt our firm commitment to this relationship and the rebalancing process. Looking ahead, he said, "the OPEC and non-OPEC cooperation within the umbrella of the 'Declaration of Cooperation' will go beyond the rebalancing of the oil market — we want to institutionalize this relationship."

CALL FOR PAPERS



The OPEC Energy Review is a quarterly energy research journal published by the OPEC Secretariat in Vienna. Each issue consists of a selection of original well-researched papers on the global energy industry and related topics, such as sustainable development and the environment. The principal aim of the OPEC Energy Review is to provide an important forum that will contribute to the broadening of awareness of these issues through an exchange of ideas. Its scope is international.

The three main objectives of the publication are to:

1. Offer a top-quality platform for publishing original research on energy issues in general and petroleum related matters in particular.
2. Contribute to the producer-consumer dialogue through informed robust analyses and objectively justified perspectives.
3. Promote the consideration of innovative or academic ideas that may enrich the methodologies and tools used by stakeholders.

Recognizing the diversity of topics related to energy in general and petroleum in particular which might be of interest to the journal's readership, articles will be considered covering relevant economics, policies and laws, supply and demand, modelling, technology and environmental matters.

The OPEC Energy Review welcomes submissions from academics and other energy experts.
Submissions should be made via Scholar One at: https://mc.manuscriptcentral.com/opec (registration required).
A PDF of "Author Guidelines" may be downloaded at Wiley's OPEC Energy Review page at:
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1753-0237/homepage/ForAuthors.html

All correspondence about subscriptions should be sent to John Wiley & Sons, which publishes and distributes the quarterly journal on behalf of OPEC *(see inside back cover)*.

Nicolás Maduro Moros (r), President of Venezuela, meets with Mohammad Sanusi Barkindo, OPEC Secretary General, in the capital of Venezuela, Caracas.

Lenín Moreno (c), President of Ecuador; Mohammad Sanusi Barkindo (l), OPEC Secretary General; and Eng Carlos E Pérez (r), Ecuador's Minister of Hydrocarbons.

OPEC Secretary General visits Presidents of Venezuela and Ecuador

From February 5–7, 2018, OPEC Secretary General, Mohammad Sanusi Barkindo, conducted a tour of OPEC's South American Member Countries, Ecuador and the Venezuela, to meet with the leadership of both nations. The OPEC Bulletin *reports.*

The first stop was Caracas, where the Secretary General was received by Nicolás Maduro Moros, President of the Bolivarian Republic of Venezuela, who had extended an invitation to the Secretary General for the meeting during the 7th Meeting of the Joint Ministerial Monitoring Committee in Oman. The meeting was also attended by Manuel Salvador Quevedo Fernandez, People's Minister of Petroleum and President of Petroleum of Venezuela SA, and Jorge Arreaza, Minister of Foreign Affairs.

Venezuela's solid support and committment

Mohammad Sanusi Barkindo conveyed OPEC's gratitude to President Maduro for his great support throughout the intensive consultation process leading to the 'Declaration of Cooperation', including the meeting on the side-lines of the World Energy Conference in Istanbul in October 2016, which helped the Organization achieve its landmark, historical decisions.

The 'Declaration of Cooperation' underlined a shared and deep commitment by participating countries to restore balance in the oil market. Previous meetings with President Maduro at the Miraflores Palace on November 16, 2016, and January 16, 2017, reaffirmed Venezuela's commitment to efforts towards achieving these collective goals, and participating countries immensely benefitted from the engagement and ongoing collaboration with the Venezuelan Government.

The groundwork of the last 20 months has focused in developing, refining and institutionalizing the framework and mechanisms for the implementation of these decisions. This has occurred with a concurrent improvement in market conditions. These positive outcomes, which are in the best interest of producers, consumers, the oil industry and the global economy alike, have been widely acknowledged and acclaimed.

Unity and discipline

In the meeting, President Maduro underscored the great achievements to date and stressed that these should continue by cementing the win-win relationship between participating countries in the 'Declaration of Cooperation'. The President made reference to remaining market challenges and called for strong unity and discipline in the coming months and years, for the benefit of all. President Maduro reassured the Secretary General of his continuous support and affirmed that he would stay in close contact with other Head of States of OPEC and non-OPEC participating countries.

A separate meeting was held with Manuel Salvador Quevedo Fernandez, the People's Minister of Petroleum, at the Ministry where discussions centered on recent oil market developments, the implementation of the amended 'Declaration of Cooperation' and the critical importance of institutionalizing the OPEC non-OPEC partnership.

Mohammad Sanusi Barkindo (r), OPEC Secretary General, is received by Manuel Salvador Quevedo Fernández (l), the People's Minister of Petroleum and President of Petróleos de Venezuela.

Consultations in Ecuador

On February 6–7, 2018, the Secretary General continued his South American tour, travelling to the Ecuadorian capital of Quito to meet with the President of Ecuador Lic Lenin Moreno Garcés. Hosted at the elegant Presidential Palace, the meeting was also attended by Eng Carlos E Pérez, Minister of Hydrocarbons, and Maria Ferranda Espinoza, Minister of Foreign Affairs.

President Moreno acknowledged the remarkable achievements of participating countries in their unprecedented commitment towards restoring stability to the global oil market and industry. He commended the constructive engagement of the Secretary General with Member Countries to not only keep them abreast of the current dynamics but also seek their feedback. In this regard, the President expressed his appreciation for the timely visit of the Secretary General. The President strongly reiterated Ecuador's commitment to its membership of OPEC and implementing the decisions in a fair manner.

Mohammad Sanusi Barkindo congratulated the President on his recent election victory. He made reference to the historic achievements under the Declaration of Cooperation, with OPEC and non-OPEC countries taking joint policy decisions to assist the market in returning to balance after a severe downturn, in the interest of producers, consumers, the oil industry and the global economy.

Barkindo stressed the fact that the market has been responding positively and the fundamentals today would have been very different without the committed efforts of participating countries effectively implementing the 'Declaration of Cooperation'.

Building a permanent framework of cooperation

The strengthening of this foundation by building a broader framework of permanent cooperation is the means of sustaining market stability beyond the short-term. The Secretary General, in the

Mohammad Sanusi Barkindo (c), OPEC Secretary General, meets with Lenín Moreno, President of Ecuador.

mutual interests of all stakeholders, emphasized the importance of continuing this dialogue.

The Secretary General also underscored the necessity of all participating producing countries, including Ecuador, continuing to strive for full conformity with the supply adjustments under the 'Declaration of Cooperation'.

President Moreno encouraged the further development of opportunities for Ecuadorian nationals working in the oil industry to participate in capacity-building activities organized by the OPEC Secretariat.

In a separate meeting with Ing Carlos Pérez, Minister of Hydrocarbons, recent market developments and the outcome of the 7th Meeting of the Joint Ministerial Monitoring Committee held in Oman on January 21, 2018, were reviewed. The Minister and the Secretary General also discussed Ecuador's conformity with the supply adjustments and explored ways to further strengthen cooperation.

Egypt's past, present and future on display

The second edition of the Egypt Petroleum Show (EGYPS), inaugurated by Egypt's President Abdel Fattah El-Sisi, saw OPEC Secretary General, Mohammad Sanusi Barkindo, deliver keynote remarks at the Presidential Opening Ceremony. The OPEC Bulletin *reports from the event that also included high-level strategic panel sessions, a technical conference, and a large exhibition with the OPEC Secretariat's Public Relations and Information Department showcasing the Organization's publications and achievements.*

Mohammad Sanusi Barkindo (l), OPEC Secretary General, with other participants of the panel session, Abbas Al Naqi (r), Secretary General of the Organization of Arab Petroleum Exporting Countries (OAPEC); Dr Yury Sentyurin (second l), Secretary General of the Gas Exporting Countries Forum (GECF); and moderator Eithne Treanor (second l), CEO of E Treanor Media.

Egypt is home to the Giza pyramids, the Great Sphinx, the ancient temples of Luxor, to name just a few of the country's historic and globally-renowned symbols, but it is now also writing a new chapter in its history, with the recent significant investments and expansion in its petroleum industry.

This was on display at EGYPS 2018, which took place from February 12–14, with energy ministers, oil and gas industry executives, policymakers and technical experts gathering in Cairo to showcase investment opportunities in Egypt, as well as to discuss the current challenges facing the regional and global petroleum sectors.

The event was held under the patronage of Abdel Fattah El-Sisi, President of Egypt, who attended the opening ceremony and then toured the exhibition. The opening ceremony also saw OPEC Secretary General, Mohammad Sanusi Barkindo, deliver keynote remarks, alongside Tarek El Molla, Egypt's Minister of Petroleum and Mineral Resources.

The Secretary General began by paying his deep respects to Egypt's President. "His leadership of Egypt, his great guidance and his vision for the country's future should be widely acclaimed." He also took the opportunity to thank the President and El Molla for Egypt's "welcome attendance, engagement and solidarity as an observer at the 173rd Meeting of the OPEC Conference and active participation at the 3rd OPEC and non-OPEC Ministerial Meeting in Vienna on November 30 last year."

Egypt & OPEC

Barkindo highlighted Egypt's long history of cooperation with OPEC, recalling the fact that Cairo hosted the First Arab Petroleum Congress in April 1959, and this "helped set the path towards the establishment of OPEC."

On the last day of that Congress, he said, "a number of visionary leaders, namely Juan Pablo Pérez Alfonzo of Venezuela, Abdullah al-Tariki of Saudi Arabia, Dr Fuad Rouhani of Iran, Dr Tala'at al-Shaibani of Iraq, and Ahmed Sayed Omar of Kuwait, slipped off one-by-one to meet secretly at the Cairo Yacht Club here in Maadi.

"These five founding fathers of OPEC forged what has become known as a 'gentlemen's agreement' in Cairo. It was here where the idea of OPEC was incubated, before it came into the world in Baghdad in September 1960."

He added that Egypt has been a pioneer non-OPEC producer in terms of its cooperation with OPEC. He said the country has shown "great foresight in reaching out to others. It was one of the first observers to the OPEC Conference back in 1984; it contributed to oil market stabilization efforts in the late 1980s; and, this historic city hosted OPEC ministerial level meetings in the 2000s."

The Secretary General also noted that today "Egypt is fast becoming a key regional hub for energy, and a global player in the industry. Over the last few years it has made great strides in discovering and developing its energy resources, under the able and far-sighted leadership of its President." He made reference to the Zohr, North Alexandria and Nooros fields that are expected to make Egypt self-sufficient in natural gas, as well as developments in oil.

'Declaration of Cooperation'

Barkindo emphasized that Egypt's presence at the landmark meetings of November 30 2017, alongside a further five additional non-OPEC producing countries, meant that 30 oil producers, with 24 producers already part of the 'Declaration of Cooperation', affirmed their commitment to restoring stability to the oil market on a sustainable basis, in the interests of producers, consumers, and the global economy. To put it simply, he said "it is unparalleled in the history of the oil industry."

He recalled an old Egyptian proverb that had been carved on temple walls thousands of years ago, which read: 'The seed cannot sprout upwards without simultaneously sending roots into the ground.'

He said that the saying was very apt for the historic cooperation witnessed between OPEC and non-OPEC through the 'Declaration of Cooperation'. "The roots of

Abdel Fattah El-Sisi (second r), President of Egypt, greeting Mohammad Sanusi Barkindo (second l), OPEC Secretary General.

this cooperation are the foundation on which the success has been built," he said, and "it will remain fundamental to it flowering further in the years ahead as we look to institutionalize the 'Declaration of Cooperation', beyond rebalancing the market."

He added it is why the 'Declaration of Cooperation' remains open to all producers. "We believe it is a continuity partnership that can work for everyone, across all timeframes, to help deliver the sustainable market stability we all desire."

Market conditions

The Secretary General said that there was no doubt that the industry is starting to feel a warmer glow and that "the overall market fundamentals are strong."

He highlighted that in 2017, the global economic recovery gathered momentum, with the positive trend expected to be maintained in 2018 with "an extremely healthy growth forecast of 3.8 per cent."

Correspondingly, he said, global oil demand growth has been robust and strengthening with growth of 1.6 million barrels/day in 2018, the same level as in 2017. He added that "we now see global oil demand surpassing the 100m b/d threshold much earlier than we previously expected."

He also highlighted the continued drop in the OECD stock overhang against the five-year average and the fact that the three benchmark crudes of Brent, WTI and Dubai remain in backwardation.

This rebalancing, the Secretary General said, has evidently been driven by the unprecedented conformity levels of participating OPEC and non-OPEC countries in the 'Declaration of Cooperation'.

He said "we have gone beyond what was originally envisaged. The results speak for themselves. And we continue to have the same focus and commitment as we head into 2018."

Looking ahead

The Secretary General highlighted the world will need more energy in the years ahead and that oil and gas will continue to play a major role in the world's energy mix for the foreseeable future. In OPEC's World Oil Outlook 2017, he said, oil and gas are estimated to still contribute 52 per cent to the global energy mix by 2040.

The growth will obviously require huge investments, he said, "such as those being made by Egypt over the past few years, as well as by OPEC Member Countries who have continued to invest in their industries throughout this recent volatile down-cycle. This has positioned them well to maintain their leading roles as reliable and dependable suppliers to expanding economies around the world."

However, he added, "it is important to remember that globally more than a trillion dollars of capex cuts have been witnessed in recent years." He said it is essential to recall that the foundation for investment and growth comes through balance and stability in the oil market. "Stability today begets stability tomorrow. We need to remember that the short, medium and long terms are inter-linked in multiple ways."

In this regard, he underscored why the success of the 'Declaration of Cooperation' has proven to be so important to the strong fundamentals of the global oil market today.

Egyptian perspective

El Molla, in his remarks to the conference, underlined the importance of EGYPS 2018 in terms of exploring promising opportunities in the petroleum market and increasing cooperation with global companies. He said his ministry's priorities were on improving governance, establishing an exploration and production information portal, and improving quality across the board.

He described the country's foreign partners as a "key to success," adding that he is sending them a message that stresses the government's keenness on reform, as well as avoiding unnecessary bureaucracy. He said the government was committed to providing an "investment-magnet" atmosphere to lure more investments into the energy market.

The success of Egypt's recent petroleum activities was underscored at the event by two well-known industry Chief Executive Officers, Bod Dudley from BP and Claudio Descalzi from Eni.

Dudley said that BP invested more money in capital last year in Egypt than any other country in the world, and is looking to invest over $1 billion in Egypt this year. He said BP had been in the country for 50 years, producing lots of natural gas, and highlighted that BP had announced on the first day of the conference a new project that had started gas production.

The project was Atoll Phase One project, offshore Egypt, in the North Damietta concession in the East Nile Delta. BP said that it had been delivered seven months

View of the OPEC stand at the Egypt Petroleum Show.

ahead of schedule and 33 per cent below the initial cost estimate. The project is now producing 350 million cubic feet of gas a day and 10,000 b/d of condensate.

Dudley said in a press release: "BP is focused on delivering growth with discipline, carefully choosing and efficiently executing high-quality projects. The longstanding partnerships we have in Egypt allowed us to fast-track Atoll's development and deliver first gas only 33 months after discovery. This is a further demonstration of our commitment to help realise Egypt's oil and gas potential and meet the increasing demand from its growing population."

Descalzi also underscored the opportunities available in Egypt, specifically noting the huge Zohr offshore gas field being developed by Eni in the Mediterranean. He said that production from the field is expected to reach 2.9 billion cubic feet per day by mid-2019, and by that point there would also be seven trains operating. Discovered in 2015 by Eni, the field contains an estimated 30 trillion cubic feet of gas.

Panel sessions

The OPEC Secretary General also participated in a panel session at EGYPS 2018 with Abbas Al Naqi, Secretary General of the Organization of Arab Petroleum Exporting Countries (OAPEC) and Dr Yury Sentyurin, Secretary General of the Gas Exporting Countries Forum (GECF). The session was moderated by Eithne Treanor, CEO of E Treanor Media.

The panelists discussed a variety of issues including the current oil market rebalancing process, the value of cooperation and dialogue among all stakeholders, and the importance of seeing the necessary investments return to the oil and gas industries.

Other panel sessions included a ministerial panel session titled 'Inspiring, Leading and Creating Opportunities that will transform the Global Energy Landscape'. El Molla was joined on the panel by two OPEC Ministers, Mustapha Guitouni, Algeria's Minister of Energy and Manuel Salvador Quevedo Fernandez, Venezuela's People's Minister of Petroleum, as well as the South African Energy Minister David Mahlobo.

Quevedo said that Venezuela's view of the oil market is related to the welfare and stability of the people. He also highlighted the participation of his country in the historic 'Declaration of Cooperation', which he said is an initiative that has brought great lessons for humanity, where countries inside and outside OPEC with common interests meet regularly to help rebalance the global oil market.

Guitouni highlighted the importance of forging partnerships in order to foster the economic fundamentals of the energy and oil industry, and outlined the energy investment opportunities in Algeria, as well as the efforts made to improve the business climate and stimulate entrepreneurship. He also evoked the need to maintain the efforts made by OPEC and non-OPEC countries to achieve stability and balance the oil market.

EGYPS 2018

EGYPS 2018 brought together a plethora of key industry stakeholders including ministers, NOCs and IOCs, international service providers, EPC contractors, consultants and financiers. Heralded as the largest and most important platform for the oil and gas industry in North Africa, the event lived up to its billing. The next EGYPS will be held from February 18–20, 2019.

Global energy leaders gather to discuss future energy outlooks

The eighth edition of IEA-IEF-OPEC Symposium on Energy Outlooks was held at the headquarters of the International Energy Forum (IEF) on February 14, 2018, in Riyadh, Saudi Arabia. Energy ministers and international experts joined delegates from the International Energy Agency (IEA) and OPEC to exchange energy outlooks, review historical baseline data and compare energy scenarios with the overarching goal of enhancing the producer-consumer dialogue on energy security and market transparency. The OPEC Bulletin *filed this report.*

Pictured above from l–r: Dr Sun Xiansheng, Secretary General of the International Energy Forum; Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources; Alexander Novak, Minister of Energy of Russia; Mohammad Sanusi Barkindo, Secretary General of OPEC.

The Symposium was officially opened by Dr Sun Xiansheng, Secretary General of the International Energy Forum, which hosts the event on an annual basis as part of a wider trilateral work programme undertaken by the IEA, IEF and OPEC in recognition of mandates from the Energy Ministers of the IEF and G20 countries. Other joint activities include high-level workshops on physical and financial energy market interactions and gas and coal market outlooks.

Dr Xiansheng began by welcoming the more than 150 senior government and industry representatives in attendance from energy producing and consuming countries to the Symposium. He recognized the high-level attendance of several energy ministers, from Saudi Arabia, Russia and Sudan, adding that this was an indication of the event's importance in international energy dialogue. "Global energy dialogue is more important now than ever," Dr Xiansheng stated. "We currently find ourselves at an energy crossroads, and it is imperative we talk to each other, engage one another and achieve goals together. This Symposium is essential to that end."

Realism and resolve

Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources, was also in attendance and delivered an opening statement.

"Realism and resolve are the only ways to achieve an orderly transition to a more secure, more sustainable energy future," he said. "There is a tremendous opportunity here for the IEA, the IEF and OPEC to collaborate in promoting a rational view of future energy policy that will promote energy security, encourage environmental protection, meet and mitigate the challenges of climate change, and help to fuel economic prosperity not just in the developed world, but the developing world as well."

Alexander Novak, Minister of Energy of Russia, was also on hand and provided an opening statement in which he lauded the IEF for offering this type of platform for the transparent exchange of energy analyses and outlooks.

"For any country to successfully implement its energy policy an adequate understanding of the main trends, and factors influencing markets is necessary," he explained. "To create a predictable environment for policy and investment decisions we strongly believe that the process of modelling of the future, through an inclusive comparative analysis of energy outlooks, must become universal and global. In this regard, we yield due praise to the IEF, which for more than 20 years has been successful in its role as the main platform and coordinator of this process."

Enhancing common understanding

In his opening remarks, the Secretary General of OPEC, Mohammad Sanusi Barkindo, underlined the dire necessity of cooperation and dialogue in an increasingly complex global oil industry.

"Today's event is a further bridge to enhancing a common understanding between IEF, the IEA and OPEC," he said. "These efforts are a priority for OPEC because in today's increasingly complex and interlinked global oil market, no one player can go it alone — cooperation and dialogue are crucial."

Finally, Keisuke Sadamori, Director of Energy Markets and Security at the IEA, used his opening statement to emphasize his organization's commitment to ongoing collaboration with IEF, OPEC, and other stakeholders in order to make a significant contribution to the process of transition to more sustainable and secure energy systems.

On display at the symposium were a selection of the latest OPEC publications.

Three main sessions

After the opening session concluded, the programme featured three main sessions, which were held under Chatham House Rule.

The first session focused on the latest IEA and OPEC projections, including key findings from the comparative analysis, and projections by the US Energy Information Administration, which was invited as a special guest.

Session 2 covered the industry's views on energy outlooks in the short, medium and long terms, while Session 3 looked at the crucial issue of investment in unconventional and conventional oil and gas production.

The OPEC Secretary General stressed the importance of the investment issue in his remarks.

"I am pleased to see that a portion of today's agenda, namely in Session 3, is being devoted to the crucial issue of investment in both conventional and unconventional oil and gas production, a topic featured prominently in the WOO 2017," he stated. He added that he had heard from both NOCs and IOCs at recent industry events about the crucial need to reinstate adequate levels of long-term investment to the industry.

Keisuke Sadamori (c), Director of Energy Markets and Security at the IEA.

Delegates to the Symposium take time out for a group photograph.

Conclusions

After a day characterized by informative presentations as well as open and transparent deliberations, a joint press statement was released, highlighting the main outcomes of the Symposium.

It was acknowledged that the comparing of outlooks has become easier over successive meetings of the Symposium and that dialogue on producer and consumer perspectives has become better informed and more collegial.

It was also noted that this year's comparative analysis of the IEA's and OPEC's short, medium, and long-term projections has led to improved data outcomes and a sharper focus on differences related to shifts in global energy demand and supply patterns, the role and resilience of unconventional production in OECD countries and the extent to which compared energy matrices change over time.

Participants expressed their ongoing commitment to global energy dialogue as a means to strengthen energy security around the world, while remaining dedicated to achieving greater data consistency and improving the comparability of energy outlooks.

Enhanced dialogue and cooperation key

There was unanimous agreement among the leaders of IEA, IEF and OPEC that dialogue and cooperation efforts such as these must continue, and could perhaps be enhanced.

"While considerable progress has been made in improving the comparability of IEA and OPEC outlooks, there remains room for improvement," stated Dr Sun Xiansheng. "Other outlooks such as those provided by the US Energy Information Administration, or by companies and academia could well be included in future comparative analysis."

Khalid A Al-Falih also encouraged further opportunities for dialogue, commenting that "this gathering has become a true meeting of some of the greatest minds in the world of energy, and we look forward to a candid and constructive exchange of viewpoints, ideas and insights."

The IEA's Sadamori emphasized the ever-increasing importance of ensuring market transparency on the basis of accurate data at a time when the oil market is undergoing drastic changes.

The OPEC Secretary General also encouraged enhanced, long-term collaboration and dialogue, saying: "Looking ahead, I believe there is great potential in expanding our existing dialogue and collaboration efforts and instituting them on a long-term basis. Through open and transparent communication such as we have witnessed here today, we will foster a more sustainable stability in the global oil market, and all industry stakeholders will stand to benefit."

All images in this feature, unless otherwise stated, courtesy of IEF.

Speaker in the Secretariat lecture series …

New technological solutions for the Sustainable Development Goals

***Professor Nebojsa Nakicenovic** (pictured), Deputy Director General of the International Institute for Applied Systems Analysis (IIASA), provided OPEC staff with a number of very interesting insights and food for thought when he visited the OPEC Secretariat as part of the OPEC Lecture Series on December 14, 2017. **Maureen MacNeill** reports.*

Professor Nakicenovic — who spoke on the topic "New technological solutions for the Sustainable Development Goals" — stated one of the most important research areas of IIASA is the Sustainable Development Goals (SDGs), which: "I personally believe … could be a new vision for humanity."

Even though they are a political compromise, they are quite visionary and were the result of a complicated and participatory stakeholder process, he said. "As a vision for where humanity needs to go, they are fantastic. I do not think we have had anything like that before."

He walked participants through the development of mankind, including the various revolutionary changes that took place and pushed humanity forward, one of the biggest being the switch to fossil fuel energy, which caused the population to increase ten-fold.

Everyone on the planet could live very well on average, when one considers the rapid economic growth over the past few centuries, he said. From a development point of view, the distribution of wealth is a major issue. The average German household throws a fifth of its food away, for example, while over 800 million people go to bed hungry every night.

Rapid growth and the revolutionary use of fossil fuels have also had a high cost in the form of burdening the Earth. Earlier, the planet was able to process the man-made greenhouse gases (GHG), said Nakicenovic. However, now there are signs of serious distress, for example with coastal nitrogen concentrations rising, tropical forests being cut down, land use on the rise and ocean acidification.

Pre-industry GHG levels were at 180 parts per million (ppm), while this year they were above 400 ppm. "Emissions from fossil fuels and industry in 2016 were 62 per cent higher than those in 1990."

For a brief period, from 2014–16, it seemed emissions were stabilizing, but they have started to increase once more, mainly because China's coal consumption is again rising, he said, adding both China and India still get about 80 per cent of their energy from coal.

He added half of the Earth's temperature increase comes from CO_2 and the other half from other substances such as methane and nitrous oxides.

Aerosols cool the atmosphere, which is why volcanic explosions can cause a temperature drop, while other weather patterns such as El Niño lead to warming.

Core ice samples from Greenland have been a very powerful way to measure CO_2 levels and temperatures back 800,000 years, he said.

Sustainable development has a lot do with the planetary systems, added Nakicenovic. All 7.5 billion people on the planet want a good life, but they create garbage and emissions. Sustainable development is about people and the planet; it is about development without damaging the Earth's support systems, he said.

Energy poverty

On the subject of energy, the cost per kilowatt hour is more in poorer countries without access to electricity, with South Asia and sub-Saharan Africa having the least access. He added that the OPEC Fund for International Development (OFID) does great work in this area and that the electrification problem could be quite easily solved.

"The average German household throws a fifth of its food away, for example, while over 800 million people go to bed hungry every night."

SDG7, which talks about universal access to energy in one of its three targets, is a key for achieving sustainable development, he said. To reach this SDG7 target, $40–50 billion per year would be needed.

He added other major issues include the two billion people who do not have adequate access to sanitation and one billion who practice open defecation. In the OECD countries, 100 per cent of the population has access to sanitation, while in the rest of the world only two-thirds have access, which is reflected in the health status of those areas.

Three billion people use polluting cooking fuels, with four million dying a premature death because of in-door cooking pollution. If open cooking fires were replaced with kerosene or electricity, it could solve a huge developmental problem, he said. However, infrastructure has to be in place and supply reliable, he added, otherwise people go back to what they were using, also leading to massive deforestation.

He stressed that "it would not cost much to pull people out of abject poverty."

Paris Agreement

Nakicenovic admitted that he was surprised by the level of ambition in the Paris Agreement, adopted in November 2015. He said the goal to limit a temperature rise to 2°C, and if possible 1.5°C, leaves little wiggle room. The current temperature threatens many systems already, including sea ice, glaciers and coral reefs, with climate change mostly threatening the poor. Current commitments would bring warming close to 3°C.

"If CCS were introduced on a large scale, it could help stabilize the temperature at 2°C."

Meeting the Paris Agreement goal would require producing net-negative emissions, he added, which would mean adopting technology like carbon capture and storage (CCS) on a large scale in conjunction with biomass, as well as increasing afforestation and developing other solutions. If CCS were introduced on a large scale, it could help stabilize the temperature at 2°C, he said. Water is also an issue in this scenario. "Today most of the water use goes to coal, in the future most might go to CCS … Today CCS might be the most practical solution." However, it is not clear whether the technology would be publicly accepted and what its adverse impacts might be as a consequence of vigorous scale-up and diffusion.

Revolutionary changes

The major developments that changed the world, including combustion engines, the petrochemical industry and recently the digital age, essentially transformed everything, he said. However, such fundamental changes are unpredictable and even if there was a major breakthrough now, which is unlikely, it would still take decades to implement.

"Our biggest challenge is time. We have historically so little time because we waited too long. There could be a zero-carbon economy, but we still need equivalent things for water, land use, eradicating diseases, education. Having a breakthrough that can solve all that is unimaginable. Somehow we have to mesh all those systems together. "

He stated that all of Europe's CO_2 could be stored under Vienna, but there is still a lot of public controversy about CCS. He added it is not possible to step out of fossil fuels tomorrow, and CCS will not come online so fast.

"Emissions would have to be halved every decade to achieve the Paris Agreement, and we would also need negative emissions and to protect natural sinks that remove carbon. These are currently being weakened. It is a tall order… it is difficult to construct scenarios that can do it without net negative emissions.

"The Earth has never had so much carbon in the atmosphere since homo sapiens emerged. Will this overpower 800,000 years of climate cycles?"

On the other hand, urbanization lowers energy consumption. Currently one-half of the world lives in urban centres, a figure expected to climb to two-thirds. At the same time, development of infrastructure in order to bring people out of poverty and to meet population growth will raise emissions, as the steel and concrete industries are responsible for nearly a tenth of all carbon emissions. However, one could, for example, have zero emission steel production if hydrogen is used for the reduction, as is currently being planned in a pilot plant in Austria.

"I am not pessimistic in the long run, but I am pessimistic about time. We need to have minus emissions by mid-century and it took a century for biomass to be replaced by coal and coal by oil and gas. I am not sure we have enough time."

Policy synergies

One big solution will be policies that address more than one area. For example polices that solve energy and water issues at the same time. "Synergies are the way forward," he said.

Meanwhile, the financing for implementing the SDGs will have to come from private sources, said Nakicenovic. "Investment comes from the private sector; governments do not have so many resources. They are there to catalyze and promote through regulatory mechanisms which are part of the policy frameworks. That is the responsibility of the governments, especially in the context of the SDGs.

"They should fund research and development, produce roadmaps, figure out what to do with people who will be displaced. There will be lots of adjustment and displaced people."

The public sector has to shape the rules of game and will adjust them in its self-interest. That said, CEOs of many companies, including some oil companies, say they can adjust to policy measures such as the carbon tax and still be profitable, but they cannot afford to adjust to policy volatility, he said. "So volatility of policy is a big barrier for the private sector to invest in sustainable ways."

Another problem is the current market mindset that profit has to be made in a very short time, while sustainable development is a long-term issue. The question is how to adjust investors' thinking so that they will accept lower profit in the short term in order to achieve healthier long-term profit, he said.

"In energy alone would need to double the current investments. Today $1.34 trillion worldwide is invested in energy. This probably has to be $2.5 or $2.6 trillion per year according to our studies, and the most money needs to go into efficiency."

Policy could drive how we use our resources, but social norms will as well, he stated, which raises the question of how social norms can be changed. Changes have already been taking place, he added, such as more awareness about throwing garbage in the street, the abolishment of slavery and changes in smoking habits.

"We have to liberate the environment from our pressure like we liberated the slaves from chains."

He used the example of feet binding in China. When the country opened, "all of a sudden they realized the rest of world looks upon them badly, and the need (to bind) was not so immediate anymore because a middle class was developing, so it disappeared within a generation."

In the case of today's challenges, the world is more connected, thus there may be more peer pressure and the faster spread of technology. The electronic age could amplify the speed of change, he said.

He added the idea of "technology transfer" to developing countries is a wrong concept, and that development has to be endogenous. "Korea, China, these parts of the world developed through their own power, though they can be helped internationally. The same thing we had to do to industrialize, they have to do. We cannot guess what is correct for that culture."

Technologies are key

The world needs disruptive technologies to address the challenges to 2050, he said. Disruptive technologies can very powerfully and quickly effect change. For example, when the Model T car was introduced, it replaced horses in 13 years, he said. "It is 13 years to 2030; it is conceivable we can do it."

"We need to do this in other areas…Now technology can produce electricity from gas, separate oxygen from air, combust gas in a CO_2 turbine, store CO_2 underground. Natural gas energy could have zero emissions and create much-needed water as a side result.

"What has happened in the past will happen in the future. We need new systems that combine well, and digitalization is a key technology."

Atmospheric warming can also be offset in other, science-fiction sounding ways. It was suggested more than half a century ago that warships shoot sulphur into the atmosphere or that mirrors in orbit could reflect back some of the sun's warming rays, or that scrubbers could be used to remove carbon from the atmosphere. Some of these ideas are already feasible, but very expensive.

"It would not cost much to pull people out of abject poverty."

Additionally, carbon is a fantastic construction material because it is light and strong, stated Nakicenovic. It could be used to make cars, planes and more, maybe buildings and bridges. The drawback is that it requires a great deal of energy to turn CO_2 into usable carbon.

An end goal should be to have circular economies, for example in urban areas, to ensure the hinterland is not burdened by waste from cities. This involves reusing waste. Some call it urban mining.

"Incheon in Korea has a seven-metre high garbage pile originating mostly from Seoul, with three meters of earth on top layered seven to ten times. It is 100 metres high. They lay pipes and water is cleaned for industrial purposes and enough biogas is produced to last 20 years."

Human potential and the SDGs

Nakicenovic said the most important thing in all these equations is human beings, with the eradication of poverty being the number one goal. Without the eradication of poverty, none of the other SDGs can be achieved.

When poverty is eradicated, people can become educated, and the more educated people are, the more awareness increases, thus they produce less emissions, he said. US Nobel Prize winner Simon Kuznets created the Kuznets' curve, which shows that at the beginning of development, environmental pressure increases, but after a certain level of development, it starts falling off.

"Without the eradication of poverty, none of the other SDGs can be achieved."

"It is education, but education cannot be done without light, without food. You need institutions, you have to go away from child labour, so children can spend time in school, that means there needs to be adequate means of living, minimum sanitation, some electricity.

"It is not one or the other; this is why the 17 goals are so important because this is the agenda for human development, but also for protection of the planet. Our support systems, the Earth's systems, do not care if we disappear or stay. It is not an environmental agenda; it is a human development agenda. But human development without worrying about our support systems will not occur, that is my point.

"If Africa does not develop what will happen? Millions of people will be coming through Europe. You cannot stop people, so we have to develop. It is in our self-interest even if you have no empathy."

He added there is no silver bullet, but there must be consistent work in many areas. It is a mistake to think any SDGs can be singled out when looking for solutions, he added.

He said that the development of SDG7 is exceedingly important. Previously (in the Millennium Development Goals), there was no development goal for energy, with the argument that energy is so important for all the other SDGs that it does not need to have one of its own.

"But that is like saying there should be no ministry of education because it plays an important role in all governmental activities. To have an SDG on energy is really important and a huge achievement."

Role of the oil industry

As a very high tech and innovative industry, the oil and gas industry has an important role in helping solve the dilemma of sustainable development, he stated. "The oil and gas industry controls technology."

It has a strong knowledge base that could be implemented to a greater degree. "In terms of large technology, large systems, oil platforms, high-tech refineries, technology improvements, drilling for shale, these are major technological breakthroughs on a very large scale. So the oil and gas industry has not only incredible knowledge, but it also has the capacity to innovate enormously."

That knowledge can be applied to many other areas, he said. For example, offshore renewables require knowledge of platforms. Drilling, pipelines and cables represent exceedingly important future technology for doing many things underground, including CCS. "CCS should be the domain of the oil and gas industry," he stated; carbon can be stored where oil is taken out.

CCS could create zero emissions and would offer a bridge to a really sustainable future. The same suppliers to the oil industry today would be the natural suppliers to the CCS industry, he stated. "It is a huge opportunity for the industry. There is also opportunity for the industry to go to other sectors. It knows how to acquire capital and how to implement projects."

Innovation will continue, particularly in terms of competition with renewables, he added, but the hindrance to some extent is that it is easier to make money in oil then to venture into new areas.

Nakicenovic said that "competition with renewables will advance the oil and gas industry, as well as offer new opportunities for diversification.

He added with 3 billion people out of 7.5bn still needing to develop, oil products might be the best way to go, for cooking, mobility, and other uses. "The market will change. Maybe the US will no longer be the biggest market, it may become sub-Saharan Africa and parts of India.

"Europe and the US might use mostly carbon free, pollution free sources of energy, whether natural gas or renewables. There will be multiple energy sources."

Professor Nebojsa Nakicenovic

Research

- IIASA Senior Research Scholar: Transitions to New Technologies.
- IIASA Senior Research Scholar: Energy.
- Long-term patterns of technological change, economic development and response to climate change and, in particular, the evolution of energy, mobility, and information and communication technologies.

Positions

- Currently Deputy Director General/Deputy Chief Executive Officer of the International Institute for Applied Systems Analysis (IIASA).
- Former Professor of Energy Economics at the Vienna University of Technology.
- Member of the United Nations Secretary General Special Advisory 10-Member Group to support the Technology Facilitation Mechanism.
- Member of the United Nations Secretary General High-Level Technical Group.
- Member of the Advisory Council of the German Government on Global Change (WBGU).
- Member of the International Council for Science (ICSU) Committee on Scientific Planning and Review, and Co-Chair of the Global Carbon Project.
- Member of the Board, Climate Change Centre Austria (CCCA).
- Member of the Working Group of the Austrian Panel on Climate Change (AG-APCC).
- Member of the Panel on Socioeconomic Scenarios for Climate Change Impact and Response Assessments.
- Member of the Renewable Energy Policy Network for the 21st Century (REN21) Steering Committee.
- Member of the International Advisory Board of the Helmholtz Programme on Technology.
- Member of the Earth League.

Consulting areas

- Engaged in the work of the Intergovernmental Panel on Climate Change (IPCC) in various roles over the past 25 years, starting with involvement in the Industry and Energy Subgroup during the First Assessment Report, followed by being a Lead Author on the Policy Paper on Technologies, policies and measures for mitigating climate change (1996).
- Convening Lead Author of the Energy Primer and Lead Author of the Energy Chapter of the Second Assessment Report (1993–95).
- Convening Lead Author of the Special Report on Emissions Scenarios *(Nakicenovic et al, 2000)*.
- Convening Lead Author of the Third Assessment Report (Chapter 3: 1999–2001).
- Coordinating Lead Author of the Fourth Assessment Report (Chapter 3: 2002–07).
- Lead Author of the Fifth Assessment Report (Chapter 5: 2010–14).

Publications

- Authored more than 300 publications and is Editorial Board Member of several scientific journals, such as Journal on Technological Forecasting and Social Change, Climate Policy, Energy Policy, Current Opinion in Environmental Sustainability, the International Journal of Energy Sector Management, Ecosystem Health and Sustainability, The Scientific World Journal, Environmental Innovation and Societal Transitions, and the Journal of Energy Strategy Reviews.

Angola issues first public tender for fuel imports

In an effort to widen its import base, Sonangol, Angola's national oil company, has issued its first public tender to buy refined products, according to a report by *Reuters*.

One source cited in the report said the tender would close on January 31 and was looking for 1.2 million tonnes of gasoline, 2.1m t of gasoil and 480,000 t of marine fuel.

Mainly reliant on oil sales to generate government income, the tender signals one step towards reforming the country's oil industry.

Angola was hit hard by the 2014 oil price crash, which created a major set-back to its economy and adversely affected businesses.

President Joao Lourenco, who took office in September 2017, remains committed to economic reforms and ordered a review of the country's oil industry.

Egypt renews contract for 12 million barrels of Iraqi crude

According to a report by *Reuters*, Egypt has renewed a contract to import 12 million barrels of Iraqi crude oil over the next year, an official at state petroleum buyer EGPC said.

The official, who declined to be named, said that six 2-million barrel cargoes of crude would be supplied over the course of a year, starting in January 2018. The Iraqi deal was originally agreed in April 2017 with the first shipment arriving in May. Egypt has transitioned from being an energy exporter to becoming a net importer as domestic output has not kept pace with increasing demand.

Kuwait awards contracts to boost production capacities

According to *Petroleum Intelligence Weekly (PIW)*, Kuwait has awarded Royal Dutch Shell and BP three ten-year enhanced technical-service agreements to help raise its oil production capacity by roughly one-third to 4 million b/d and gas output to 1 billion cu ft/day by 2020.

Shell was awarded one contract for conventional fields in north Kuwait, targeting production of 1 million barrels/day, and another one for the Jurassic deep gas development. Shell was originally awarded a five-year contract for the Jurassic scheme in 2010, which has since been extended twice and expired last March.

Kuwait offered BP a contract for fields in south-east Kuwait, including Burgan, one of the world's largest oil fields, where the company is aiming to maintain or possibly expand oil production capacity to 1.7m b/d.

Waafa al-Zaabi, Managing Director of Kuwait Petroleum Corporation told *PIW* on the sidelines of the *Atlantic Council Energy Forum* in Abu Dhabi that Kuwait was committed to reaching its oil production capacity target and was planning to spend $112bn on oil and gas upstream development.

Saudi Aramco considering expansion to India

Saudi Aramco, the state oil company of Saudi Arabia, is considering entering India as part of its Asian expansion, Nikkei said on Tuesday, citing Aramco's CEO who said that plans for an Indian refinery are crystallizing.

"Saudi Aramco is looking at additional investments in China, and India is also a very important destination which we are giving great consideration, and (where we are) currently in discussion with some companies," Aramco CEO Amin Nasser told the *Nikkei Asian Review* in an interview.

The Saudi government has said it plans to sell about five per cent of Aramco, hoping to raise some $100 billion or more in what would likely be the world's biggest initial public offering (IPO).

"At the moment, we are prepared for a listing in the second half of 2018," Nasser confirmed to *Nikkei*.

Saudi officials have said they may list Aramco on one or more foreign markets such as New York, London and Hong Kong in addition to Riyadh, which would boost the company's global profile and reduce the strain on the Saudi market.

Amin Nasser, Saudi Aramco's CEO.

NPCC wins $327 million contract from India's ONGC

The National Petroleum Construction Company (NPCC) of Abu Dhabi recently announced a $327 million contract awarded by India's Oil and Natural Gas Corporation to build offshore infrastructure on the west coast of India.

NPCC, which is majority owned by Senaat, Abu Dhabi's General Holding Corp, is an engineering, procurement and construction contractor. The company has been awarded contracts from ONGC in the past.

The latest one includes survey, design and installation of five oil well platforms, pipelines and cables, as well as commissioning services at ONGC's Ratna field on the west coast of India, according to a statement by NPCC.

QIDDIYA —

Saudi Arabia's ground-breaking recreational capital

Since the establishment of Saudi Arabia in 1932, the Kingdom has been riding the train of development at a rapid pace, progressing from one milestone to another. For instance, the capital city of Riyadh is a glowing example of the prosperity and success the country has accumulated over the years. The OPEC Bulletin's ***Ayman Almusallam*** *reports on a major project that is being developed to help transform the Kingdom into a regional recreational hub of the Middle East.*

In recent years, the amusement parks industry has experienced a significant boom, making it an increasingly significant player in today's global economy.

According to the International Association of Amusement Parks and Attractions (IAAPA), the sector generated a solid €4.9 billion in revenues in Europe alone, demonstrating its essential contribution to the continent's economy in 2013.

Being a global sensation, the renowned Walt Disney Company, which owns eleven parks scattered across the globe, is one the industry's leading companies. Based on a report carried by *Forbes*, the American multinational company amassed total revenue of $45 billion in 2014. It also generated more than 20 per cent of the firm's overall operating profit.

Amusement parks, such as Walt Disney or its British competitor Merlin, are regularly visited by millions every year, providing significant economic support to related industries, such as tourism, hospitality and gastronomy.

The benefits of developing such a sector are clear, providing national economies with new streams of income.

On April 8, 2017, the Kingdom's Crown Prince, Deputy Prime Minister and Minister of Defence — Mohammed bin Salman — announced the country's plan to

Left: Custodian of the two Holy Mosques, His Majesty King Salman Bin Abdulaziz Al-Saud of Saudi Arabia.

Below: HRH Mohammed Bin Salman Al-Saud, Crown Prince of the Kingdom Saudi Arabia.

inaugurate a world-class recreational park in the year 2022.

The Crown Prince emphasized the significance of developing such projects as a means of contributing to the nation's social and economic welfare.

He added that the park, guided by the principles and policies of the ambitious 'Vision 2030' plan, would become a cultural landmark and a prominent centre aimed at meeting the various needs of the countries' youth population.

Amusement park of the future

The mega park will cover an area of 334 square kilometres on the south-western edge of the Kingdom's capital, Riyadh, covering a fifth of the capital's land area.

It will feature four key sections — entertainment, car sport, general sports and hospitality — in addition to a large safari zone and a Six Flags theme park.

Construction is scheduled to commence in 2018 and be completed in 2022, according to a report carried by the Kingdom's official press agency — *Saudi Press Agency (SPA)*.

The SPA reported on the cutting-edge technology that will be used as a cornerstone in developing the park's games and activities.

Visitors will be able to engage in a variety of adventure activities, while virtual reality and 3D technologies will be integrated into the various games.

Development of the necessary infrastructure and basic amenities on the project site is estimated to cost 10 million Saudi Arabian Riyal ($2.5m approximately), while the construction of the recreational park and its related facilities are expected to incur between 20m and 30m Riyal (between $5m and $8m).

A number of local and international investors are exploring the opportunities to invest in the gigantic project. It is regularly reported that the Public Investment Fund (PIF), one of the country's key financial institutions, may become the main investor in the recreational park.

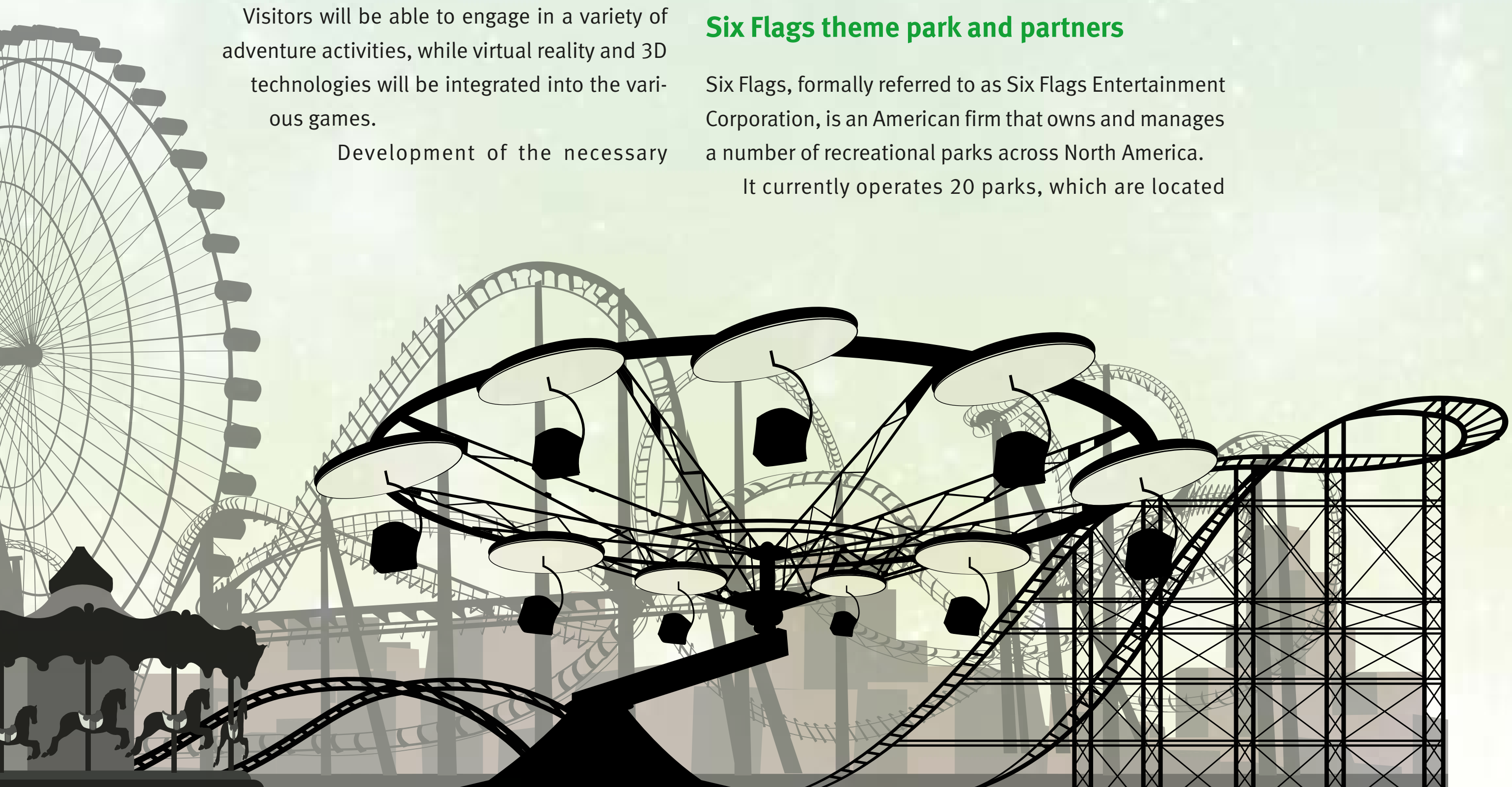
Six Flags theme park and partners

Six Flags, formally referred to as Six Flags Entertainment Corporation, is an American firm that owns and manages a number of recreational parks across North America.

It currently operates 20 parks, which are located

"This city will become, by God's will, a prominent cultural landmark and an important centre for meeting the future generation's recreational, cultural and social needs in the Kingdom."

— Mohammad bin Salman Al-Saud, Saudi Crown Prince



in the United States, Canada and Mexico. In 2016, the firm welcomed over 30 million visitors to its properties.

In an attempt to expand the entertainment sector in Saudi Arabia, the American company is preparing to construct three mega parks in the Kingdom, where each park is expected to cost between \$300m and \$500m. It is also a key partner of the Qiddiya project.

Public Investment Fund

The Kingdom’s PIF is a sovereign wealth fund that was founded for the purpose of maintaining and enhancing the investments carried out by the government of Saudi Arabia.

Overseen by the Kingdom’s Council of Economic and Development Affairs and managed by a capable board of directors, the fund remains, since its establishment in 1971, a solid instrument in Saudi Arabia’s investment infrastructure.

The aim of the sovereign fund is to become one of the leading funds worldwide and develop strong and diverse portfolio by investing in domestic, as well as international, long-term opportunities.

The current chairman of the PIF is Mohammad bin Salman Al-Saud, the Kingdom’s Crown Prince, Deputy Prime Minister and President of the Council of Economic and Development Affairs.

Vision 2030, a roadmap to a bright future

In a determined effort to strengthen the national economy and shift away from dependence on oil, the OPEC Member Country launched in April of last year its ambitious roadmap — Vision 2030.

Under the leadership of the Custodian of the Two Holy Mosques, King Salman Bin Abdulaziz Al-Saud, the Kingdom’s Crown Prince, Deputy Prime Minister and Minister of Defence, Prince Mohammad Bin Salman, revealed the various programmes and instruments that have been developed to realize the vision’s short, medium and long-term benefits.

King Salman, while envisaging the nation’s promising future, noted the vision’s primary aim: “my primary goal is to be an exemplary and leading nation in all aspects, and I will work with you in achieving this endeavour.”

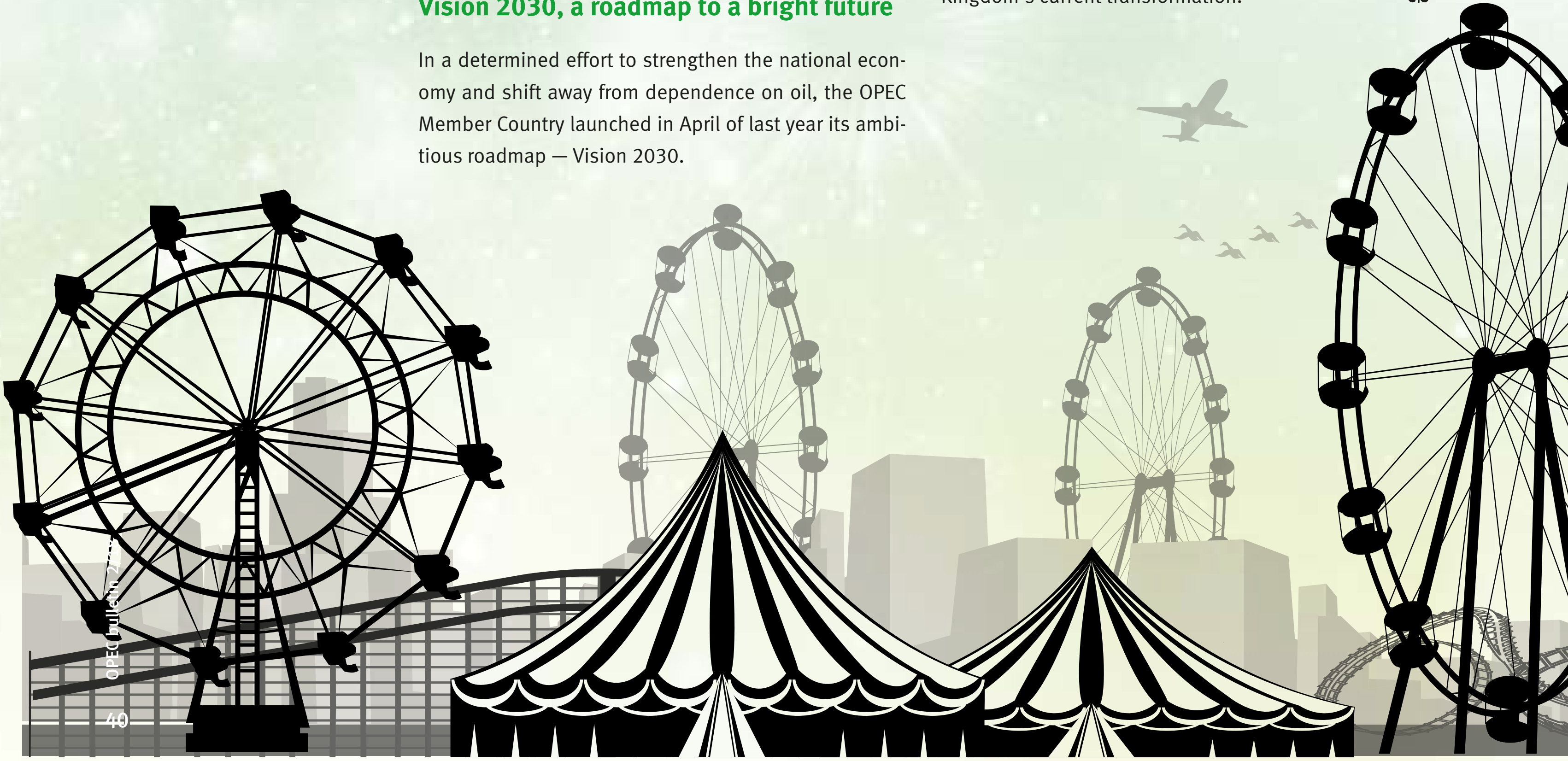
Vision 2030 consists of several essential programmes and key plans, such as the ‘National transformation programme’, the ‘Fiscal balance programme’, the ‘Private sector growth stimulation plan’ and the ‘Regional development plan’.

During the inauguration of the Kingdom’s aspiring roadmap, the Crown Prince identified three influential pillars for its success — a vibrant society, a thriving economy and an ambitious nation.

The founder of Walt Disney, Walter Elias, once said: “All our dreams can come true, if we have the courage to pursue them.”

Under the guidance of the Kingdom’s ambitious leaders, the country is set to experience a notable rise in economic growth and socio-economic development.

This is evident through the ambitious plans and projects that have been either developed or announced, and the Qiddiya project is an exquisite example of the Kingdom’s current transformation.



First Islamic Republic of Iran Petroleum Minister dies at 89

Ali Akbar Moinfar, the first Minister of Petroleum of the Islamic Republic of Iran, passed away at the age 89 on January 2, 2018.

Born in 1928, Moinfar studied seismology in Japan and was a founding member of the Islamic Association of Engineers.

In September 1979, he was appointed Petroleum Minister in a cabinet reshuffle, becoming the first oil minister of IR Iran in September 1979, when the office was established. He was also appointed chairman and managing director of the National Iranian Oil Company.

Iranian Minister of Petroleum Eng Bijan Namdar Zanganeh sent a message expressing his grief and condolences over Moinfar's passing.

Ali Akbar Moinfar (r), the first Minister of Petroleum of the Islamic Republic of Iran, seen during the 57th Meeting of the OPEC Conference in Vienna in 1980.

IWA

Shutterstock

OFID's focus

OFID places a special emphasis on projects aimed at improving water, sanitation and wastewater services and promoting the sustainable management of resources in water-stressed countries. The organization continues to prioritize underserved regions, particularly in sub-Saharan Africa, where over one-third of the population still lack access to safe and reliable drinking water sources and nearly three-quarters still use unimproved sanitation facilities.

Above: Faris Hasan, Director of OFID's Strategic Planning and Economic Services Department (fourth from left), with OFID-sponsored young water professionals.

Waste not, want not

New water report targets SDG 6 as young leaders gather in Argentina to find solutions to growing global challenges.

By Anna Ilaria-Mayrhofer

OFID, a longstanding sponsor of the International Water Association (IWA), has supported the production of the IWA's *Wastewater Report: The reuse opportunity,* which was presented at the recent IWA Development Congress in Buenos Aires, Argentina.

The report aims to illustrate the wastewater challenge and reuse opportunity in eight* cities across the globe *(see below)* and presents a roadmap for meeting Sustainable Development Goal target 6.3: "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally."

OFID also sponsored the participation at the Congress of 30 delegates from developing countries in sub-Saharan Africa, Asia, Latin America, the Caribbean and emerging Europe, as it has done since its partnership with IWA began in 2011.

This year's event was held under the theme *Wastewater as a resource — Managing wastewater towards water-wise cities: innovative solutions for engagement, planning and investment.* The Congress brought together over 3,000 water professionals from 82 countries.

OFID's Faris Hasan, Director of Strategic Planning and Economic Services, delivered a keynote speech outlining OFID's support of water-related operations, which take up nearly one-quarter of the organization's total approved commitments of $21.3 billion. These approvals support projects ranging from large-scale urban water supply and sanitation infrastructure projects, to the installation of small water treatment devices in poor rural communities, explained Hasan, as well as schemes promoting the rationalization of water use and capacity building initiatives targeting water utility companies.

Hasan also spoke of the institution's partnership with the venue's host country Argentina, which began in 2014. OFID has committed $100 million to co-fund two projects aimed at improving the quality and quantity

OFID's Faris Hasan, Director of Strategic Planning and Economic Services.

* *Aqaba, Jordan; Bangkok, Thailand; Beijing, China; Chennai, India; Durban, South Africa; Kampala, Uganda; Lima, Peru; Manila, Philippines.*

Christian Villa, from Metro Pacific Water, Philippines.

of potable water to boost socio-economic development and the living standards of nearly 700,000 people in the Santa Fé and San Juan provinces.

On the sidelines of the conference, Hasan and Dr Walid Mehalaine, Head of OFID's Grants and Technical Assistance Unit, met with IWA's newly-appointed Executive Director, Dr Kala Vairavamoorthy, who thanked OFID for its cooperation and expressed his interest in deepening ties other areas, such as the energy-water-food nexus.

With an estimated 1.8 billion people in the world relying on unsafe water sources, tackling the challenges of inefficient processing and distribution systems has never been more urgent. According to the IWA, around 80 per cent of all wastewater flows back into the environment. This not only has serious repercussions for the environment and public health, but also represents a lost opportunity. There is solid evidence that water reuse can help overcome challenges posed, for example, by growing urbanization, climate change and environmental degradation.

Crystal clear: young professionals speak their mind

A collective keynote address from three IWA Young Water Professionals — whose attendance at the Congress was funded by OFID — provided new thinking and strengthened their positions as emerging thought leaders. The address took place during a plenary session on Business and Governance Resilience towards achieving the SDGs. Rianna Gonzalez from the Water and Sewage Authority, Trinidad and Tobago, Suvritha Ramphal from the Royal Danish Embassy, South Africa, and Christian Villa from Metro Pacific Water, Philippines, outlined some of the multi-faceted issues their countries and regions were facing.

The three young professionals attributed many of the challenges their countries experienced to a combination of inadequate infrastructure and the unsustainable practices of water utility companies (the cost of treating water sometimes exceeds revenues, owing to increased pollution). As a result, some utilities have become reliant on government subsidies — a problem exacerbated by urban migration and a lack of cohesion among stakeholders, among other factors.

It was agreed that today's highly complex challenges should be addressed by: collaborating with communities and water cooperatives; implementing recycling and reuse schemes; and improving river basin management. Examples of successful and innovative real life approaches were discussed and proposed for use as model solutions for the future.

For more information, see *www.iwa-network.org*.

Conference highlights

The IWA conference was held under the overarching theme of catalyzing transformational change and supporting the transition to new ways of managing water resources and delivering water services. Participants had the opportunity to share knowledge, practical experiences and forge new partnerships to address present and future water and sanitation development challenges.

- One key message and recommendation of the conference was: Utility companies should lead industry-wide and social innovations that extend beyond traditional business models and should require a full-ecosystem and nexus approach. With an estimated $112 billion/year needed to meet clean water and sanitation-related SDG targets 6.1 and 6.2, over 80 per cent of developing countries lack the funding needed. In 2014, official development finance to the water sector reached $18bn. This gap could be narrowed by exploring non-traditional funding solutions, such as leveraging private financial resources.
- Tackling water scarcity requires building adaptive water systems and pro-active management, with a focus on long-term preparedness. In confronting the challenges of providing water resources for all, water professionals need to redefine the design of urban water and wastewater systems to address resource limitations while taking into account the wellbeing of citizens — and ultimately move from being mere service providers to resource and 'liveability' stewards.
- In light of the high percentage of wastewater that is un- or under-utilized, cities should take the lead in halving this amount through the implementation of re-use and recycle programmes.
- Implementing measures such as non-regressive fees and charges through differentiated tariffs or compensation measures for poor households could help provide more equitable access to water and sanitation services.

Shutterstock

Petroleum Industry Analyst

The Energy Studies Department monitors, analyses and forecasts world energy developments in the medium and long term and reports thereon, in particular providing in-depth studies and reports on energy issues. It monitors developments and undertakes specific studies on energy demand and production-related technology, assessing implications for OPEC. It identifies and follows up key areas of energy-related emerging technologies and research and development (R&D), facilitates and supports planning and implementation of collaborative energy-related R&D programs of Member Countries, as well as identifies prospects for OPEC participation in major international R&D activities. It carries out studies and reports on developments in the petroleum industry, providing effective tools for carrying out model-based studies of analyses and projections of energy supply/demand and downstream simulation. It elaborates OPEC Long Term Strategy and monitors, analyses and reports on relevant national or regional policies (fiscal, energy, trade and environmental), assessing their impacts on energy markets.

Objective of position:

To study and analyse medium to long term strategies, plans, operations and performance of petroleum-related companies and to assess the impact on OPEC and on the medium to long-term oil outlook; to monitor and analyse developments in the petroleum industry structure and assess the impact on OPEC.

Main responsibilities:

- Collects/treats data, and analyses and reports on major oil companies' strategies, plans, operations, performance and investment.
  Studies and analyses developments in petroleum industry structure.
- Contributes to the preparation of technical reports on medium- to long-term developments.
- In collaboration with the Environment Matters Unit studies and assesses developments in multilateral negotiations, in particular within the WTO framework, with relevance to the petroleum industry.
- Contributes to speeches, articles and presentations to internal meetings and various international forums.
- Carries out any other tasks assigned by the relevant superiors as pertain to his/her background, qualifications and position.

Required competencies and qualifications:

Education: University degree in Economics, Finance or Engineering; advanced degree preferred.

Work experience: University degree: eight years in the petroleum industry or in oil-related companies or institutions; advanced degree: six years.

Training specializations: Economic analysis; analysis of the financial performance of companies; analysis of company strategies; corporate planning; knowledge of oil companies' operations along the value chain.

Competencies: Communication skills; analytical skills; presentation skills; interpersonal skills; customer service orientation; initiative; integrity.

Language: English.

Status and benefits:

Members of the Secretariat are international employees whose responsibilities are not national but exclusively international. In carrying out their functions they have to demonstrate the personal qualities expected of international employees such as integrity, independence and impartiality.

The post is at grade E reporting to the Head of Energy Studies Department. The compensation package, including expatriate benefits, is commensurate with the level of the post.

Applications:

Applicants must be nationals of Member Countries of OPEC and should not be older than 58 years.

Applicants are requested to fill in a résumé and an application form which can be received from their Country's Governor for OPEC.

In order for applications to be considered, they must reach the OPEC Secretariat through the relevant Governor not later than **April 3, 2018,** quoting the job code: 5.3.03 *(see www.opec.org — Employment).*

Accountant

The Organization of the Petroleum Exporting Countries (OPEC) has a vacancy based in Vienna, Austria, for an Accountant in its Finance & Human Resources Department.

Main responsibilities:

- Checks and reviews the journal vouchers prepared for all transactions including the VAT coding and statement of discounted payments as necessary.
- Checks and monitors the general ledger entries including all account entries, cash disbursement register entries, fixed asset registers entries and all related entries.
- Carries out regular reviews and updates accounting information system, including updates of chart of account.
- Coordinates and prepares the Secretariat's annual preliminary and final draft budget and other reports on financial matters for the Board and Management including review of budget commitment and control.
- Checks and reviews all bank reconciliations.
- Checks and prepares mission settlements and all related expenses ie travelling expenses, prepayment of per diems; checks and prepares all payments of all staff's benefits; prepares financial statements.
- Prepares the information related to the statement of expenditure (for Management) and the statement of account (for Member Countries).
- Obtains interest quotations for the Secretariat's deposits, controls movement of deposits, and checks the interest computations including Provident Fund Accounts.
- Administrates cash flow and coordinates with banks to facilitate transfer of funds as required.
- Assists Finance Officer in planning and conducting all activities in the Section. Carries out any other tasks assigned by the relevant superiors as pertain to his/her background, qualifications and position.

Requirements:

University degree: Accounting/Finance; advanced degree preferred; work experience: eight years with university degree; six years with an advanced degree

Skills and knowledge:

Accounting (Managerial Accounting, Financial Accounting); Finance (Financial Management preferred); Cost & Benefits Analysis/Budgeting; Computer Accounting System; Analytical & presentation skills; Communication & Interpersonal skills; Customer service orientation; Initiative & integrity; Proficiency in written and spoken English .

Offer:

Commensurate remuneration package, ie monthly basic salary of (€4,969 x 12 per year), with tax-free benefits and six-week annual leave.

Applications:

Applicants should kindly complete the 'Application Form' which can be downloaded from our website (www.opec.org) and send it to: OPEC, Finance & Human Resources Department, Helferstorferstrasse 17, A-1010 Vienna, Austria; or email: recruitment@opec.org.

Online applicants should quote 'Job Code 9.2.02' in the 'Subject' field. An automatic reply will be sent to confirm the successful submission of the documents.

The deadline for receipt of applications is March 25, 2018. Acknowledgements will only be sent to short-listed candidates.

Senior Editing Assistant

The Organization of the Petroleum Exporting Countries (OPEC) has a vacancy based in Vienna, Austria, for a Senior Editing Assistant in its Energy Studies Department.

Main responsibilities:

- In close collaboration with the research staff of the Department, processes technical reports, including typing, drafting, proofreading/editing, formatting and finalizing text, preparing tables, graphics and flow charts and coordinating with other departments for presentation to meetings and/or dispatch to Member Countries.
- Services meetings, taking notes, preparing summaries and drafting the final report.
- Prepares presentations for in-house meetings and outside conferences.
- Maintains the Department's physical and electronic filing system of research reports.
- Retrieves data and information as required for the research programmes.
- Drafts correspondence and provides secretarial support to the research staff.
- As secretary to the WOO (World Oil Outlook) Core Group, coordinates meetings and all areas of preparation of the WOO.
- Carries out any other tasks assigned by the relevant superiors as pertain to his/her background, qualifications and position.

Requirements:

Vocational training; five years of work experience .

Skills and knowledge:

MS Office; typing; effective writing; effective reporting; communication & interpersonal skills; customer service orientation Initiative & integrity; proficiency in written and spoken English.

Offer:

Commensurate remuneration package, ie monthly basic salary of (€3,335 x 12 per year), with tax-free benefits and six-week annual leave.

Applications:

Applicants should kindly complete the 'Application Form' which can be downloaded from our website (www.opec.org) and send it to:
OPEC, Finance & Human Resources Department, Helferstorferstrasse 17, A-1010 Vienna, Austria; or email: recruitment@opec.org

Online applicants should quote 'Job Code 5.2.05' in the 'Subject' field. An automatic reply will be sent to confirm the successful submission of the documents.

The deadline for receipt of applications is March 25, 2018. Acknowledgements will only be sent to short-listed candidates.

Forthcoming events

Global smart energy summit, March 6–8, 2018, Dubai, UAE. Details: Informa Group PLC, 5 Howick Place, London SW1P 1WG, UK. Tel: +44 207 01 75 000; e-mail: headoffice@informa.com; website: www.middleeastelectricity.com/globalsmartenergysummit/en/home.html.

Saudi downstream forum, March 6–8, 2018, Yanbu Industrial City, Saudi Arabia. Details: BME Global Ltd, 8 Tyers Gate, London SE1 3HX, UK. Tel: +44 44 20 33 28 95 81; e-mail: james@bme-global.com; website: www.saudidownstream.com.

Central and Eastern European gas conference, March 7–8, 2018, Zagreb, Croatia. Details: dmg :: events, 6th floor, Northcliffe House, 2 Derry Street, London W8 5TT, UK. Tel: +44 20 3615 2873; fax: +44 20 3615 0679; e-mail: conferencemarketing@dmgevents.com; website: www.theceegas.com.

LPG Europe 2018, March 7–8, 2018, Lisbon, Portugal. Details: Active Communications International, 5–13 Great Suffolk Street, 4th Floor, London SE1 0NS, UK. Tel: +44 207 981 98 00; fax: +44 207 593 00 71; e-mail: claire@acieu.net; website: www.wplgroup.com/aci/event/lpg-europe-summit.

Asian refining summit, March 8–9, 2018, Singapore. 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/asia-pacific/asian-refining-summit/agenda.

FPSO roundtables, March 13, 2018, Singapore. 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: https://fpsoroundtables.iqpc.sg/?utm_medium=portal&mac=IQPCCORP.

SPE Canada heavy oil technical conference, March 13–14, 2018, Calgary, AB, Canada. Details: Society of Petroleum Engineers, PO Box 833836, Richardson, TX 75083-3836, USA. Tel: +1 972 952 393; fax: +1 972 952 9435; e-mail: spedal@spe.org; website: www.spe.org/events/en/2018/conference/18choc/homepage.html.

SPE Canada unconventional resources conference, March 13–14, 2018, Calgary, AB, Canada. Details: Society of Petroleum Engineers, PO Box 833836, Richardson, TX 75083-3836, USA. Tel: +1 972 952 393; fax: +1 972 952 9435; e-mail: spedal@spe.org; website: www.spe.org/events/en/2018/conference/18urc/home.html.

East Africa oil and gas summit and exhibition, March 14–16, 2018, Nairobi, Kenya. Details: dmg :: events, 6th floor, Northcliffe House, 2 Derry Street, London W8 5TT, UK. Tel: +44 20 3615 2873: fax: +44 20 3615 0679; e-mail: conferencemarketing@dmgevents.com; website: http://eaogs.com.

Energy transitions 2018, March 19–20, 2018, London, UK. Details: Chatham House, 10 St James's Square, London SW1Y 4LE, UK. Tel: +44 207 957 5700; fax: +44 207 957 5710; e-mail: contact@chathamhouse.org; website: www.chathamhouse.org/conferences/energy-transitions-2018.

2nd Papua New Guinea petroleum and energy summit, March 19–21, 2018, Port Moresby, Papua New Guinea. Details: CWC Associates Ltd, Regent House, Oyster Wharf, 16–18 Lombard Road, London SW11 3RF, UK. Tel: +44 207 978 000; fax: +44 207 978 0099; e-mail: sshelton@thecwcgroup.com; website: www.pngsummit.com.

16th world LNG and gas series 16th Americas summit, March 20–23, 2018, Houston, TX, USA. Details: CWC Associates Ltd, Regent House, Oyster Wharf, 16–18 Lombard Road, London SW11 3RF, UK. Tel: +44 207 978 000; fax: +44 207 978 0099; e-mail: sshelton@thecwcgroup.com; website: http://lngamericas.cwclng.com.

Offshore technology conference Asia, March 20–23, 2018, Kuala Lumpur, Malaysia. Details: Society of Petroleum Engineers, Suite B-11-11, Level 11, Block B, Plaza Mont'Kiara, Jalan Bukit Kiara, Mont'Kiara, 50480 Kuala Lumpur, Malaysia. Tel: +60 36201 2330; fax: +60 36201 3220; e-mail: spekl@spe.org; website: http://2018.otcasia.org/?_ga=2.185797673.1041044577.1508406485-725780394.1385559793.

18th annual Arctic oil and gas symposium, March 21–22, 2018, Calgary, AB, Canada. Details: The Canadian Institute, 1329 Bay Street, Toronto, ON M5R 2C4, Canada. Tel: +1 877 927 7936; fax: +1 877 927 1563; e-mail: CustomerService@CanadianInstitute.com; website: www.canadianinstitute.com/18th-annual-arctic-oil-gas-symposium.

Eastern Mediterranean gas conference, March 21–22, 2018, Nicosia, Cyprus. Details: Cvent, 11th Floor, On Euston Sq, 40 Melton Street, NW12FD London, UK. Website: www.cvent.com/events/eastern-mediterranean-gas-conference-2018/event-summary-23f9449dfa9442e1930a5291c82d410d.aspx.

European fuels markets and refining strategy conference, March 21–22, 2018, Venice, Italy. Details: Active Communications International, 5–13 Great Suffolk Street, 4th Floor, London SE1 0NS, UK. Tel: +44 207 981 98 00; fax: +44 207 593 00 71; e-mail: claire@acieu.net; website: www.wplgroup.com/aci/event/fuel-market-refining-strategy-conference.

SPE EOR conference and OGWA, March 25–28, 2018, Muscat, Oman. Details: Society of Petroleum Engineers, Dubai Knowledge Village, Block 17, Offices S07–S09, PO Box 502217, Dubai, UAE. Tel: +971 4 390 3540; fax: +971 4 366 4648; e-mail: spedub@spe.org; website: www.spe.org/events/en/2018/conference/18ogwa/homepage.html.

Oman oil and gas exhibition and conference, March 26–28, 2018, Muscat, Oman. Details: Omanexpo LLC, 1st Floor, SABCO Building, Wattayah Muscat, Sultanate of Oman. Tel: +968 24 66 01 24; fax: +968 24 66 01 25/126; e-mail: info@omanexpo.com; website: www.ogwaexpo.com.

Gasification 2018, March 28–29, 2018, Frankfurt, Germany. Details: Active Communications International, 5–13 Great Suffolk Street, 4th Floor, London SE1 0NS, UK. Tel: +44 207 981 98 00; fax: +44 207 593 00 71; e-mail: claire@acieu.net; website: www.wplgroup.com/aci/event/gasification.

Monetary policies and their impact on the oil market

January 2018

Central banks in major developed economies are expected to implement some monetary tightening in 2018. This is mainly due to the strong momentum in global economic growth which is expected to continue this year, as well as inflation expectations rising and the improving labour market in these economies.

Higher crude prices have supported headline inflation readings, although core inflation — which strips out energy and food prices — has generally remained moderate in developed economies. While inflation readings are expected to remain moderate in 2018 in the three largest developed economies, namely the US, the Euro-zone and Japan, central banks expect some improvements next year.

Indeed, robust gains in labour markets have pushed unemployment rates lower in 2017 — in some cases close to levels considered as full employment. This has only translated in modest wage growth so far, indicating that there is still some slack in the labour market, giving further room for keeping monetary policy accommodative, with a gradual approach towards normalization of monetary policy going forward.

As a result, median expectation by participants at the US Federal Reserve's policy setting meeting in December viewed an additional increase of 75 basis points (bps) in the target range of the Federal funds rate, the Feds key policy rate, in 2018 as appropriate. This is unchanged from their September estimations, in spite of expectations for a lower unemployment rate and faster economic growth this year. Embedded in that forecast is the potential boost from the recently approved tax reform legislation in the US, although significant uncertainty about that impact was noted during the meeting.

The Fed noted that inflation risks appear to be roughly balanced. Moreover, market-based measures of inflation compensation in US dollar show a low — though increasing — likelihood of above target inflation in the medium- and long-term. Taking all this into account, the Fed has been moving forward cautiously. Last year, a more moderate-than-previously expected pace of monetary tightening in the US generally translated into lower US dollar, which provided some flexibility for the central banks of emerging economies. Emerging economies are particularly sensitive to sudden upward shifts in interest rates expectations in the US, which would normally result in a tighter monetary policy to limit large currency depreciations and capital outflows, which could curtail oil demand growth in those economies.

Meanwhile, the likelihood for rate hikes in the Euro-zone remains subdued, with no rate hike expected before the European Central Bank (ECB) ends net asset purchases. However, recent ECB accounts showing some potential change to communication guidance has been interpreted as a shift towards a slightly less accommodative stance. This would likely result in some higher debt securities yields not only in the Euro-zone but also in other developed economies. Meanwhile, the head of the Bank of Japan (BoJ) recently highlighted the possibility that interest rates may be so low that they are unable to stimulate the economy any more. While the BoJ is likely to remain committed to monetary stimulus, but it could slow the pace of its asset purchases.

Petroleum producers funding hasn't been significantly affected by the expected monetary tightening in 2018. Some increase in borrowing cost could be expected for petroleum companies which have enjoyed historically low borrowing costs in recent years. Therefore, the increased tightening in monetary policy is not likely to have a considerable impact on the oil market, particularly in an environment of improving economic growth.

MOMR … oil market highlights

January 2018

The **OPEC Reference Basket (ORB)** averaged $62.06/barrel in December, its highest since June 2015. On the yearly basis, the ORB averaged $52.43/b, a gain of 29 per cent or $11.67/b over the previous year. Oil prices received wide-ranging support from production adjustment resulting from the Declaration of Cooperation (DoC), strong economic and demand growth, as well as sentiment in the financial markets. ICE Brent increased $1.23 at $64.09/b, while NYMEX WTI increased $1.28 at $57.95/b. The spread between ICE Brent and NYMEX WTI spread narrowed slightly to $6.15/b in December. The Brent, WTI and Dubai market structure held backwardation. Sweet/sour differentials widened in Europe and Asia, and narrowed in the US Gulf Coast.

The **global GDP growth** forecast remains at 3.7 per cent for both 2017 and 2018. US growth was revised up in 2018 to 2.6 per cent, after growth of 2.3 per cent in 2017. Growth in the Euro-zone was lifted to 2.4 per cent in 2017, followed by 2.1 per cent in 2018. Similarly, Japan's growth was lifted in both 2017 and 2018 to now stand at 1.8 per cent and 1.6 per cent, respectively. India's somewhat softening momentum led to a slight downward revision to 7.2 per cent in 2018, after growth of 6.5 per cent in 2017. China's growth is expected to remain at 6.8 per cent in 2017 and 6.5 per cent in 2018.

Global oil demand growth in 2017 was revised upward by 40,000 b/d to stand at 1.57m b/d, averaging 96.99m b/d for 2017. The upward revision was broadly a result of better-than-expected data for OECD Europe and China. For 2018, oil demand growth is anticipated to be around 1.53m b/d, following a marginal upward adjustment compared to last month's report, with global oil demand now expected to reach 98.51m b/d. Non-OECD economies will contribute 1.24m b/d of the demand growth expected in 2018.

Non-OPEC **oil supply** growth in 2017 has been revised marginally lower to now stand at 770,000 b/d. The adjustments were mostly due to revisions in the actual data for 4Q17. For 2018, non-OPEC supply growth was revised up by 160,000 b/d to now stand at 1.15m b/d, driven by mostly higher growth expectations for the US and Canada. OPEC NGLs are also expected to grow by 180,000 b/d in 2018, compared to 170,000 b/d growth in the previous year. OPEC production in December, according to secondary sources, is expected to increase by 42,000 b/d to average 32.42m b/d.

Product markets in the Atlantic Basin continued to lose ground as refining margins narrowed further. In the US market, losses could be attributed to a weakening in the top and middle of the barrels, which offset gains in the diesel complex, driven by the impact of winter storms on domestic demand. In Europe, product market plummeted with losses seen across the barrel as refinery margins hit a 16-month low due to rising crude prices and supply-side pressure. In Asia, product markets remained at healthy levels amid firm domestic demand.

Dirty **tanker** spot freight rates in general did not show considerable gains in December. Average dirty tanker spot freight rates was almost stable from the previous month. VLCC freight rates declined during the month as earnings dropped on the back of high vessels availability. Meanwhile, tonnage demand remained limited in December and transit delays saw a decline, supported by high tonnage availability. Clean tanker spot freight rates strengthened West of Suez as a result of a tightening in vessel supply, mainly in the Mediterranean.

Total OECD commercial **oil stocks** fell in November to stand at 2,933m b. At this level, OECD commercial oil stocks are about 133m b above the latest five-year average. Crude and product stocks indicate a surplus of around 114m b and 19m b above their seasonal norms, respectively. In terms of days of forward cover, OECD commercial stocks stand at 61.8 days in November, some 1.9 days higher than the latest five-year average.

OPEC crude in 2017 is estimated at 32.9m b/d, which is 600,000 b/d higher than 2016. In 2018, OPEC crude is projected at 33.1m b/d, about 200,000 b/d higher than in the previous year.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for January 2018. 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.

Review of recent global oil demand trends

February 2018

World oil demand growth exceeded 1.40 million barrels/day for the third consecutive year to register an increase of 1.6m b/d in 2017. Total global demand is now near the 97.0m b/d threshold. Cumulatively, between 2015 and 2017, the world has added around 5m b/d of demand for oil products on the back of healthy economic conditions globally and a relatively steady product price environment.

OECD Americas' oil demand grew by a healthy 230,000 b/d in 2017, driven by the solid economic momentum which supported light and middle distillate consumption.

In OECD Europe and Asia Pacific, following stable growth in the past two years, oil demand remained in positive territory in 2017, collectively rising by 230,000 b/d. Improvements in the economy, healthy petrochemical and transportation sectors, and colder than normal temperatures earlier in the year lent support to oil demand growth.

In non-OECD, China's oil demand growth was robust in 2017, increasing by nearly 500,000 b/d as the petrochemical and the transportation sectors continued to expand at a healthy pace.

Oil demand growth in Other Asia — primarily India — increased by 230,000 b/d, this is despite slower-than-expected oil demand growth from India in 1Q17, post demonetization. Meanwhile, Latin America and Middle East oil demand growth flipped into positive territory in 2017, with the two regions adding a combined 130,000 b/d, on the back of an uptick in economic conditions in Brazil, along with firm growth in some countries in Middle East.

For 2018, the major assumptions accounted for in the oil demand forecast include: a steady rise in global economic activities, which are projected to increase by 3.8 per cent y-o-y; transportation fuels — namely gasoline, jet fuel and diesel oil — are anticipated to provide the bulk of growth in 2018, propelled by steady vehicle sales in the US, China and India; and capacity additions, as well as expansions in petrochemical sector projects, which are expected to provide support to light distillates requirements, mainly in the US, and to a lesser extent in China.

Conversely, oil demand is assumed to be limited by a number of factors, namely: the level of substitution with other fuels in OECD Americas, Asia Pacific, and the Middle East; a steady increase in efficiency gains, and a reduction in subsidies, which are anticipated to reduce oil demand in the Middle East, but mitigated by higher household income. Finally, the degree of digitalization and technological development in various sectors is also expected to relatively cap oil demand growth in 2018.

As a result, oil demand in 2018 is projected to grow by 1.59m b/d, broadly to reach 98.6m b/d. The OECD is foreseen to rise by around 320,000 b/d, with OECD Americas and Europe being firmly in the positive, while OECD Asia Pacific is anticipated to decline. In the non-OECD region, growth is forecast at 1.26m b/d, with China being the major contributing country to overall growth, followed by Other Asia, including India.

Recently, healthy and steady economic development in major global oil demand centres was the key driver behind strong oil demand growth. This close linkage between economic growth and oil demand is foreseen to continue, at least for the short term.

MOMR … oil market highlights

February 2018

The **OPEC Reference Basket (ORB)** increased for the fifth-straight month in January, gaining a sharp 7.7 per cent to average $66.85/barrel, the highest monthly average since November 2014. Oil prices were supported by continuing efforts by OPEC and participating non-OPEC producers to balance the market and ten consecutive weeks of crude inventory draws amid healthy economic growth and improving oil demand.

ICE Brent was $4.99 higher at $69.08/b in January, while NYMEX WTI surged $5.71 to $63.66/b. The ICE Brent/NYMEX WTI spread narrowed 73¢ to $5.42/b. Hedge funds raised net long positions in ICE Brent and NYMEX WTI to 1.08 million contracts, a new all-time high record. The market structures for Brent, WTI and Dubai are in sustained backwardation. In the first week of February, crude oil futures lost around $6/b from the end of January amid an overall decline in equity markets and a slide in the US dollar, as well as stronger-than-expected US supply and a build in US inventories.

The **global GDP growth** forecast was revised up by 0.1 percentage points to 3.8 per cent for both 2017 and 2018, mainly supported by advanced economies. US growth was revised up in 2018 to 2.7 per cent, after growth of 2.3 per cent in 2017. Growth in the Eurozone was lifted to 2.5 per cent in 2017 and 2.2 per cent in 2018. Japan's growth forecast remains unchanged in both 2017 and 2018 at 1.8 per cent and 1.6 per cent, respectively. While China's 2017 growth was better than expected at 6.9 per cent, the 2018 growth forecast remains unchanged at 6.5 per cent. Also, India's GDP growth forecast remains unchanged at 7.2 per cent in 2018, after growth of 6.5 per cent in 2017.

World oil demand growth in 2017 is estimated to increase by 1.60m b/d, representing an upward adjustment of some 30,000 b/d compared to last month's projections, mainly to reflect the continuing better-than-expected data in OECD Europe in 3Q17. Total world oil demand stood at 97.01m b/d in 2017. In 2018, world oil demand is foreseen to reach 98.60m b/d, representing growth of 1.59m b/d, 60,000 b/d higher than the previous month's projections and mainly reflecting the positive economic outlook.

Non-OPEC supply in 2017 was revised up by 70,000 b/d, mainly due to an upward revision in the OECD, to average 57.86m b/d, representing growth of 860,000 b/d. For 2018, non-OPEC supply forecast was revised up by 320,000 b/d, to average 59.26m b/d, representing growth of 1.40m b/d, which was also revised up by 250,000 b/d. Expectations for higher production in the US, UK and Brazil, as well as lesser declines in Mexico and China were the main reasons behind the upward adjustment. OPEC NGLs and nonconventional liquids' production averaged 6.31m b/d in 2017, up by 170,000 b/d y-o-y. OPEC NGLs are expected to grow by 180,000 b/d to average 6.49m b/d in 2018. In January 2018, OPEC crude oil production decreased by 8,000 b/d, according to secondary sources, to average 32.30m b/d.

Product markets in the Atlantic Basin showed mixed performance in January as refining margins in the US turned around from the declining trend recorded in the previous month, showing some gains, mainly at the top of the barrel supported by cold weather-related refinery outages. Meanwhile, in Europe, product markets lost some ground with weakening seen at the bottom of the barrel due to supply-side pressure. In Asia, product markets weakened, with losses seen all across the barrel, except for the middle distillate complex, pressured by slower seasonal demand. Due to higher scheduled maintenance in February, product markets in the USGC are expected to receive some support on the back of lower product supplies.

Dirty **tanker spot freight rates** experienced a general downward trend in January, which affected vessels of different classes on all reported routes. VLCC, Suezmax and Aframax average spot freight rates declined by 17 per cent, 31 per cent and 13 per cent m-o-m, respectively. The decline was driven by low tonnage demand, limited inquiries and port maintenance as well as a prolonged tonnage list. Similarly, clean tanker spot freight rates were weak, mainly as fixtures to eastern destinations showed lower rates than in the previous month.

Total **OECD commercial oil stocks** fell in December to stand at 2,888m b. At this level, OECD commercial stocks were 109m b above the latest five-year average. Crude and products stocks indicated a surplus of around 100m b and 9m b above the seasonal norm, respectively. In line with the existing overhang, the market is only expected to return to balance towards the end of this year. In terms of days of forward cover, OECD commercial stocks stood at 61.0 days in December, some 1.1 days higher than the latest five-year average.

Demand for OPEC crude in 2017 is estimated to stand at 32.8m b/d, some 600,000 b/d higher than the 2016 level. In 2018, demand for OPEC crude is forecast at 32.9m b/d, slightly higher than the 2017 level.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for February 2018. 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 spot crude prices $/b

Crude/Member Country	2017 Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	2018 Jan	Weeks 1–5/2018 (week ending) Jan 5	Jan 12	Jan 19	Jan 26	Feb 2
Arab Light – Saudi Arabia	52.29	53.63	50.68	51.64	49.30	45.21	47.12	49.63	53.29	55.73	61.08	62.50	67.42	65.99	67.27	67.84	68.20	67.66
Basrah Light – Iraq	51.66	52.66	49.82	50.75	48.56	44.55	46.43	49.26	53.03	55.02	60.21	61.44	66.11	64.76	66.12	66.48	66.89	65.95
Bonny Light – Nigeria	54.98	55.24	51.91	53.02	50.77	46.92	48.66	51.69	56.55	57.97	63.29	64.64	69.92	68.73	70.41	70.14	70.77	68.89
Es Sider – Libya	53.08	53.46	50.00	51.04	48.90	44.87	46.96	50.31	55.07	56.48	61.58	63.09	68.23	67.04	68.72	68.45	69.08	67.22
Girassol – Angola	54.41	55.21	51.89	52.68	50.36	46.46	48.75	52.31	56.83	57.88	62.97	64.97	69.77	68.69	70.30	69.91	70.54	68.86
Iran Heavy – IR Iran	51.90	53.16	50.27	51.12	49.00	44.62	46.01	48.70	52.27	54.29	59.27	60.87	65.85	64.38	65.62	66.22	66.69	66.10
Kuwait Export – Kuwait	51.48	52.85	49.87	50.81	48.65	44.37	46.19	48.70	52.23	54.50	59.58	60.94	65.74	64.30	65.56	66.15	66.51	65.95
Marine – Qatar	53.44	54.14	50.89	52.39	50.24	46.26	47.45	49.71	52.91	55.14	60.47	61.54	66.36	64.88	66.24	66.88	67.00	66.81
Merey – Venezuela	46.81	47.03	44.14	46.15	45.16	42.49	43.41	45.38	49.13	50.70	55.86	56.04	59.14	58.42	58.74	59.13	59.80	60.07
Murban – UAE	55.97	56.31	52.96	54.32	51.96	47.86	49.02	51.51	54.94	57.39	62.76	63.84	68.81	67.08	68.50	69.32	69.70	69.32
Oriente – Ecuador	48.64	50.08	46.83	48.70	46.91	43.11	45.21	47.45	51.30	53.77	59.23	59.66	63.53	62.11	63.78	64.24	64.09	63.29
Rabi Light – Gabon*	53.13	54.04	50.63	51.71	49.48	45.45	47.54	50.69	55.10	56.31	61.66	63.17	68.16	66.97	68.65	68.38	69.01	67.11
Saharan Blend – Algeria	54.84	55.06	51.40	51.84	49.80	46.07	47.96	51.31	56.32	57.88	63.23	64.74	69.93	68.74	70.42	70.15	70.78	68.90
Zafiro – Equatorial Guinea*	53.80	54.75	51.73	51.98	49.96	45.92	48.19	51.67	56.57	57.73	62.75	64.34	69.23	68.14	69.82	69.47	69.98	68.08
OPEC Reference Basket	**52.40**	**53.37**	**50.32**	**51.37**	**49.20**	**45.21**	**46.93**	**49.60**	**53.44**	**55.50**	**60.74**	**62.06**	**66.85**	**65.49**	**66.81**	**67.21**	**67.64**	**66.89**

Table 2: Selected spot crude prices $/b

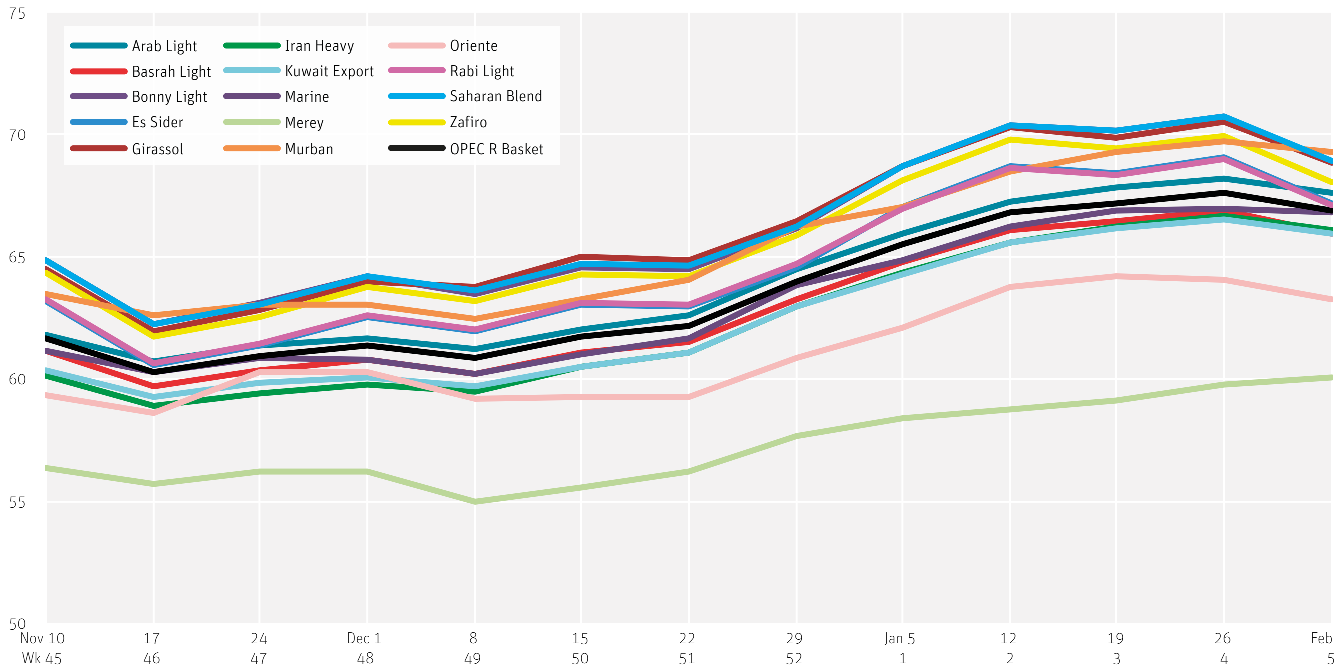
Crude/country	2017 Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	2018 Jan	Weeks 1–5/2018 (week ending) Jan 5	Jan 12	Jan 19	Jan 26	Feb 2
Arab Heavy – Saudi Arabia	50.56	51.97	48.86	49.97	47.92	43.64	45.76	48.55	51.78	53.99	59.03	60.47	65.24	63.81	65.00	65.62	66.01	65.56
Brega – Libya	54.43	54.86	51.40	52.19	49.85	45.77	47.61	50.76	55.34	56.78	61.99	63.54	68.68	67.49	69.17	68.90	69.53	67.73
Brent Dtd – North Sea	54.58	55.06	51.60	52.59	50.45	46.42	48.51	51.66	56.07	57.28	62.63	64.14	69.13	67.94	69.62	69.35	69.98	68.08
Dubai – UAE	53.71	54.41	51.21	52.31	50.47	46.38	47.59	50.24	53.51	55.63	60.81	61.61	66.15	64.71	65.87	66.53	66.93	66.59
Ekofisk – North Sea	54.62	55.17	51.50	52.57	50.43	46.40	48.63	52.30	57.15	57.85	63.28	64.98	69.99	68.81	70.63	70.40	70.83	68.43
Iran Light – IR Iran	52.35	52.35	49.13	50.04	47.34	43.85	47.03	50.85	54.45	56.25	62.12	63.37	68.32	67.57	69.26	68.81	68.60	66.32
Isthmus – Mexico	54.98	56.09	52.26	53.81	51.85	48.21	50.75	52.92	55.20	56.08	61.35	62.57	67.57	65.87	67.62	68.04	68.57	67.75
Oman – Oman	54.01	55.12	51.71	52.82	50.57	46.50	47.63	50.37	53.95	55.63	60.84	61.63	66.42	64.99	66.22	66.82	67.18	66.79
Suez Mix – Egypt	51.72	51.97	48.24	49.71	47.31	43.82	46.12	49.59	53.19	55.11	60.83	62.04	66.99	66.24	67.93	67.48	67.27	64.99
Minas – Indonesia*	50.63	51.19	48.35	47.95	45.96	42.65	43.96	45.91	49.20	50.55	55.50	56.95	60.91	60.04	60.96	61.07	61.40	60.91
Urals – Russia	53.42	53.67	49.94	51.55	49.04	45.52	47.82	51.30	54.89	56.81	62.53	63.75	68.69	67.94	69.63	69.18	68.97	66.69
WTI – North America	52.50	53.40	49.58	51.06	48.56	45.17	46.67	48.03	49.71	51.57	56.67	57.94	63.70	61.36	63.27	63.86	65.10	65.21

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. From January 2009–December 2015, the ORB excludes Minas (Indonesia). As of July 2016, the ORB includes Rabi Light (Gabon).

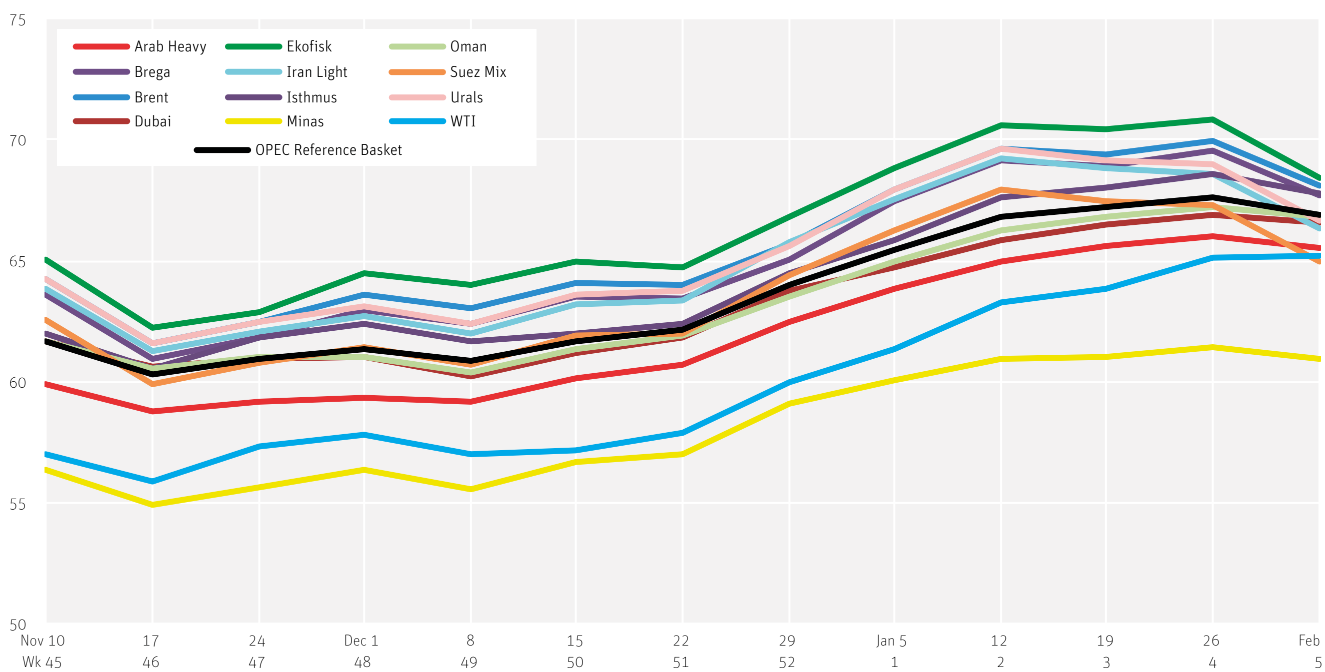
* *Indonesia joined in 1962, suspended its Membership on December 31, 2008, reactivated it again on January 1, 2016, but suspended its Membership again on December 31, 2016. Gabon joined in 1975 and left in 1995; it reactivated its Membership on July 1, 2016. Equatorial Guinea joined on May 25, 2017.*

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; as of January 1, 2016, Argus; Secretariat's assessments.

Graph 1: Evolution of the OPEC Reference Basket spot crude prices, 2017–18 $/b



Graph 2: Evolution of selected spot crude prices, 2017–18 $/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).
Indonesia suspended its OPEC Membership on December 31, 2008, this was reactivated from January 1, 2016, but suspended again on December 31, 2016.

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
2017	January	55.06	73.82	65.60	65.05	50.60	43.03
	February	54.82	75.66	66.35	66.13	49.73	43.13
	March	50.70	70.06	62.29	62.21	44.86	39.94
	April	51.54	75.36	64.21	64.11	46.95	41.71
	May	48.43	72.61	61.13	61.11	46.26	40.64
	June	44.69	69.62	57.81	57.06	43.95	39.68
	July	47.29	70.31	61.17	60.90	45.03	42.23
	August	51.00	75.17	65.71	64.70	46.64	44.06
	September	55.76	79.57	70.72	71.33	49.82	47.00
	October	57.45	76.10	71.36	71.69	50.61	47.35
	November	63.44	82.88	78.12	75.35	55.64	51.68
	December	63.79	80.40	77.64	76.56	54.46	51.21
2018	January	65.48	85.60	83.10	82.15	57.65	54.41

Note: Prices of premium gasoline and diesel from January 1, 2008, are with 10 ppm sulphur content.

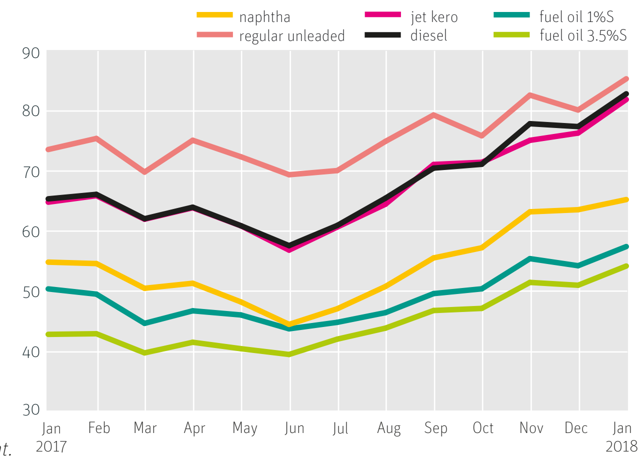


Table and Graph 4: South European market — spot cargoes, fob Italy $/b

		naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1 per cent S	fuel oil 3.5 per cent S
2017	January	54.21	66.95	66.54	52.19	45.77
	February	54.46	68.26	67.52	50.41	45.75
	March	49.55	62.59	63.15	46.24	42.34
	April	50.67	67.89	65.24	48.03	43.95
	May	47.31	63.74	62.28	47.10	42.85
	June	43.57	59.92	58.01	45.56	42.13
	July	46.31	61.17	62.06	45.35	43.60
	August	50.46	66.85	65.54	46.70	44.94
	September	54.97	71.24	71.77	49.97	48.10
	October	56.67	68.30	72.03	51.51	48.88
	November	62.85	72.97	76.17	56.06	53.14
	December	62.72	72.85	77.24	55.51	52.65
2018	January	64.29	78.36	82.91	59.24	55.94

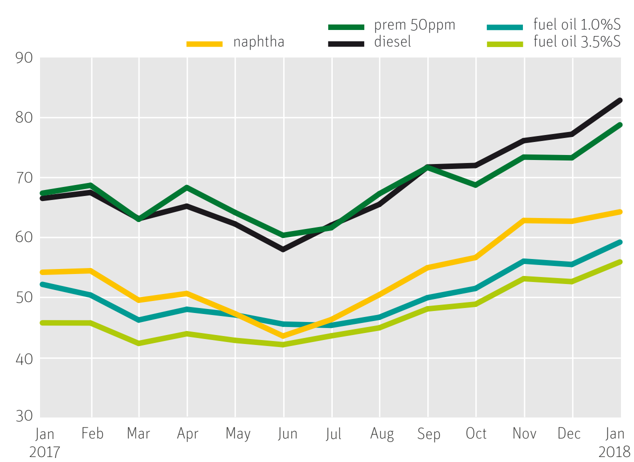


Table and Graph 5: US East Coast market — spot cargoes, New York $/b, duties and fees included

		regular gasoline unleaded 87	gasoil*	jet kero*	fuel oil 0.3 per cent S	fuel oil 3.0 per cent S
2017	January	67.54	64.13	65.12	59.23	48.51
	February	64.75	64.43	67.20	59.44	47.74
	March	62.83	60.48	62.20	53.62	44.19
	April	67.65	61.79	64.80	55.17	45.96
	May	64.47	59.10	60.71	52.99	43.94
	June	60.62	54.86	56.52	50.63	41.98
	July	65.78	58.03	62.55	53.78	45.17
	August	70.86	61.59	69.45	53.97	46.26
	September	77.64	68.78	76.57	58.56	48.81
	October	71.96	68.26	71.93	59.19	50.31
	November	77.29	75.33	77.53	64.25	55.65
	December	73.63	77.66	81.35	63.83	54.69
2018	January	80.00	83.24	85.59	70.96	58.29

* *FOB barge spot prices.*

Source: Platts. As of January 1, 2016, Argus. Prices are average of available days.

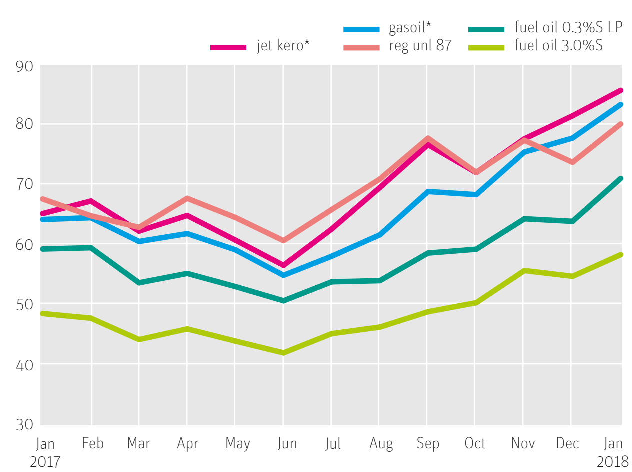


Table and Graph 6: Singapore market — spot cargoes, fob $/b

		naphtha	premium gasoline unl 95	premium gasoline unl 92	gasoil	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2017	January	55.71	69.47	66.77	65.15	65.17	55.05	50.47
	February	56.58	69.90	67.54	66.76	66.26	54.59	49.07
	March	50.82	64.28	61.94	62.94	61.93	50.74	45.64
	April	52.31	67.66	64.81	64.68	63.88	52.47	47.34
	May	48.71	64.40	61.68	61.19	60.82	51.58	46.01
	June	44.94	59.78	57.41	57.54	57.03	50.17	44.60
	July	45.92	61.76	59.02	61.05	59.77	50.45	45.58
	August	50.58	67.51	64.70	63.51	63.11	51.91	47.08
	September	55.20	70.43	67.55	68.49	68.08	55.73	50.55
	October	57.79	70.04	67.37	68.61	68.36	57.07	51.72
	November	64.67	75.59	73.07	73.14	74.02	62.02	56.67
	December	65.21	75.32	73.26	75.27	75.45	62.10	56.20
2018	January	66.26	78.61	76.65	80.78	81.00	64.40	58.85

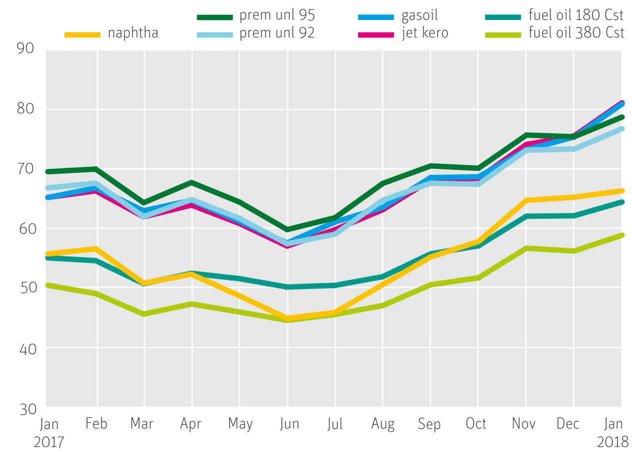
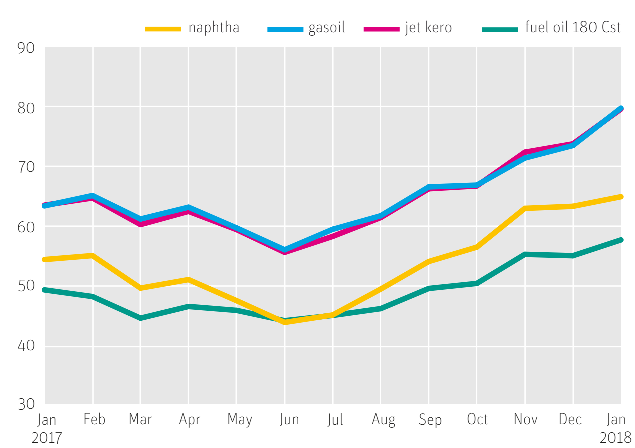


Table and Graph 7: Middle East Gulf market — spot cargoes, fob $/b

		naphtha	gasoil	jet kero	fuel oil 180 Cst
2017	January	54.42	63.38	63.50	49.35
	February	55.08	65.11	64.70	48.24
	March	49.65	61.19	60.26	44.63
	April	51.07	63.16	62.46	46.58
	May	47.55	59.70	59.42	45.93
	June	43.92	56.05	55.62	44.21
	July	45.16	59.47	58.28	45.09
	August	49.48	61.73	61.43	46.22
	September	54.09	66.55	66.24	49.59
	October	56.49	66.85	66.71	50.43
	November	62.97	71.37	72.35	55.29
	December	63.31	73.46	73.74	55.06
2018	January	64.91	79.71	79.55	57.70

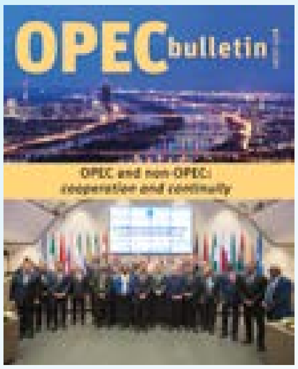
Source: Platts. As of January 1, 2016, Argus. Prices are average of available days.



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)

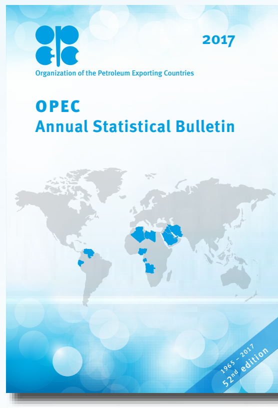


December 2017/ January 2018

November 2017

October 2017

Annual Statistical Bulletin 2017

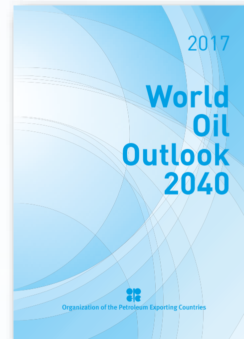


144-page book. A USB is also available (for Microsoft Windows only) which contains all the data in the book and much more.

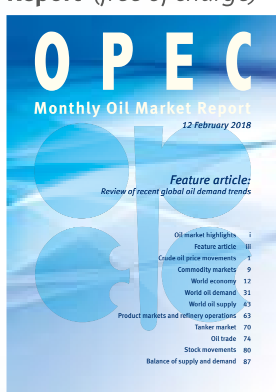
- Easy to install and display
- East to manipulate and query

Interactive version available at http://asb.opec.org/

World Oil Outlook 2017
(free of charge)

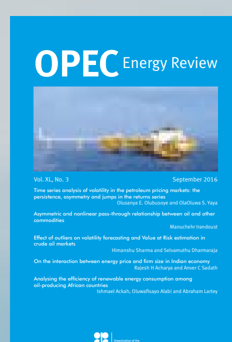


OPEC Monthly Oil Market Report *(free of charge)*



- Crude oil and product prices analysis
- Member Country output figures
- Stocks and supply/ demand analysis

Annual Report 2016
(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 2015:

	Institutional			Personal
	Print	Online	Print & online	Print & online
Europe €	615	615	738	182
UK £	485	485	582	123
Americas $	814	814	977	203
Rest of world $	949	949	1,139	£123

Canadian residents, please add five per cent for GST.

Orders and enquiries:
John Wiley & Sons, 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