

# OPEC bulletin <sup>4/18</sup>



16<sup>th</sup> IEF Ministerial in India  
4<sup>th</sup> Iraq Energy Forum



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# Proud history; bright future

Baku, Azerbaijan; Digboi, Assam State, India; Baghdad, Iraq.

At first glance, it is not obvious what links these three distinct places that were the destinations of three OPEC missions over the last month. Digging into their history, however, it becomes clear that each destination constitutes a place of monumental significance in the journey of oil. In fact, if one wanted a brief synopsis of the industry's history, studying these three places would provide it, as well as offering a prognosis for oil's future trajectory.

Baku is a city synonymous with oil. The Arabian historian, Ahmed Al-Belaruri, writing in the 9<sup>th</sup> century, noted the reliance of the Absheron region on oil in ancient times, while Abu-Ishag Istekhri (10<sup>th</sup>–11<sup>th</sup> centuries) and Abu-d-Gasan Ali Masudi (10<sup>th</sup> century) also wrote of oil usage in the Baku region. In 1847–48, oil was first extracted from wells in Bibieybat and later Balakhany for industrial purposes. From the industry's earliest days, Baku has played a crucial role in its development.

Given its unique status in the history of oil, Azerbaijan has a very special role to play in the fortunes of the industry in the 21<sup>st</sup> century. The country has fulfilled its responsibilities as a producer admirably, joining the 'Declaration of Cooperation' on December 10, 2016. Azerbaijan has consistently had one of the highest rates of conformity with the voluntary production adjustments. Moreover, OPEC's relations with Azerbaijan are currently at an all-time high. This was the propitious backdrop to the Secretary General, Mohammad Sanusi Barkindo's Mission to Azerbaijan in March.

Scholars of the history of oil will be familiar with the fabled town of Digboi, in Tinsukia district in the north-eastern part of the state of Assam, India. In the midst of dense jungle, a hotbed for malaria, in the 19<sup>th</sup> century, oil was accidentally discovered by a team of engineers working for the Assam Railways and Trading Company. According to legend, English engineer, W L Lake, saw oil on the feet of elephants emerging from the jungle and shouted, "Dig boy, dig," hence the town's name. This name alone is evocative of the excitement, as well as the bravery, of those involved in the early days of oil discovery.

Digboi Refinery is India's oldest operating refinery, and is also one of the oldest in the world. The historic refinery has been termed the 'Gangotri of the Indian hydrocarbon sector.' Little wonder then, that OPEC's Secretary General described his visit there as a "pilgrimage" and a "dream

fulfilled." The visit was part of a mission that involved bilateral meetings with Dharmendra Pradhan, India's Minister for Petroleum and Natural Gas and the Minister for Skill Development and Entrepreneurship; and participation at the 16<sup>th</sup> IEF Ministerial Meeting and the Meeting of the Heads of JODI partner organizations.

Approximately 100 years after the discovery of oil in Digboi, another event occurred that would change the course of the industry and, indeed, history. On September 14, 1960, at the Al-Shaab Hall in Bab Al-Muadham, Baghdad, OPEC was founded. When a delegation from the OPEC Secretariat visited Iraq in March 2018 to meet leading Iraqi dignitaries and participate at the 4<sup>th</sup> Iraq Energy Forum, they also had the opportunity to make a pilgrimage to OPEC's birthplace.

OPEC's subsequent history has been well traversed, especially in the pages of this publication. The almost 58 years since that momentous day in Iraq has seen change on a tremendous scale; however, one thing remained constant: OPEC's unwavering commitment to market stability in the interests of producers, consumers and the global economy alike.

The modern manifestation of this commitment is the historic 'Declaration of Cooperation.' The age-old principles at the heart of the Organization have been extended to forge an alliance with ten other non-OPEC oil producing countries, in order to fulfil the inherent responsibilities which come with being an oil producer. The initial prognosis of some industry commentators when the 'Declaration of Cooperation' first came into being in December 2016 was not promising. They did not think the cooperation would get off the ground, endure or have an impact on the market.

However, the actions of participating OPEC and non-OPEC countries have proven the doomsayers wrong. Current conditions in the market reflect the transformative impact the 'Declaration of Cooperation' has had on the global oil industry: market fundamentals are strong, conformity with the voluntary production adjustments is high, international cooperation is working and future prospects for the industry are much brighter.

From Baku-to-Digboi-to-Baghdad: an oil industry journey in three locations. And while all who work in the industry can be proud of petroleum's role in fueling modern civilization, the spirit of the 'Declaration of Cooperation' has shown that this is an industry that has its best days ahead of it.





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Cover

This month’s cover shows the opening of the IEF 16<sup>th</sup> Ministerial Meeting, held in April in New Delhi, India (see story on p4–23).

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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.



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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.

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# IEF 16<sup>th</sup> Ministerial Meeting addresses tough issues

*High-level attendees at the 16<sup>th</sup> Ministerial Meeting of the International Energy Forum (IEF) addressed challenges facing all consumers and producers around the world today: ‘The future of global energy security: transition, technology, trade and investment.’ The OPEC Bulletin’s Maureen MacNeill reports.*



*Addressing the opening session: Shri Narendra Modi (second r), Indian Prime Minister; Khalid A Al-Falih (r), Minister of Energy, Industry and Mineral Resources of Saudi Arabia; Dharmendra Pradhan (second l), India's Minister for Petroleum and Natural Gas and Minister for Skill Development and Entrepreneurship; and Dr Sun Xiansheng (l), Secretary General of the International Energy Forum.*



*Shri Narendra Modi, Indian Prime Minister.*

*Suhail Mohamed Al Mazrouei, the United Arab Emirates Minister of Energy & Industry, and President of the OPEC Conference.*

### Ideal location

The biennial IEF Ministerial Meeting was appropriately held in India — one of the world’s energy power-houses and a future source of energy growth consumption — from April 10–12, 2018. The government of India hosted more than 90 delegations, including 50 energy ministers, 30 CEOs, 12 heads of international organizations and over 500 guests.

“The IEF has done a tremendous job advancing producer-consumer dialogue, and also developing an optimal energy transition blueprint,” said Khalid A Al-Falih, Minister of Energy, Industry and Mineral Resources of Saudi Arabia, during the inaugural session. “Dialogue is even more important because of the uncertainties in the energy markets.

“The world will need all energy sources for a long time, including oil and gas ... We need to take a holistic view ... This is the way to a successful





L–r: Christof Rühl, Global Head of Research, Abu Dhabi Investment Authority; Suhail Mohamed Al Mazrouei, United Arab Emirates Minister of Energy and Industry and President of the OPEC Conference; Ingvil Smines Tybring-Gjedde, Deputy Minister of Petroleum and Energy, Norway; Dr Sun Xiansheng, Secretary General, IEF.

transformation.” He added that although oil demand is rising by 1.5 million barrels/day, adequate levels of oil investments have not kept pace.

Indian Prime Minister Shri Narendra Modi opened the event to a rapturous reception. The Prime Minister shared his energy vision, which comprises the four pillars of energy access, energy efficiency, energy sustainability and energy security. He also called for a global consensus on ‘responsible pricing.’

Dharmendra Pradhan, India’s Minister for Petroleum and Natural Gas and Minister for Skill Development and Entrepreneurship, added in his remarks that his country is looking for clean, affordable, sustainable energy, to “transform common lives in India.”

Dr Sun Xiansheng, Secretary General of the International Energy Forum (IEF), said the energy transition “won’t happen overnight”, and that long-term discussions on the impact of energy poverty are necessary.

### Plenary 1: Global shifts: The future of global energy security — finding new balances

OPEC Secretary General, Mohammad Sanusi Barkindo,

made a scene-setting statement, along with Fatih Birol, Executive Director, International Energy Agency; Li Fanrong, Deputy Administrator, National Energy Administration, China; and Mark Wesley Menezes, US Under Secretary of State.

Birol said that peak oil demand is not in sight and that last year record demand growth was driven by trucks and petrochemicals. “Our main worry is whether there will be enough investment to meet oil demand growth ... We must be very careful that we don’t see trouble by 2020.” He added that a major change on the energy landscape is the declining cost of renewables.

Barkindo provided an overview of OPEC’s views on energy security, emphasizing that market stability is a cornerstone for energy security. He told participants that the ‘Declaration of Cooperation’, signed by 24 OPEC and non-OPEC countries on December 10, 2016, demonstrates the effectiveness of cooperation among producing countries. The high levels of conformity by participating countries with the voluntary adjustments in production continue to have a transformative impact on the global oil market. “The equally important *second phase* of our efforts includes *institutionalization* of this cooperative process into a *broader framework* and *ensuring continuity*.”



Fanrong said that energy security is a common challenge for all, which requires international cooperation, along with technology and innovation. At the same time, China has a “beautiful China policy” which promotes green efforts, including a decrease in coal consumption. The country has also seen the largest increase in fossil fuel demand in history, with a rise of 60 per cent since 2012.

Menezes talked about the remarkable shift in US energy policy, with innovation and progress leading to abundant and affordable energy. He added that the country is on course to become the world’s largest producer of both oil and natural gas, while also developing its coal exports and seeking to export nuclear technology to stable countries. Despite tremendous economic growth between 2005 and 2017, carbon emissions in the US dropped by 14 per cent in that period, he added. “Countries don’t have to choose between having economic growth and supporting the environment. Innovation can do both. We will embrace innovation over regulation.”

Other participants stated that the energy shift is likely to happen in an evolutionary rather than revolutionary way, all energy forms are needed and investment is crucial to keep pace with growing demand. Investment must be augmented by policies, particularly regarding oil and gas, so the world’s GDP growth can be secured. There was a call from speakers to address the needs of developing nations in terms of mitigating price volatility, which presents a major challenge.

Barkindo said in a closing statement that “it is important to say that this is a massive energy transformation. Nobody is isolated from the impact of the forces of this transition.”

## **Plenary 2: Sustainable and inclusive growth — energy access and affordability**

During his scene setting statements Suleiman J Al-Herbish, Director-General of OFID, highlighted that



*Mohammad Sanusi Barkindo, OPEC Secretary General.*

OFID’s strategy to address the challenges of access to affordable energy relies on three key pillars: advocacy, operations on the ground, and partnerships.

At the advocacy level, Al-Herbish said that “we are proud that we were among those whose efforts culminated by placing energy as the seventh Sustainable Development Goal (SDG) in the 2030 agenda ... Affordability is the real meaning of energy security,” he added. “Energy for the poor is still a footnote.”

The other scene setting speaker, Yuri Sentyurin, Secretary General of the Gas Exporting Countries Forum (GECF) stated that the Sustainable Development and Paris Agreement Goals need to be met, and “if they are to be achieved, the role of natural gas can’t be ignored.”

However, natural gas still faces key challenges in the form of energy policies, which have not been highlighted in nationally determined contributions submitted to the United Nations Framework on Climate Change.

## **Plenary 3: Oil and gas market stability and change — investment in a new era**

The President of the OPEC Conference and Minister of



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

Energy and Industry of the United Arab Emirates, Suhail Mohamed Al Mazrouei, noted that the current price cycle is longer than previous cycles and that there is a new-comer to the market in terms of shale oil.

“If this is not managed well, it can distort the market.” He added, “I think to attract investors back, we have to understand how much shale oil will come to the market.”

Investment in conventional oil is needed immediately. Bringing down breakeven costs provides a good motive for investors, as does finding more efficient project concepts with stable, predictable frameworks, as well as an attractive exploration policy.

*Heads of Delegations and other delegates attending the IEF 16<sup>th</sup> Ministerial Meeting gather for a group photograph.*

## Plenary 4: Uptake of clean technologies: disruption and coexistence of new and existing technologies — the way ahead

In his scene setting remarks, Kamel Ben Naceur, Chief Economist, Abu Dhabi National Oil Company stated that the world faces three main challenges in relation to energy, namely energy access for all, trying to meet Paris Agreement targets and trying to improve air quality.

He said that spending in clean energy R&D lags behind other sectors. “We need an acceleration of investment into clean energy.” Another speaker stated that digital technology is pivotal for clean energy, including Big Data.

In concluding remarks, the IEF’s Christoph Van Agt said that the IEF is moving dialogue forward. He added that the last meeting in Algiers had provided the mandate for more dialogue, and the output from the panel can take the discussion forward.

## Concluding session

According to Sun Xiansheng, Secretary General of the IEF, the two days of global dialogue had international energy cooperation and an infectious enthusiasm at their core. He added that as fossil fuels will comprise more than half of the energy mix in 2040, an orderly transition dialogue is required to reach a reliable and realistic transformation that everyone can afford.

Marcos Pourteau, Undersecretary of Hydrocarbons, Ministry of Energy and Mining of Argentina, which currently holds the G20 presidency said that G20 members each have to follow their own path based on national priorities and circumstances, as well as their resources. He added that a work plan is to be developed in 2019.

China has been chosen to host the next IEF Ministerial Meeting in 2020.



# JODI partners meet to discuss five-year action plan

*The Joint Organizations Data Initiative (JODI) held its 6<sup>th</sup> Meeting of Heads of JODI Partner Organisations on April 10, 2018, in New Delhi, India, to discuss progress made on the five-year plan approved at the previous meeting held two years earlier in Algiers. The OPEC Bulletin's Maureen MacNeill reports.*

**H**eld on the sidelines of the 16<sup>th</sup> International Energy Forum (IEF) Ministerial Meeting, the Heads of JODI Partner Organizations met to share their views and the outlook for their five-year plan. The Partner Organizations are comprised of the Asia-Pacific Economic Cooperation (APEC), the Gas Exporting Countries Forum (GECF), the International Energy Agency (IEA), the IEF, the Latin American Energy Organization (OLADE) and OPEC.

The meeting of the Heads of the JODI partners is held every two years in association with the IEF Ministerial Meeting. The main objective of the meeting is to help determine and set forth an agreed path forward for JODI, based on the outcome of consultations with the JODI data-user community and the goals of partners in delivering ongoing improvements to the initiative.

In his opening remarks, OPEC Secretary General, Mohammad Sanusi Barkindo, said that the leaders in the room are “united in their unwavering commitment to achieving a sustainable oil market stability which is in the interests of producers and consumers alike ... This core conviction lies at the heart of JODI.”

He added that the most effective antidotes to market volatility are transparency, international dialogue and the exchange of reliable oil data.

“For these reasons, OPEC is extremely proud to have played a role in the establishment of JODI and the initiative continues to have our full support.”

He added that the JODI community continues to demonstrate that the global oil transparency challenge can be effectively surmounted step-by-step, and that he hopes that the oil and gas database will soon be enlarged to include other commodities such as coal and LNG.



*Dr Sun Xiansheng (l), IEF's Secretary General; and Mohammad Sanusi Barkindo, OPEC Secretary General.*

Barkindo pointed out that despite a high volume of submissions by countries supplying data, there are some regions — especially Africa — which are lagging behind. He asked that the other participants actively consider how to assist Africa in its participation in JODI.

IEF Secretary General, Dr Sun Xiansheng, said he also feels that Africa is very important, because although the near-future consumers of energy are in Asia, in ten years or more, consumption growth may come from Africa. Additionally, some parts of Central Asia are still not covered.

OPEC's Head of the Data Services Department clarified that OPEC has always been a strong supporter of JODI, adding the Organization has identified areas and countries that are behind and is "actively working hard with lagging countries."

### General challenges and opportunities

The JODI partners discussed how they can best collaborate with various stakeholders at particular stages of the JODI data supply chain, with a focus on improving both quality and completeness of information. They reviewed progress made regarding the five-year JODI action plan (2015–20) and recommended future activities in line with the plan. They also asked that a plan be developed for 2020–25 and that this be presented at the next Heads of JODI Partner Organizations Meeting.

Some general challenges were raised during the meeting. A general lack of human and financial resources in some countries was recognized by participants. In

addition, some countries lack regulatory frameworks, and many have no requirement to report data, which is a barrier to data sharing. Confidentiality remains an issue and progress on data quality improvements have stagnated or deteriorated.

One representative said that it is important for partners to recognize that underdeveloped regions have human resource challenges and other issues, requiring technical assistance and capacity building. Some countries don't see the benefits of JODI because they are small and do not use global data. Capacity building for those countries could help improve the situation.

The importance of capitalizing on training opportunities was emphasized by another participant, while more regular actions and news/reports were deemed necessary. It was suggested that the initiative try to find more partners in influential international organizations.

Quality is of key importance, and most resources should focus on this, stated one participant. "It has moved to being a benchmark, a reference for the market. We need to maintain this."

The EU has a strategy to restart data collection through protocols, deadlines and meetings. "It's well and good for ministers to tell us to collect, but they need to supply resources, set policy and deal with confidentiality issues," added one member.

### Improving transparency

Participants at the meeting took note of efforts to improve energy data transparency beyond the current framework

*Delegates of the 6<sup>th</sup>  
Meeting of Heads of JODI  
Partner Organizations.*





*Mohammad Sanusi Barkindo (second l), OPEC Secretary General.*

for collecting data through increasing visibility and accessibility of currently available data (ie for coal) on the JODI website and assessing the feasibility of extending JODI coverage to other energy flows, such as LNG.

They also reaffirmed their commitment to improving quality, reliability and timeliness of JODI data, along with continuing efforts to extend JODI coverage to Africa and other regions still not represented. Sharing know-how on communication strategies while enhancing JODI’s visibility and reach were also emphasized. The Heads welcomed the fact that JODI data now appear on commercial data redistribution platforms.

Delegates said they supported efforts to improve the efficiency of data reporting in order to achieve earlier data release dates, and agreed on ongoing efforts to reach data users through JODI conferences, user seminars and information sessions.

All of the participants pledged their full backing for JODI and its goals, calling on all JODI stakeholders in government and industry to continue improving JODI data quality. They also called on IEF Ministers to ensure that required regulatory and institutional frameworks, along with human and financial resources, are available to provide comprehensive, reliable and timely energy data.

Dr Sun commented at the end of the meeting that the synergies and dynamics are clear, and he is positive JODI will see great progress in the future. “The road is twisted, not straight. But the way is bright going forward.”

### Information seminar

Dr Sun also opened the JODI Information Seminar, stating that JODI is a concrete part of the consumer-producer dialogue, which is paramount to achieving a sustainable energy transition and the United Nations Sustainable Development Agenda 2030. He stated that leaders require reliable data to make appropriate decisions on policies and investment.

“JODI is a unique source of national data; I am proud to be coordinating it. It is a reference for market analysis,” he stated, quoting the JODI motto “Better data, better decisions.” Dr Sun added that he is grateful for the tireless and remarkable efforts undertaken by members, regardless of differing institutions and mandates. “All join under the JODI banner. All have a common interest.”

APEC’s James Kendell stated that information is necessary to stabilize energy prices, adding that the data harmonization JODI has brought to the world has been a remarkable accomplishment. Yury Sentyurin, Secretary General of the GECF, stated that since it became a JODI member in 2014, global gas transparency has improved.

OPEC’s Secretary General said: “The raw material of our industry is not oil, it’s data.”

He added that JODI has come a long way in quality, processing and timeliness of data from both producers and consumers. He added that OPEC decisions would not have been possible without timely, functional data. “I am sure we can achieve even higher goals,” he added.

Attendees were told how JODI data are collected and



*Delegates of the participating institutions seen during the JODI Information Seminar.*

processed by the IEA's Head of Section, Energy Data Centre, Erica Robin, and how key features differentiate JODI from other data sources. Checks and balances take place at company, country and organization levels before data are finally sent to the IEF for entry into the databank. The IEF then does another quality check. Methodological and technical issues, consistency, completeness of data and validity are examined along the way.

### History

Various JODI users shared both their challenges and success stories with the audience. Atreyee Das, Director General of the Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas, India, stated the country needs transparent energy data to meet the needs of its very young population, which will require more and more energy in the future.

“The energy sector is the foundation of all economic activity, the basis for planning and investment,” he said, adding that energy security is a vital issue for India. Good data can also lead to greater efficiency and output at a lower cost. “Since 2012, the Indian government has had a national data sharing and accessibility policy,” said Das, “one of the few in the world.”

OPEC's Senior Research Analyst, Petroleum Studies

Department, Dr Aziz Yahyai, stated that OPEC needs the data for research and oil market analysis.

“JODI is the only official source of direct information with comprehensive metadata and country notes ... It's unique information that can't be found elsewhere.”

He added that there is data for more than 110 countries with significant overall coverage, and said that global supply indicates the status of the market when compared with total world oil demand. “This supply versus demand figure is important.”

Fuad Al-Zayer, Coordinator of JODI at the IEF, highlighted strong political support and joint efforts by JODI partners and their member countries to build the JODI database since its inception in 2000.

JODI's origins stretch back to the late 1990s when energy ministers identified a lack of transparency and reliable oil statistics as a key contributor to price volatility. The Joint Oil Data Exercise was launched in April 2001 to raise awareness among oil market players about the need for increased transparency in oil market data, and then to build a database.

Within a year, there were over 70 participating countries representing 90 per cent of global oil supply and demand. The IEF Secretariat took over coordination of JODI in January 2005. In 2008, the JODI platform was extended to cover natural gas.



# JODI five-year action plan

The *JODI five-year action plan toward 2020* was initially published prior to the IEF15, held in Algiers in 2016. The plan contains seven key objectives:

- **Continue to enhance the quality of JODI data** for both the JODI-Oil and JODI-Gas databases: Work done in this area since 2016 includes workshops and training sessions organized to encourage participating countries to regularly revise historical data. Improvements were seen in many countries. Additionally, JODI partners have engaged with their member countries to improve completeness of data submissions.
- **Improve the timeliness of data reporting mechanisms**, with the goal of advancing JODI-Oil from M-2 to M-1: Although JODI has been a voluntary initiative; the European Commission has formally set agreed and mandatory deadlines for EU Member States. Other mechanisms include an IEA timeliness evaluation based on tighter deadlines. OLADE has harmonized data reporting with international standards. The IEF is developing a new online data updating procedure, which will help accommodate faster reporting.
- **Continue to strengthen capacity building efforts**, including regional training workshops and the use of online training platforms: The IEF has collaborated with different international partners, thus increasing capacity building. GECCF, IEA and OLADE have implemented their own online training programmes.
- **Strengthen engagement with the JODI user/energy data analytics community**, including small meetings and collaboration with industry, universities and think tanks: the 13<sup>th</sup> international JODI conference in October 2017 included many users; the JODI Data User Seminar series was created; the IEA, IEF and OPEC regularly participate in joint technical workshops comparing outlooks and historical baseline data.
- **Raise JODI brand awareness**, including active promotion by partner organizations and relationships with the media, as well as the IEF's development and promotion of the JODI website: three major data redistribution agencies were given permission to feature JODI World Databases on their platforms; webcasting of user seminars; users of JODI's website more than doubled between 2011 and 2017.
- **Consider improvement of data transparency for other forms of energy** (ie coal): JODI partners agreed to broaden energy data transparency to encompass available coal data.
- **Identify and engage with JODI champions**, including political, technical and social entities and through embracing offers of cooperation from political blocs such as the G20: IEF ministers reiterated the need for improved data transparency, a view shared among the eight partner organizations. JODI partners who are part of the G20 Energy Working Group continue to promote enhanced collaboration and transparency.

*Dr Aziz Yahyai, OPEC's Senior Research Analyst, Petroleum Studies Department.*



*Fuad Al-Zayer, Coordinator of JODI at the IEF.*



*The OPEC stand at the meeting.*

# IEF Secretary General speaks about the ‘energy transition’ and challenges

*Dr Sun Xiansheng, the IEF’s Secretary General, told the OPEC Bulletin after the successful 16<sup>th</sup> IEF Ministerial Meeting that one of the most pressing issues discussed at the 16<sup>th</sup> Ministerial Meeting was investment.*



“**N**ow the issue is very complex. Before it was easy. We didn’t have shale oil, nor renewables so much. We didn’t have the hesitation and not many uncertainties. Now it’s different. We have the shale oil, and don’t know what oil prices will be for the next two to three years. We don’t know how renewables (will develop).

“Ten years ago investors ... in oil and gas were sure ... now they’re not sure. And in the past three years investment (has been) much reduced and the recovery from reserves for crude is the lowest it’s been in the past 60 years. So it’s a big challenge for the future.”

Dr Sun said if investment patterns continue on their current trajectory, another round of rising oil prices may follow, which would be a challenge not only for producers but also for consumers.

“It’s a big risk for consumers. So this situation is not good for both sides. They (investors) are hesitating, because they don’t have a clear picture for the future.”

The uncertainties mean that the outlook from organizations such as OPEC and the IEA are very important. “We work together with brother organizations such as OPEC and we supply a platform for outlooks so people can see clearly.”

He stated that the 2040 forecasts of both organizations show fossil fuels still provide the majority of energy

*Dr Sun Xiansheng, the IEF’s Secretary General.*

within the energy structure, adding “so now people have the components. At this time we still have high requirements, so investment is safer, (which is why) investment came back about 60 per cent or something like this (this year).”

### Country outlooks and strategies

“Individual countries have their own outlooks and own strategies, and different countries have different conditions,” he said. However, for many other countries the outlooks are not yet so clear. “(They) have to listen to (their) neighbours, listen to international organizations ... So I think OPEC’s and the IEA’s outlooks are very, very important for these individual countries. I think the better and safe way is to refer to the outlooks and then compare and see differences.

“For some (countries) the common policy is a balanced policy. A balance between fossil fuels and renewables,” which he added is practical.

### Technological progress

“People should also pay attention to technological progress,” said Dr Sun. “That’s why we also have some discussions about technology, about renewables.”

He added that the ‘energy transition’ addresses mainly three things: economic development (for both developed and developing countries); climate change, which requires global action; and the energy mix.

The list of concerns regarding security of supply is indeed not short. Lack of adequate investment, infrastructure and geopolitical issues are at the forefront of this list.

“I feel that technology (could) have a very important impact on operating costs,” said Dr Sun, adding this helps to cushion against the effects of low oil prices.

Technologies from the US can aid other regions, thus “if these regions work together it’s more helpful.”

Dr Sun believes that the oil and gas industry will make a larger contribution to managing climate change in the future because “energy efficiency starts from the energy producer. The issue is not fossil fuels — coal, oil and gas — the issue is how to reduce emissions of CO<sub>2</sub>, how to cleanly use these energies. That is the major issue”.

“OPEC has been a very important organization for the past 60 years and will continue to play an important role as a global supplier of energy in the future,” he said. “I feel OPEC is a responsible Organization ... they have made a lot of effort in the area of clean energy use, for climate change and also the security of supply, as well as cooperation with producers — the non-OPEC producers — and also with consumers.

### OPEC’s important role

“I feel (OPEC will play a) very important role in future years, because energy poverty and energy accessibility and energy affordability and also energy sustainability are very important tasks for all, especially for OPEC.”

With the looming challenges of today, dialogue has become even more important, said Dr Sun. “We have such complicated issues together, with economies, climate change, the energy transition, geopolitics. The solution to these issues is the dialogue ...For the challenges, you cannot ignore this. You cannot be like the ostrich and put your head into the sand and say I didn’t see this. You can only confront these issues and work together with partners through dialogue and cooperation.”

He added that the IEF will continue to use its role as a neutral platform — where consumers, producers and other energy industry participants can conduct a dialogue in a transparent fashion — to further discussion on current pressing energy issues. 

Indian Oil Corporation Limited (Assam Oil Division)  
*Extends a Warm Welcome to*  
**His Excellency Mohammad Sanusi Barkindo, Secretary General, OPEC**  
*along with Senior Officials Representing Team OPEC*



*The Digboi refinery is surrounded by lush green jungle, showing the industry's harmony with nature.*

*At the site, the OPEC Secretary General spoke about the oil industry's contribution to sustainable development.*



## OPEC Secretary General visits world's oldest refinery in India

**O**PEC Secretary General, Mohammad Sanusi Barkindo, and a small OPEC delegation visited the Digboi refinery, the oldest operating refinery in the world, on April 13–15.

The Secretary General also unveiled a new Crumb Rubber Modified Bitumen (CRMB) plant at the refinery, considered to be a milestone in the 117-year-history of the plant. Barkindo praised both IOCL and AOD Digboi for taking the necessary steps to evolve CRMB as a special product.



Each member of the four-strong OPEC team planted a fruit-bearing tree inside the museum complex.



The ceremony underscored the oil industry's green credentials.

A ceremony was held on April 14 with the OPEC delegation, senior officials of Indian Oil and AOD Digboi Refinery and employees in attendance.

### An industry committed to sustainable development

The Secretary General's visit also involved a guided tour of the refinery, including the 1928 vintage Wax Moulding Shed; the Digboi Centenary Museum; and the Digboi War Cemetery, where tributes were offered.

Barkindo stated, "I am on a pilgrimage," as he looked at the Oil Discovery Well No 1 and vintage refining equipment. He added that he had heard of Digboi many times as a student and had always yearned to visit.

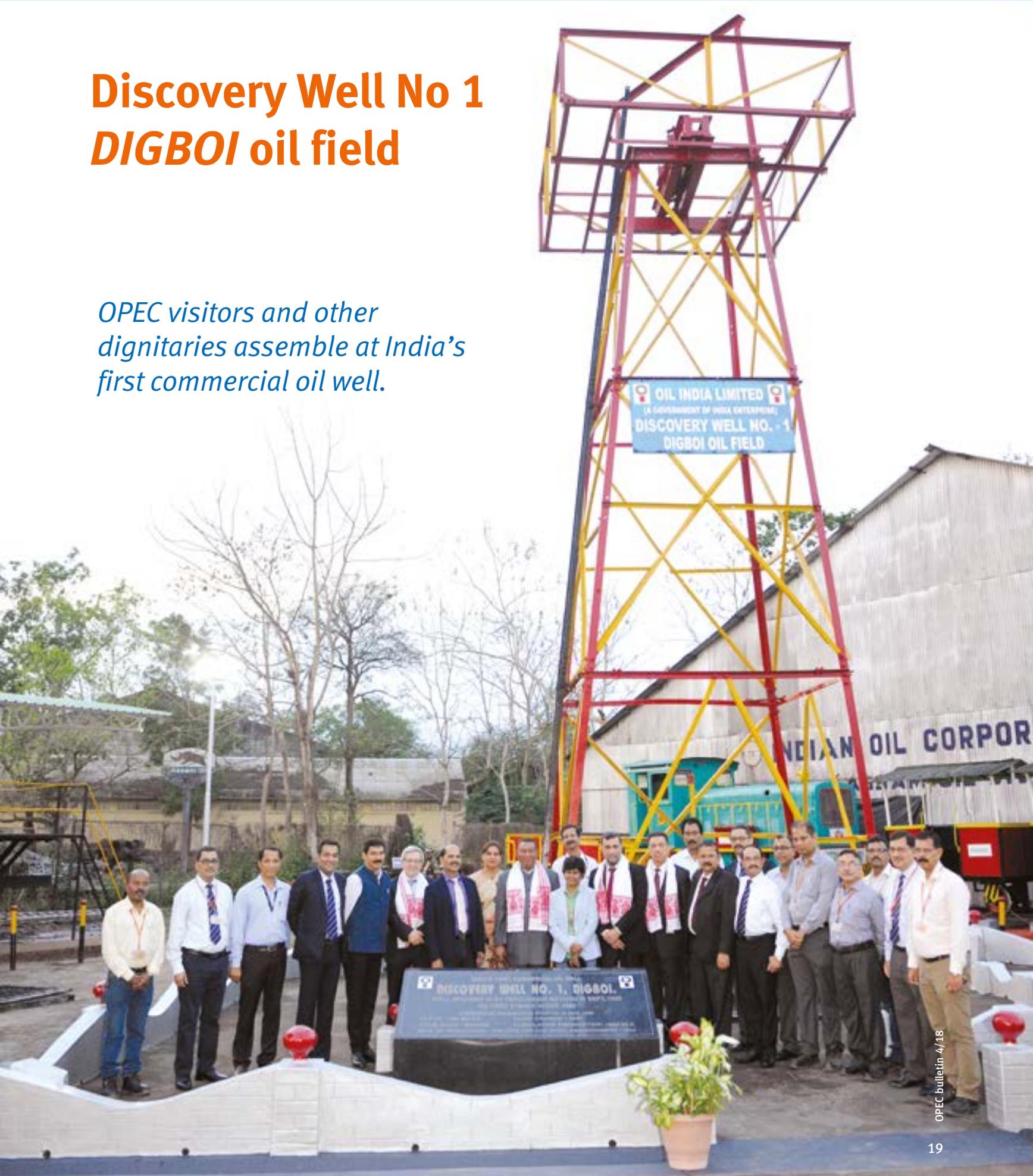
"A dream has been finally fulfilled as I have had the honour and privilege to visit the birthplace of this noble industry; an industry that has fueled the current civilization and will continue to do so in the foreseeable future. I congratulate the management of IOCL, Digboi and the government of India for preserving this prized history."

Along with the guided tour of the museum, during which the discovery of oil in this remote corner of India was detailed, each member of the four-strong OPEC team planted a fruit-bearing tree inside the museum complex.

"This (oil) industry has come under unfair criticism accusing it of 'harming' the environment. I see here not only the preserving of this legacy (the first well ever drilled in India) but also preserving the environment. I saw greenery around the well and the refinery," the Secretary General said. "The oil industry that has fueled the current civilization is climate friendly," he added. 

# Discovery Well No 1 *DIGBOI* oil field

*OPEC visitors and other dignitaries assemble at India's first commercial oil well.*



# Welcome to Digboi: The birthplace of the Indian oil industry



*OPEC Secretary General unveils the new Crumb Rubber Modified Bitumen Unit at the Digboi Refinery*

It was the elephants who did it. Their tracking of oil out of the jungle in the early 1880s on their big feet led to the discovery of the first oil site in India in the nether regions of the country — an area known as Assam.

The town founded on the site is known as Digboi. Rumor has it that Digboi is named after those very elephants that not only discovered oil, but were then employed to dig it out for production. They remained

faithful and hard-working employees of the oil industry in the region for many decades.

### Well No 1

India's first commercial oil well, known as Well No 1, was spudded 662 feet below the surface in 1889 at Digboi. Commercial production started in 1890 and ceased in 1927. There was cumulative production of 622 KLS and a rate of production of 909 litres/day.

It was a time of swashbuckling adventurers, army men, surveyors, railway workers and tea entrepreneurs. Oilmen joined this class of the elite. The lush, green area

still comprises forest lands and tea estates, harkening back to the early times.

Although operations first started around 1890, the existence of crude oil in India is seen in memoirs and dispatches by army officers from the deep jungles of upper Assam as early as 1825. Indeed, the impenetrable



*The solvent dewaxing unit at Digboi.*



*Barkindo visiting the wax moulding shed.*



The refinery has a unique place in the history of oil.

rainforest of upper Assam seemed to be sitting on an oil cauldron of sorts, as first noted by the 46<sup>th</sup> Regiment Native Infantry, when it was on reconnaissance in the area.

Lt R Wilcox observed ‘great bubbles of gas and green petroleum’ in 1825 while surveying the Namchik River about 25 miles east of Digboi. He added in his writings, “The jungles are full of an odour of petroleum.”

More sightings were recorded until experimental drilling began after 1865, though the first few attempts came up dry.

The story goes that engineers first noticed an elephant reporting for work with oil-soaked feet during the laying of the railway tracks between Dibrugarh and Ledo in 1881. Another popular belief about the naming of Digboi took hold about this time. It is said that Canadian drillers who were excited about the discovery of oil told their workers to ‘dig, boy, dig!’.

### One of the world’s oldest refineries

One of the world’s oldest functioning refineries is still operating at Digboi. By 1893, there were several



The museum provides fascinating insights into the history of the industry.

successful wells in the area, which resulted in the building of a small refining unit by AR&T in Margherita.

By 1899, AR&T recognized the potential of the area and created the Assam Oil Company. With flows dwindling from wells feeding Margherita and increasing in Digboi, it was decided that a bigger, better refinery would be constructed at Digboi.

The Digboi Refinery was commissioned with the running of the first “still” in 1901 and had an initial capacity of 500 barrels/day. Elephants played a major support role in the construction and operations of the refinery and were on the payroll.

In a book recounting the history of the region, it states that Roopkali, Phoolkali and Moti were three popular elephant employees.

“[The elephants were] trained to work the same hours as their human counterparts ... work days for these majestic creatures commenced with the first whistle blow at 6:00 am and ended with the second whistle at 2:00 pm, after which no one could make them work.”

The first lots of kerosene were delivered to the remotest villages by bullock carts and country boats.



*The refinery at Digboi.*

The area was not without its challenges for employees, from the stifling jungle to malaria, or ‘Digboi fever’, which regularly struck down workers.

Oil production was actively increased in Digboi to meet requirements for WWII in 1942. The oil was considered to be of extremely high importance due to Digboi’s proximity to the scene of fighting. Some of the many air raid shelters set up at that time can still be seen there.

Following some sluggish years after the war, the refinery trudged along until 1981 when an act of Parliament spawned the Indian Oil Corporation Ltd (IOCL) and created the Assam Oil Division. Assam Oil’s Digboi later came under Oil India Ltd. The Oil and Natural Gas Division had been set up by the government of India in 1955, and the formation of Oil India followed shortly after in 1959.

Later the refinery underwent frequent upgrades, with the most recent taking place in 2017 when a new pre-flash system for the crude distillation unit was commissioned.

### **The diversity of Digboi**

The upper Assam region has benefited greatly from a large multicultural workforce that supported the growing tea, coal and oil industries in the region. People from around the country have traditionally come to the area to work, and the community continues to celebrate its multi-ethnic heritage.

The region’s natural landscape is as diverse as its inhabitants. The ‘county of golden gardens’ is covered in tropical evergreens and rain forests, swamps and grasslands. The vast rainforest of the Assam Valley spreads across nearly 600 square kilometres, and the reserves are some of the most biologically rich areas in the region, boasting rare and diverse flora and fauna.

An impressive variety of birds boasting brilliant colours can be seen flitting across the sky, and, of course, the original workers of the oil industry, elephants, can be seen wandering near the wells and bungalows. 

## 4<sup>th</sup> Iraq Energy Forum

*Despite numerous challenges over the years, OPEC Member Country Iraq continues to play an important role, both in the region and in the Organization. The Iraqi government's recent efforts to consolidate recent security gains and bring about a return to stability have paid off. One of the most telling signs of the progress being made in recent years is that this year the country held the 4<sup>th</sup> Iraq Energy Forum, an event which in the three previous editions has attracted leading players from across the petroleum and natural gas value chains. The OPEC Bulletin provides this brief report on the Forum, its participants and the address given by OPEC Secretary General, Mohammad Sanusi Barkindo.*

*Haider al-Abadi, Iraqi Prime Minister, speaks to participants at the 4<sup>th</sup> Iraq Energy Forum.*



## An exciting programme

One of the greatest industry achievements made by Iraq in recent years is the development, organization and sponsorship of the Iraq Energy Forum. Organized by the Iraq Energy Institute, which has been led by its Founder and Director Luay al-Khatteeb for a number of years, the Forum has increasingly become one of the most important industry gatherings in the region.

Held at the Al-Rasheed Hotel in central Baghdad, the two-day Forum took place on March 28–29, 2018, and was attended by some of the oil industry’s biggest players. High-level speakers included Elija Andjelich, Managing Director of Petrochemical Projects at Lukoil; Hussain Qaragholi, a Corporate and Investment Banking professional at Deutsche Bank AG; Zaid Elyaseri, Country Manager for BP Iraq; Abdulla al-Qadi, Upstream Director at Crescent Petroleum; Musab Alkateeb, CEO of Siemens Iraq; Prof Michael Mulnix, President of American University of Iraq; Douglas Silliman, US Ambassador to Iraq; and Martin Healy, Energy Advisor at the Bureau of Energy Resources at the US Department of State.

Day One of the Forum included four sessions, covering everything from energy economics, upstream developments, an overview of the downstream value chain, and a discussion of the sustainability of mega projects in the region. Day Two brought four more sessions. These included discussions about the northern regional government of Iraq, the prospects for renewable energy projects in the country and region, capacity building and the outlook for the overall business and investment environment in the country. In addition, Day Two began with a very high-level discussion among several Federal Ministers, US State Department officials, academics and businessmen, who took turns offering their own outlook for the country from very diverse perspectives.

OPEC’s Secretary General, Mohammad Sanusi Barkindo, took part in an important plenary session at the very start of Day One of the Forum entitled ‘Energy, economy and geopolitics’. He was joined on the panel by Jabbar Ali Hussein Al-luiebi, Iraq’s Minister of Oil; Barham



*Mohammad Sanusi Barkindo, OPEC Secretary General, at the 4<sup>th</sup> Iraq Energy Forum.*

Salih, former Prime Minister of the Kurdistan Region of Iraq and former Deputy Prime Minister of the central government in Baghdad; Adnan al-Janabi, a Member of Iraq’s Parliament; and Alan Eyre, the US State Department’s Director of Middle East/Asia at the Bureau of Energy.

## Secretary General’s remarks

The opening plenary session was attended by Iraqi Prime Minister Haider al-Abadi and other senior Iraqi officials. They were also joined by various ambassadors and senior members of the Iraqi Parliament. During the panel discussion, which was moderated by John Deferios, CNN’s Emerging Markets Editor, the Secretary General offered brief introductory remarks, which encompassed current oil market developments while also describing the broad market outlook through to 2040.

However, he first provided a useful introduction and briefed the audience on the historic ‘Declaration of Cooperation’ and its voluntary adjustment in global oil production of 1.8 million barrels/day. As he told the audience, the Declaration, which was signed by 24 OPEC and non-OPEC countries on December 10, 2016, and its ongoing implementation have seen a successful and much-desired reduction in the stock overhang. This has



Jabbar Ali Hussein Al-luiebi, Iraqi Oil Minister (l) and Salim Al-Jabouri, Speaker of the Iraqi Parliament (c) meeting with OPEC's Secretary General.



Alaa K Alyasri (l), Iraqi Governor for OPEC, meeting with OPEC's Secretary General.

helped to bring about a return to balance in the market. The Secretary General also spoke about the different prospects for oil demand in the short-, medium- and long-term.

### Official visits

While in Iraq, OPEC's Secretary General, an inveterate multi-tasker, arranged a variety of meetings with various Iraqi officials, as well as several cultural excursions (about which more in separate articles in this edition of the *Bulletin*). A few days before the official start of the Iraq Energy Forum, Barkindo met with Jabbar Ali Hussein Al-luiebi, Iraq's Oil Minister, in Baghdad. The two officials discussed the outlook for the oil market, as well as the most recent efforts by OPEC and the participating non-OPEC producers who signed the 'Declaration of Cooperation'.

Later in the day, the Secretary General also met with Iraq's President,

Fuad Masum. Barkindo praised the President and members of his Cabinet for their continuous support granted to OPEC, and for their efforts to support the ongoing implementation and conformity to the ‘Declaration of Cooperation’. In turn, the Iraqi President reiterated his country’s commitment to the Declaration and ongoing efforts to reduce the stock overhang and bring about the return of market stability.

On the day before the Forum, the Secretary General and an accompanying OPEC delegation also met with the Speaker of the Iraqi Parliament, Salim Al-Jabouri, in Baghdad. The meeting was also attended by Iraq’s Oil Minister, Al-luiebi. The Secretary General briefed Al-Jabouri on the oil market outlook. He described the efforts that led to the establishment of the ‘Declaration of Cooperation’ in 2016 and then lauded the support Iraq had given to the Declaration and to its implementation.

On the final day of the Forum, OPEC’s Secretary General and the accompanying OPEC delegation met with Iraqi Prime Minister Haider al-Abadi in Baghdad, along with Iraq’s Oil Minister, Jabbar Ali Hussein Al-luiebi. The Iraqi Prime Minister took the opportunity to reiterate his country’s full commitment to the historic Declaration and its implementation. Al-Abadi also commended OPEC and its Secretary General for the efforts made to reduce the stock overhang and rebalance the oil market.

The Prime Minister was pleased with the Declaration and its achievements thus far and gave further assurances that Iraq would continue to play a role in its ongoing implementation. He also spoke of the importance to continue to institutionalize the framework of cooperation between OPEC and participating non-OPEC producing countries.

The Secretary General in turn briefed al-Abadi on current market developments, emphasizing the impact that the ‘Declaration of Cooperation’ has had on the oil market. Before departing, he also wished Iraq and its people successful elections in May.

## Outlook for future events

In terms of the overall outlook for the country, several of the speakers and participants

all concurred with US Ambassador Silliman’s comments made on Day Two, March 29, of the Forum. The Ambassador sounded a note of optimism tempered with urgency, noting that “foreign and Iraqi companies are ready, willing and able to share with the Iraqi government the risks of lower oil prices and the cost of increasing production” — provided that the financial risks of investing in the country are reduced and shared among more stakeholders. “The energy sector is vital to Iraq’s future,” he said.

He then added that “[b]y leveraging the power of private enterprise, [Iraq] ... can grow the economy, create jobs, diversify public sector investment, and diminish the risks of an oil-dependent economy.” This seemed to reflect the opinions of most of the people attending the Forum, many of whom are already looking forward to the 5<sup>th</sup> edition to be held in the spring of next year. In the meantime, continued efforts to consolidate the recent economic and political gains are almost a certainty. The outlook, therefore, can only be described as bright and hopeful. ■■



*Mohammad Sanusi Barkindo, OPEC Secretary General, at an awards ceremony with Adnan al-Janabi, a Member of Iraq’s Parliament.*

# ‘Cradle of civilization’: Iraq and the Tigris- Euphrates river valley

*People speak of the ‘Ancient World’ as if it were only comprised of Greece and the Rome Empire. But there are far deeper roots to be explored, which lead one back to the Ancient Near East and its various empires. In order to give some cultural and historical context to the various events and official visits in which OPEC has participated this year, the OPEC Bulletin provides this very brief introduction to the role and place of Iraq and the emergence of civilization along the Tigris-Euphrates river valley.*

*Greater Zab River near Erbil in northern Iraq, part of the Tigris-Euphrates river system.*

## The legacy of the ‘Ancient East’

As the Dutch Egyptologist and archaeologist Henri Frankfort once wrote, Mesopotamia was one of “the cultural centres of the Ancient Near East.” Unfortunately, it has too often been overlooked by scholars and historians, who in some cases have operated with what can only be described as ‘cultural blinders’.

Though other scholars — particularly those associated with the University of Chicago and the Warburg Institute at the University of London — have worked hard during the latter half of the 20<sup>th</sup> century to teach more people about the cultures and civilizations of the Tigris and Euphrates river valley, there is still widespread ignorance of the role played by that region — and by the country we now know as Iraq.

Though constraints of time and space do not allow for a full, extended or generous treatment of the material, it is worth recalling that the ‘Ancient World’ refers first and foremost to the Babylonian, Egyptian, Assyrian, as well as the Chaldean and Persian Empires. It is only after these initial civilizational expressions that Greece and Rome began to emerge, in the first case leading to the ‘Age of Hellas’ and in the latter leading to the rise (and subsequent fall) of the Roman Empire.

It is in those early river-side communities and population centres that the Ancient

Near East began. It is there — in what is now modern-day Saudi Arabia, Jordan, Lebanon, Syria and Iraq — that archaeologists have found the earliest forms of picture writing, pen and writing tablets collection of laws, as well as trade routes, both on land and sea. All of these pre-date the similarly important contributions made by the later civilizations of Greece and Rome. A few examples follow.

## The Code of Hammurabi

We should not overlook one of the greatest contributions made, which was the game-changing legal development represented by the Code of [King] Hammurabi. Ruling Babylon from 1792–1750 BCE, Hammurabi took all the legal decisions made during his reign, collected them and inscribed them onto stone columns which were subsequently set up and installed in Babylon’s Temple of Marduk.

In all, his code included 282 case laws which pertained to everything from economic matters (such as tariffs, prices, trade fees, and other commercial regulations), family law (marriage and divorce), as well as a civil and criminal laws.

It’s important not to overlook the importance of the Code of Hammurabi, as it was “the most complete and perfect



Henri Frankfort at work in the 1930s.



Ancient Near eastern tablet with early writing and inscriptions.

The Great Ziggurat of Ur in south-eastern Iraq.





In this stone relief, Hammurabi (on the left, standing) is depicted as receiving his 'royal insignia' from a divinity (possibly Markduk). "Hammurabi holds his hands over his mouth as a sign of prayer."

Wikimedia Commons



Wikimedia Commons

OPEC bulletin 4/18

extant collection of Babylonian laws" ever seen, according to scholars.

## The epic of Gilgamesh

The 'Epic of Gilgamesh' is an epic poem from ancient Mesopotamia. The earliest surviving version of the Epic of Gilgamesh dates to the 18<sup>th</sup> century BCE. Only a few of the original tablets exist today. A later version, written — or rather engraved — on 12 stone tablets dates from the 13<sup>th</sup> to the 10<sup>th</sup> centuries BCE. Some of the best preserved copies of this later version were discovered in the ruins of the library of the Assyrian king, Ashurbanipal, dating from the 7<sup>th</sup> century BCE. Approximately two-thirds of this longer version still exist today.

The Epic of Gilgamesh is divided into two main parts. The first half discusses Gilgamesh and a wild or feral man called Enkidu, who was originally created by the gods to prevent Gilgamesh from oppressing his subjects, the people of the city of Uruk. However, through various experiences, Enkidu eventually becomes 'civilized' and he travels to Uruk where he challenges Gilgamesh to a test of manly strength. Gilgamesh wins — and the two end up becoming friends.

Together, they have a series of adventures and misadventures. But after they together kill a sacred bull, which had been sent to punish Gilgamesh, the gods sentence Enkidu to death.

In the second half of the Epic, Gilgamesh, upset by Enkidu's death, decides to seek eternal life. After wandering wide and far without success, the gods take pity on him. In one of the most famous passages of the Epic, the gods tell Gilgamesh:

*"Gilgamesh, whither rovest thou?  
The Life thou pursuest thou shalt not find.  
When the gods created mankind,  
Death for mankind they set aside,  
Life in their own hands retaining."*

In the end, despite numerous failed attempts, Gilgamesh fails to find eternal life, just as the gods told him. However, the Epic concludes with praise for the walls

Detail of the Code of Hammurabi.

of the city of Uruk, which Gilgamesh himself had built. It turns out that this is the one act or deed committed by Gilgamesh that has outlived him, that has outlasted death, which has made him 'immortal'. In other words, it is, as some have suggested, a form of cultural immortality for Gilgamesh's fame to have survived his bodily death. The lesson here — of humility, providence, and submitting to the divine will — has not been lost on audiences, no matter how modern or contemporary.

### Secretary General's visit

When an OPEC delegation, headed by Secretary General, Mohammad Sanusi Barkindo, travelled to Iraq earlier this year in late March, it was to attend and participate in the historic 4<sup>th</sup> Iraq Energy Forum.

However, as Barkindo himself noted to those



*Gilgamesh seen subduing a lion on this stone carving located in the Louvre in Paris.*



*The National Museum of Iraq in Baghdad.*



*Tablet V of the Epic of Gilgamesh, located in the Sulaymaniyah Museum in Iraq. This tablet dates back to the Old-Babylonian Period (2003–1595 BCE).*

accompanying him, Iraq has a special place in the history of OPEC and in the long trajectory of human civilizations. The Mission to Iraq then began a few days before the start of the Forum and extended beyond the end of the Forum as well. In those extra days, the Secretary General not only held important high-level meetings with Iraqi government officials but also sought out historic places in the city of Baghdad such as Al-Shaab Hall, the actual site where OPEC was created in 1960 (*see accompanying article on page 42*).

A keen student of history, the Secretary General also made it a point to seek out information about the country's history, as well as to visit other cultural and historical sites of interest. In addition to the moving visit to Al-Shaab Hall, he visited the National Museum of Iraq, where some of the most important treasures from ancient

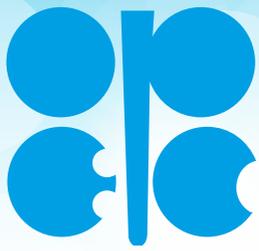
Babylon — especially during the reign of Nebuchadnezzar (605 BCE to 562 BCE), can still be viewed.

Babylon, which has been the subject of far too few exhibitions over the years, was then capital of an empire reaching from the Gaza strip in the west to the Gulf in the east. In addition to the great 70-metre tall glazed blue ziggurat — what some have called ‘the foundation platform of heaven and earth’ — Babylon was adorned with dozens of temples and shrines.

The OPEC delegation relished this visit, taking in some of the wonders of the Ancient East and pondering on the importance of Iraq and its historic legacy, both for OPEC and for the world. It occurs to one that there can never be too many trips to such a treasured place, and whether for commercial or artistic reasons, the role of Iraq is as important as ever. 

One of the gates leading to the city of ancient Babylon.





2017

Organization of the Petroleum Exporting Countries

# OPEC Annual Statistical Bulletin



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# OPEC CITIES IN FOCUS



In the April 2017 edition of the *OPEC Bulletin*, we introduced a new series — **OPEC Cities In Focus** — which would endeavour to provide an overview of the major cities in OPEC’s Member Countries and highlight their many attributes.

Though each OPEC Member Country has played a prominent role in the oil and gas sector over the years, and has maintained a steadfast commitment to the Organization’s broader objectives in regards to market stability, they all have much more to offer than just energy resources. Through this series, we hope to spotlight the history and development of their principal cities.

Our motivation is to highlight some of the other features of our Member Countries apart from oil and gas. And our desire is to offer readers a window into the rich urban life in our Member Countries and their cultural diversity.





# Baghdad: ancient history and magnificence

*While Iraq is widely considered the “cradle of civilization”, Baghdad is surely the gemstone at its centre. Since its foundation in the 8<sup>th</sup> century, the city quickly earned a remarkable reputation as a cultural hub and as a global “centre of learning.” In the 8<sup>th</sup> instalment of the OPEC Bulletin’s regular feature, ‘OPEC Cities in Focus’, **Ayman Almusallam** provides a historical overview of Baghdad and sheds light on some of the most significant sites in the Iraqi capital.*

*Kadoumia mosque, Baghdad, Iraq.*

**W**ith a population of more than 7.2 million people on a land area of 204 square kilometres, Baghdad is the bustling capital of the Republic of Iraq. Considered to be the country's economic, administrative and educational centre, Baghdad is its largest city and the second largest city in the Arab world (after Cairo). But it once was, quite literally, the most important city in the Middle East, playing a significant role in the history of the region and the world.

Taking four years to build, the charming city became a prominent place under the Abbasids. Built on the banks of the Tigris, the city had readily available water, which in turn led to the expansion of the city and a rapid increase in its regional influence. It also had notable control over strategic trade routes. These vital elements led to its solid growth over the ensuing decades and centuries.

### The Caliph's dream

Baghdad has rather distant origins. The Abbasid Caliphate founded Baghdad in the 8<sup>th</sup> century, with Caliph al-Mansur enlisting thousands of people to build Baghdad from 762 to 764. The Caliph's dream was to establish an iconic centre of education, culture, commerce and science for the Islamic world. As such, he was determined to build a 'perfect city'.

It is said that the construction of Baghdad was "a marvel in urban planning" and "the greatest construction project in the Islamic world." Al-Mansur, who was intimately familiar with Euclidean principles of geometry, came up with a basic blueprint



*A statue of the slave girl Morgiana pouring boiling oil into 37 storage jars in Kahramana Square, Baghdad.*

comprised of two large semicircles. This earned Baghdad the name of the 'Round city'.

Al-Mansur invited the brightest minds and architects of his day to design and build the city. According to historians, more than 100,000 workers were hired to complete the city's construction and make the Caliph's

vision a reality. These workers included engineers, blacksmiths, surveyors, legal experts, and carpenters from across the Abbasid Empire.

Historians say that before construction began, the Caliph himself walked on the ground to mark the perfect circle for the outer walls, which were to be four miles in circumference — and then laid the first brick after a prayer. Once the city was completed four years later, it is reported that the Caliph reflected on his creation and said: "This is indeed the city that I am to found, where I am to live, and where my descendants will reign afterward."

### City structure

Baghdad was surrounded by four large walls and four gates. The massive brick walls, which had battlements at the top, were a defining feature of Mansur's city. Additionally, the walls were protected by an outer, water-filled moat. According to 11<sup>th</sup> century scholar, Al Khatib al Baghdadi, each of the four walls consisted of 162,000 bricks for the first third of the wall's height, 150,000 for the second third and 140,000 for the final section — all of which were bonded together with mud and reeds.

Each equidistant gate, in turn, was decorated by double doors made of iron. Four straight roads ran through each gate and connected to the centre of the city. The four roads were lined with vaulted arcades containing shops and bazaars for residents of the city. A network of smaller streets connected to these four main roads, leading to a series of houses and squares.

Finally, a network of water-ways connected the Euphrates with the Tigris. It also helped to add to the visual delight of the city and most likely helped with drainage as well.

Eventually, because of its geographical location and proximity to two main waterways, as well as its rapidly growing reputation as a centre of commerce and learning, Baghdad became a major trade hub not only for all parts of the Muslim world but also for Europeans and more distant countries like China and India. It was truly one of the earliest global cities in the Middle East.

### The palace and mosque

The centre of the city was empty except for two of the most important buildings in the city: the Great Mosque and the Caliph's Golden Gate Palace. No one except Mansur was permitted to ride into this central area.

With a remarkable 130 foot-high emerald dome above a main public or audience area, which was visible for miles, the Caliph's Palace was a classically Islamic expression of the union between temporal and spiritual authority. At its very top was the figure of a horseman with a lance in his hand, which was said by historians to swivel like a weathervane — “thrusting his lance in the direction from which the Caliph's enemies would next appear.”

Mansur's great mosque, in turn, was similarly important. Not only was it Baghdad's first mosque, it was also immense, encompassing 90,000 square feet.

The 9<sup>th</sup> century philosopher, writer, and polymath al-Jahiz praised the city, saying: “I have seen the great cities, including those noted for their durable construction. I have seen such cities in the districts of Syria, in Byzantine territory, and in other provinces, but I have never seen a city of greater height, more perfect circularity, more endowed with superior merits or possessing more spacious gates or more perfect defences than ... the city of Abu Jafar al-Mansur.”

### House of Wisdom and the ‘Translation Movement’

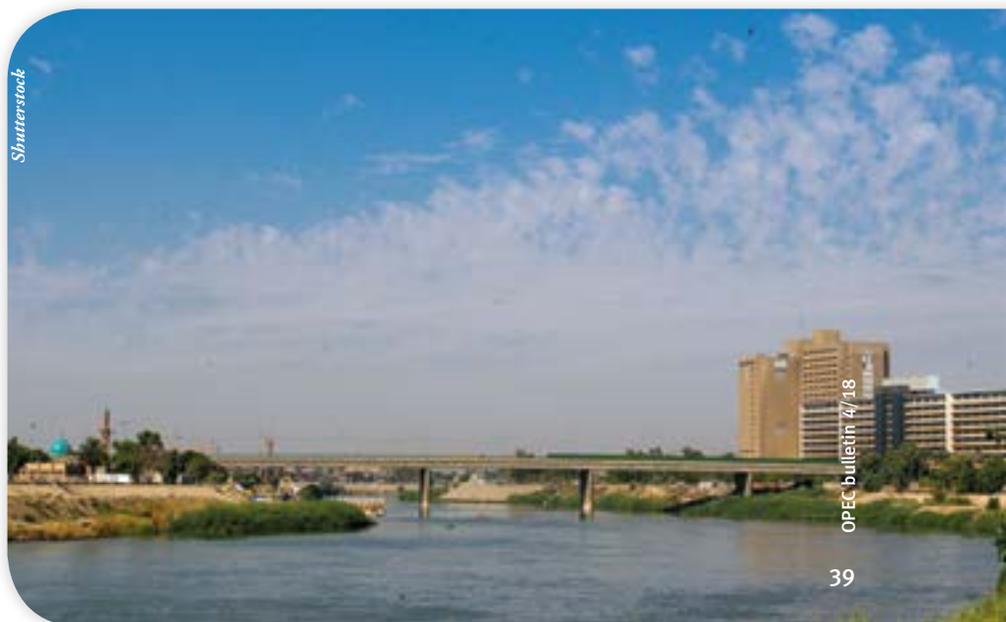
During the golden age of the Abbasids, Caliph Haroon al-Rashid set up the *Bayt-al Hikma* (House of Wisdom), which was a key intellectual centre in the city and the region. It began as a simple library but soon became a repository of much of the existing knowledge in the world, sponsoring and housing translations from Syriac, Greek, Sanskrit and Persian sources. The Abbasid rulers also regularly invited renowned scholars, as well as authors and thinkers, to the House of Wisdom, thus establishing it as a unique platform for discussing and sharing new ideas, information and views. The House of Wisdom eventually offered unparalleled resources for the study of science and humanities — not only to Muslim but also to Jewish and Christian scholars from around the world. By the 9<sup>th</sup> century, according to scholars, it boasted the largest collection of books in the entire world.

The House of Wisdom achieved particularly distinctive prominence during the reign of the Caliph Al-Ma'mun. The so-called ‘Translation Movement’, which began in the House of Wisdom, was one of the important milestones that occurred during his reign, leading to the promotion learning. The Translation Movement, which received unparalleled support from Abbasid rulers, sought to translate literature from other linguistic traditions and cultures into Arabic in order to expand learning among more people. Various famous works in Ancient Greek were translated, including the entire extant output of Plato, Aristotle and Pythagoras, as well as other works now lost for posterity.

### Growth and decline

For centuries, Baghdad remained a large cosmopolitan city. In many respects, it was the centre of the world, as has been eloquently argued in Hugh Kennedy's *When Baghdad ruled the Muslim world: the rise and fall of Islam's greatest dynasty*. In that work, one is introduced to the extent of Baghdad's influence during the 8<sup>th</sup> and 9<sup>th</sup> centuries, with a sphere of influence that “stretched from Tunisia to India” and a “legacy [that] influenced politics and society for years.”

Despite the rich intellectual legacy of the city, the threat of Mongol invasions during and after the era of Genghis Khan changed the city's fortunes forever. With a massive army of 200,000 men, Mongol warlord Hulagu Khan set out to invade the lands of the Middle East and the Nile during the 13<sup>th</sup> century.



Shutterstock

Bridge in Baghdad.



Monument of Liberty in Baghdad.

On January 18, 1258, Baghdad was surrounded by Mongols and a few days later, the city walls were under Mongol control. On February 10 of that year, the Caliph surrendered to Hulagu and attempted to save the city and its residents — to no avail. Then the sacking of Baghdad began. Thousands of people lost their lives and the famed Bayt al-Hikma (House of Wisdom — *see box on previous page*) was completely destroyed, along with schools, libraries and mosques. Some accounts say that so many books and manuscripts were dumped into the Tigris that it ‘ran black with ink’.

The fall of Baghdad was a staggering blow to the culture of literacy and wisdom; Islamic civilization; and world culture. It was a cataclysmic event and the losses incurred then have never been offset.

Centuries later, in the early 1870s, the last traces of Mansur’s famed ‘Round City’ were finally demolished when Midhat Pasha,

a reformist Ottoman governor, tore down the venerable city walls during a zealous attempt to modernize the city. This marked the end of the historic Baghdad — though it still offers interesting sites to visitors, as we will describe below.

### Key attractions

Over its long history, Baghdad has played a major role in the region and the world. Despite the changes that inevitably have occurred over the centuries, the city still offers visitors some key attractions described below.

### Mutanabbi Street

Located in centre of Baghdad, this street is renowned for book trading. In the 10<sup>th</sup> century, the Abbasids promoted reading and education as an essential foundation for developing one of the key growth factors — human resources. The street is named after one of the most distinguished Arab classical poets — Al-Mutanabbi. It also used to be occupied with bookstores and outdoor independent book stands. The promotion of reading soon influenced the city as a whole, as it helped in furthering literacy and the intellectual abilities of Baghdad’s population.

### Qushla

The landmark building, which is located in the Risafa area on the eastern side of the Tigris, penetrates the skyline of Baghdad, demonstrating the artistic and architectural abilities of Baghdadis. The Governor for Iraq during the Ottoman era — Namiq Pasha — commissioned the development of Qushla in 1881. However, construction was completed during the reign of his successor. The

### Literary treatments

Over the centuries, Baghdad remained an endless and distinctive source of inspiration for authors, poets and artists. In classic literature, Al-Mutanabbi and Al-Ma’arri, among others, dedicated some of their most beautiful work to the city of Baghdad. In contemporary literature, Ahmed Shawqi, Muhammad Mahdi al-Jawahiri and Nizar Qabbani have all paid glowing tribute to the Iraqi capital.

In 2013, Baghdad was nominated for the ‘Capital of Literature’ award by the United Nations Educational, Scientific and Cultural Organization (UNESCO), in recognition of its extensive contributions to the creation of literature. UNESCO also described Baghdad as “a vehicle to foster tolerance, understanding and peace.” It also added: “Being a city of diversity, the literature sector in Baghdad releases several monthly newspapers in three languages, namely Arabic, English and French.”



Statue of the Iraqi poet Al-Mutanabbi, Baghdad, Iraq.



The Qushla building is located in the Risafa area of Baghdad.

building, as well as the Risafa area, is currently listed under UNESCO’s tentative World Heritage List.

### Al-Mustansiriya Madrasah

The era of Abbasids witnessed solid efforts and notable steps toward developing educational systems and advanced institutions. This historic building, which was originally constructed in 1227, accommodated one of the most iconic institutions of higher learning. Caliph Al-Mustansir ordered the construction of the school, emphasising the importance of developing an institution that prevails in design and learning. Al-Mustansiriya, fortunately, survived the destruction resulting from the Mongol siege and invasion. Today, the Al-Mustansiriya building is a testament to the glory bequeathed by the Abbasid Caliphate. Following the expansion and the modernization of the building, Al-Mustansiriya University was established.

### Freedom Monument

The monument presents testimonies of various events and phases that occurred throughout the history of Iraq, both ancient and modern past. It is situated in the Liberation Square of Baghdad, designed by Iraq’s Jawad

Salim. A report carried by the *Voice of Iraq*, a digital Iraqi newspaper, has stressed the importance of the monument to the country. The artwork illustrates various eras of Iraq’s history, starting from the Assyria and Babylonia periods to modern history.

Mohammad Al-Kanany, President of the Fine Arts Department in the Arts Academy, has commented on the significance of the monument saying: “This piece is considered to be one of the most important artworks completed in the history of the country.”

### Al-Shaheed Monument

Dedicated to Iraqi martyrs, the monument was built to remember those who died during wars and pivotal moments. The site also demonstrates the abilities and creativity of Iraqi artists. The monument, which was completed in 1983, was designed by the architect Saman Kamal and built by the sculptor and artist, Ismail Fatah Al Turk.

Since its establishment, the Iraqi capital has been governed by several dynasties. The notable diversity that the city achieved for several centuries was laudable, and contributed to its incomparable history. Despite setbacks and the loss of staggering amounts of architecture, history and literature, Baghdad — a Founder member of the OPEC and the place where the Organization literally was given life — is set to remain not only an icon of magnificence but a city that will continue to derive honour and glory from its unique and exquisite legacy.

## ‘An OPEC homecoming’: a visit to Al-Shaab Hall



Al-Shaab Hall.

*The tradition of ‘returning home’ and ‘revisiting the past’ may be one of the oldest of human impulses. People frequently attempt to remember where they grew up and recall how they were raised. The fact is, human beings cherish the moments they formerly shared with friends and acquaintances, and like to pay tribute to important moments in their lives. This is no less true for an Organization like OPEC — so when the most recent opportunity arose for the Secretary General, **Mohammad Sanusui Barkindo**, and an accompanying OPEC delegation to visit the city of Baghdad on March 28, 2018, it was clear that a visit to the Organization’s birthplace at Al-Shaab Hall (People’s Hall) in central Baghdad was requisite. The OPEC Bulletin reports on this stirring homecoming.*

In 2018, the Secretary General of OPEC, Mohammad Sanusi Barkindo, visited OPEC’s birthplace, Al-Sahaab Hall, accompanied by officials from the Iraqi government. It was an emotional event for many all involved — as it was there that the five Founder Members of the Organization had gathered in 1960 to take action on behalf of their common cause — which would give rise to the creation of OPEC. A bit of history may be in order.

### A meeting for posterity

In April 1959, a number of oil-producing countries had convened in the Egyptian capital of Cairo to discuss several issues of great importance, including the dominance of the oil markets by what were then called the ‘Seven Sisters’.

This meeting, which occurred on the margins of the ‘First Arab Petroleum Congress’, was pivotal in establishing OPEC. It

was while attending that Congress that five energetic and visionary leaders — 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 on the last day of the Congress to gather at the Cairo Yacht Club.

At that informal and private meeting, the five gentlemen forged an agreement to collaborate further. This also gave rise to the idea of forming a new organization to stand up for their individual and common interests. Thus, the idea of OPEC was born.

One year and five months later — specifically, September 10–14, 1960 — representatives of the five Founder Members met again in Baghdad, where a truly landmark decision was taken to establish what they decided to call the Organization of the Petroleum Exporting Countries (OPEC). This marked a moment

in history that altered the dynamics of the petroleum industry forever.

### A historic site

In a speech delivered at the 3<sup>rd</sup> Iraq Energy Forum on April 2 of 2017, OPEC’s Secretary General recognized both the importance of Baghdad and of the historic site where OPEC was created. “Here in this city on the banks of the rivers Euphrates and Tigris in the land of Mesopotamia near the historic Babylon, the five Founding Fathers of OPEC ... gathered together in the Al-Shaab Hall, to midwife this Organization on September 10–14, 1960,” he said. “This became known as the historic ‘Baghdad Conference’.”

Barkindo continued: “There was no fanfare; just five developing nations setting about the business of defending their legitimate national interests.” Although there were some who, in the early days, were sceptical about the need or viability of the new organization, it went on to make a mark, he added. “In this light, the formation of OPEC was a pioneering act, an act that demonstrated that even developing countries had rights.”

Steeped in history, the Secretary General’s comments were uplifting and hopeful. “That initial small group of developing countries has now evolved into a group of 13 (14 as of 2018) that is respected far and wide as an established part of the international energy community. It has overcome many challenges, and it continues to prosper.”

But on the occasion of those comments, the Secretary General did not have the opportunity to visit Al-Shaab. Such an opportunity did not arise again until late March of this year, when he attended the 4<sup>th</sup> Iraq Energy Forum (see accompanying feature article on page 24). Along with a group of Iraqi officials and a small delegation from OPEC, the Secretary General made the “pilgrimage,” so to speak, to the old site and evoked memories of OPEC’s creation. For many, it was a moving occasion.

### Spectacular architecture

Al-Shaab Hall is located in the Bab Al-Muaatham district in the very heart of Baghdad. It is attached to the previous headquarters of Iraq’s Ministry of Defence, which is a small, ancient castle originally constructed during the Ottoman era.

Although the exact date of the construction of Al-Shaab Hall remains unknown, the hall serves as a testament to the creative and artistic abilities of the Iraqi people. Khalid Al-Sultani, a well-known



OPEC delegates and Iraqi officials gather at Al-Shaab Hall.

Iraqi architect, believes the Hall was built in 1946 or 1947. “It is one of the spectacular architectural designs in the world’s modern history,” Al-Sultani says. The Hall’s design fits the general design of the city of Baghdad and derives some inspiration from the city’s ancient history, which dates back more than a thousand years (see accompanying feature article on page 36).

Since its construction, Al-Shaab Hall has regularly hosted musical events and other cultural activities, including traditional and folkloric music and dance performances. However, for the past five years it has lain abandoned, unused and rather forlorn.

### Preserving the past

Thus, on the heels of the Secretary General’s March visit to the Hall, and as OPEC nears its 60<sup>th</sup> anniversary, discussions have begun to emerge as to the possible rehabilitation or maintenance of the Hall that might be pursued over the next few years. The Iraqi Prime Minister, Haider al-Abadi, has even indicated that something will be done to preserve the site and thus preserve a part of OPEC’s historic founding. This would not only honour OPEC, it would also be an honour for the Iraqi people.

The decisions that were taken in Baghdad’s landmark meeting in 1960 were inimitable and influential. It took place during a time when the international economic and political landscape was shifting, and when stability in the oil market was much needed. The impact of that historic meeting creation has become apparent over the past six decades.

In its almost 57 years of existence, OPEC has seen its Members through challenges and uncertainties — and, in the process, has proven to the international community that it has a unique position and an important role to play now and into the future. 

# Kuwait Oil & Gas Show



*Bakheet Al-Rashidi, Kuwait's Minister of Oil and Minister of Electricity and Water.*

## Transformation, diversification and integration

*Held under the patronage of Kuwait's Ministry of Oil, the 5<sup>th</sup> Kuwait Oil & Gas Summit (KOGS) took place in Kuwait City from April 16–17. With OPEC Secretary General, Mohammad Sanusi Barkindo, partaking in the opening session, alongside Bakheet Al-Rashidi, Kuwait's Minister of Oil and Minister of Electricity and Water, as well as Dr Mohammed Bin Hamad Al-Rumhi, Oman's Minister of Oil and Gas, and Nizar Al-Adsani, Deputy Chairman and CEO at Kuwait Petroleum Company (KPC), the OPEC Bulletin reports.*

**U**nder the theme, 'New energy era in the region: transformation, diversification and integration', the 5<sup>th</sup> KOGS got underway on April 16 at the Jumeirah Messilah Beach Hotel in Kuwait City. The opening session proved a scene setter for the rest of the conference, with two ministers, a CEO, and the OPEC Secretary General, offering up their thoughts on a variety of different issues.

### Declaration of cooperation

There was evidently much focus on the landmark 'Declaration of Cooperation', with the ministers from participating countries, Kuwait and Oman, on the panel. Al-Rashidi and Al-Rumhi both called on OPEC and non-OPEC oil producers to continue their unprecedented cooperation to maintain stability in the energy market.

Al-Rashidi stated at the event that he believed oil producers were heading in the right direction to restore stability to the oil market. "A year ago, there was a surplus of 340 million barrels (m b) of oil. At the end of February, the surplus dropped to 50m b and we believe we are on the right path to get rid of this surplus."

Al-Rumhi expressed his gratitude to all participants in the 'Declaration of Cooperation'. "We owe you a great deal of appreciation for your efforts and contribution in the recent recovery in the oil markets," he said, noting the desired stabilized situation is yet to be reached, but "it is much better today than yesterday." He noted that "uncertainties remain a major burden on our shoulders. However, I am very optimistic about the coming years and they will be good ones."



*HH Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah (c), the Emir of the State of Kuwait; accompanied by Bakheet Al-Rashidi (r), Kuwait's Minister of Oil and Minister of Electricity and Water; met with Mohammad Sanusi Barkindo, OPEC Secretary General (l); at the Bayan Palace, Kuwait City, in January 2018.*

Al-Rumhi added that “I call for the signatories of the (cooperation) declaration agreement, those 24 nations from OPEC and non-OPEC, to continue the dialogue, the understanding and commitment in maintaining the market conditions that will encourage investment.”

The OPEC Secretary General paid a specific thank you to the “Emir, His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah for his personal and active engagement in the ‘Declaration of Cooperation’, not only in reaching out to other Heads of State during the initial consultations, but in the implementation process too.



*Participants at the KOGS.*



*Dr Mohammed Bin Hamad Al-Rumhi, Oman's Minister of Oil and Gas.*

His exemplary leadership and unparalleled wise guidance has been a key part of the success we have achieved.”

The OPEC Secretary General also stated that the past 15 months or so has shown the ‘Declaration of Cooperation’ to be a great success, driven by the unprecedented conformity levels to the voluntary production adjustments. He said that “there is no doubt that the industry is starting to feel a much warmer glow. The overall market fundamentals have not been this strong since the onset of the current cycle.”

He added that “we have not only turned a historic page, but a new chapter is being authored in the history of the industry by OPEC and its non-OPEC partners, who continue to demonstrate the power of cooperation and dialogue to restore stability and growth in the global oil market, and the knock-on positives of this for the global economy.”

However, there remained concerns that the drop in investments in recent years, still posed a major challenge for the industry. It was a topic that would be a recurring theme for speakers in the opening

session as they tackled some of the issues posed by the organizers in the conference’s overall theme.

## A new energy era

Barkindo stated that there has been much talk of a ‘new energy era’, or what some might term an ‘energy transition’ at recent events he has attended. He put forward the question, what does this actually mean?

He noted that “I think the one thing that all of us can agree on is that the world will need more energy in the decades to come for the foreseeable future”, with OPEC’s *World Oil Outlook (WOO) 2017* expecting energy demand to increase by 35 per cent in the period to 2040.

In this regard, he highlighted global economic expansion, population growth, as well as the fact that today “around 3 billion do not have clean fuels for cooking, and 1.1 billion have no access to electricity ... It is a universal obligation to address this major challenge.”

At the same time, however, he underlined that “we need to recognize the threat posed by climate change to our environment.” He stressed that OPEC remains fully engaged and supportive of the Paris Agreement.

To put it simply, he said, the basic energy challenge of the ‘new energy era’ can be summed up in two questions:

- How can we ensure there is enough supply to meet expected future demand growth?
- How can this growth be achieved in a sustainable way, balancing the needs of people in relation to their social welfare, the economy and the environment?

## Diversification

The Secretary General said that all forms of energy are required, with the “world of energy more diversified in the years ahead”.

He noted that renewables are projected to record the fastest annual growth rate, averaging 6.8 per cent per annum in the period to 2040, but even by then, the combined contribution of renewables, hydro, nuclear and biomass are expected to account for just 26 per cent of the global energy mix, an increase of seven per cent from today.

In terms of oil and gas, he said, “combined they are still expected to provide more than half of the world’s energy needs by 2040, with their combined share relatively stable between 52–53 per cent over the almost 25-year forecast period.”

Oil, he added, is expected to reach over 111 million barrels a day (m b/d) by 2040, an increase of around 15m b/d, and on top of this, he said, “we should also remember that oil producers and

companies must invest heavily simply to offset the impact of natural decline rates, which is annually around 4m b/d.”

## Investments

Placing this into an investment perspective, the OPEC Secretary General said that in the period to 2040 the required global oil sector investment is estimated at a huge \$10.5 trillion. In addition, this also needs to be placed in the context of the fact that globally more than a trillion dollars of frozen capex or cuts were witnessed during 2015 and 2016.

In this regard, he commended Kuwait and its “able and visionary leadership for its laudable investment plans announced earlier this year for the country to spend more than half a trillion dollars by 2040 to boost its oil and gas output and refining capacity.

“This includes plans to more than double refining capacity by 2035 and to boost oil production to 4.75m b/d by 2040. These developments are not only important for Kuwait, but they will be vital to the industry and consumers in the years and decades ahead. The longevity of oil as a desirable energy source can only be guaranteed by such bold and visionary investment plans.”

## Transformation

In looking ahead, Barkindo said, “we need to be realistic about what each energy source can provide, and continually look to transform how we extract, process, supply and use all the energies needed in the future.

“This should not only be through the concerted and continued development of renewable energies. It also needs to be through the development of technologies in the oil & gas industry to enhance efficiencies, in both production and use, streamline working practices, and further improve their environmental footprint.”

He noted a number of the industry’s past achievements as a reminder that innovation, human ingenuity and new technologies are the key to unlocking the abundant sources of oil and energy in an ever more sound, secure and responsible manner.

In terms of the challenge of emissions, as an industry, he said, it is one that we need to face head on. He stated that he is “a firm believer that solutions can be found in technologies that reduce and ultimately eliminate these emissions.”

From this perspective, he stressed that more work and collaboration are urgently required. “We need to continually look at the development and use of cleaner technologies, such as carbon capture utilization and storage and many others in the future. At OPEC, we welcome coordinated action with the industry and through various research and development platforms.”

He added that it “is vital that we collectively develop and adopt technologies, as well as all-inclusive energy policies, that



*Mohammad Sanusi Barkindo, OPEC Secretary General.*

would address carbon emissions, not to crowd out investments in oil.”

The Secretary General said in looking at the energy future, “we truly believe we need to work towards a more integrated industry, at all levels. We need to continually break down barriers; we cannot work in silos. This is vital in an increasingly interdependent and complex world.”

From OPEC’s perspective, he underscored that this is readily apparent in the ‘Declaration of Cooperation’. He said that this “integrated approach to tackle the oil market downturn and return balance and stability to the market is unparalleled in the history of the oil industry.”

## Sustainable stability

In closing, Barkindo returned to the two questions he had initially put forward and the key themes of the conference. He said: “In looking at these, it is clear that we will need a diversified energy mix; the transformative use of technologies across all energy sources; and a more integrated and holistic industry.”

He also noted the interconnections between diversification, transformation and integration, and added that the over-arching issue for all of these is “stability”.

He emphasized that stability is required “for investments and energy output expansion to flourish; to provide access to modern energy services for those currently without; for economies around the world to grow; and for producers, in terms of security of demand, and stability for consumers, in terms of security of supply.”

He concluded that “stability is the key ingredient to a sustainable global energy future for us and the coming generations.”

*All images in this feature, unless otherwise credited, courtesy of CWC Kuwait Oil & Gas Summit.*



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

## OPEC Secretary General's mission to Azerbaijan

*Azerbaijan has been a reliable member of the 'Declaration of Cooperation' partnership throughout the market rebalancing process. The country has consistently been one of the highest performing participating countries in terms of the voluntary production adjustments. A major factor for the strong relationship with OPEC has been the engagement and support of the President of the Republic of Azerbaijan, Ilham Aliyev.*



On January 25, 2018, in Davos, Switzerland, on the margins of the World Economic Forum, President Aliyev met with OPEC Secretary General, Mohammad Sanusi Barkindo. At this meeting, Barkindo thanked President Aliyev for the steadfast leadership role his country played in the run up to the landmark ‘Declaration of Cooperation’ in 2016, as well as his country’s continued commitment to the cooperation throughout 2017. President Aliyev said he was very pleased to see the successful accomplishments of the cooperation, specifically referencing the recent positive outcome of the Joint Ministerial Monitoring Committee (JMMC) meeting in Oman, which had been held a few days earlier.

### Fruitful discussions

Barkindo was able to follow up on these discussions by visiting Azerbaijan, March 18–19, 2018. A series of extremely fruitful discussions were held, which reviewed Azerbaijan’s ongoing cooperation with OPEC, as well as the historic ‘Declaration of Cooperation’ and

explored possible avenues to enhance collaboration in the future. Barkindo stressed that President Aliyev has played an extremely constructive and important role both in securing the adoption of the ‘Declaration of Cooperation,’ as well as its ongoing successful implementation.

The Mission also afforded Barkindo the opportunity to meet with Parviz Shahbazov, Minister of Industry and Energy. At this meeting, prospects for future cooperation between Azerbaijan and OPEC were explored. In this context, the Secretary General expressed his gratitude for Azerbaijan’s support in the ongoing efforts to further enhance and institutionalize the OPEC-non-OPEC framework of cooperation. Meeting with other leading government and industry officials were also held during the Mission.

One of the key architects of the strong relationship between Azerbaijan and OPEC was Natig Aliyev, Azerbaijan’s Minister of Energy for 13 years. Aliyev sadly passed away on June 9, 2017. However, Aliyev’s legacy lives on as the future looks bright for the blossoming partnership between Azerbaijan and OPEC.



*Ilham Aliyev (r), President of the Republic of Azerbaijan, met with Mohammad Sanusi Barkindo (second l), OPEC Secretary General, in Azerbaijan in March 2018.*

In 1879, the Baku refinery had eight distillation units, four larger pans and two smaller steam pans, as well as coolers for the hot masut that remained in the pans after the distillation process.



### Unique place in the history of oil

Baku holds a unique place in the history of oil. Indeed, oil seepages had been noted for centuries on the Aspheron Peninsula. The famous discoverer, Marco Polo, reported in the 13<sup>th</sup> century of a spring in Baku which produced oil. Zoroastrians had worshipped the “eternal pillars of fire” in the vicinity of Baku. These pillars were in fact the consequence of flammable gas which was associated with petroleum deposits. In the early 19<sup>th</sup> century a primitive oil industry began to emerge and by 1829 there were 82 hand dug pits. In 1846, a 21 metre deep well was drilled using a primitive percussion drilling mechanism,

in Bibiheybət, for oil exploration, with positive results. In a decade’s time, on August 27, 1859, “Colonel” Edwin L Drake struck oil on American soil.

For the first few decades of the industry in Baku, the industry had a monopoly system. This was abandoned in the 1870s as the area was opened to private enterprise. A new era of entrepreneurship ushered in, involving some of the most famous names in the history of the industry.

In 1876, the Noble brothers Robert and Ludvig founded a distillery in Baku which would eventually turn into *The Petroleum Production Company Nobel Brothers, Limited*, or Branobel.

Baku is therefore steeped in oil history and this is reflected in much of the city’s architecture. It is very fitting venue for meetings which discuss the future of the oil industry. In this regard, Azerbaijan plays a special role in the ‘Declaration of Cooperation’ partnership. Conscious of its enormous contribution to the history of the industry, it is only natural that Azerbaijan and OPEC enjoy such a natural affinity.



At the meeting in March in Azerbaijan, Mohammad Sanusi Barkindo (l), OPEC Secretary General, had the opportunity to meet with Parviz Shahbazov (r), Azerbaijan’s Minister of Industry and Energy.



*Ilham Aliyev (c), President of the Republic of Azerbaijan; Mohammad Sanusi Barkindo (second l), OPEC Secretary General; Parviz Shahbazov (second r), Azerbaijan's Minister of Industry and Energy; with OPEC delegates.*



*A pier in the industrial district of Baku city, Azerbaijan.*





# IEA delegation visits OPEC

*Dr Fatih Birol, the Executive Director of the International Energy Agency, visited the OPEC Secretariat in Vienna on April 4, accompanied by a delegation of senior IEA officials. The team met with Mohammad Sanusi Barkindo, OPEC Secretary General, and senior analysts from the Organization. The OPEC Bulletin reports.*

**D**r Birol began his career at OPEC before joining the IEA. He stated that although he left OPEC 23 years ago, he will never forget his years at the Organization, where he was “schooled in the energy industry,” emphasizing that he has great respect for OPEC.

Barkindo underscored the growing working relationship between both organizations and the new impetus towards greater cooperation. He recalled his visit to the IEA’s Paris-based headquarters in September 2016, a month after he had assumed office.

The April 4 meeting highlighted the sustained dialogue between energy producers and consumers that is necessary to enhance stability, security and transparency in energy markets.

Dr Birol stressed that a healthy dialogue between the IEA and OPEC is critical to help guarantee energy security in an environmentally friendly and economically sustainable way.

“Whether it is under the ‘umbrella’ of the International Energy Forum (IEF), or through coordinated joint research activities, closer ‘collaboration’ and ‘complementarity’



Left: Dr Fatih Birol (l), Executive Director of the International Energy Agency, with Mohammad Sanusi Barkindo, OPEC Secretary General. Above: Participants at the OPEC-IEA meeting.

between our two organizations have become the watchwords of the day,” Mohammad Barkindo said.

Dr Birol said that the IEA is no longer the “rich man’s energy club”, adding that many countries from the emerging world are members or associated members, and that the line between producers and consumers is becoming increasingly blurred. Mexico joined the Organization in March as the 30<sup>th</sup> full member and many citizens of OPEC Member Countries work in the IEA, at its 260 person-strong office.

“The IEA wants to ensure oil security,” said Dr Birol,

industry, in order to make essential fuels cleaner. This includes the IEA’s goal to move the carbon capture and storage (CCS) technology dialogue forward. A summit was held on the subject last year, which included the world’s largest companies and focused particularly on coal, but also upstream oil and gas.

OPEC is actively involved with the IEA Greenhouse Gas R&D Programme (IEAGHG), which funds research into CCS, focusing on technologies that can reduce carbon emissions. In fact, OPEC has hosted bi-annual meetings for members of the IEAGHG Executive Committee — made up of government and industry professionals — in Vienna at its headquarters. The two organizations agreed to collaborate further on this vital issue in the future.

One IEA expert stated that according to analysis undertaken last year on methane emissions, about 75 per cent of the methane released by the oil and gas industry could be avoided; 40–50 per cent at no cost at all. Barkindo applauded the IEA’s study, adding that climate change focuses almost exclusively on CO<sub>2</sub>, though scientists agree all greenhouse gas emissions are important, and commended the organization for taking the lead on this contentious issue.

Dr Birol and his team shared their views on current and future energy markets stating that although the US will play a large role in production growth in the short to medium term, the Middle East is extremely important in all outlooks in the medium term and beyond.

One IEA researcher said it is reassuring how many similarities exist between the IEA and OPEC outlooks. The IEA shares OPEC’s view that the industry is still recovering from an unprecedented fall in investment and that money needs to be spent on aging fields to counter natural decline.

The IEA’s view is that peak oil demand has not been reached and thus the future will require greater amounts of oil than today, with oil demand remaining robust, according to one expert.

He stated the IEA encourages NGOs and governments



*Mohammad Sanusi Barkindo (c right), OPEC Secretary General, addresses the meeting.*

adding “90 days of stocks should be ready to that end.” Natural gas has become an increasing priority over the past two years, according to one IEA expert, and the IEA plans to host a gas and coal symposium later this year.

“Energy efficiency is a key area at the IEA,” said Dr Birol, adding that concepts around this are being implemented in emerging economies through capacity building and training programmes. He added that this is a critical issue for OPEC Member Countries, which should be securing their oil and gas for export.

The IEA supports modernization of the fossil fuel



*Dr Fatih Birol (l), reviews OPEC's publications.*

to invest in oil. “Our role, and that of OPEC, is to educate people. Because we will be using oil and gas for many years and there is an urgent need for investment.

“From our point of view, oil security is very important. It’s a part of overall (energy) security.”

Dr Birol called the petrochemical sector the “blind spot of energy”, adding that it will be a huge driver of oil demand in the future. IEA experts added that trucks, aviation and shipping are important future drivers of long-term oil demand.

The IEA stressed the importance of the OPEC-IEA-IEF (International Energy Forum) partnership and joint work programme, which has grown to include many mutual events, including an annual workshop on the interactions between physical and financial energy markets, a symposium on energy outlooks and a symposium on gas and coal market outlooks. The three organizations are also bound together by the Joint Organizations Data Initiative (JODI), which has powerfully enhanced energy data transparency and reliability.

Both sides agreed to work more closely together, not only at the executive level, but also at the technical level, including sharing the findings of future studies.

“I am pleased to visit the OPEC Secretary General and the OPEC Secretariat,” Dr Birol said. “This meeting represents yet another fruitful opportunity to exchange views, discuss recent trends in the market and further deepen the important ties between our organizations.”

*Dr Fatih Birol and Mohammad Sanusi Barkindo, walk through Vienna’s first district.*



*OPEC bulletin 4/18*



# OFID celebrates 42<sup>nd</sup> anniversary with Marshlands of Mesopotamia exhibition

**O**FID (the OPEC Fund for International Development) has celebrated the 42<sup>nd</sup> anniversary of its establishment with an exhibition entitled *In the Garden of Eden – the Marshlands of Mesopotamia (Al-Ahwar) in Iraq*. It was jointly hosted by OFID Director-General, Suleiman J Al-Herbish, and Chargé d’Affaires of the Embassy of the Republic of Iraq in Vienna, Ezat Al-Bhadily.

In his opening remarks, Al-Herbish spoke of how OFID had matured during the last four decades: “We have evolved from a temporary special fund into a pioneering and renowned international development finance institution. Today, we help to set the sustainable development agenda and contribute to alleviating poverty across the world.”

Al-Herbish continued: “OFID is fully committed to supporting the United Nations Agenda 2030 and the Sustainable Development Goals – the global plan of action for people, planet and prosperity. Working with our partners we have helped shape the Agenda and contributed to the establishment of a standalone Sustainable Development Goal for access to affordable and clean energy; something that underpins all aspects of sustainable development.”



## International development

Al-Herbish also made reference to the recognition OFID has received in recent years from some of the leading names in international development, such as:

*Left: Suleiman J Al-Herbish (r), OFID Director-General, opens the exhibition with LI Yong (l), UNIDO Director-General, and Ezat Al-Bhadily, Chargé d’Affaires of the Embassy of Iraq in Vienna (c).*



former United Nations Secretary General, Ban Ki-moon; President of the World Bank, Jim Yong Kim; former United Nations Under-Secretary-General and Special Representative for Sustainable Energy for All, Kandeh Yumkella; and Director General of the United Nations Industrial Development Organization, LI Yong, the latter of whom attended OFID's celebratory exhibition. All have recognized OFID's pioneering energy poverty alleviation work.

Commenting specifically on the anniversary exhibition, Al-Herbish said: "This exhibition sits well with the

Sustainable Development Goals 14 and 15 in particular, which focus on our responsibility to protect the planet's precious land and water resources.

## Ecosystems

"We all have a role to play. Furthering our knowledge and understanding of our extraordinary cultures and ecosystems is an important part in the process. I have stressed many times that international development should be human centred and that the richness of diversity and



# OPEC Fund for International Development (OFID)

culture should be maintained and promoted for all of humanity.”

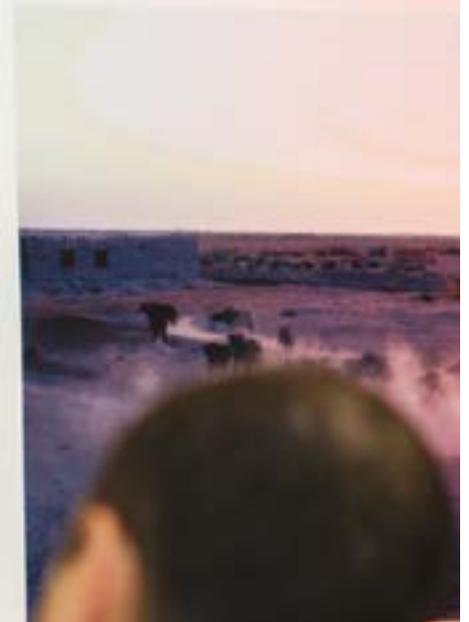
*In the Garden of Eden – the Marshlands of Mesopotamia (Al-Ahwar) in Iraq* provides an insight into one of the most precious ecosystems of the planet and a truly inspiring culture that links back to ancient civilizations. Modern day Mesopotamia is formed by parts of Iraq, eastern Syria, southeast Turkey and southwest Iran. Some religious scholars believe that the Mesopotamian Marshes was once home to the Garden of Eden and researchers have discovered links between the Marsh

Arabs and the ancient Sumerians – arguably the first civilization in the world.

The event is the latest in a long line of exhibitions hosted by OFID to showcase the cultures of its Member and partner countries. This exhibition was jointly hosted by Iraq, an OFID Member Country and also a founding member of OFID’s sister institution: the Organization of the Petroleum Exporting Countries (OPEC). OPEC was created in the Iraq capital at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. 



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## Briefings

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

### Visits to the Secretariat



**February 7** Officials from the Research Centre of the United Nations and International Organizations (RCUNIO), Beijing, China.



**February 26** Students from Science Po, Nancy France.



**March 6** Students from the Polytechnique School (PTS), Groß-Enzersdorf, Austria.



**March 13** Students from Stoevring Gymnasium, Stoevring, Denmark.



**March 16** Students from the Franklin University Switzerland, Sorengo (Lugano), Switzerland.



**March 26** Students from Russia from the Diplomatic Academy of Vienna, Austria.



**March 27** Officials from the Moscow Petroleum Institute, Moscow, Russia.

## Forthcoming events

**FLNG global, May 14–15, 2018**, Amsterdam, Netherlands. Details: Cedigaz, 1 & 4 Avenue de Bois-Préau, 92852 Rueil Malmaison, France. Tel: +33 1 47 52 67 20; website: [https://energy.knect365.com/flng/?utm\\_source=Cedigaz&utm\\_medium=referral&utm\\_campaign=FKA2672CDG&utm\\_content=FKA2672CDG&tracker\\_id=FKA2672CDG&vip\\_code=FKA2672CDG](https://energy.knect365.com/flng/?utm_source=Cedigaz&utm_medium=referral&utm_campaign=FKA2672CDG&utm_content=FKA2672CDG&tracker_id=FKA2672CDG&vip_code=FKA2672CDG).

**Argus crude and refined products exports: infrastructure, economics and shipping, May 14–16, 2018**, Houston, TX, USA. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 44 34 51 16; email: [me.events@argusmedia.com](mailto:me.events@argusmedia.com); website: <http://argusmedia.com/exports>.

**Canada LNG conference and exhibition, May 14–16, 2018**, Vancouver, BC, Canada. Details: dmg :: events, 6<sup>th</sup> 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](mailto:conferencemarketing@dmgevents.com); website: [www.canadagaslng.com](http://www.canadagaslng.com).

**Flame, May 14–17, 2018**, Amsterdam, The Netherlands. Details: Cedigaz, 1 & 4 Avenue de Bois-Préau, 92852 Rueil Malmaison, France. Tel: +33 1 47 52 67 20; website: <https://energy.knect365.com/flame-conference>.

**Maximizing horizontal drilling efficiency congress, May 15–17, 2018**, Houston, TX, USA. Details: American Business Conferences, City Centre One, 800 Town & Country Blvd, Suite 300, Houston, Texas 77024, USA. Tel: +1 800 721 3915; fax: +1 800 714 1359; e-mail: [info@american-business-conferences.com](mailto:info@american-business-conferences.com); website: [www.horizontal-drilling-efficiency-congress.com](http://www.horizontal-drilling-efficiency-congress.com).

**Global oil and gas Uzbekistan, May 16–18, 2018**, Tashkent, Uzbekistan. Details: ITE Group plc, Oil and Gas Division, 105 Salusbury Road, London NW6 6RG, UK. Tel: +44 207 596 5233; fax: +44 207 596 5106; e-mail: [oilgas@ite-exhibitions.com](mailto:oilgas@ite-exhibitions.com); website: <http://oilgas.uz>.

**6<sup>th</sup> Cyber security for oil and gas, May 21–22, 2018**, Houston, TX, USA. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: [enquire@iqpc.co.uk](mailto:enquire@iqpc.co.uk); website: <https://oilandgascybersecurity.iqpc.com>.

**Gas shipping Americas, May 22–23, 2018**, Houston, TX, USA. Details: IBC Global Conferences, The Bookings Department, Informa UK Ltd, PO Box 406, West Byfleet KT14 6WL, UK. Tel: +44 207 017 55 18; fax: +44 207 017 47 15; e-mail: [energycustserv@informa.com](mailto:energycustserv@informa.com); website: <https://energy.knect365.com/gas-trading-shipping-americas>.

**International downstream technology and strategy conference, May 22–23, 2018**, Prague, Czech Republic. Details: Euro Petroleum Consultants Ltd, 44 Oxford Drive, Bermondsey Street, London SE1 2FB, UK. Tel: +44 207 357 8394; fax: +44 207 357 8395; e-mail: [enquiries@europetro.com](mailto:enquiries@europetro.com); website: <https://europetro.com/week/idw2018>.

**4<sup>th</sup> LNG fuels summit, May 22–24, 2018**, Amsterdam, Netherlands. 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](mailto:sshelton@thecwcgroup.com); website: [www.lngfuelssummit.com](http://www.lngfuelssummit.com).

**International bottom of the barrel technology conference, May 24–25, 2018**, Prague, Czech Republic. Details: Euro Petroleum Consultants Ltd, 44 Oxford Drive, Bermondsey Street, London SE1 2FB, UK. Tel: +44 207 357 8394; fax: +44 207 357 8395; e-mail: [enquiries@europetro.com](mailto:enquiries@europetro.com); website: [www.europetro.com/week/idw2018](http://www.europetro.com/week/idw2018).

**FPSO Brazil congress 2018, May 28–30, 2018**, Rio de Janeiro, Brazil. 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](mailto:enquire@iqpc.co.uk); website: <https://fpsobrazilcongress.iqpc.sg>.

**Global commodity risk management forum, May 29–31, 2018**, London, UK. Details: 10–18 Vestry Street, Hoxton, London N1 7RE, UK. Tel: +44 207 11 11 615; fax: +44 207 18 37 945; e-mail: [info@irn-international.com](mailto:info@irn-international.com); website: [www.comriskforum.com](http://www.comriskforum.com).

**Caspian oil and gas, May 29–June 1, 2018**, Baku, Azerbaijan. Details: ITE Group plc, Oil and Gas Division, 105 Salusbury Road, London NW6 6RG, UK. Tel: +44 207 596 5233; fax: +44 207 596 5106; e-mail: [oilgas@ite-exhibitions.com](mailto:oilgas@ite-exhibitions.com); website: <http://caspianoilgas.az>.

**11<sup>th</sup> global crude oil summit, June 5–6, 2018**, London, UK. 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](mailto:cynthia.rugg@platts.com); website: [www.platts.com/events/emea/global-crude-oil-summit/index](http://www.platts.com/events/emea/global-crude-oil-summit/index).

**Latin America refining technology conference, June 5–6, 2018**, Buenos Aires, Argentina. Details: The World Refining Association, Bedford House, Fulham Green, 69–79 Fulham High Street, London SW6 3JW, UK. Tel: +44 207 38 48 013; fax: +44 207 38 47 843; e-mail: [enquiry@wraconferences.co.uk](mailto:enquiry@wraconferences.co.uk); website: <https://lartcate.wraconferences.com>.

**India energy week 2018, June 6–7, 2018**, New Delhi, India. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 44 34 51 16; email: [me.events@argusmedia.com](mailto:me.events@argusmedia.com); website: [www.argusmedia.com/iew](http://www.argusmedia.com/iew).

**Canadian global exploration forum, June 11, 2018**, Calgary, AB, Canada. Details: dmg :: events, 6<sup>th</sup> 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](mailto:conferencemarketing@dmgevents.com); website: [www.cgef.org](http://www.cgef.org).

**Global offshore Brazil summit, June 11–13, 2018**, Rio de Janeiro, Brazil. Details: World Oil, PO Box 2608, Houston, TX 77252, USA. Tel: +1 713 529 4301; fax: +1 713 520 4433; e-mail: [energyeventseditor@gulfpub.com](mailto:energyeventseditor@gulfpub.com); website: [www.globaloffshorebrazil.com](http://www.globaloffshorebrazil.com).

**Global petroleum show, June 12–14, 2018**, Calgary, AB, Canada. Details: dmg :: events, 6<sup>th</sup> 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](mailto:conferencemarketing@dmgevents.com); website: <https://globalpetroleumshow.com>.

**East Africa oil and gas summit and exhibition, June 14–15, 2018**, Nairobi, Kenya. Details: dmg :: events, 6<sup>th</sup> 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](mailto:conferencemarketing@dmgevents.com); website: <http://eaogs.com>.

**2<sup>nd</sup> Africa oil and gas local content conference and exhibition, June 14–16, 2018**, Luanda, Angola. 408, United House, 39–41 North Rd, London N7 9DP, UK. Tel: +44 207 70 04 949; fax: +44 207 68 13 120; e-mail: [trade@ametrade.org](mailto:trade@ametrade.org); website: <http://ametrade.org/alc>.

**Moscow international oil and gas exhibition, June 18–21, 2018**, Moscow, Russia. Details: ITE Group plc, Oil and Gas Division, 105 Salusbury Road, London NW6 6RG, UK. Tel: +44 207 596 5233; fax: +44 207 596 5106; e-mail: [oilgas@ite-exhibitions.com](mailto:oilgas@ite-exhibitions.com); website: [www.mioege.ru/en-GB](http://www.mioege.ru/en-GB).

**Project management for refinery upgrades and CAPEX projects, June 19–21, 2018**, Amsterdam, The Netherlands. Details: Fleming Europe, Mlynské nivy 71, 82105 Bratislava, Slovakia. Tel: +42 1 257 272 100; e-mail: [info@flemingeurope.com](mailto:info@flemingeurope.com); website: <https://fleming.events/project-management-refinery-upgrades-capex-projects>.

**7<sup>th</sup> OPEC international seminar, June 20–21, 2018**, Vienna, Austria. Details: Eventplan GmbH, Gregor-Mendel-Str. 50, 1190 Vienna, Austria. Tel: +43 1 361 600 0-0; e-mail: [office@eventplan.at](mailto:office@eventplan.at); website: [www.opecseminar.org](http://www.opecseminar.org).



# Summer product market outlook

April 2018

Product markets in 2017 saw record-high refinery margins across the globe, and this encouraging momentum for global product markets has continued in the 1Q18. In the lead up to the summer season in the northern hemisphere, indicators are pointing to this positive and optimistic outlook remaining in place.

The US is typically the key driver for product markets in the run-up to the summer driving season. Demand in the US had an excellent start to the year, with monthly data for January 2018 showing combined gasoline and diesel growth of around 845,000 barrels/day y-o-y, and total combined oil products growth of around 1 million b/d, the highest in 22 years. The weekly data for February and March has further supported this positive trend. In addition, most of the products showed an encouraging trend, with diesel oil seeing strong growth. Demand for diesel oil was encouraged by the positive macro-economic indicators, higher demand for residential heating fuel, higher domestic freight shipment, up by 12 per cent y-o-y, and a stronger y-o-y housing market.

Furthermore, this optimism is supported by continuous draws in major oil product stock categories, with US gasoline stocks dropping for five consecutive weeks and distillates stocks dropping for eight out of nine weeks to now stand below the five-year average. At the same time, US commercial crude oil stocks are far below the levels witnessed in the last few years, standing below the latest five-year average for the last three weeks. These developments could lead to tightening market prospects during the summer, lending additional support to refining margins.

Additional backing could be derived from vehicle sales, which have shown strong increases in the EU in the first two months of 2018, up by 6.5 per cent compared to the previous year. In Asia, new car sales started strong in 2018 as the six ASEAN nations' car sales increased by nine per cent in January y-o-y.

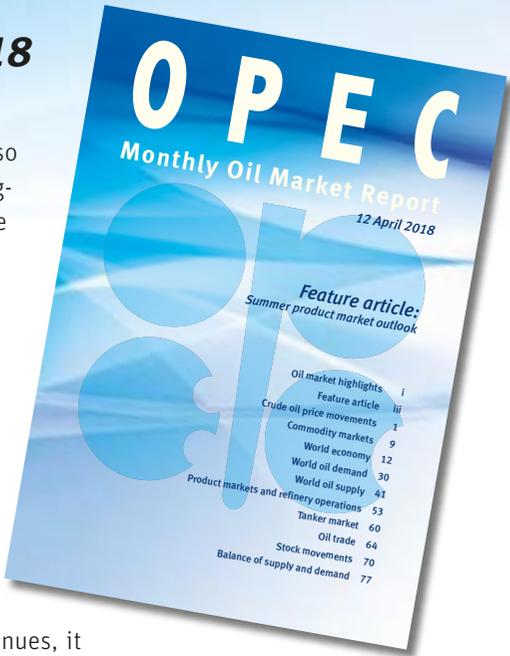
In India, new car sales from the three larg-

est car manufacturers also posted strong growth figures compared to the same time last year, and in China new car sales have grown strongly since the beginning of 2018. In addition, the recent lifting of a five-month restriction on heavy-duty trucking and industrial production in northern China is expected to support the regional diesel market. If this trend continues, it could further support product markets in the coming months.

Similarly, reports of impending refinery closures along with crude intake reductions in Latin America will potentially unlock additional product demand in the region and open up export opportunities from other main markets. This will provide further support to the global product market. This positive global momentum is also reflected in global average gasoline retail prices that were up by \$10/b y-o-y in the 1Q18, as well as diesel, which increased on average by \$14/b compared to the 1Q17 in all major trading hubs.

Looking forward, a healthy global economic forecast for 2018, positive car sales data in recent months, stronger 2018 y-o-y US product consumption in January and potentially tighter global product markets are expected to boost gasoline and distillates demand, which is forecast to grow by around a combined 992,000 b/d in 2018.

High conformity levels observed by OPEC and non-OPEC producing countries in the 'Declaration of Cooperation', which has led to the downward trend in oil inventories, particularly in the OECD, should further enhance market stability and support crude and product markets in the months ahead.



# MOMR ... oil market highlights

April 2018

**Crude oil price movements** — In March, the OPEC Reference Basket (ORB) increased by less than 0.5 per cent to \$63.76/b. Oil futures ended about one per cent higher in a relatively volatile month, following US equity market movements and supported by robust oil demand growth forecasts, tightening US crude stocks and geopolitical tensions. ICE Brent was 99¢, or 1.5 per cent, higher at \$66.72/b from the previous month, while NYMEX WTI gained 59¢, or 0.9 per cent, to average \$62.77/b. Year-to-date, ICE Brent was \$12.66 higher at \$67.23/b. The NYMEX WTI/ICE Brent spread widened slightly month-on-month, as the steep inventory declines in Cushing, Oklahoma, subsided. Hedge funds increased net long positions in ICE Brent and NYMEX WTI in March to 1.08 million contracts. For the month, the Dubai structure flipped back into contango, while Brent and WTI structure remained in backwardation, albeit at a reduced level.

**World economy** — The global GDP growth forecast remains at 3.8 per cent for both 2017 and 2018. Expected US growth in 2018 is unchanged from the previous month at 2.7 per cent, after growth of 2.3 per cent in 2017. Growth in the Euro-zone was revised up to 2.3 per cent in 2018, following growth of 2.5 per cent in 2017. Japan's 2018 growth forecast remains at 1.5 per cent, after actual growth of 1.7 per cent in 2017. India's and China's 2018 GDP growth forecasts remain unchanged at 7.2 per cent and 6.5 per cent, respectively, following 2017 GDP growth of 6.3 per cent and 6.9 per cent.

**World oil demand** growth for 2017 was adjusted higher by around 30,000 b/d to 1.65m b/d, mainly to account for up-to-date data in both OECD and non-OECD regions. Total world oil demand is now pegged at 97.07m b/d for the year. Similarly, world oil demand growth

in 2018 was revised higher by 30,000 b/d, compared to last month's report, to now stand at 1.63m b/d. This mainly reflects the positive momentum in the OECD in the 1Q18 on the back of better-than-expected data, and supported by development in industrial activities, colder-than-anticipated weather and strong mining activities in the OECD Americas and the OECD Asia Pacific. In the non-OECD region, Other Asia saw an upward revision of 30,000 b/d in the 1Q18 as a result of better-than-expected demand in the industrial and transportation sectors in the first two months of the year. In contrast, oil demand growth was adjusted lower by 30,000 b/d in the 1Q18 in the Middle East region. This mainly reflects slower-than-expected regional oil demand developments. Total world oil demand for the year is forecast to average 98.70m b/d.

**World oil supply** — Non-OPEC supply for 2017 was revised up by 30,000 b/d, mainly due to updated Canadian production data, to now show growth of 900,000 b/d for the year. For 2018, non-OPEC supply was also revised up by 80,000 b/d from the previous month's assessment, to now show growth of 1.71m b/d year-on-year. This is on the back of higher-than-expected output in the 1Q18, mainly in the FSU and the US, as well as some upward adjustments elsewhere. Non-OPEC supply is now estimated to average 59.61m b/d for 2018. OPEC NGLs and non-conventional liquids production is estimated to grow by 180,000 b/d year-on-year to average 6.49m b/d in 2018. In March, OPEC crude production decreased by 201,000 b/d to average 31.96m b/d, according to secondary sources.

**Product markets and refining operations** — Product markets in the Atlantic Basin exhibited strong gains during March, strengthening sharply amid the onset of the spring refinery

maintenance season. In the US, support came from higher gasoline demand, gasoline price adjustments from the winter-to-summer Reid Vapour Pressure (RVP) grade switch, and higher gasoline drawdowns. In Europe, product markets strengthened, supported by higher middle distillate demand and tighter middle distillate inventories. Meanwhile, product markets in Asia weakened slightly, with losses seen across the barrel due to lower arbitrage opportunities, and lower heating requirements.

**Tanker market** — Average dirty tanker spot freight rates were flat in March. Generally, dirty tanker rates were depressed for all classes despite some relative gains for Suezmax from a month earlier. Weak freight rates were registered on all major trading routes as the market continues to suffer from tonnage oversupply, while the level of activities remains insufficient to relieve the imbalance. Moreover, reduced delays and fleet expansions pressured freight rates in March. In the clean tanker market, average freight rates declined slightly affected by weaker rates in the direction West of Suez.

**Stock movements** — Preliminary data for February shows that total OECD commercial oil stocks fell by 17.4m b to stand at 2,854m b, which is 43m b above the latest five-year average. Crude stocks indicated a surplus of 55m b, while product stocks saw a deficit of 12m b below the five-year average. In terms of days of forward cover, OECD commercial stocks rose in February to stand at 60.6 days, which is 0.6 days lower than the latest five-year average.

**Balance of supply and demand** — In 2017, demand for OPEC crude is estimated to stand at 32.9m b/d, 600,000 b/d higher than the 2016 level. In 2018, demand for OPEC crude is forecast at 32.6m b/d, 300,000 b/d lower than in 2017.

*The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for April 2018. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website ([www.opec.org](http://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												2018					Weeks 9-13/2018 (week ending)				
	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Mar 2	Mar 9	Mar 16	Mar 23	Mar 30				
Arab Light – Saudi Arabia	50.68	51.64	49.30	45.21	47.12	49.63	53.29	55.73	61.08	62.50	67.42	64.03	64.40	64.07	62.96	63.05	65.77	67.18				
Basrah Light – Iraq	49.82	50.75	48.56	44.55	46.43	49.26	53.03	55.02	60.21	61.44	66.11	62.31	62.27	62.33	61.06	60.81	63.64	64.84				
Bonny Light – Nigeria	51.91	53.02	50.77	46.92	48.66	51.69	56.55	57.97	63.29	64.64	69.92	66.02	67.05	66.82	66.40	65.15	68.52	69.29				
Es Sider – Libya	50.00	51.04	48.90	44.87	46.96	50.31	55.07	56.48	61.58	63.09	68.23	64.36	64.89	64.96	64.24	62.99	66.36	67.13				
Girassol – Angola	51.89	52.68	50.36	46.46	48.75	52.31	56.83	57.88	62.97	64.97	69.77	66.09	66.89	67.02	66.44	64.97	68.26	68.85				
Iran Heavy – IR Iran	50.27	51.12	49.00	44.62	46.01	48.70	52.27	54.29	59.27	60.87	65.85	62.27	62.15	62.03	60.63	60.84	63.56	65.00				
Kuwait Export – Kuwait	49.87	50.81	48.65	44.37	46.19	48.70	52.23	54.50	59.58	60.94	65.74	62.14	62.23	62.06	60.78	60.91	63.59	64.98				
Marine – Qatar	50.89	52.39	50.24	46.26	47.45	49.71	52.91	55.14	60.47	61.54	66.36	63.14	63.39	63.02	62.06	62.20	64.50	66.12				
Merey – Venezuela	44.14	46.15	45.16	42.49	43.41	45.38	49.13	50.70	55.86	56.04	59.14	57.68	56.92	56.95	56.16	56.18	57.53	58.71				
Murban – UAE	52.96	54.32	51.96	47.86	49.02	51.51	54.94	57.39	62.76	63.84	68.81	65.88	66.31	65.82	64.80	65.01	67.49	69.37				
Oriente – Ecuador	46.83	48.70	46.91	43.11	45.21	47.45	51.30	53.77	59.23	59.66	63.53	60.28	61.16	60.87	60.06	59.29	62.40	64.00				
Rabi Light – Gabon*	50.63	51.71	49.48	45.45	47.54	50.69	55.10	56.31	61.66	63.17	68.16	64.19	64.92	64.87	64.27	63.02	66.39	67.16				
Saharan Blend – Algeria	51.40	51.84	49.80	46.07	47.96	51.31	56.32	57.88	63.23	64.74	69.93	66.01	66.69	66.67	66.04	64.79	68.16	68.93				
Zafiro – Equatorial Guinea*	51.73	51.98	49.96	45.92	48.19	51.67	56.57	57.73	62.75	64.34	69.23	65.19	65.91	66.04	65.24	63.99	67.36	68.13				
<b>OPEC Reference Basket</b>	<b>50.32</b>	<b>51.37</b>	<b>49.20</b>	<b>45.21</b>	<b>46.93</b>	<b>49.60</b>	<b>53.44</b>	<b>55.50</b>	<b>60.74</b>	<b>62.06</b>	<b>66.85</b>	<b>63.48</b>	<b>63.76</b>	<b>63.58</b>	<b>62.52</b>	<b>62.33</b>	<b>65.08</b>	<b>66.39</b>				

**Table 2: Selected spot crude prices**
**\$/b**

Crude/country	2017												2018					Weeks 9-13/2018 (week ending)				
	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Mar 2	Mar 9	Mar 16	Mar 23	Mar 30				
Arab Heavy – Saudi Arabia	48.86	49.97	47.92	43.64	45.76	48.55	51.78	53.99	59.03	60.47	65.24	61.60	61.49	61.42	60.02	60.26	62.84	64.16				
Brega – Libya	51.40	52.19	49.85	45.77	47.61	50.76	55.34	56.78	61.99	63.54	68.68	64.96	65.64	65.62	64.99	63.74	67.11	67.88				
Brent Dtd – North Sea	51.60	52.59	50.45	46.42	48.51	51.66	56.07	57.28	62.63	64.14	69.13	65.16	65.89	65.84	65.24	63.99	67.36	68.13				
Dubai – UAE	51.21	52.31	50.47	46.38	47.59	50.24	53.51	55.63	60.81	61.61	66.15	62.69	62.76	62.57	61.29	61.47	64.02	65.56				
Ekofisk – North Sea	51.50	52.57	50.43	46.40	48.63	52.30	57.15	57.85	63.28	64.98	69.99	65.81	66.63	66.86	66.25	64.71	67.86	68.63				
Iran Light – IR Iran	49.13	50.04	47.34	43.85	47.03	50.85	54.45	56.25	62.12	63.37	68.32	62.64	63.44	63.18	62.28	61.20	65.07	66.65				
Isthmus – Mexico	52.26	53.81	51.85	48.21	50.75	52.92	55.20	56.08	61.35	62.57	67.57	64.83	65.40	65.05	64.59	64.07	66.66	67.29				
Oman – Oman	51.71	52.82	50.57	46.50	47.63	50.37	53.95	55.63	60.84	61.63	66.42	63.00	63.31	63.01	61.84	62.14	64.75	65.85				
Suez Mix – Egypt	48.24	49.71	47.31	43.82	46.12	49.59	53.19	55.11	60.83	62.04	66.99	61.31	61.93	61.85	60.86	59.63	63.50	65.08				
Minas – Indonesia*	48.35	47.95	45.96	42.65	43.96	45.91	49.20	50.55	55.50	56.95	60.91	58.15	58.90	58.40	57.21	57.37	60.14	62.44				
Urals – Russia	49.94	51.55	49.04	45.52	47.82	51.30	54.89	56.81	62.53	63.75	68.69	63.01	63.63	63.55	62.56	61.33	65.20	66.78				
WTI – North America	49.58	51.06	48.56	45.17	46.67	48.03	49.71	51.57	56.67	57.94	63.70	62.15	62.76	62.16	61.70	61.31	64.13	65.03				

Note: As per the decision of the 109<sup>th</sup> 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 108<sup>th</sup> 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 105<sup>th</sup> 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 136<sup>th</sup> (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).

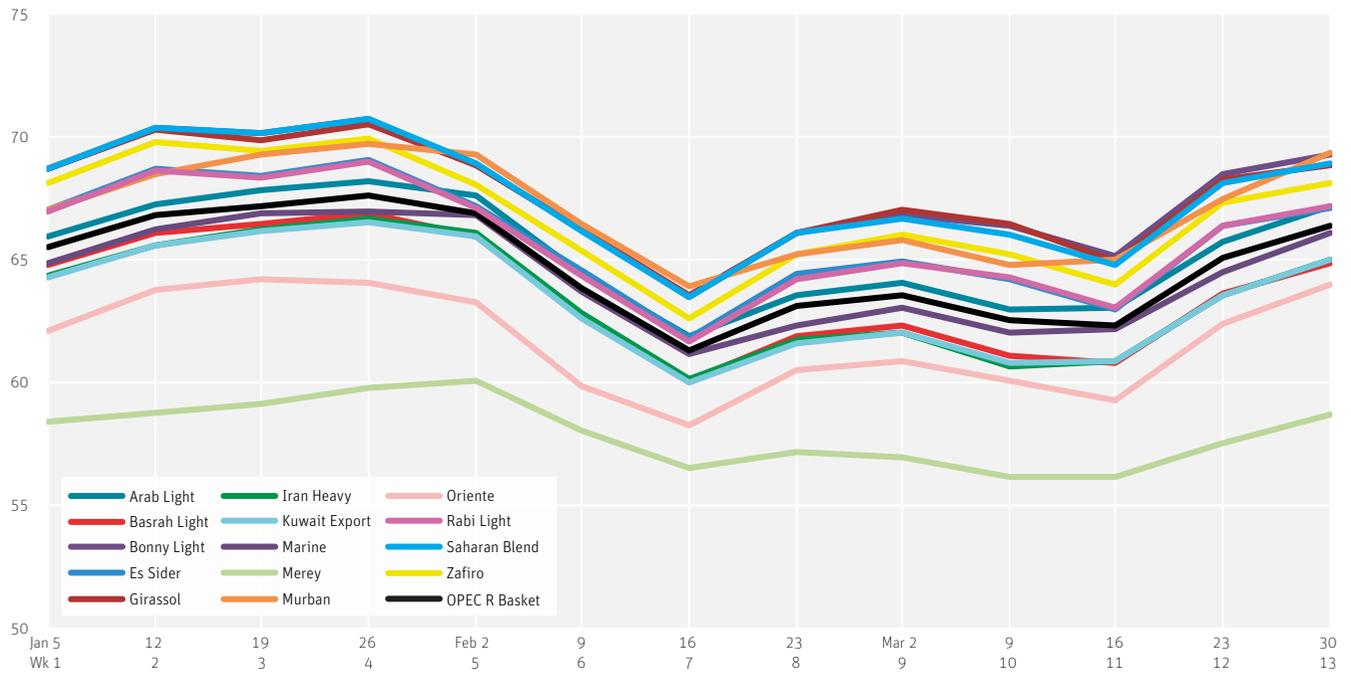
\* Indonesia joined in 1962, suspended its Membership on December 31, 2008, reactivated it again on January 1, 2016, but suspended its Membership again on December 31, 2016. Gabon joined in 1975 and left in 1995; it reactivated its Membership on July 1, 2016. Equatorial Guinea joined on May 25, 2017.

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

Sources: The netback values for TJK price calculations are taken from RVM; Platt's; as of January 1, 2016, Argus; Secretariat's assessments.

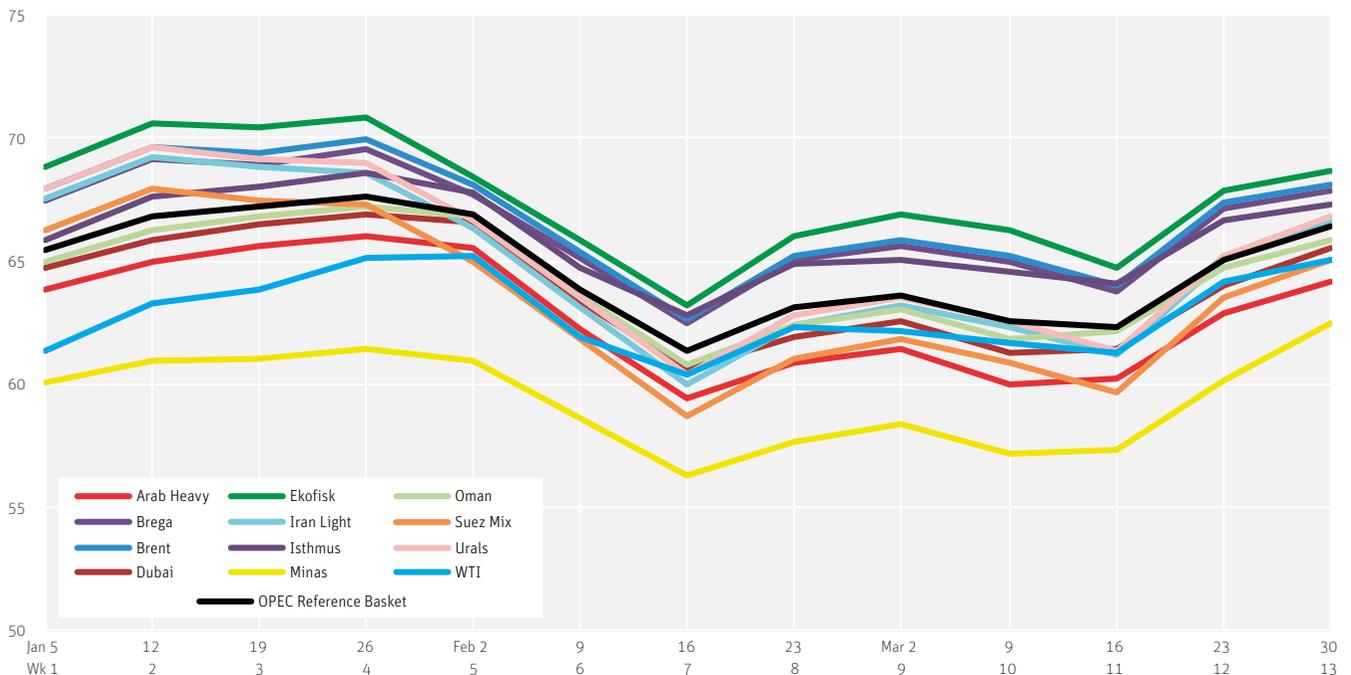
Graph 1: Evolution of the OPEC Reference Basket spot crude prices, 2018

\$/b



Graph 2: Evolution of selected spot crude prices, 2018

\$/b

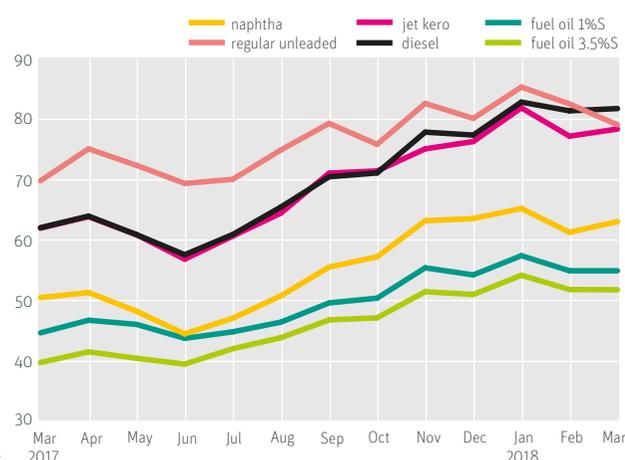


Note: As per the decision of the 109<sup>th</sup> ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108<sup>th</sup> ECB, the basket has been recalculated including the Angolan crude Girassol, retroactive January 2007. As of January 2006, monthly averages are based on daily quotations (as approved by the 105<sup>th</sup> 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 136<sup>th</sup> (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
<b>2017</b>						
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
<b>2018</b>						
January	65.48	85.60	83.10	82.15	57.65	54.41
February	61.52	82.80	81.65	77.45	55.15	52.04
March	63.29	79.34	82.03	78.64	55.15	52.00

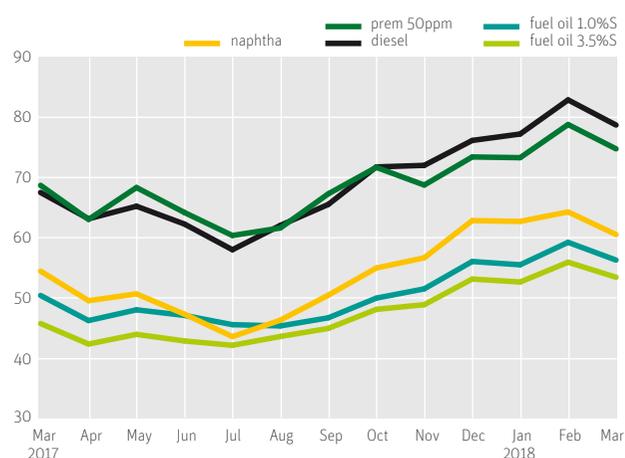


Note: Prices of premium gasoline and diesel from January 1, 2008, are with 10 ppm sulphur content.

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

\$/b

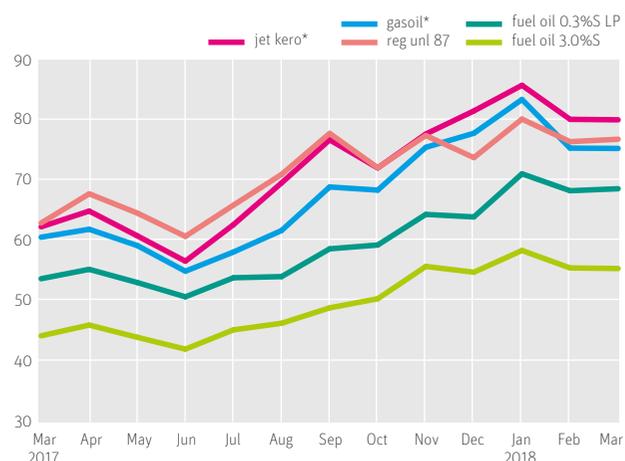
	naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1 per cent S	fuel oil 3.5 per cent S
<b>2017</b>					
March	49.55	62.59	63.15	46.24	42.34
April	50.67	67.89	65.24	48.03	43.95
May	47.31	63.74	62.28	47.10	42.85
June	43.57	59.92	58.01	45.56	42.13
July	46.31	61.17	62.06	45.35	43.60
August	50.46	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
<b>2018</b>					
January	64.29	78.36	82.91	59.24	55.94
February	60.54	74.32	78.73	56.29	53.44
March	62.41	74.83	79.81	56.38	53.47



**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
<b>2017</b>					
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
<b>2018</b>					
January	80.00	83.24	85.59	70.96	58.29
February	76.27	75.20	79.96	68.16	55.40
March	76.67	75.15	79.88	68.49	55.31



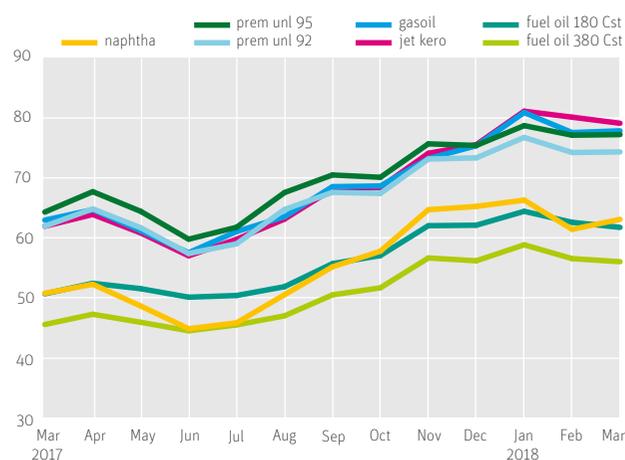
\* FOB barge spot prices.

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

**Table and Graph 6: Singapore market – spot cargoes, fob**

\$/b

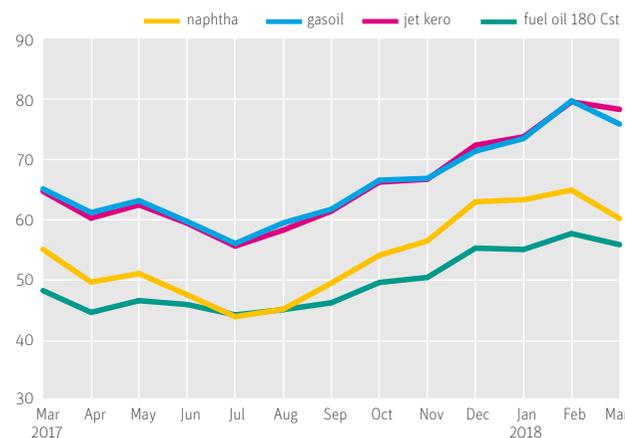
	naphtha	premium gasoline unl 95	premium gasoline unl 92	gasoil	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
<b>2017</b>							
March	50.82	64.28	61.94	62.94	61.93	50.74	45.64
April	52.31	67.66	64.81	64.68	63.88	52.47	47.34
May	48.71	64.40	61.68	61.19	60.82	51.58	46.01
June	44.94	59.78	57.41	57.54	57.03	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
<b>2018</b>							
January	66.26	78.61	76.65	80.78	81.00	64.40	58.85
February	61.41	77.02	74.15	77.46	80.01	62.58	56.56
March	63.08	77.12	74.25	77.75	79.00	61.74	56.05



**Table and Graph 7: Middle East Gulf market – spot cargoes, fob**

\$/b

	naphtha	gasoil	jet kero	fuel oil 180 Cst
<b>2017</b>				
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
<b>2018</b>				
January	64.91	79.71	79.55	57.70
February	60.19	75.86	78.30	55.86
March	61.36	75.90	77.14	55.93

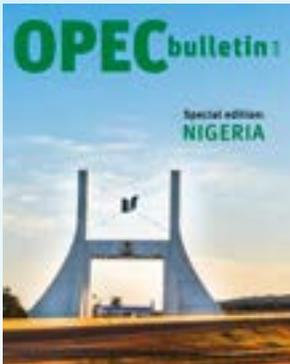


Source: Platts. As of January 1, 2016, Argus. Prices are average of available days.

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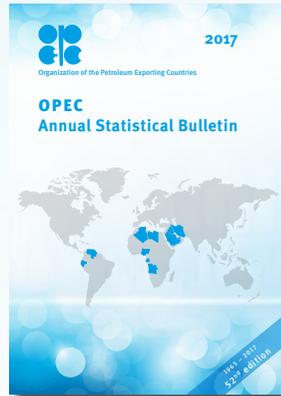
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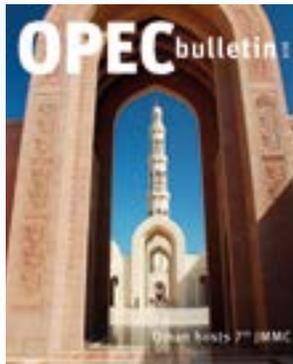
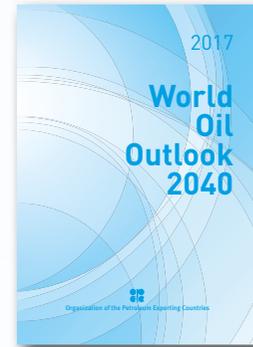


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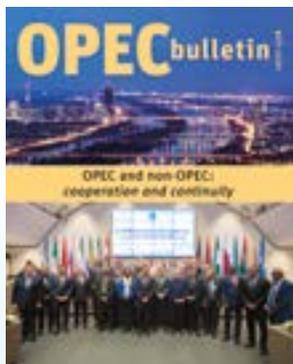
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