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Taking stock

The landmark production adjustment decisions taken by 24 OPEC and non-OPEC oil producing nations at the end of 2016, and renewed in May this year, responded to the urgent need to bring the market rebalancing forward. They specifically focused on stimulating the acceleration of the drawdown of the stock overhang. As a result the key 'stocks' metric has been monitored closely by all participants in the 'Declaration of Cooperation'. It begs the questions: how have stocks performed so far this year, and perhaps more importantly, what is the current trend?

In the first quarter of 2017, OECD commercial oil stocks actually rose by 44 million barrels (m b), much higher than the seasonal average of 36m b. It should be noted that contributing to this build was the fact that refinery maintenance globally was much heavier during the first quarter. In January and February, for example, one million barrels a day (m b/d) of throughput was shut down for maintenance in the US alone, which equated to approximately 60m b.

It is also important to remember that the fourth quarter of 2016 was a period of significantly rising supplies that were working their way through the market in the early part of 2017. From September to November 2016, non-OPEC production increased by around 1.8m b/d, while OPEC production increased by about 500,000 b/d. These increases need to be set against a global demand increase of just 200,000 b/d in the fourth quarter of 2016, compared to the third quarter.

OECD commercial oil stocks started to fall, however, in each of the three months comprising the second quarter of 2017. In aggregate, this equated to a drop of close to 9m b compared to the seasonal average of 45m b. It was clear evidence that the OECD inventory overhang of crude and oil products onshore was declining.

The most recent data for July 2017 now shows OECD commercial oil inventories around 195m b above the five-year average, down 145m b from the close to 340m b seen at the beginning of 2017. There has been some concern that US has been an outlier in this trend and there is no doubt that the US has taken longer to destock, particularly given rising production there in the first quarter of 2017. However, we recently witnessed nine consecutive weeks of crude oil stock draws in the US across the months of July and August. This amounted to a total drawdown of over 51m b, compared to the same period in 2016 when US crude oil stock levels were relatively flat.

It should be noted that the final week of August (week ending September 1) actually saw a US crude oil stock build of around 4.5m b, although this was to be expected following the refinery outages after Hurricane Harvey hit Texas and Louisiana.

Floating storage has also been on a declining trend since June, supported by a narrowing contango. As a whole, industry data for 2017 suggest that crude in floating storage has fallen by more than 30m b since the beginning of the year.

At the most recent meeting of the Joint Ministerial Monitoring Committee (JMMC), delegates highlighted the efforts made by OPEC and participating non-OPEC producing countries. These have continued to yield positive results in the joint efforts to achieve the goal of rebalancing the oil market.

The high conformity levels of participating OPEC and non-OPEC producing countries, in accordance with the 'Declaration of Cooperation', have clearly played a key role in this global destocking process. Signatories of the Declaration achieved conformity levels of 98 per cent and 94 per cent in June and July, respectively, following similar high levels in previous months.

Over the first half of the year, the collective efforts of participating producer nations have pulled close to 350m b in aggregate from global supply. It is easy to imagine what the market would have looked like had these 24 countries not taken such collective action.

With this in mind, the JMMC has expressed great satisfaction with the results achieved so far and with the steady progress made towards full conformity. At the same time, however, it has continued to encourage all participating countries to continue to try to achieve full conformity for the benefit of producers and consumers alike.

Alongside this positive conformity story, another optimistic indicator going forward is global oil demand growth. It is estimated to increase by close to 2m b/d from the first to the second half of this year. This has been confirmed by the July data. The US, in particular, is expected to be responsible for a significant amount of this growth given the rising demand for transportation fuels there during the summer driving season. Undoubtedly this boost in demand will contribute to further reductions in commercial oil inventories.

There is no doubt that the oil market is moving in the right direction towards the objectives of the 'Declaration of Cooperation'. But patience and perseverance are still required. As the Chinese philosopher, Confucius, once said: "The man who moves a mountain begins by carrying away small stones."

The rebalancing process was never going to happen overnight; it was never going to happen in a linear fashion; and it was always going to require a concerted effort by a wide range of industry stakeholders. As the JMMC stated in the conclusion of its latest press release, all options, including the possible extension of the 'Declaration of Cooperation' beyond the first quarter of 2018, have been left open to ensure that every effort is made to rebalance the market for the benefit of all.

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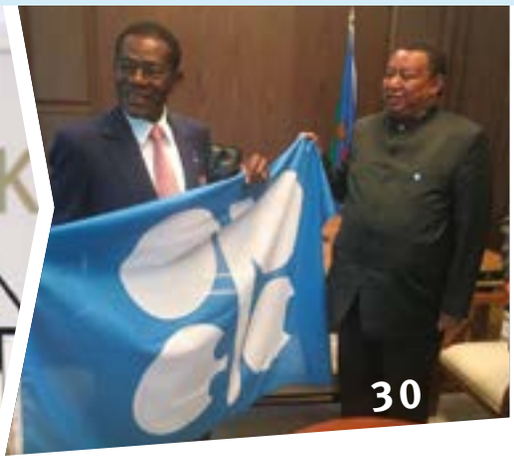

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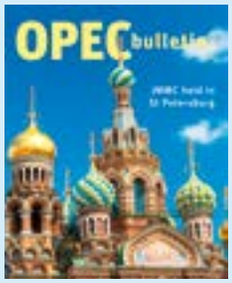

Cover
This month's cover reflects the 4th Joint Ministerial Monitoring Committee (JMMC) held in July in St Petersburg, Russia (see feature starting on p4).

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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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4th Meeting of the Joint Ministerial Monitoring Committee in St Petersburg, Russia

JMMC confident oil market is steadily moving towards rebalancing

The 24 participating oil producing countries (13 from OPEC, 11 non-OPEC) of the 'Declaration of Cooperation' converged on Russia's cultural capital of St Petersburg on July 24, 2017, for the 4th Meeting of the Joint OPEC-non-OPEC Ministerial Monitoring Committee (JMMC). The* OPEC Bulletin's *Scott Laury reports.

On the panel (l–r): Khalid A Al-Falih, President of the OPEC Conference and Minister of Energy, Industry & Mineral Resources, Saudi Arabia; Alexander Novak, Minister of Energy, Russian Federation; Issam A Almarzooq, Minister of Oil and Minister of Electricity and Water, Kuwait; and Mohammad Sanusi Barkindo, OPEC Secretary General.

The fourth edition of the JMMC was hosted by the Russian Federation, which co-chairs the Committee along with OPEC Member Kuwait. The site selected for the meeting was the elegant cultural hub of St Petersburg.

In opening the meeting, the Committee expressed its deep appreciation to Co-Chairman Alexander Novak, Minister of Energy of the Russian Federation, for hosting the event and for the warm hospitality and excellent arrangements made for the occasion.

Opening remarks were delivered by Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources, and President of the OPEC Conference; Alexander Novak; Issam A Almarzooq, Kuwait's Minister of Oil and Minister of Electricity and Water and Chairman of the JMMC; and Mohammad Sanusi Barkindo, OPEC Secretary General.

The JMMC then reviewed the June 2017 report on oil market developments and an implementation assessment of the first six months of the 'Declaration of Cooperation' as submitted by the Joint OPEC-non-OPEC Technical Committee (JTC), which met on July 22, 2017, in St Petersburg in the lead-up to the JMMC Meeting.

Slow and steady progress

The JMMC concluded that the oil market was making steady and significant progress towards rebalancing.

"The continued strengthening of the global recovery is underway, with stability in the oil market remaining a key determinant," a press release issued by OPEC after the meeting stated. "The market volatility has been lower in recent weeks and investment flows have visibly started to improve in the industry."

Khalid A Al-Falih, President of the OPEC Conference and Minister of Energy, Industry & Mineral Resources, Saudi Arabia.

Co-Chairman Alexander Novak, Minister of Energy, Russian Federation.

The JTC report also highlighted several positive indicators that could provide support to the market in the months ahead, including rising demand, continued high levels of conformity and the falling overhang of OECD commercial oil stocks

"Oil demand is expected to increase significantly in 2H17 compared to 1H17, with the growth reaching a level of 2 million barrels/day, which should sustain the inventory draws," the press release stated, referring to the JTC report.

"Furthermore, the participating OPEC and non-OPEC producing countries achieved a conformity level of 98 per cent in June 2017, the same level of high conformity observed for the first six months from January to June 2017. Also, the overhang of OECD commercial oil stocks above the five-year average level has fallen by 90m b for the period from January to June 2017 and now stand at 250m b."

The JMMC pointed out, however, that despite the high level of conformity at the aggregate level, there was still room for improvement by some participating countries, and urged all participating producers to press onwards towards 100 per cent conformity for the remaining period of the 'Declaration of Cooperation'.

Supply growth moderating

The JMMC noted that new final investment decisions related to oil company projects had fallen significantly below historic averages, which could moderate future supply growth.

"Shale oil projects, which have been the source of a sizable share of oil supply growth in the past three years, are going through a period of slowing well productivity, accelerating cost inflation, deceleration of rig count growth and constrained capital market access," the press release stated.

The JMMC also reviewed the presentations made by Libya and Nigeria on their production recovery plans, prospects and challenges, acknowledging the upside limitations of both countries to go beyond their current production levels.

"Once their production levels stabilize, participating producing countries should further cooperate in a manner that contributes to the stabilization of the market," the press release added. "The JMMC will continue to monitor and recommend further actions, including the holding of an Extraordinary Meeting of the Conference of the 24 producing countries, if needed."

The JMMC comprises the Oil and Energy Ministers of OPEC Members Algeria (Mustapha Guitouni, second r), Kuwait (Issam A Almarzooq, third r — Committee Chairman) and Venezuela (Dr Nelson Martinez, second l), as well as non-OPEC Oman (Mohammed Hamad Al Rumhy, l) and the Russian Federation (Alexander Novak, third l). Pictured with Khalid A Al-Falih (c), Minister of Energy, Industry & Mineral Resources, Saudi Arabia, and President of the OPEC Conference; and Mohammad Sanusi Barkindo (r), OPEC Secretary General.

In this regard, the JMMC welcomed Nigeria's voluntary offer to implement the appropriate production adjustment as soon as its recovery reaches a sustainable production volume of 1.8m b/d.

Finally, the JMMC recommended keeping the extension of the 'Declaration of Cooperation' beyond 1Q18 as an option should further action be required for the stabilization of the market.

Before closing the meeting, the JMMC announced that the 5th Meeting of the JMMC would take place in September 2017 or earlier if deemed necessary.

After the meeting concluded, a press conference was held at which the President of the OPEC Conference, the Chairman and Co-Chairman of the JMMC, along with the Secretary General and Venezuela's People's Minister of Petroleum, were available to answer questions from the international media covering the event.

Delegates attend the 4th Meeting of the Joint Ministerial Monitoring Committee in St Petersburg.

Speaking to the press are (l–r): Dr Nelson Martinez, (then) People's Minister of Petroleum, Venezuela; Mohammad Sanusi Barkindo, OPEC Secretary General; Issam A Almarzooq, Minister of Oil and Minister of Electricity and Water, Kuwait; Alexander Novak, Minister of Energy of the Russian Federation; and Khalid A Al-Falih, Minister of Energy, Industry & Mineral Resources, Saudi Arabia, and President of the OPEC Conference.

Conference President says OPEC and non-OPEC unity will make the difference

In his opening remarks to the 4th Meeting of the JMMC in St Petersburg, Khalid A Al-Falih, Saudi Arabia's Minister of Energy, Industry and Mineral Resources, and President of the OPEC Conference, stressed that the continued unity among the 24 OPEC and non-OPEC participating countries of the 'Declaration of Cooperation' will be the key ingredient to success in achieving a stable and growing global oil market.

Al-Falih began his remarks with a brief tribute to the Russian Federation and his colleague and host for the occasion, Alexander Novak, Russian Minister of Energy.

"It is a pleasure to be back in St Petersburg, and I would like to thank Alexander Novak both for hosting this gathering and for his tireless efforts and strong support for the effective cooperation between OPEC and key non-OPEC producers — including, of course, the Russian Federation."

He went on to acknowledge the important work being done by the JMMC, the JTC and their respective leadership teams.

"I also want to acknowledge the efforts of the Joint Ministerial Monitoring Committee under the leadership of the Minister of Oil and Minister of Electricity and Water of Kuwait, Issam A Almarzooq; the contributions of the Joint Technical Committee; and the work of the OPEC Secretariat and Mohammad Barkindo. I would note that at our last meeting in May, delegates agreed to expand the mandate of the JMMC to continue to monitor levels of conformity and make additional recommendations, if necessary, in light of changing market conditions."

He then proceeded to outline the oil market developments that had transpired since the last meeting of the JMMC, noting three important positive trends that were developing despite the ongoing pressure placed on the market due to uncertainty regarding supply and demand.

"First, almost a decade after the world economy was rocked by financial turmoil, the global recovery has finally become 'broad-based and stable,' according to most major economic institutions," he maintained. "Second, oil demand is picking up, from moderate growth of 1m b/d in the first quarter of the year to 1.5m b/d in the second quarter, including rising demand growth in the key consuming markets of China, India and the United States. In coming years, we expect that oil demand will continue to increase at a healthy pace."

Decreasing inventories

And the third important trend he pointed out concerns declining global inventories.

"And the third key positive trend is the reverse in the build-up in global inventories. For example, US inventories have fallen from a peak in March 2017 of about 538m b to a little more than 490m b. The most recent data show that OECD crude oil inventories as a whole are 250m b above the five-year average, down from close to 340m b in January. Over the first half of the year, our collective efforts have pulled close to 350m b in aggregate from global supply — so you can imagine where the market would be had we not acted."

Although this general upward trend is expected to continue, he added that several challenges were to be expected in the months ahead.

"Despite the positive indicators I just mentioned, we must acknowledge that the market has turned bearish with several key factors driving this behaviour: reported conformity not matching export figures, increased Libyan and Nigerian production, US shale forecasts, and finally the outlook past the March 2018 expiry date of our agreement."

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

Strong conformity

"Although conformity with the production agreement remains strong at the aggregate level, some countries continue to lag — which is a concern we must address head-on. In addition, exports have now become the key metric for financial markets, and we need to find a way to reconcile credible export data with production data and our monitoring mechanism."

On the issue related to growing supplies from Nigeria and Libya, both of which were exempted from the decision, he said the JMMC would continue to assess the situation and act appropriately.

"We remain supportive of our partners in both of those nations as they work on the recovery of their industries and economies. The Committee, however, should monitor the impact of such growth on global supply-demand balances.

Another important factor, he stated, is the growth outlook for US tight oil, which currently seems to be on a downward trend.

"Looking at US tight oil, while the drilling rig count and production growth accelerated in the last few months with the recovery in oil prices, the sharp rate of increase in rig levels has already started to ease significantly. There are many factors at play, including rising costs, declining well productivity, and the movement of production to less prolific acreage and more marginal wells."

Looking ahead to the 2018 outlook, he maintained that demand growth is forecast to be robust.

"Let me also comment briefly on the 2018 outlook, where demand growth forecasts made by various institutions range between 1.4m and 1.6m b/d. This compares to US crude oil production growth of 600,000 b/d predicted by the US Energy Information Administration. This means that after accounting for shale growth there will be a net of between 800,000 b/d and 1m b/d of demand to be met by other producers."

He concluded his remarks by emphasizing that further collaboration between the OPEC and non-OPEC producers will be key to achieving a stable and growing global oil market.

"In summary, ladies and gentlemen, let me stress that the historical collaboration and cohesion among the OPEC and non-OPEC members remains exemplary in spite of the headwinds we are facing, and our united stance amid a complex market environment will continue to play the most important role in shaping market sentiment."

JMMC Chairman praises unprecedented OPEC-non-OPEC cooperation

In his remarks to the 4th Meeting of the JMMC, Issam A Almarzooq, Kuwait's Minister of Oil and Minister of Electricity and Water, and Chairman of the JMMC, underlined the many milestones being achieved through this historic OPEC-non-OPEC collaboration.

Almarzooq began by providing a historical overview of how this cooperative relationship began and led to the creation of the JMMC.

"The JMMC was established following OPEC's 171st Ministerial Conference decision of November 30, 2016, and the subsequent historic 'Declaration of Cooperation' made at the joint OPEC and non-OPEC Ministerial Meeting of December 10, 2016. At these meetings, 11 non-OPEC oil producing countries cooperated with the 13 OPEC Member Countries in an effort to accelerate the stabilization of the global oil market through adjustments in oil production of around 1.8m b/d."

The Chairman also explained the importance of the implementation monitoring process and how the JTC was founded.

"In support of this historic cooperation, this Committee, which concluded its inaugural meeting on January 22 at the OPEC Secretariat in Vienna, put together a framework of monitoring mechanisms. Part of that framework included the creation of a Joint Technical Committee — the JTC — which met for the sixth time two days ago, on the July 22, here in St Petersburg. The mandate of the JTC was to produce, with the support of the Secretariat, a monthly report updating the JMMC on the status of the implementation process."

He then provided the background on the key decision made at the last JMMC meeting in May 2017, which led to an extension of the 'Declaration of Cooperation'.

"At the last meeting of the JMMC on May 24, 2017, our committee, having considered market conditions and global inventory levels, concluded that it was necessary to extend the production adjustments. The committee also recommended that the duration of the anticipated extension should be longer than the originally envisaged period in the 'Declaration of Cooperation' of six months. Having discussed various scenarios presented by the JTC with regard to the extension of the 'Declaration of Cooperation', the JMMC recommended that the production adjustments of the participating countries should be extended for nine months, commencing July 1, 2017."

The 172nd Meeting of the OPEC Conference and the 2nd OPEC and non-OPEC Ministerial Meeting of May 25, 2017, then adopted these recommendations and agreed to expand the mandate of the JMMC to continue to monitor conformity, evaluate market developments and make appropriate recommendations if deemed necessary.

The Chairman reiterated that throughout the entire span of this cooperation, the overarching goal has remained constant: to achieve an enduring stability for the global oil market.

"While our meeting today is the first since the extension of the 'Declaration of Cooperation' and expansion of our mandate, our core tasks remain the same, namely ensuring that the objectives of the Ministerial Conference decision and the 'Declaration of Cooperation' are achieved through the successful implementation of voluntary adjustments in production. Furthermore, we remain committed to joint cooperation for the achievement of a lasting stability in the oil market — in the interest of oil producers, consumers and the industry."

He went on to commend the high levels of conformity achieved during the first half of 2017.

Issam A Almarzooq, Kuwait's Minister of Oil and Minister of Electricity and Water, and Chairman of the JMMC.

"The implementation of the 'Declaration of Cooperation' for the first six months of 2017 saw conformity levels unprecedented in the history of OPEC. This is a convincing demonstration of the willingness of all participating countries to continue their cooperation until the set goal of returning the stock overhang to the five-year average is achieved."

The Chairman also gave special recognition to those participating nations that performed beyond what was expected of them.

"It should be acknowledged that some producing countries have over-performed, and they certainly merit recognition for their dedicated efforts. Without their exemplary performance, we certainly would not have seen such high conformity levels. Therefore, allow me to offer my deep appreciation to all those countries for conforming beyond expectation. I hope their excellent performance will motivate other producing countries to reach their own goals — and perhaps to even surpass them."

He then underlined the importance of staying firmly committed to achieving the common goal of full implementation of the 'Declaration of Cooperation'.

"I think now is an opportune moment to remind all of us, individually and collectively, to remain focused and not lose sight of our aspirations. Despite the progress achieved, I would like to warn against complacency and stress the absolute paramount importance of staying the course and striving to achieve better levels of conformity over the next nine months."

After providing an overview of the current developments in the global oil market, he stressed the need to remain patient as the complexities of the rebalancing process take time.

"I would like to emphasize the need for patience and perseverance. As the old saying goes, 'Rome wasn't built in a day'. The extension of the 'Declaration of Cooperation' is for nine months and it began to take effect on July 1.

"Today is the July 24. There are a total of 274 days in these nine months, therefore, we have not even seen nine per cent of that time elapse. We need to redouble and focus our efforts as we have 91 per cent of the course still to see out!"

He then alluded to the bright future ahead for the global oil market and economy when these unprecedented cooperative efforts meet with success.

"Each of us is looking forward to the day when investments once again return to healthy levels, and the world economy is strong and robust. This will be well-served if we do our work — and the long-term deepening of ties and ongoing cooperation between OPEC and non-OPEC countries will go a long way to supporting such goals."

OPEC Secretary General optimistic that joint efforts are working

OPEC Secretary General, Mohammad Sanusi Barkindo, began his remarks by expressing his appreciation to the Russian Federation and Minister of Energy, Alexander Novak for hosting the meeting and for his delegation's ongoing leadership role in the historical OPEC-non-OPEC cooperation over the previous months.

He also commended the President of the Conference and the JMMC Chairman for their unwavering support of the joint efforts to bring stability, growth and investment back to the global oil market.

He then mentioned his last visit to Russia in June and the ongoing importance of OPEC-Russia relations.

"I was last here back at the start of June for the prestigious St. Petersburg International Economic Forum. It was a truly global gathering of leaders and experts. This followed the meeting of the 6th High-level OPEC-Russia Energy Dialogue in Moscow on the last day of May. This was another opportunity to explore and advance this important dialogue, which is a great example of an active and well-structured dialogue among producing nations, as well as discuss opportunities to further institutionalize the dialogue between OPEC and non-OPEC on a sustainable basis."

During that visit, the Secretary General also had the opportunity to meet with the Russian Prime Minister and discuss the deepening ties between OPEC and Russia.

"Whilst in Moscow I was also extremely grateful for the opportunity to meet with Dmitry Medvedev, Prime Minister of the Russian Federation. We discussed the 'Declaration of Cooperation' and the good relations between OPEC and Russia that are playing a role in helping the oil market to recover from the downturn that was felt throughout the industry in 2015 and 2016, as well as ways and means to enrich and deepen our important energy dialogue."

The Secretary General also acknowledged the key role being played by the JTC and its leadership team in supporting the implementation process.

"I would like to acknowledge the hard work of the Joint Technical Committee, ably supported by the OPEC Secretariat, which met here in St Petersburg only two days ago on July 22.

"Your efforts in supporting this Ministerial Committee are greatly appreciated. I would particularly extend my deep appreciation to the two Co-Chairs of the JTC, Haitham Al-Ghais and Pavel Sorokin, for their ongoing and important work to support the 'Declaration of Cooperation'."

He proceeded to highlight a number of key oil market developments that had occurred since the last meeting of the JMMC.

"We continue to see high conformity levels among OPEC and participating non-OPEC producing countries to the 'Declaration of Cooperation'. We believe that the overall conformity figures for participating countries in the first half of the year are a convincing demonstration of the willingness of all countries to help rebalance the market."

In terms of inventories, he said global stocks were decreasing, but there was still more to be achieved.

"Secondly, while a number of headwinds in the first quarter of 2017 limited the drawdown of stocks, we are now seeing OECD stock levels fall on a regular basis. While it is clear we are heading in the right direction, the overall picture underscores that more needs to be done. We are evidently not where we want to be in terms of reaching the five-year average."

Two other positive developments he outlined were the solid growth in global oil demand and an expanding world economy.

"We believe demand is holding steady, with expectations for around 1.3m b/d in both 2017 and 2018. Moreover, we expect to see a significant increase in global demand, of close to 2m b/d, from the second to the third quarter this year. Undoubtedly this anticipated boost in demand will contribute to further reductions in commercial oil inventories. Additionally, we expect to

Mohammad Sanusi Barkindo, OPEC Secretary General.

see solid global economic growth of 3.4 per cent in both 2017 and 2018."

The Secretary General noted that several challenges still needed to be overcome before a rebalanced market would be attainable.

One area is the continued increases in supply coming from non-OPEC countries, mainly in North America.

"On the supply side, non-OPEC supply from countries outside of the 'Declaration of Cooperation' has increased this year, and there are expectations for greater quantities, mainly in the US from tight oil. Overall growth for non-OPEC this year is now expected to be 800,000 b/d."

He added that an increasing level of volatility had entered the market and was affecting market sentiment.

"The period since the last JMMC meeting in May has also been one of mixed market sentiment. It has been an unpredictable period, with significant price volatility. Traders have been seemingly unclear as to how they view the market in the second half of 2017 and into 2018."

Another reason for concern, he said, was the lack of robust long-term investments, which are crucial to ensuring future supply.

"While it has been positive to see short-cycle industry investments returning, we need to recognize that the global industry still requires the return of more long-cycle investments, the baseload for the industry's long-term future."

The Secretary General concluded his remarks by encouraging the participating OPEC and non-OPEC countries to stay focused on the task at hand so that their hard work would pay off in the end.

"We should not be side-tracked by this external analysis or media report and we need to appreciate that bumps on the market rebalancing path were always going to be part and parcel of the process. We are also only just over three weeks into the renewal of the 'Declaration of Cooperation', there are more than eight months remaining. It is always wise to look ahead, but we should not try and look further than we can see. We need to focus on the now, and ensure that each step we take moves us closer to our stated goal."

All images in this article are courtesy of the Ministry of Energy of the Russian Federation.

22nd World Petroleum Congress

The petroleum world gathers in Istanbul

Widely recognized as the 'Olympics' of the oil and gas industry, the World Petroleum Congress (WPC) was held for the 22nd time in Istanbul, Turkey, from July 9–13, 2017. Under the theme of 'Bridges to our energy future', the five-day event brought together some 3,000 delegates, 500 CEOs, 50 ministers and around 25,000 visitors to the accompanying exhibition. With the OPEC Secretary General, Mohammad Sanusi Barkindo in attendance, the OPEC Bulletin *reports from the event.*

They say Istanbul is where the continents collide — the meeting point between East and West. The city straddles Europe and Asia and the mix is evident throughout with the mesmerizing architecture and culture combining Asia, Europe and the old city of Constantinople — from the Hagia Sophia to the Blue Mosque; from the Topkapi Palace to the Grand Bazaar. It is also most impossible to turn a corner in Istanbul without finding something to marvel upon.

The city is cut by the Bosporus Strait, where boats of every size navigate the internationally significant waterway, where old men crowd bridges across the natural strait to drop fishing lines and gossip, and where locals and tourists cross the bridges to move from one continent to another.

Given these connections, it seems apt that the organizers created this year's WPC theme, 'Bridges to our energy future'. This was emphasized by Turkey's President Recep Tayyip Erdoğan when he addressed delegates at the opening presidential ceremony. Erdoğan stressed that the Turkish Government is keenly aware that Turkey is a key player in the Eurasian energy axis.

Erdoğan also noted that new oil and natural gas pipelines have the potential to further strengthen Turkey's role as a global energy corridor and major hub. In this regard, he noted the successful completion of the Baku-Tbilisi-Ceyhan oil pipeline project, which is carrying Azeri natural gas to the Mediterranean, and the Baku-Tbilisi-Erzurum natural gas pipeline project that will make it possible to carry natural gas from Azerbaijan to Turkey and Europe. He also highlighted the Southern Gas Corridor (SGC) development, as well as the Turkish Stream, an energy project that is being conducted with Russia.

Mohammad Sanusi Barkindo, OPEC Secretary General.

This theme was also elaborated on at the opening ceremony by Jozsef Laszlo Toth, President of the World Petroleum Council, who noted that energy corridors play an important role in securing safe and economically viable access to hydrocarbon markets, especially from Central Asia and from the Middle East.

He added that given an expanding global population, continued global economic development, and the fact that oil and natural gas will remain the world's leading energy resources for decades to come, it is vital to find ways and means to deliver future energy demand around the world in a safe and environment-friendly manner. He said that it will "require massive investment, technology, the highest skilled human resources and superior ethical business practices."

OPEC Secretary General

It has been evident over the past year that OPEC has also been undertaking actions that focused on bridging to the future, specifically by helping bring forward the oil market rebalancing process and seeing sustainable stability return to the market. These issues were elaborated

Turkish President, Recep Tayyip Erdoğan, delivered a speech during the 22nd World Petroleum Congress at the Istanbul Convention Centre in Istanbul, Turkey.

Fatih Birol, Executive Director, International Energy Agency (IEA).

Dr Sun Xiansheng, Secretary General, International Energy Forum (IEF).

On the sidelines of the WPC Mohammad Sanusi Barkindo, OPEC Secretary General, met with Mustapha Guitouni, the newly appointed Algerian Minister of Energy.

on by the OPEC Secretary General, Mohammad Sanusi Barkindo, through a number of Congress interventions, media interviews, as well as meetings with an array of Ministers and industry leaders.

At the Congress, Barkindo was joined by Fatih Birol, the International Energy Agency (IEA) Executive Director, on a panel (plenary) session titled 'IEA — OPEC dialogue', with the session chaired by Dr Sun Xiansheng, the Secretary General of the International Energy Forum (IEF).

The Secretary General provided a brief overview of the oil market since the landmark 170th (Extraordinary) Meeting of the OPEC Conference in Algiers, on September 28, 2016, and the historic production adjustment decisions taken by OPEC at the 171st Ordinary Meeting of the OPEC Conference on November 30, 2016, and the 'Declaration of Cooperation' with 11 non-OPEC nations on December 10, 2016, which was renewed on May 25, 2017.

He particularly underscored the importance of the 'Declaration of Cooperation' and said this had changed the atmosphere of the oil market and "restored confidence, not only within OPEC, but also in enabling us to reach out to non-OPEC friends."

He stressed that the level of conformity to the production adjustments of those participating countries in the 'Declaration of Cooperation' has been "most commendable" and added that while the market rebalancing

Delegates attending the 22nd WPC at the Istanbul Convention Centre in Istanbul, Turkey.

Mohammad Sanusi Barkindo, OPEC Secretary General, speaks to the media in Istanbul.

had taken longer than expected at the end of 2016, it remained on course, with global stock levels falling. He added that he saw this destocking process continuing in the second half of 2017, particularly with the expected pick-up in global demand.

Dialogue with all producers

Barkindo also added that it was vital to continue to be proactive in evolving dialogues with all producers to create a secure and sustainable energy future. In this regard, in talking to the media in Istanbul, he noted that "OPEC has broken the ice in reaching out to shale producers in the US.

"We sat with them and we had a very productive and very useful preliminary meeting with them. We all agreed that we should continue these meetings," he added.

He said that he believed that OPEC and shale producers have begun to "understand" each other, and at the end of the day, he said, we all belong to the same oil market.

He noted that all global oil producers should help balance the market. "It

Barkindo (r), visits the OPEC stand at the WPC. Here seen with Members of the Secretariat's team.

Reuters

Rex Tillerson (l), US Secretary of State, and former CEO at ExxonMobil, received the Dewhurst Award from Jozsef Laszlo Toth, President of the World Petroleum Council.

is beyond any group of stakeholders, it has to be a collective responsibility of all producers."

In regards to the 'Declaration of Cooperation', he also stressed that it is vital that we "try to institutionalize it." He said that "we are looking beyond the market rebalancing."

Informal meetings

On the sidelines of the WPC, the Secretary General also held a series of informal meetings with OPEC and non-OPEC oil and energy ministers, and took time out to visit a number of OPEC Member Country pavilions at the WPC exhibition.

Barkindo met with the newly appointed Algerian Minister of Energy, Mustapha Guitouni, who thanked the OPEC Secretary General for the efforts he has embarked on since he assumed office in August 2016, specifically those related to the landmark decisions taken by OPEC and non-OPEC oil-producing countries.

Barkindo then briefed the Algerian Minister on the specifics of the decisions taken and acquainted the Minister with the May 25 renewal of the 'Declaration of Cooperation' by participating OPEC and non-OPEC producing countries that extended the production adjustments for a further nine months, beginning on July 1, 2017.

The Secretary General also met with Qatar's Minister of Energy and Industry, Dr Mohammad Bin Saleh Al-Sada, Kuwait's Minister of Oil and Minister of Electricity & Water, Issam A Almarzooq, and the Russian Federation's Minister of Energy, Alexander Novak.

In touring the exhibition arena, the Secretary General visited a number of OPEC Member Country pavilions — Algeria, Kuwait, IR Iran, Qatar, Saudi Arabia, Venezuela, as well as the OPEC stand. He was briefed

by exhibitors at each pavilion on their petroleum and energy activities and plans.

The Dewhurst Award

The WPC in Istanbul also witnessed the recognition of Rex Tillerson with the Dewhurst Award. Tillerson became US Secretary of State at the end of 2016, but for 41 years previously he had been an ExxonMobil employee, of which the last ten years were as Chief Executive Officer (CEO). The Award, named after Thomas Dewhurst, who organized the first WPC in 1933, celebrates excellence in the petroleum industry.

Tillerson, the tenth recipient of the Dewhurst Award, reminisced warmly about his time with ExxonMobil and praised those working in the industry. "I miss all of you," Tillerson, told delegates. "I miss you as colleagues, I miss you as partners, I miss you as competitors, I miss the healthy debates, the collaboration, the breakthroughs that were achieved."

Paying tribute to his former colleagues and workforce at ExxonMobil, Tillerson added: "I accept this award on behalf of the hard working men and women of ExxonMobil. This award is for them — I am here because of what they have achieved."

In bridging to the future, Tillerson noted that Houston (Texas) will be the host of the next WPC in 2020. A Texan native, Tillerson quipped that "I hope to be there ... in some capacity."

To Houston in 2020

Waving goodbye to Istanbul, which Laszlo Toth described as holding a "memorable congress" and where "we enjoyed the warm hospitality of our Turkish host", the skyline and culture in Houston will obviously offer up something different in 2020. It is a city with a tremendous oil history related to the Texas 'oil boom' that occurred during the early 20th century following the discovery of a large petroleum reserve near Beaumont, and a skyline that is the headquarters of more than 500 exploration and production companies and 150 pipeline transportation operators.

The Mayor of Houston, Sylvester Turner, speaking in Istanbul, praised the WPC and Turkish Congress organizers and at the same invited representatives of the oil industry to participate in 2020.

The baton has now been passed to Houston, as the WPC looks to continue to build energy bridges across the world.

Sylvester Turner, the Mayor of Houston, speaking in Istanbul, praised the WPC and Turkish Congress organizers and at the same time invited representatives of the oil industry to participate in the WPC 2020. The baton has now been passed to Houston.

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World Petroleum Congress 2017

Energy Evolution

At the 2017 World Petroleum Congress (WPC) in Istanbul a host of high-level speakers delivered speeches and presentations focused on key energy themes. One of the main keynote addresses came from ***Alexander Novak****, Russia's Minister of Energy, and a key architect of the landmark OPEC and non-OPEC 'Declaration of Cooperation'. The* OPEC Bulletin *provides a translated and shortened version of his remarks to the Congress, which underscored some of the key challenges, as well as opportunities, surrounding the world's energy future.*

Energy is the foundation of social development. Over the next 20 years, the Earth's population will multiply further, and process of electrification will be brought to millions more in developing countries. The continuing growth of global GDP will positively influence the well-being of all social classes, especially the expanding middle class. The success of medicine and agriculture will enable the average life span of the world's population to increase. This will require a power supply increase, and according to experts, energy demand will grow by at least 25 per cent.

However, the next 20 years will be markedly different from what we have been accustomed to over the past 100 years. It is quite possible that an energy revolution will not consist of a single step, but if we were to close our eyes today and open them in 20 years, I am confident that our sector will have changed considerably, and evolved to meet the plethora of energy challenges.

This Congress has brought together the heads of the world's largest companies to discuss the basic vectors of the world's energy development. And the main issue we are facing is how we can ensure an uninterrupted supply of energy to the global economy, irrespective of the political and economic volatility of today.

Alexander Novak, Russia's Minister of Energy, was one of the WPC's 2017 main keynote speakers.

Typical in terms of future uncertainty is an evaluation of the range of long-term energy scenarios. According to current International Energy Agency (IEA) estimates, the production volume variation of different primary energy resources in 2040 with respect to its baseline scenario ('New Policy') exceeds 30, 40 and even (for coal) 75 per cent. The variation of evaluations for the respective volumes of end-use energy demand is mainly in the range of 20 to 40 per cent. Variations in baseline scenarios offered by other leading analytical centres and companies are also considerable: there is a twofold, or sometimes even greater difference, in the estimated future annual growth rates of primary energy resource consumption.

We live in interesting times. On the one hand, we enjoy unprecedented transparency in markets, companies, access to information, technological breakthroughs and pure energy technologies. On the other, we can observe destructive trends of artificial, unilateral barriers aimed at the non-competitive promotion of products, the intimidation of partners, the concentration of technologies that leads to technological inequality in the world, as well as the politically motivated limitations in terms of infrastructure development and financing.

Together we need to define what kind of energy we would like to see in the future: a foundation for the development of humankind or a political tool?

In the era of the Fourth Industrial Revolution and the 'age of electricity', the energy source itself is not that important. What is more critical is the following:

- Its 'on demand' availability;
- The competitiveness of its price; and
- Clear and generally accepted consumer qualities.

In view of these considerations, I would like to focus on several important aspects affecting energy markets:

1. Evolution of the fuel balance;
2. Technological progress; and
3. Rules being shaped for trade, financing and technological exchange on the energy markets.

World fuel balance

The future balance of hydrocarbons is currently one of the most significant issues, as evidenced by its discussion at the St Petersburg International Economic Forum in June.

The general consensus is that the world's demand for energy will grow, though the structure and geography of this demand will change significantly. Growth rates are most likely to decline, largely owing to technological progress and increased energy efficiency.

There will be a deep reform of the market's geographical structure, with the expected stagnation or reduction in energy consumption in OECD countries, while the centre of consumption growth will shift to the Asia, Middle East and Africa (AMEA) region, where consumption is expected to rise by a factor of at least 1.5.

The demand growth for hydrocarbons may reach up to 20 per cent in the case of oil and even more in the gas segment by 2035. However, the gross share of hydrocarbons in the energy balance will trend lower. Sustained growth in the world's GDP will be accompanied by the continuous expansion of automobilization and electrification in developing countries (primarily, India, Indo-China and African countries). The use of petrochemical products will expand in all spheres of modern life — currently they are used to manufacture nine out of ten of the objects that surround us.

The global economy has created an infrastructure focused on the consumption of hydrocarbons over the past 100 years — trillions of dollars and a huge number of man-hours spent in countless territories and lands. Many millions of people have been engaged in supporting this industry and maintaining the infrastructure; its evolution and development continues today. This not only concerns automobiles, petrol stations and the sectors servicing them, but also related machine building, marketing and maintenance, etc.

Any infrastructure reform, with any significant change in the fuel and energy balance, would take at least 25–30 years. Thus, the artificial speeding-up of decarbonization without proper calculations may devalue the investments made and seriously hit the competitive ability of many developing countries.

The climate agenda and renewable energy

Renewable energy will, in any case, be the fastest growing source of energy. The share of renewables and nuclear energy will increase in the world energy balance from 15 to 23 per cent by 2035, and the share of renewables (excluding hydro power) in power generation will grow from seven to 20 per cent within 20 years.

The growth of renewables in the energy balance is actively influenced by the UN Climate Agenda aimed at

reducing the emission of greenhouse gases to address climate change.

Despite the growing competitiveness of renewable energies, their development today still has limitations. These are primarily technological, which so far prevent them from full-scale use in transport, industry and power generation.

Nevertheless, the role of renewable energy will grow in the long term, and we believe that the co-existence of hydrocarbons and renewable energy will allow us to effectively facilitate the development of future energy and technologies.

In this context, I would like to give an example of an economically justified movement towards the use of pure energy: in Russia, a gradual replacement of coal-fired power generation by gas-fired power plants largely contributes to the reduction of greenhouse gas emissions. Today almost 85 per cent of energy in our country is produced from carbonless or low-carbon sources, and this value will reach almost 90 per cent (88.6 per cent) by 2035.

In 2015, according to the criteria of the Kyoto Protocol (and accounting for the absorbing capacity of forests) greenhouse gas emission in our country amounted to 57 per cent of the level recorded in 1990. Thus, Russia has moved beyond its commitments under the Kyoto Protocol and considerably compensated for the emission growth in other countries. We intend to strictly comply with our obligations under the Paris Agreement and will facilitate its fulfilment.

Thus, purity, reliability and accessibility to energy across the whole world will be provided by a reasonable combination of various energy sources. It is important for the process of enhancing reliability and purity of the power supply to be inclusive and non-discriminating to those most vulnerable. Together we must direct this progress for the benefit of the whole of humankind.

Technologies shaping the energy future

I would like now to turn to the very important issue on which the future of energy will depend on to a large extent — technological progress. This sphere requires honest and open dialogue in order to understand how much and what type of energy we will need.

The so-called Fourth Industrial Revolution may exceed all the previous ones in terms of its impact on lifestyle and traditional consumer habits. Naturally, we are first of all interested in how it will influence energy markets. But in order to understand that, we must not limit ourselves to our sector alone, as in the rapidly changing globalized world no sector can exist in isolation. Let us highlight several key trends to be focused on:

1) Digital technologies;
2) Artificial intelligence and robotics;
3) Biotechnologies;
4) Materials science;
5) Infrastructure and transport reformations; and
6) Energy technologies.

Digital technologies

According to Moore's law, computing power in the world doubles every two years. The growth and availability of computers, and their adaptedness for the solution of social tasks have made IT one of the most rapidly growing segments of the global economy — the IT industry grows by ten per cent annually. It also serves as a basis for breakthroughs in other branches — explosive growth in other sectors is often possible due to digitalization and computerization.

Why is it so important? Over the course of history, humankind has acquired vast experience in interacting with each other, as well as with nature, but never before in history have we been able to analyze the data associated with this array of repeated actions and sequences in a detailed and scientific way. This is the so-called 'Big Data' analysis.

Analysis of these data arrays will have influence on all spheres of life and in all occupations — for example, accountants, air traffic control and even in pizza delivery. The results expressed in the optimization of procedures, itineraries, processes and job descriptions may cause the exponential growth of labour productivity.

Of course, one cannot fail to also mention such trends as the continued development of the Internet, as well as virtual reality.

It is a very concise list of developments currently occurring in the IT sector, but it concerns the trends that are influencing the energy sphere at this very moment.

Big data with regard to energy cannot only sharply reduce energy costs, potentially removing excess production costs, but it may also have a disruptive effect on the production and logistical chains, as well as consumer habits.

Of course, at present, we do not have a full understanding of the effect of these technologies, but further

Alexander Novak (l), Russia's Minister of Energy, presenting his address to the 22nd World Petroleum Congress.

energy efficiency improvements, as well as a deceleration of energy resource demand growth is obviously just a question of time.

Biotechnologies

Biotechnologies are of no less importance for us than anything else in this list. At first glance, it may seem that they have no relation to energy at all, but such a statement is misleading. All our energy consumption forecasts are based on population expansion, and the welfare of people.

One of the main driving forces behind the current population trends is the rapid development of biotechnologies. Such areas as immune engineering, human genome mapping and precise genetic engineering will enable us to considerably extend not only the average human lifespan, but also its active stage. And this, together with the population size, is directly connected to energy consumption.

The development of precise genetic engineering in crop production will continue to evolve given the necessity to feed an expanding population, and the sharp growth in agriculture productivity will not occur everywhere, but in particular regions. This will lead to a growing demand for transportation and storage. Both of these are quite power intensive sectors, which boosts energy demand.

Materials science

Breakthroughs in materials science have already made 3D printing possible, and its further development may lead to huge shifts in approaches to production. If some goods, or parts, can be printed near the consumer, the necessity for huge factories that produce goods that are large and inconvenient to transport disappears. Of course, a great deal of research and adjustment is necessary to make it commercially viable, but progress never stops. Changes in transport streams and the labour market will also influence the demand for fuel and power, and in turn, this will shape the world economy.

Infrastructure and transport reforms

Enhancing the reliability and accessibility of infrastructure in many energy branches facilitates the further globalization of the energy market, concerning such developments as pipelines, liquefied natural gas (LNG) and electric power.

We can observe a sharp rise in the number of

countries consuming LNG (from 18 to 32 in ten years), with the associated construction of regasification terminals and gas-supplying infrastructure.

This number may increase further. This is not only due to the climate agenda, but also due to the development of such technologies as floating regasification terminals, which can actually be driven to any remote area. There are projects where such terminals will not only regasify, but also immediately consume gas for power generation and water desalinization. Thus, prerequisites are created to solve a great number of problems for developing countries, in terms of improving access to energy supplies.

The proliferation of electric vehicles continues to influence global energy.

According to BP's current forecasts, the number of electric vehicles on our planet will increase 50 fold — from two million to 100m — within the next 20 years (by 2035). And according to Bloomberg calculations, it will remove from the market up to 1.4m barrels of oil/day. This will quicken with the likely emergence of budget-friendly electric vehicles in Asia-Pacific countries and Europe.

However, taking into account active sales tax equalization for cars with electric and petrol engines and demand saturation, the rate of electric vehicle propagation will decrease.

Electric vehicles will find their niche and coexist with petrol cars for a long time. Naturally, the spread of the use of electric vehicles may be significantly influenced by national energy policies and new breakthroughs in energy acquisition technologies.

Energy technologies

Everyone is familiar with the shale revolution both in the gas and oil industries. The optimization of production processes, the development of horizontal drilling technologies and the improvement of hydraulic fracturing made it possible to drill deeper, further, quicker and more efficiently.

This process is also continuing — 'Big Data' or machine learning in our sector may lead to higher optimization, and the reduction of costs and downtimes, which will make more oil available for consumers. Digitalization in this sector will enable more precise collector modeling and equipment attrition planning, without storing extra inventory and spare parts in the field, as well as the quicker drilling and transportation of drilling rigs.

Nowadays some companies already use smartphone applications to control drilling. It means that you can actually text your wife, order a pizza and browse the game score of your favourite soccer team all while continuing to lay a two-kilometre deep side track.

In the power industry, we can also witness a rapid development in technologies. Nets are becoming 'smarter' — smart grids are being introduced everywhere, the share of distributed generation is on the rise, new power transmission technologies, such as wireless transmission (via air), and the use of superconductors etc, are being tested.

The use of renewable energy sources is also continually being perfected, and it can compete with traditional power generation in terms of price, though it is still actively supported by subsidies.

Nuclear power plant technologies are being upgraded successfully, particularly those that operate in the closed nuclear fuel cycle.

The development of such technologies requires a new level of collaboration between scientific teams, manufacturing, and governmental structures. In this context, it is possible to maintain competitiveness only by joining forces with like-minded people. The new era may become the epoch of energy prosperity, or if we are not prepared for constructive cooperation, it may leave many with only secondary roles to play.

Geopolitics and artificial barriers

The energy of the future will depend not only on fundamental values and technologies. The most important factor for sustainable development is the unrestricted development of trade relationships, with crossflows of capital and technologies and collective research and development activities. Clear, transparent and fair rules of the game are required; otherwise politics can become a serious barrier for growth.

For example, very often we face artificial barriers for infrastructure development and artificial preferences to certain energy sources and suppliers.

Three years ago, at the World Petroleum Congress in Moscow, we warned about the possibility of such risky action, in particular with respect to the European gas market. We can see uncovered sabotage of economically justified and consumer-attractive infrastructure projects, interference in the commercial relationships of companies, preferences to certain transit countries, contrary to commercial common sense and transit safety considerations.

We can witness certain distortions in the energy

policy of some countries, which refuse to use effective and clean energy sources (nuclear power, gas) under the influence of political considerations. At the same time, the subsidizing of renewable energy continues, although in this day and age many are competitive without it.

Various limitations and particularly ex-territorial sanctions that have become fashionable in recent years do not contribute to stability either. They encompass the spheres of trade, investment and technology distribution. In fact, this policy is the continuation of protectionism and contradicts the principles of the World Trade Organization (WTO) and other international organizations — cooperation for the benefit of all countries in the world. Such short-sighted actions break the sector's market mechanisms, create artificial barriers for progress, and provoke, among other problems, a dangerous phenomenon in terms of technological inequality.

I am certain that only open trade links and technological collaboration based on commonly agreed rules and standards will contribute to the development of the global economy and international cooperation.

Today Russia is one of the leading energy powers and a guarantor of the global economy's energy security. We see huge unrealized cooperation and investment potential and will continue to work on its realization with all interested partners. Progress requires cooperation between market participants in joint project implementation, the creation of new mechanisms for joint situation monitoring and analysis, financing and the execution of research and development activities.

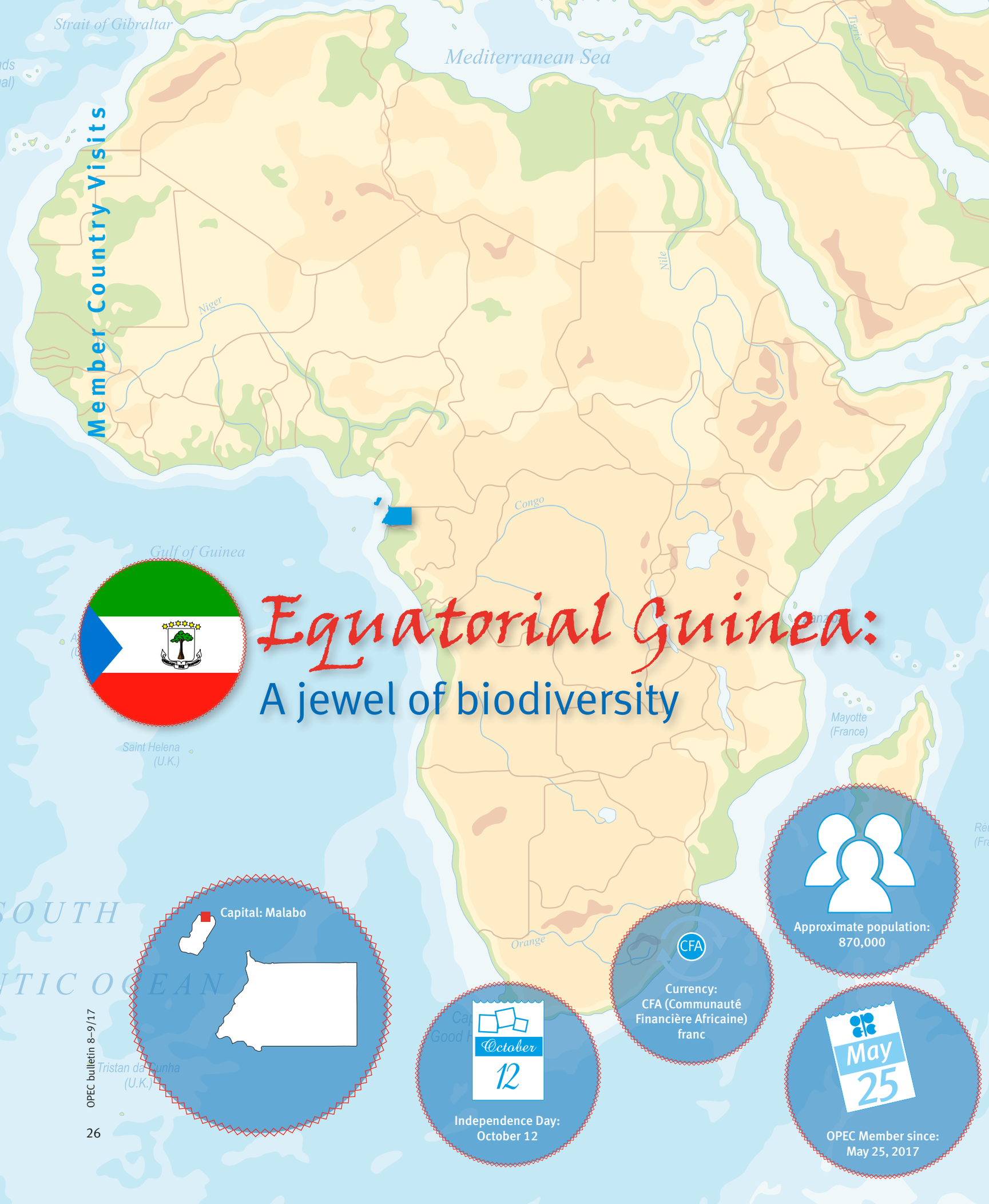
Politically motivated unilateral limitations will not stop development, and neither do they cause the expected effect. Let me remind you that in the first six months of this year foreign investments in Russian assets appeared to break five-year records, with EU countries being the leaders (Austria in first place). According to experts, the world economy quickly adapts to sanctions, and the country imposing them will suffer the greatest losses.

Energy future: safer, cleaner and more convenient

In conclusion, I would like to highlight once again that we live in an era of industrial revolution. The world continues to adapt to new technological concepts and is seeking balance. It depends on our combined actions, on the possibility to define prospective development paths and to involve all the world's economies in this process to ensure both the well-being of our countries and our energy future, which must be safer, cleaner and more convenient than today.

All images in this article are courtesy of the Ministry of Energy of the Russian Federation.

Delegates to the 22nd World Petroleum Congress listen to Minister Novak's message.



Equatorial Guinea:

A jewel of biodiversity

At the 172nd Meeting of the Conference of the Organization of the Petroleum Exporting Countries (OPEC) held in Vienna, Austria, on May 25, 2017, the Conference approved the admission of Equatorial Guinea into the Organization with immediate effect. With the addition of Equatorial Guinea, OPEC now has 14 Members. The* OPEC Bulletin *provides a profile of the Organization's latest Member.

Equatorial Guinea is located in Central Africa and comprises the Rio Muni mainland and five volcanic offshore islands. It has a population of approximately 870,000, with around 145,000 residing in the capital city of Malabo. The mainland region is bordered by Cameroon to the north, and Gabon to the south and east. On the west, the Río Muni region overlooks the Gulf of Guinea. The seat of government is in Oyala.

A monkey, known as 'Mono' in Equatorial Guinea, seen beside the Atlantic beach in Bata.

An aerial view of the south coast of Equatorial Guinea's Bioko island.

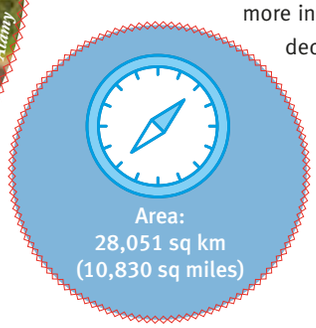
Despite being small in size, covering an area of approximately 28,051 square kilometres, the country is renowned for having one of the greatest biodiversities in Africa. From classical beaches with black volcanic sand to the magical coral reefs; from the incredibly lush rainforests, to the Alpine lands at altitudes above 3,000 metres.

It is home to more than a hundred different mammals. There are small antelopes, pangolins and felines, as well as the great primates of chimpanzees, mandrills, colobus and gorillas. There are other large mammals too, such as elephants, hippopotamus, bush pigs and the manatee. The country has numerous species of reptiles, amphibians and sea turtles, as well as other aquatic fauna. And there are also more than 300 known species of birds, as well as an extraordinary variety of insects, that the country says are still "pending being inventoried".

OPEC Membership

In an interview with the *OPEC Bulletin* after assuming OPEC Membership, Gabriel Mbaga Obiang Lima, Equatorial Guinea's Minister of Industry, Mines & Energy, said the country decided to join OPEC after enduring the struggles that all producers had been through following the oil price drop that started in mid-2014. "We believe that it is better that oil producers work together," he said, and stated that it is very important that you join an organization like this that is able to provide information that is more informed and helps in taking future decisions related to projects.

He stated that OPEC has fared well over the years and added that it has become an extremely relevant global organization.



Teodoro Obiang Nguema Mbasogo, Equatorial Guinea's President.

Gabriel Mbaga Obiang Lima, Equatorial Guinea's Minister of Industry, Mines & Energy.


Alamy

The Basilica of the Immaculate Conception of the Virgin Mary in Mongomo, Equatorial Guinea.

"Usually you know the relevance of an organization not in the good times, but in the bad times, and this has clearly been a good example because OPEC has stepped in at a very important moment. We believe it has stabilized very volatile pricing and we believe that by continuing to work together, we can continue to see benefits for a long time for everybody."

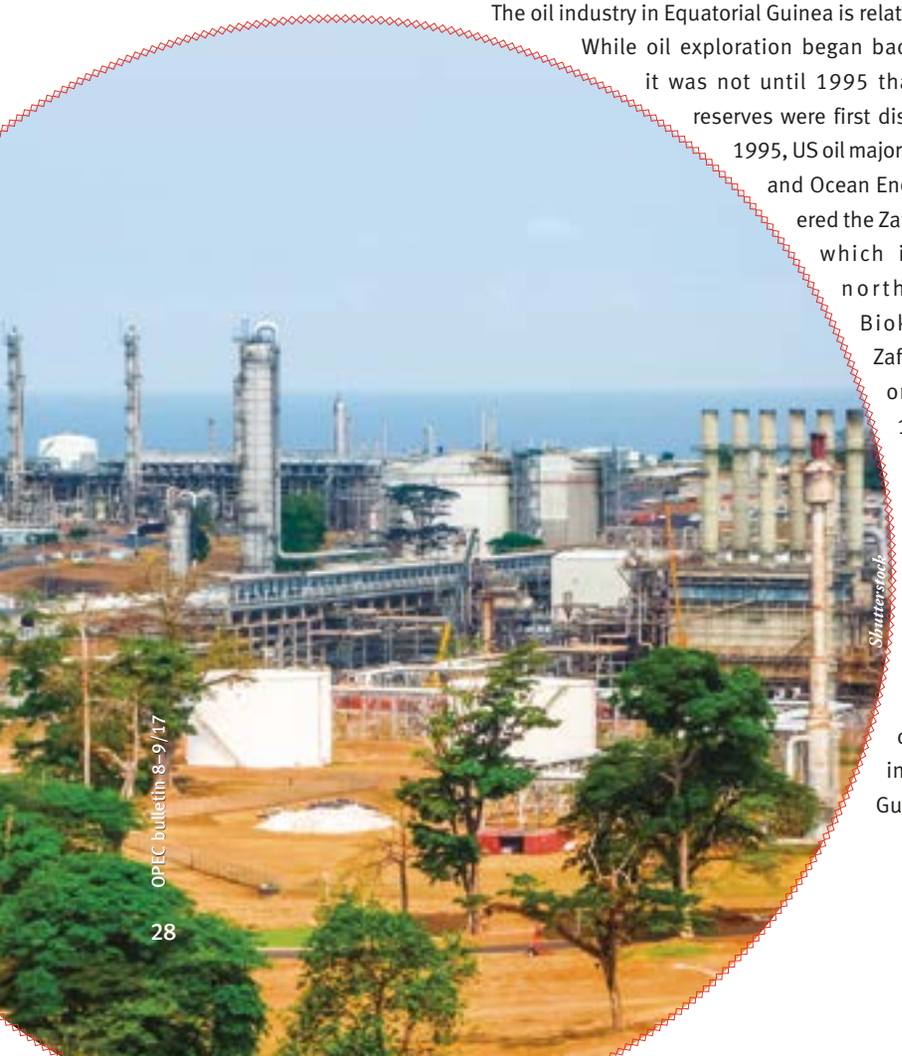
Equatorial Guinea was an important stakeholder of the non-OPEC participants that were part of the 'Declaration of Cooperation' with OPEC back in December 2016. Given that it is now a Member of OPEC, the country moves its production adjustment to OPEC.

Equatorial Guinea is a producer and net exporter of liquids, as well as being a key producer and exporter of natural gas. The country is also a member of the Gas Exporting Countries Forum. It is estimated to be currently producing around 260,000 barrels/day of liquids, and according to OPEC's *Annual Statistical Bulletin,* it produced around 6,212 million standard cubic metres of natural gas in 2016. It is one of the largest oil and gas producers in Africa.

Oil

The oil industry in Equatorial Guinea is relatively young. While oil exploration began back in 1960, it was not until 1995 that large oil reserves were first discovered. In 1995, US oil major ExxonMobil and Ocean Energy discovered the Zafiro oil field, which is located north-west of Bioko island. Zafiro, brought onstream in 1996, was the first deepwater field in West Africa and is currently the main producing field in Equatorial Guinea.

View of an oil installation in Malabo Sipopo, Equatorial Guinea.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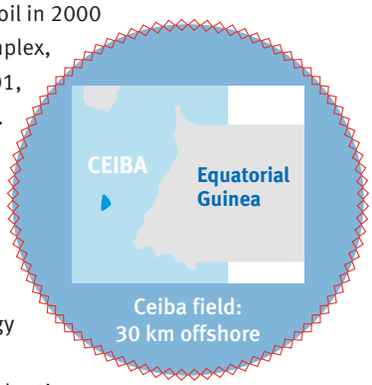
Within a decade Equatorial Guinea's oil production rose from around 17,000 b/d in 1996 to a record close to 375,000 b/d in 2005, before declining in subsequent years.

Other major fields in the country include those operated by US-based groups Hess Corporation, Marathon Oil and Noble Energy.

For Hess, these are the Ceiba field, located about 30 km offshore in the Gulf of Guinea, which was discovered in 1999 and began producing oil in 2000 and the adjacent Okume complex, which was discovered in 2001, with first production in 2006. Net production for these two fields in 2016 was around 33,000 barrels of oil equivalent/day. For Marathon, it is the Alba field, a major condensate field, and for Noble Energy it is the Alen and Aseng fields.

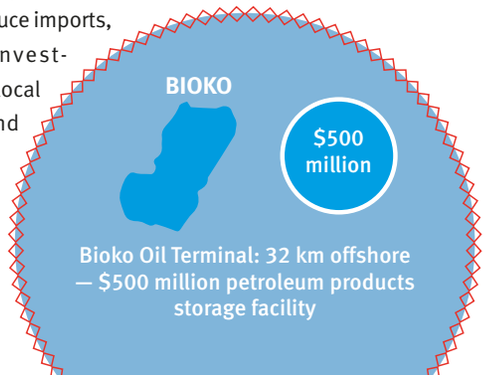


Given its recent oil production decline, the government is looking to revive growth with plans to increase oil production to 300,000 b/d in around two years and 500,000 b/d in five years. With this in mind, it opened a licensing round in 2016 to bring in foreign investors for exploration projects.

This culminated recently in the country signing a new production-sharing contract with ExxonMobil for offshore block EG-11. In announcing the award, Obiang Lima said "Block EG-11 is the jewel among a group of already very prospective blocks that we are signing in 2017." Other successful bidders included Nigerian-based Taleveras, UK-based Ophir Energy and Irish-based Clontarf Energy.

In another recent development, in May 2017 the government signed an agreement with UAE-based Arabian Energy to collaborate on the petroleum tank development, implementation, construction, and financing of the Bioko Oil Terminal. The agreement is expected to see the project gather momentum as the government and the Ministry of Mines, Industries and Energy looks to establish the country as an energy trading hub for all of West Africa.

The Bioko Oil Terminal — to be located on Bioko island 32 km offshore — is a $500 million petroleum products storage facility that the government hopes will drive job creation, reduce imports, increase investment, build local capacity, and



increase shipments to key export markets from Equatorial Guinea. The terminal will consist of 22 storage tanks and will have a total capacity of 1.2m cu m. Other partners in the project are Taleveras Exploration, Gunvor Group and the Strategic Fuel Fund Association.

Gas

On the gas side, most of Equatorial Guinea's natural gas production is exported in the form of liquefied natural gas (LNG). This is processed through the EG LNG terminal on Bioko island, where the $1.4 billion Train 1 was completed in May 2007. The plant's Train 1 has a capacity of 3.4m metric tonnes/year. It is run by EG LNC Co, a consortium of Marathon Oil (60 per cent); Sonagas, the National Gas Company of Equatorial Guinea (25 per cent); Mitsui & Co, Ltd (8.5 per cent); and Marubeni Corporation (6.5 per cent).

The gas for the plant comes from the Marathon-operated Alba field. During the early part of the last decade the Marathon operated Alba field underwent a significant expansion programme and now produces a large amount of gas, which also feeds the Atlantic Methanol Producing Company (AMPCO). The country's main LNG export markets are in Asia, such as Japan and South Korea, but it has also seen exports to China, India, the US and Europe.

The country also has plans to develop the Fortuna floating liquefied natural gas (FLNG) export project. The UK's Ophir Energy is behind the development of the project, while the buyer of the LNG and the financial structure underpinning the scheme should be announced soon. Fortuna FLNG is expected to be Africa's first deepwater floating liquefaction facility, with production capacity of 2.2m t/yr and an estimated start-up in 2020.

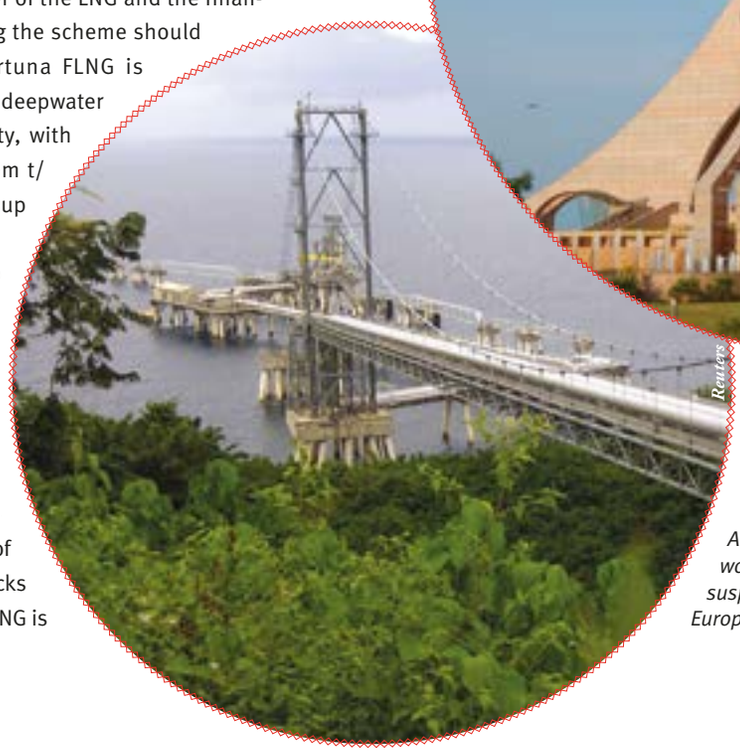
The country is also looking at other possibilities for FLNG projects. In May 2017, the Ministry of Mines and Hydrocarbons entered into a 'binding agreement' with OneLNG SA to explore the liquefaction and commercialization of natural gas in offshore Blocks O and I in the country. OneLNG is a joint venture between Golar LNG and Schlumberger to rapidly develop gas reserves into LNG. The target date for reaching an agreement is the end of 2017.

Looking ahead

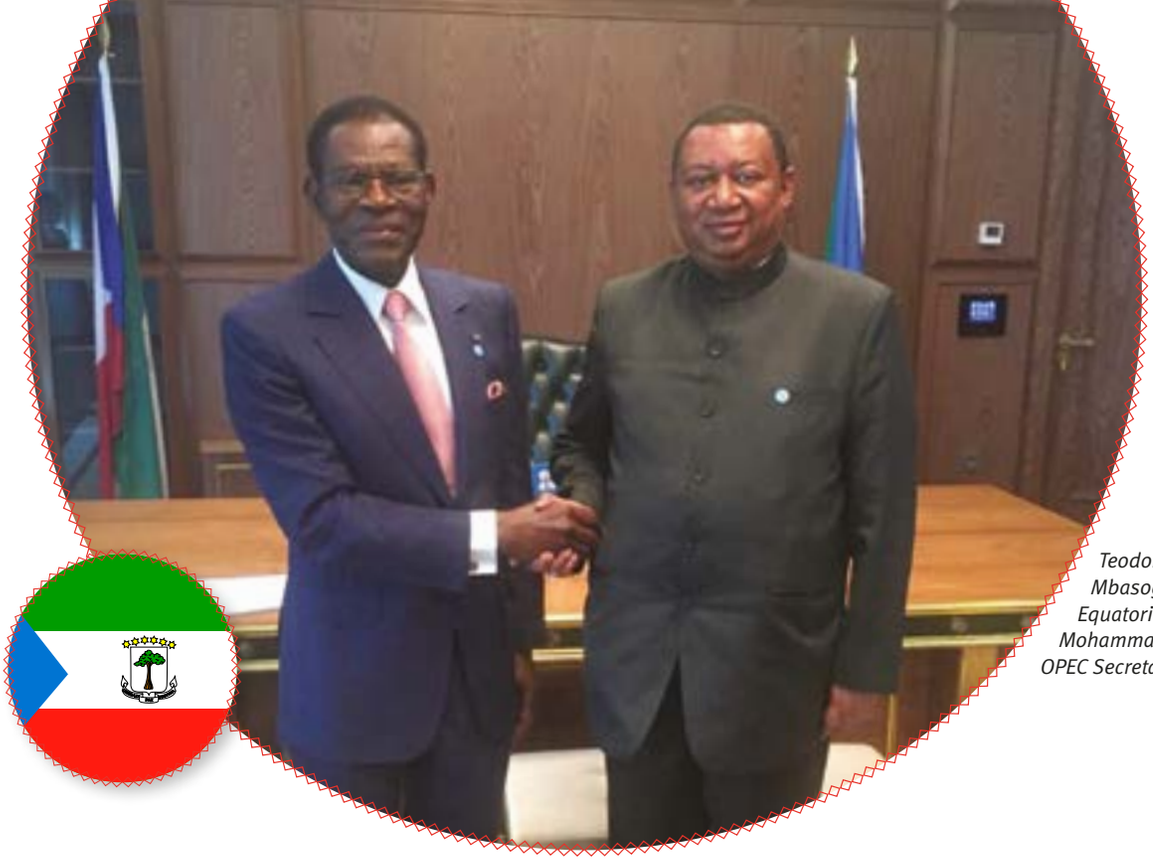
Oil and gas exports have been central to Equatorial Guinea's growth and are expected to continue to drive the economy in the years ahead. It is evident that the government is committed to reversing declining oil production, and to further expanding its LNG facilities.

The government also recognizes it has a variety of other resources that can benefit the local population and the economy, including its tropical climate, fertile soils, rich expanses of water and deepwater ports. Thus, the government is seeking to diversify the economy by encouraging agriculture and financial services. The once-significant economic mainstays of the colonial era — cocoa, coffee, and timber — are also receiving attention, although they are small in comparison to the country's energy sector.

The Torre de la Libertad monument in Bata, Equatorial Guinea was inaugurated on October 12, 2011, in commemoration of the country's independence of the nation.



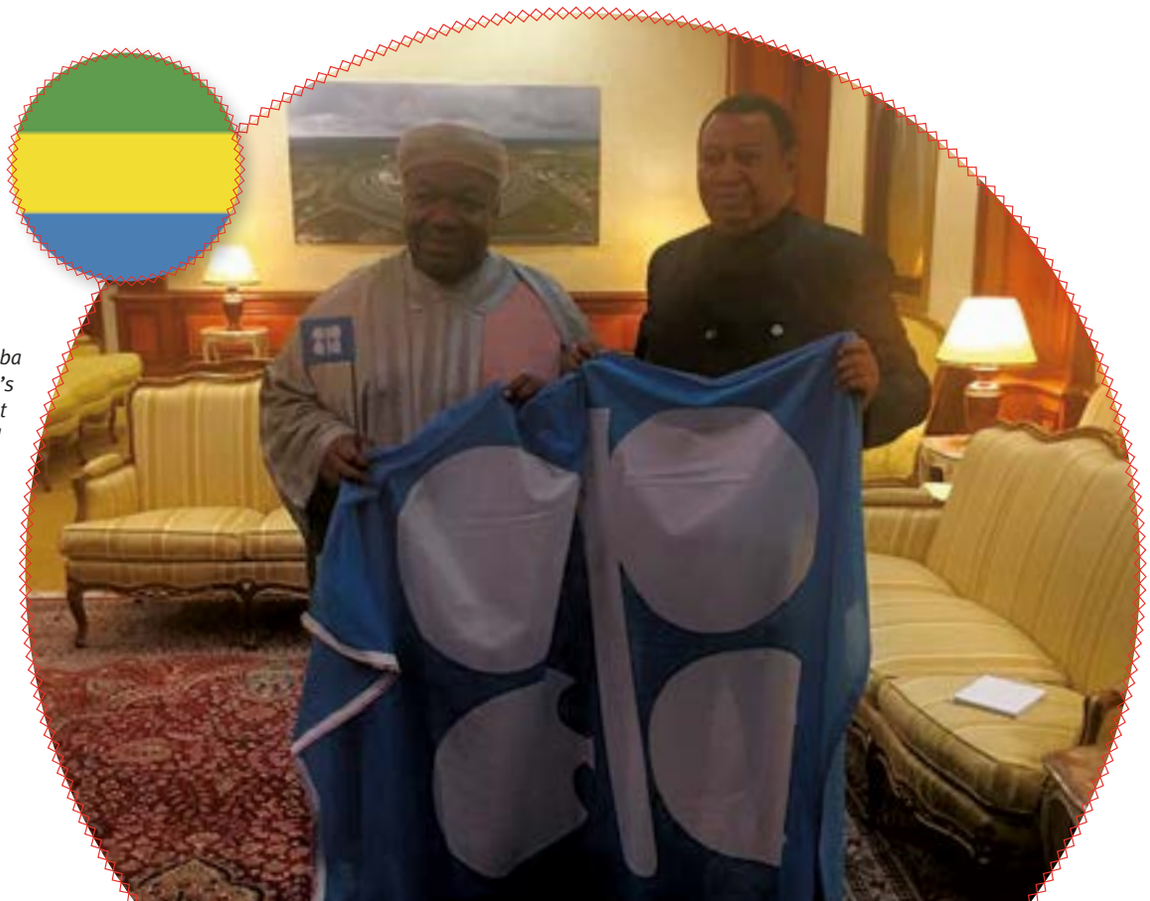
A general view of the world's first LNG pipe rack suspension bridge in Punta Europa, Equatorial Guinea.



Teodoro Obiang Nguema Mbasogo (l), President of Equatorial Guinea, met with Mohammad Sanusi Barkindo, OPEC Secretary General.

Mission Africa

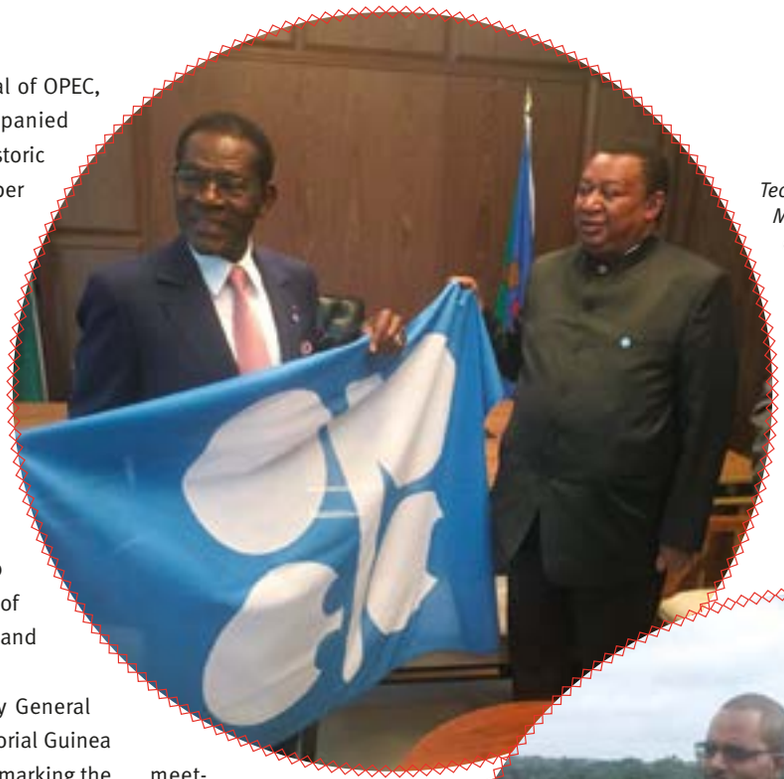
OPEC Secretary General makes historic visits to OPEC's newest Member Countries in Africa. The* OPEC Bulletin *reports.



Ali Bongo Ondimba (l), Gabon's President, met with Mohammad Sanusi Barkindo, OPEC Secretary General, in Gabon's capital city of Libreville.

At the end of July, the Secretary General of OPEC, Mohammad Sanusi Barkindo, accompanied by an OPEC delegation, embarked on an historic voyage to visit OPEC's newly inducted Member Countries — Equatorial Guinea and Gabon.

The first stop was Equatorial Guinea and Djibloho, also known as Oyala, a city that is being constructed to serve as the nation's new capital, replacing the current capital of Malabo.



Teodoro Obiang Nguema Mbasogo (l), President of Equatorial Guinea, holding up the OPEC flag, seen here with Mohammad Sanusi Barkindo, OPEC Secretary.General.

Received by the President

The delegation's first meeting was with the President of Equatorial Guinea, Teodoro Obiang Nguema Mbasogo, in the presence of the country's Minister of Industry, Mines and Energy, Gabriel Mbaga Obiang Lima.

The President welcomed the Secretary General and his accompanying delegation to Equatorial Guinea and declared the visit an historic occasion, marking the first time an OPEC Secretary General had ever visited the African nation.

The President then congratulated the Secretary General on his appointment last August and commended him on his tireless efforts to help reinstate a lasting stability to the global oil market despite the ongoing challenges faced by industry.

Positive face of OPEC

The President also welcomed what he termed "the positive face of OPEC," which is attracting new members such as Equatorial Guinea. He expressed his full support for the Secretary General, OPEC and its important mission, encouraging all Member Countries to remain focused and united, and to "meet more often to defend our interests."

The Secretary General expressed his appreciation to the President for his warm reception of the OPEC delegation and congratulated him on his country joining OPEC at the 172nd Meeting of the Conference on May 25, 2017.

The Secretary General briefed the President on the historic decisions taken last year, which culminated in the unprecedented 'Declaration of Cooperation' with 11 non-OPEC countries (now ten non-OPEC countries following Equatorial Guinea's decision to join OPEC), signed on December 10, 2016, in Vienna. Finally, he provided an update on the Joint OPEC-Non-OPEC Ministerial Monitoring Committee (JMMC), which concluded its fourth meeting on July 24, 2017, in St Petersburg, Russia.

The Secretary General, in his concluding words, commended the President as "the symbol of peace, stability and prosperity" on the African continent.

Prime Minister visit

After being received by the President, the Secretary General and his accompanying delegation then met with the Prime Minister, Francisco Pascual Eyegue Obama Asue, who welcomed them on this first-ever OPEC visit to Equatorial Guinea.

The Secretary General expressed his deep appreciation to the Prime Minister for the warm hospitality displayed to the OPEC delegation and said it was a great pleasure having this opportunity to visit Equatorial Guinea, OPEC's newest Member Country.

After the visits, the Secretary General fielded questions from the country's media organizations on Equatorial Guinea's becoming OPEC's newest Member Country and provided answers to more general questions regarding the global oil market outlook.

Gabriel Mbaga Obiang Lima (l), Minister of Industry, Mines & Energy of Equatorial Guinea, with Mohammad Sanusi Barkindo, OPEC Secretary General.

Ali Bongo Ondimba (l), President of Gabon, with Mohammad Sanusi Barkindo, OPEC Secretary General.

The OPEC delegation seen during a visit to Punta Europa.

Punta Europa Complex

The Secretary General and the accompanying delegation also visited the Punta Europa Complex in Malabo. The delegation toured the various plants in the complex, including a liquefied natural gas (LNG) facility, a condensate processing unit and a methanol production unit. The delegation was given a detailed overview of the facilities, including development and current production.

Next stop: Gabon

After the round of meetings in Equatorial Guinea were completed, the OPEC delegation boarded a southbound flight to the country's southern neighbour, Gabon, and its capital city of Libreville. The visit marked the first occasion the Secretary General has visited Gabon since it rejoined the Organization last year.

Gabon rejoined OPEC in July 2016, after having been an Associate Member in 1973 and a Full Member from 1975 to 1994.

Presidential welcome

The OPEC delegation was received on August 2, 2017, by Gabon's President of the Republic, Ali Bongo Ondimba, along with the country's Minister of Petroleum and Hydrocarbons, Pascal Houangni Ambouroue and other Gabonese officials.

The Punta Europa Complex in Malabo, Equatorial Guinea.

After welcoming the OPEC delegation, the President explained the significance and importance of Gabon's decision to rejoin OPEC after a more than 20-year hiatus. "We are passing through a difficult time and, if it had not been for OPEC, it could have been much more difficult," he said.

The President emphasized the valuable technical assistance the country receives from its fellow OPEC Member Countries, particularly in light of Gabon's current efforts to transform its oil industry and make it more sustainable.

The President also commended the Secretary General on his many accomplishments since being appointed last August, particularly in expanding consultations to include non-OPEC producing countries, which eventually led to last year's 'Declaration of Cooperation'.

A mutually beneficial relationship

The Secretary General expressed his appreciation to the President for the warm reception and excellent hospitality provided to the OPEC delegation during their visit. He also congratulated the President on Gabon's decision to rejoin OPEC, a relationship the Secretary General characterized as mutually beneficial.

The Secretary General then provided the President with an overview of the current oil price cycle that started in 2014, calling it one of the most severe price cycles in recent years, with prices dropping by 80 per cent, and described how it has been affecting the global oil market, as well as the industry.

He also updated the President on the continuing collaborative efforts between OPEC and non-OPEC producers to bring stability back to the global oil market, adding that these initiatives are underpinned by last year's supply adjustment decisions, including the historic 'Declaration of Cooperation'. He pointed out that these efforts were having an impact on the market, particularly in light of the drawdown in worldwide stocks.

Additionally, the Secretary General took the opportunity to brief the President on the decisions taken in May to extend the 'Declaration of Cooperation' for nine additional months, starting from July, as well as the outcome of the most recent meeting of the JMMC in St Petersburg, Russia.

"I am optimistic that the market will be rebalanced — and together with the help of Gabon we will restore

stability to the market," the Secretary General remarked in his closing remarks to the President.

Meeting with the Minister

On August 1, 2017, the Secretary General met with Gabon's Minister of Petroleum and Hydrocarbons, Pascal Houangni Ambouroue. He offered congratulations on behalf of the OPEC Secretariat and its Member Countries to Gabon and its people for having rejoined OPEC. The Secretary General called it a wise and strategic decision, made in the interest of the Gabonese people.

"I am confident that we can work together for the benefit of both OPEC and Gabon," he said.

The Minister, in turn, thanked the Secretary General and the OPEC delegation for their visit to Gabon, and expressed his full support for the Organization and its Member Countries as together they seek to re-establish stability in the global oil market.

During the meeting, the OPEC delegation and senior officials from Gabon's Petroleum and Hydrocarbons Ministry listened to a presentation on recent oil developments in the country delivered by Etienne Lepoukou, Gabon's Governor to OPEC. This was followed by a presentation about the OPEC Secretariat and a film about the history of the Organization.

Lepoukou was appointed OPEC Governor on July 11 and currently also serves as an Advisor to the Minister at the Ministry of Petroleum and Hydrocarbons.

Visit to National Oil Company

The Secretary General and the OPEC delegation, accompanied by Minister Ambouroue, also visited the Gabon Oil Company, the country's National Oil Company, which was established in 2011.

The company's Chief Executive Officer, Arnauld Calixte Engandji-Alansji, welcomed the delegation and briefed them on the company's history, its recent upstream activities and the country's development of its oil industry.

A joint press conference was held by Pascal Houangni Ambouroue (l), Gabon's Minister of Petroleum and Hydrocarbons, and Mohammad Sanusi Barkindo (second l), OPEC Secretary General.

At the conclusion of the visit, the Secretary General remarked on the swift and impressive pace of development of Gabon's onshore and offshore oil fields.

Press conference

At a joint press conference with the Secretary General and Gabon's Minister of Petroleum and Hydrocarbons, both officials answered questions from the media related to Gabon's recent decision to re-join OPEC, in addition to inquiries on the current and future oil market outlook for both Africa and the world.

Mohammad Sanusi Barkindo (r), OPEC Secretary General, with Arnauld Calixte Engandji-Alansji, CEO of the Gabon Oil Company.

Mohammad Sanusi Barkindo (r), OPEC Secretary General, meets with Pascal Houangni Ambouroue (l), Gabon's Minister of Petroleum and Hydrocarbons.

IR Iran's second-largest refinery is both modern and efficient

The Isfahan Oil Refinery in IR Iran has quite a historical tale to tell, though you would not know it when looking at the modern, slick equipment spread out over a 4 km x 4 km section of desert landscape reminiscent of Star Wars planet Tatooine. ***Maureen MacNeill*** *reports on a visit to IR Iran's second-largest refinery.*

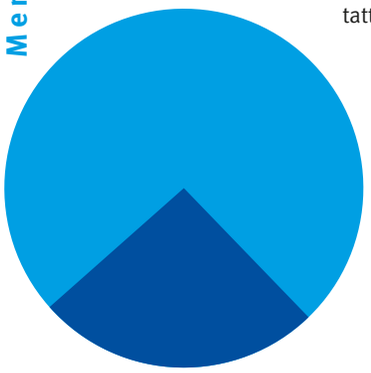
The Isfahan oil refinery.

Built about 40 years ago and located around five kilometres from the historic city of Isfahan, the Isfahan oil refinery is a subsidiary of IR Iran's state-owned National Iranian Oil Refining & Distribution Co (NIORDC).

If it could talk, it would have its share of tales to tell. The plant was turned off for a year during the 1979 Iranian Revolution. Then it was bombed 13 times during the Iran-Iraq war (1980–1988), resulting in 15 deaths. Today, in front of the main administrative building, the tattered remains of a flue that was damaged during one of the attacks acts as a reminder.

After the war the eight-metre long, ruined flue was carried to its current location. It is from a bombing at the refinery which took place at 11 o'clock on October 12, 1987, according to a plaque.

Also prominently displayed near the entrance to the refinery is a monument to those who died at the refinery during the war, primarily due to bombing. The monument has a bird theme. "It was always rebuilt," states refinery Operations Manager Hamed Armanfar. "Since the end of the war, it has always been in operation."



27% of all IR Iran's oil products are produced in the Isfahan Oil Refinery

The refinery played a significant role in the war, he adds, stating that the country would not have been able to withstand the war without it. IR Iran's largest refinery, Abadan, is close to the Iran-Iraq border and was closed during the war. Thus, the Isfahan refinery played the main role in supplying the country with petroleum products and fuel.

After the war the country was desperately in need of fuel, including gasoline, diesel and other products and Isfahan refinery was again heavily relied upon.

Plant specifics

The second-largest refinery in IR Iran, the Isfahan refinery employs 1,000 staff and 1,500 contractors. The plant produces 27 per cent of all the country's oil products. Most of the refinery's oil comes from the Ahwaz (Maroon) field in the south of IR Iran.

It started with a design capacity of 100,000 barrels/day (b/d) and only one train. This later doubled to two trains, each with a capacity of 100,000 b/d, and within five years after start up until now that amount has nearly doubled again to 375,000 b/d.

The crude is stored in a large tank farm, with six similar-size storage tanks (300,000–500,000 b/d) and one very big storage tank (1m b/d). There should always be at least three days of storage available, states Armanfar.

Below and right: Storage tanks at the Isfahan oil refinery.

Incoming oil is processed at the plant then sent to other plants to produce petrochemicals or used to supply electricity for the city of Isfahan. Some petrochemicals, such as petrol, are also produced on site and mostly used in Isfahan.

The refinery was designed by Floor & Thyssen, a joint US/German company, though after the 1979 revolution the connection to the company was lost.

"It was called the 'golden refinery' because of all the experience that went into its design", says Armanfar. "It was made after the company had already designed more than 250 chemical plants."

The refinery was not significantly affected by the sanctions the country has experienced, says Armanfar, with the exception of being unable to buy a catalyst required to produce gasoline. But finally the mentioned catalyst was manufactured by an Iranian company.

Technical look

Trains 1 and 2 are basically the same, says the operations manager. Train 1 has a distillation unit of 100,000 b/d nominal capacity and a vacuum unit. The raw crude comes to the beginning of the unit and feeds the rest of it. There is an LPG unit on site, and C3 and C4 propane and butane are also produced.

One unit is designed to decrease viscosity in order to produce better fuel, otherwise high-quality products have to be added, says the operations manager. During the war the design of these units was changed, increasing their capacity. Now crude oil is introduced directly into the unit and it has a capacity of nearly 45,000 b/d.

In the distillation area, light hydrocarbons are distilled from heavy and this is used as a feedstock for the conversion area. This produces more valuable products such as very-low sulphur gasoline, kerosene and diesel. Not all products from the first unit go on to the second unit. Some are ready for the market and go into storage, such as LPG and gasoil.

The utility section produces electricity, steam and compressed air for use in the refinery. The plant is basically electrically self-sufficient, says Armanfar.

An Iranian company constructed several units, including those

2 unit trains with a total capacity of

375,000 b/d

1,000
employed staff

1,500
contractors

for a naphtha hydrotreater, octanizer, as well as isomerization in one area.

"The isomerization unit required a catalyst (which was unavailable during sanctions), and we decided to get one from an Iranian company. We were successful and could start to use it about three years ago," he says. "It is very honorable for us that we produced this catalyst in IR Iran. It is the most difficult catalyst to produce of all.

"We are utilizing it for gasoline production; therefore we achieved production of Euro 5 gasoline, with sulphur of less than ten parts per million (ppm)."

The Iranian government has also moved in the direction of using Euro 4 quality fuel with sulphur of less than 50 ppm, particularly in larger cities such as Tehran and Isfahan, states Armanfar.

The sulphur goes to another unit where it is solidified into a granulate.

The Isfahan refinery recycles water taken from the Isfahan River and "we reuse every single drop." Recent guests from Japan were surprised and impressed with the water recovery system in place at the refinery, says Armanfar.

The flaring system works like a safety valve to relieve high pressure and is necessary for the refinery. Gas is sent to the flare because of its explosive quality, he says, and a minimum level of gas must always be flowing to the flare to keep it burning. There are many accessories to the flare system, he adds, including water seals; this water is recovered.

Earlier the plant had two flares, each requiring a flow of 1,250 normal cubic metres per hour (ncm/hr) under normal conditions. About nine months earlier, two new flares were added, which only require a minimum flow of 45 ncm/h, due to improved technology, he says.

The technology for the new flares came from an Italian thermo-engineering company, although the major parts were constructed by an Iranian company, says Armanfar.

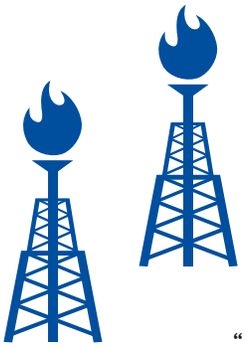
Isfahan refinery rates second in size only after the Abadan refinery, he states, but it is first in terms of the amount of product produced. Although Abadan refinery's feed capacity is the biggest in IR Iran, the variety of products produced at the Isfahan refinery is greater than at Abadan.

Complex piping (above left) and the sulphur recovery plant (l) at the Isfahan oil refinery.

A fire department is on location.

2 new flares require only

45 ncm/hr



"After the (products) leave the refinery, they are not our responsibility," says Armanfar. They may go to another city by piping or to a local gas station, he says, adding that distribution companies move the various products throughout IR Iran.

"In general (the products) stay in IR Iran, though some products such as fuel oil are exported and some products such as premium gasoline are imported."

Tour of the facility

Aside from the low-lying administration building, there is a small first aid centre for treating minor accidents such as burns, etc. "It is dangerous work," states Armanfar. More serious cases must go to hospital. There is also a relatively large fire department.

In the conversion area, Armanfar points out the hydrogen and isomax unit, where the pressure is very high at 200 bar. "And because of this pressure, it needs special care."

He also shows off a new unit, designed and constructed by Iranians, which produces solvent for the country, used to make leather, detergent, etc. The gasoline production plant is also new, he states, as we travel around the grounds in a company van.

Behind a fence there is a privately-owned lubricant production unit, he says. The government is privatizing plants little-by-little and that unit was privatized about ten years prior. In the distance, the four flaring stacks in two different designs can be seen.

On the drive back to Isfahan, we pass LPG storage pods, and there the impression of being on Tatooine is again reinforced. The LPG produced at the plant is also used in IR Iran, mostly for cars, states the plant manager.

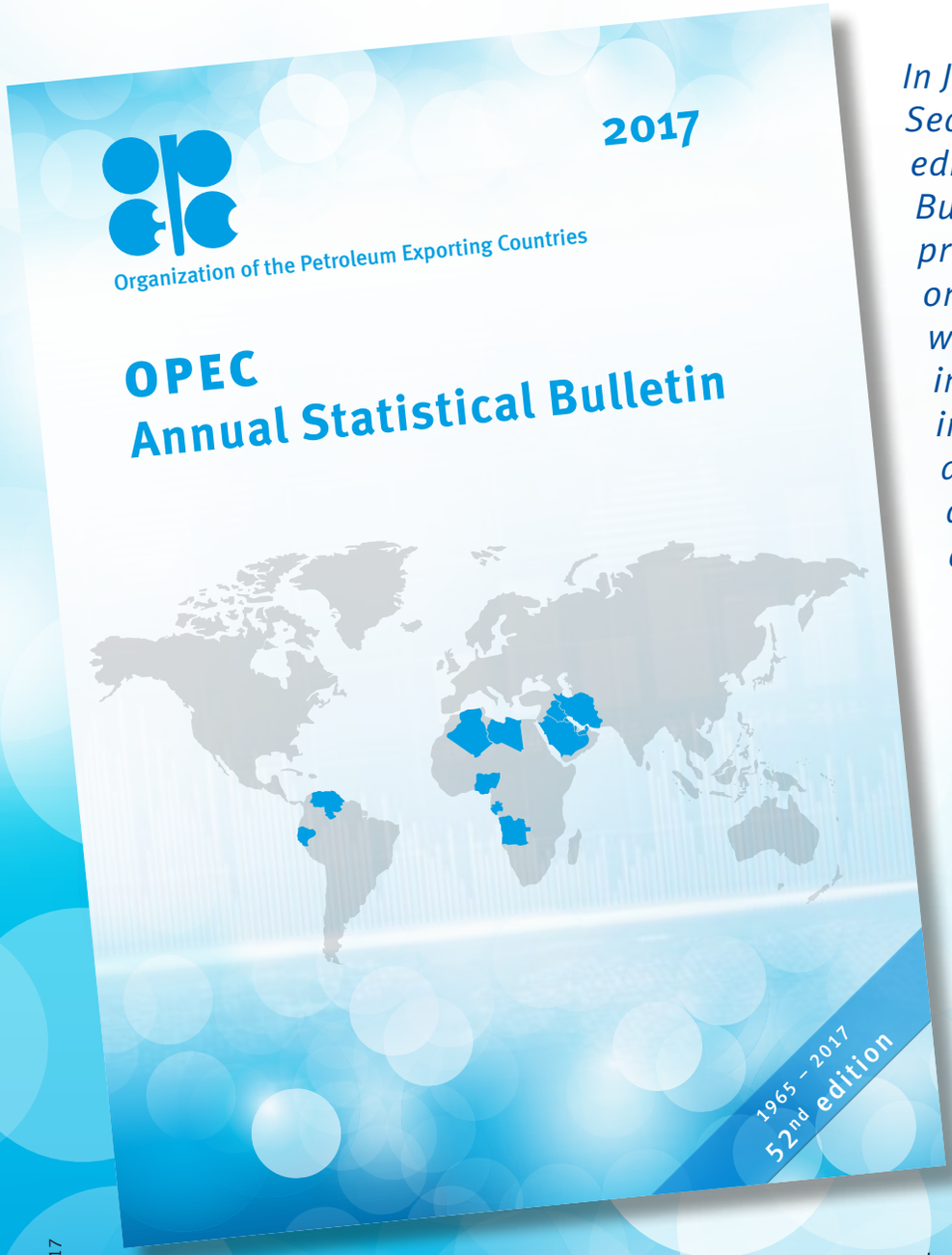
In addition to all of the workaday equipment and buildings, the refinery has a lovely mosque near its entrance for the workers to pray at.

Overall, the well-functioning and efficient refinery appears to be another example of how resourceful Iranians have been in overcoming various obstacles thrown in their path over time.

All pictures by Maureen MacNeill.

Memorial for fallen workers.

OPEC's 2017 Annual Statistical Bulletin

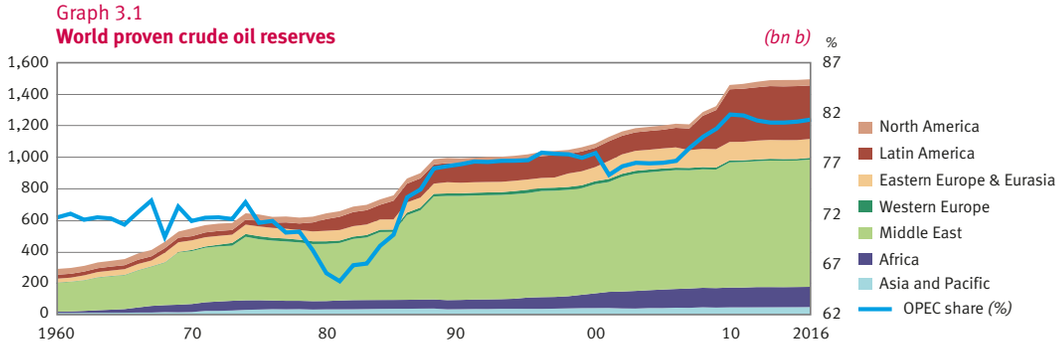


In June of this year, the OPEC Secretariat released the 52nd edition of its Annual Statistical Bulletin (ASB). The ASB provides a wide range of data on the oil and gas industry worldwide, serving as an important source of reliable information for research analysts and academics, as well as policymakers and many other industry stakeholders. The OPEC Bulletin looks at some of the main highlights for this year's publication.

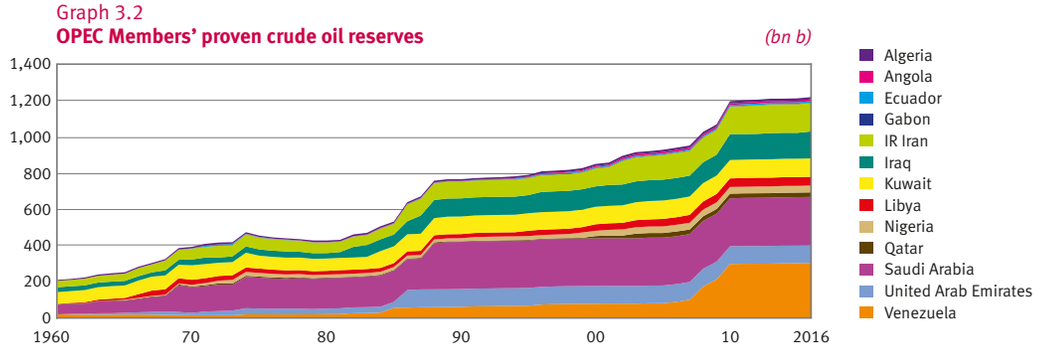
The 2017 ASB provides key statistical data for all of OPEC's 13 Member Countries — Algeria, Angola, Ecuador, Gabon, Islamic Republic of Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela *(the 53rd edition of the ASB will include data for Equatorial Guinea)* — as well as their National Oil Companies. In addition, it also provides useful information about other non-OPEC oil producing countries, bringing together important data on the upstream and the downstream, on exports, imports, production, refineries, pipelines and shipping.

Oil data: upstream

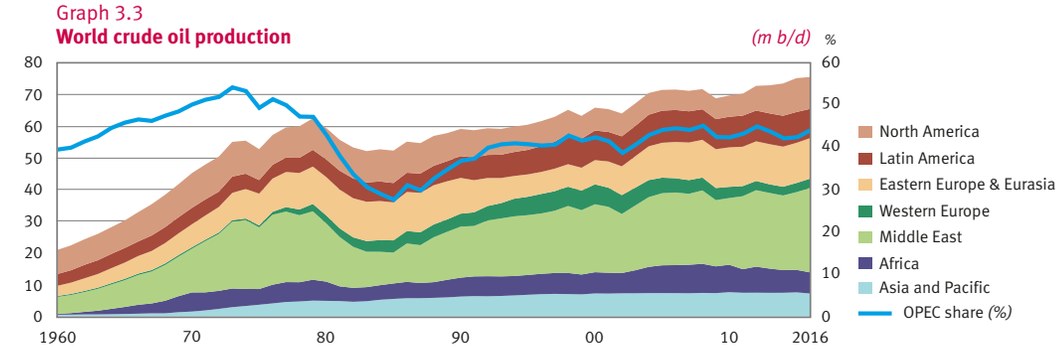
Graph 3.1
World proven crude oil reserves



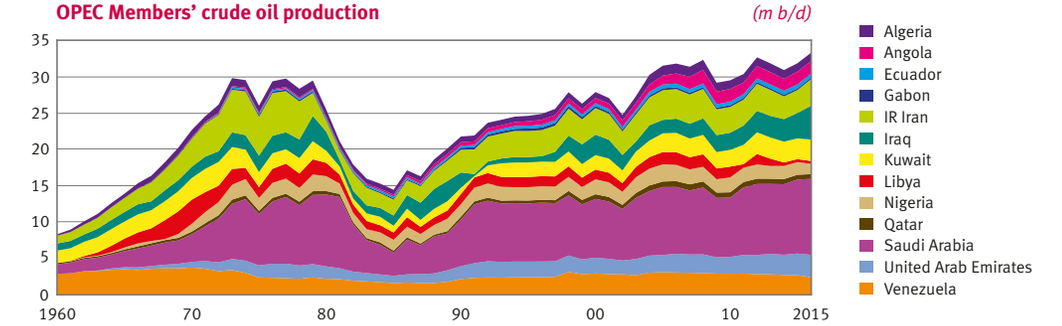
Graph 3.2
OPEC Members' proven crude oil reserves

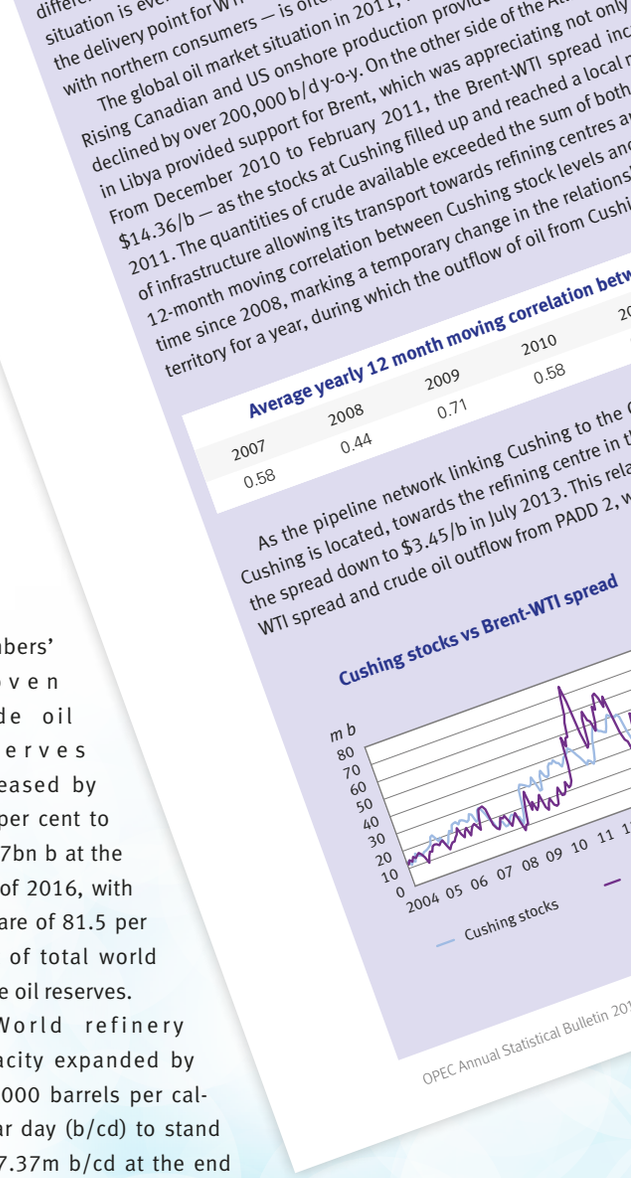


Graph 3.3
World crude oil production



Graph 3.4
OPEC Members' crude oil production





As the OPEC Secretary General, Mohammad Sanusi Barkindo, said in the *Foreword* to the publication: "In regularly publishing the ASB and making such data publicly available, OPEC seeks to ensure greater data transparency and increased sharing of information about the oil and gas industry and its many stakeholders. This has long been one of OPEC's key objectives."

Some highlights from the ASB 2017 include:

In 2016, world crude oil production inched up by 350,000 barrels/day, or 0.5 per cent, as compared to 2015, to reach 75.48 million b/d, marking the seventh consecutive year of growth. The majority of non-OPEC countries registered substantial declines in their 2016 average crude production, as compared to 2015. In 2016, the top three crude oil producing countries were Saudi Arabia (10.46m b/d), Russia (10.29m b/d) and the United States (8.88m b/d).

World oil demand averaged 95.12m b/d in 2016, up by 1.5 per cent year-on-year (y-o-y), with the largest increases in the Asia-Pacific region, particularly China and India, as well as Western Europe, North America and Africa. 2016 oil demand in the Middle East remained flat y-o-y, while oil demand declined in Latin America for the second year in a row. Total OECD oil demand grew solidly for the second consecutive year in 2016, while oil demand in OPEC Member Countries declined for the first time since 1999, dropping by 200,000 b/d or 2.2 per cent.

Total exports of crude oil from OPEC Member Countries stood at 25.01m b/d in 2016, up from 23.49m b/d in 2015. This increase represents a 6.5 per cent growth rate y-o-y. As in previous years, the bulk of crude oil from OPEC Members was exported to the Asia-Pacific region at a level of 15.72m b/d or 62.9 per cent.

Total world proven crude oil reserves stood at 1,492 billion barrels (bn b) at the end of 2016, increasing slightly by 0.3 per cent from the previous year's level of 1,488bn b. The largest additions came from Iraq, Venezuela and Norway. Total OPEC Members' proven crude oil reserves increased by 0.5 per cent to 1,217bn b at the end of 2016, with a share of 81.5 per cent of total world crude oil reserves.

World refinery capacity expanded by 450,000 barrels per calendar day (b/cd) to stand at 97.37m b/cd at the end of 2016, mainly supported by additions in North America and the Middle East, as well as the Asia-Pacific region.

The year's publication is available in various formats including print, PDF and a separate interactive online version, which is freely available on the OPEC website and includes historical time-series data going back to 1960. The ASB is also available in a Smart App version, with many advanced features. This can be downloaded for both iOS and Android mobile devices.

Barkindo concluded in his *Foreword:* "The ASB is the product of detailed and time-intensive work over many months, involving the contributions of many analysts, researchers and statisticians at the OPEC Secretariat and in our Member Countries. Their work has to be commended, for it is only through such efforts that the Organization can continue to regularly fulfil its commitment to contribute to market stability through an enhancement of data transparency."


Oil data: downstream
Graph 4.4
World oil demand
(m b/d)
%
North America
Latin America
Eastern Europe & Eurasia
Western Europe
Middle East
Africa
Asia and Pacific
OPEC share (%)
Graph 4.5
Graph 4.6
Graph 4.1
World refinery capacity
(m b/cd)
Oil data: downstream
Oil trade
Graph 5.1
World crude oil exports by region
(m b/d)

OPEC and the media

The changing face of OPEC media coverage

OPEC news reporters in the 21st century take it as read that they can transmit breaking news to the world in seconds – sometimes less – and without even breaking step with the oil ministers they are doggedly trying to keep up with. But when **Margaret MacQuaile** started writing about OPEC, there were no mobile phones and no laptops; the speed at which a story made it to the screen was basically dependent on how fast a reporter could run. She reports for the OPEC Bulletin on how times have changed for journalists covering OPEC.

The 49th OPEC Conference in 1977.

I covered my first OPEC meeting in the summer of 1985, turning up at the InterContinental Hotel in Vienna with a notebook and pen and two items of what were then state-of-the-art equipment: a clunky recorder that used full-sized, not mini, cassette tapes, and, for transmitting copy to my editors in London or New York, a rectangular contraption called a Tandy — it was essentially a keyboard with a screen capable of displaying only a few lines of text.

When I covered my final meeting a full 30 years later, I still had a notebook and pen, but the cumbersome, boxy dictaphone had become a slim digital recorder that was hardly bigger than a credit card, and the strange contraption had morphed into a powerful laptop computer. I had a mobile phone, too — and it was not just a handset that enabled me to dictate a quote to my editor; it was a mini-computer in its own right.

Nowadays, covering OPEC is undoubtedly easier in terms of the equipment that enables journalists to get the news out fast. Every hotel has WiFi. We simply connect directly to the internet and our respective editorial systems from our rooms or from the lobby. If a minister stops to answer questions about policy, we use our mobile phones to dictate back to our editors every word he says just a fraction of a second after he utters it. If we need to check back on what we have dictated, we resort to our digital recorders. Indeed, we can 'send' the recorded segment straight through to our editors, again within seconds.

All this is a far cry from the meetings of the 1980s and even the early nineties.

Looking back

For my first few OPEC meetings, I used the Tandy, typing up my end-of-day 'wrap' and then transmitting it as a long telex to the Platts office in New York. This involved placing the two ends of the hotel telephone handset — the mouthpiece and the earpiece — into what was called an acoustic coupler, dialing an outside line and then a number in New York and praying that the story would go through without any glitches. But of course there were

Members of the international media cover an OPEC Conference in 1985, in Vienna, Austria.

Margaret seen during an OPEC Conference in 1986 in Brioni, former Yugoslavia, with her Tandy — a keyboard with a screen capable of displaying only a few lines of text.

Brioni, former Yugoslavia, 1986: Ben A Osuno, Governor for OPEC, Nigeria; Rashid Bin Ouwaida Al Thani (r), Head of Delegation, Qatar; Mohammad Sanusi Barkindo (second left), Member of the Nigerian delegation.

always glitches; losing the line and having to redial was par for the course.

We flew to Geneva once with a 'portable' computer — a huge thing with a tiny green screen and separate keyboard — which came close to being impounded at Geneva Airport. The customs people had never seen a computer in a carrying case. Happily, they eventually allowed us to take it through; if they had not, we would not have been able to transmit any news.

When internet access first arrived in the 1990s, it was via dialup. But hotels did not provide even that, so my colleagues and I had to pack some additional items into our equipment bags — screwdrivers and crocodile clips. We used these to connect our laptops directly to the telephone system by dismantling the socket and using the clips to make the connection between the telephone wires and the wires of our laptop plugs. (I apologize now for all the sockets I mangled in hotels across the world; I was not very good with screwdrivers and crocodile clips.)

Speed is a vital element of real-time news reporting, and, as already noted, modern technology enables a breaking news story to be transmitted within seconds. Back in the '80s and part of the '90s, however, before the proliferation of mobile phones, you needed a fast pair of legs.

Imagine the following scene. A group of news agency reporters have been sitting for several hours in the corridor of a Vienna hotel, waiting for a bilateral meeting to end. Eventually, the door of the minister's suite opens and the minister and his visiting counterpart emerge and walk to the lift. The visiting minister and his aides disappear into the lift without speaking. The other minister, walking back to his suite, divulges a piece of news that will almost certainly move the market. Remember, nobody has a mobile phone. So everyone runs. They run into the lift and then they shoot out of it and run like the wind to their respective bunkers — the hotel room set up as an editing desk — and get their stories out.

Before we moved to mobile phones, we tried walkie-talkies. Although cumbersome, they served the purpose of giving us instant connection with our editors. There were some disadvantages, though, not least of which was the fact that the two-way conversation could be heard by anyone within earshot. So if you wanted to pass on or listen to an exclusive piece of news, you had to wait until you had some degree of privacy. Roaming around hotel lobbies with our walkie-talkies, we looked more like a bunch of crazed security guards gone rogue than journalists.

Indeed, I once appeared in a newspaper photograph of then Saudi oil minister Hisham Nazer that described him as being "surrounded by security staff." I was, needless to say, speaking into my walkie-talkie while walking alongside the minister.

Brioni Island

One particular meeting stands out in my mind for several reasons, not least of which was the fact of it being the only one of my entire career that left me feeling more relaxed and healthier when I left than when I arrived. It took place on the beautiful island of Brioni in the former Yugoslovia in the summer of 1986.

The ministers stayed on the island. We journalists were billeted in a holiday camp on the mainland, near Pula. Every morning, we were shuttled by bus to the harbour to catch a boat to Brioni, and every evening, long after sunset, we took the boat back to Pula. I still remember the 15-minute, twice-daily boat ride as one of the great pleasures of that meeting. I can still conjure up in my imagination the taste of the ripe and intensely sweet tomatoes and the fresh seafood we ate on the island. And I can still see the idyllic cove where we swam in the warm waters of the Adriatic.

Cycling was another feature of the Brioni meeting, and not just for leisure. Bicycles, available for hire, were essential for the race from the hotel where the ministers were staying to the press room, which had been set up in another hotel a fair distance away on the other side of the

Dr Subroto, Indonesia's Minister of Energy and Natural Resources, seen with members of the international press and media at the Brioni OPEC Conference in 1986.

Ahmed Zaki Yamani, (then) Minister of Oil and Mineral Resources of Saudi Arabia, seen during the OPEC Conference in Brioni in 1986.

Meeting of the Members of the Committee of Five Ministers and the non-OPEC Oil Producing Countries, April 26–27, 1988. L–r: Fadhil Al-Chalabi, (then) Acting Secretary General of OPEC; Rilwanu Lukman, (then) President of the OPEC Conference; and James Audu, Head of OPEC's PR & Information Department.

6th Meeting of the Eight-Minister Monitoring Committee, May 2–3, 1990, Geneva, Switzerland.

harbour. Competitively-motivated bicycle theft became something of a problem during that meeting.

Week-long meetings!

Another difference between then and now is the length of meetings. When I first started covering OPEC, meetings could stretch well beyond a week. My former colleague, Neil Fleming, and I calculated that we spent the equivalent of at least two whole months of 1986 at OPEC meetings. There were two particularly long meetings that year, in October and December. Earlier that year, OPEC's 'market share' policy had sent oil prices spiralling downward to single digits.

The aim of the policy had been to recover lost market share from non-OPEC producers by abandoning output limits. But the netback pricing — whereby the price of a barrel of crude was derived from the deemed value of the products extracted from it — adopted by many OPEC Members served only to drive prices lower and lower. During those long meetings in October and December, ministers worked to come up with an agreement that would rein in oil production, and we journalists were tired and frustrated.

Long meetings were exhausting for everyone. And they could also be troublesome for journalists. These days, we know we need to book our hotels for a certain number of nights. But back then, we had no idea when meetings would end and hotels could usually only guarantee us a certain number of nights.

Sometimes, if the meeting was dragging on, there then ensued a standoff with the hotel, which would want us to vacate our rooms for incoming guests with bookings. We would then try to keep out of the way of the hotel management team, ignoring announcements asking us to contact the front desk. Hats off to the Geneva Intercontinental, where most of those long meetings were held — its managers understood that we needed to be there and did everything they could to accommodate us.

But long meetings also had their positive side, tending to be quite productive for journalists because of the access not only to ministers, but also to delegates. Quite simply, there was time to talk. Late evening sessions in the hotel bar or coffee shop helped us build serious in-depth understanding of the issues and forged long-term relationships of trust that gave that generation of reporters unparalleled access to OPEC's inner workings and thoughts.

Those longer meetings could be fun, too. There was a lot more camaraderie among the different news organizations. Often stranded in lobbies for hours with no news leaking out of meetings, we made up songs and poems. Those reporters who smoked also seemed single-handedly to sustain the tobacco industry in Switzerland and Austria through those endless days of waiting. There was no such thing as a 'smoke-free' hotel

Yousef Omeir Bin Yousef (c), Minister of Petroleum & Mineral Resources, United Arab Emirates, with Margaret McQuaile (r), Vienna, Austria, 1992.

30th MMSC and 110th OPEC Conference, Vienna, Austria, June 21, 2000.

back then. Indeed, you had to specifically request a non-smoking room. And, late in the evening after we had transmitted all our stories, we regularly went out to dinner as one big group. The party often continued after dinner in the hotel bar.

There is no time for composing songs or poems these days. Nor do many journalists manage to eat dinner outside their hotels, such is the intensity that characterizes present-day OPEC meetings. Because the outline of a deal is often drawn in advance of a conference, reporters usually have a good idea of the likely outcome.

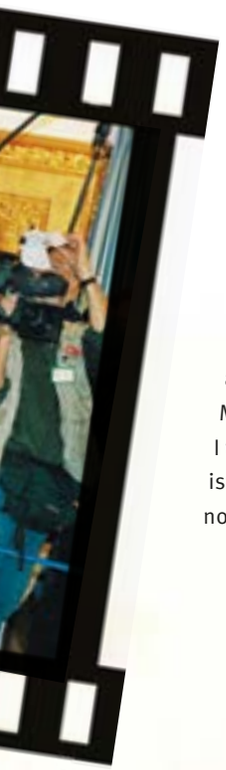
But they can never be complacent. So they make sure they are present when key ministers turn up — at all hours of the day and night — over the two or three days preceding the one-day meeting. This is not easy; in Vienna, delegations are spread across several hotels, presenting something of a nightmare for the various teams of agency reporters, who have to monitor their every movement and utterance. Not surprisingly, these teams have grown in numbers over the years.

OPEC: continually fascinating

During the course of my 30-plus years as an energy reporter, covering OPEC has meant writing about wars, financial crises, oil price spikes and oil price collapses, gluts and shortages. In the 1980s, OPEC saw the rise of non-OPEC production. More recently, it has seen the inexorable rise of US shale oil.

OPEC and its members have been at pains to stress the economic rather than political nature of the organization. And it is probably true to say that, given the heavy dependence of most Member Countries on oil revenues, economics tends to take precedence over politics when OPEC has to make collective decisions on production.

But the fact is that politics is rarely far below the surface, and that is what makes OPEC so fascinating for journalists. Since giving up full-time journalism to concentrate on writing fiction, I have been asked many times why I do not write a novel set in the world of oil and OPEC. My answer is always the same: Why would I want to do that when the reality of OPEC is so endlessly intriguing? You just could not make it up.



Margaret McQuaile was bestowed with the award for Journalism by OPEC in 2015.

About 250 members of the press were accredited for the 172th Meeting of the Conference in Vienna, Austria, in May, 2017.

A lifetime in journalism ...

Walid Khadduri *(pictured)* is nothing if not a seasoned oil industry journalist, and his connection to OPEC goes a long way back. He started his career reporting on the industry in 1975 and has seen it change and evolve over that time. Khadduri visited the OPEC Secretariat recently and **Maureen MacNeill** took the opportunity to speak to him.

In the world of OPEC, Walid Khadduri is famous for being the first person to receive the OPEC Award for Journalism in 2009, in recognition of his outstanding career in oil and energy reporting.

But this is by far not the only recognition for journalism he has received. He has also taken home the 1993 Award for Excellence in Written Journalism from the Association for Energy Economics, Norway in 1994, and an award in 2008 at the OPEC Summit in Riyadh from King Abdullah bin Abdulaziz for recognition of outstanding journalism in the field of petroleum and its industry, as well as for contributing to the awareness of the roles of petroleum and OPEC in the global economy.

The Iraqi Economic Network also awarded him for his excellence in energy economics and his contributions to informing international public opinion about the Iraqi Economic Sector, in Beirut in 2013, and he also received the Abdullah bin Hamad Al Attiya in 2014 award for lifelong achievement in energy journalism.

The Baghdad, Iraq native, born in 1942, studied in the US for 11 years, before returning to the Middle East to begin his career there.

Expert in energy reporting

He is probably best known in the energy reporting world as the hard-working Managing Director and Editor-in-Chief of the Middle East Economic Survey (MEES), where he ran the publication from 1981–2004. Before this he had been Director of Information and International Relations at the Organization of Arab Petroleum Exporting Countries (OAPEC) in Kuwait, where he worked from 1975–81.

After his stint at MEES, he became head of the Economic Section of the Arab daily paper *al-Hayat* in

Beirut from 2004–06 and is still based there, writing a weekly column on oil since 2007.

Khadduri covered OPEC Conferences and OPEC, in general, for over 20 years and has visited most OPEC Member Countries. He thinks that MEES, which started in 1957, just before OPEC was formed in 1960, is the only publication to cover every single OPEC Conference. "We never missed a single meeting," he says, recalling his time there.

As MEES is a weekly publication, he adds, it always had to find its own angle in OPEC coverage. "We couldn't compete with the wires."

Technological developments

In terms of the industry, one of the main changes he has seen over the decades is the fast-forwarding of technological developments. Although shale has been a turning point, he says, there have also been many changes within conventional oil.

For example, he adds, today we are drilling in oceans and seas thousands of metres under water. "I did not expect these innovations this early."

Additionally, the gas industry has changed tremendously, with the rise of liquefied natural gas (LNG) and gas becoming the fuel of choice in power plants. There used to be one producer to one customer with 20–25 year contracts, he says, adding now it is much more flexible.

In the Middle East, more than 50 per cent of the gas is used domestically, which is a new phenomenon in the region. Oil is still responsible for 49 per cent, but "gas is moving fast. The technology is improving and the cost is falling. It is more environmentally friendly. It is one way of addressing the climate change issue. In the Middle East we depend less on oil for power, and there will be more to export. Thus most new power plants (in the region) are gas-fed."

He states that the industry and contracts have changed; there are more spot sales and tanker technology has improved, as have the trains. There are more gas plants, liquefaction is bigger and less costly, and pipelines from Russia to China stretch for thousands of kilometres, he adds.

"All of these changes have taken place in the industry over the last decade or two." Particularly in refineries oil is not as dirty, he says. "Refineries have really moved into a more climate friendly situation than before."

As far as other uses of oil go, he does not see petrochemicals growing more than transportation yet, though that may change in the future. The combustion engine will be replaced gradually, he surmises.

Technology keeps moving and it will not stop, he states, from feedstock, to power plants, to the way cars are built. "There are efficiency gains in our society."

Changes in OPEC

Interestingly, although technology and engineering are moving forward quickly, there is still a shortage of well-trained 'information people' covering the oil industry in the Middle East, says Khadduri.

He adds that reporting on the oil industry has become more sophisticated. Whereas in the past journalists had to depend on statements from the ministries of oil, now they can directly question the ministers. "Transparency has improved a lot. OPEC Secretaries General played a big role, being more transparent and friendly with journalists, officially and unofficially."

The image of OPEC is also much better than before. The word 'cartel', for example, was used very much in the 1970s and 80s, but it is used much less today.

OPEC has also come a long way from an information perspective, he states. There are so many publications now, he says. "Ministers pushed for that before. Before the publications all stayed within OPEC and the Member Countries, now they are all in the public. OPEC is a primary source for energy information now."

Prior to 1970 OPEC was not well known, he adds, stating there were only six or seven journalists covering it. Now more than 250 come to OPEC Conference meetings.

In previous years, OPEC would not have sat together with the International Energy Agency and now the two Organizations have joint meetings, he says.

"OPEC and non-OPEC is a big change … especially with Russia. People did not feel OPEC needed that 20 years ago. Now when they decide to (adjust) production they need non-OPEC too.

"Before people used to be skeptical about Russian (production adjustments). That is no longer the case."

He adds OPEC has been flexible and now has more tools to follow market developments.

Future outlook

In commenting on his main concern regarding the industry today, he says, that he is a little bit concerned that we are not really using oil revenue properly and efficiently. "With alternatives coming in, we cannot depend on oil as we used to." The difference between 1975 and now is that "we are not prepared for the period when oil will be marginalized."

While some countries have been better than others, the government and the public have to change their consumer practices soon, he says.

"I do not think anyone can just depend on oil anymore … We cannot rely on oil as the main source of revenue as we have done for decades. It is time to take another look. We need to expand."

IR Iran signs first IPC with France's Total for phase 11 of the South Pars gas field

The National Iranian Oil Company (NIOC) and Total signed a contract on July 3, 2017, for the development and production of phase 11 of South Pars (SP11), the world's largest gas field.

The project will have a production capacity of 2 billion cubic feet or 400,000 barrels of oil equivalent/day, including condensate, which will supply the Iranian domestic market starting in 2021.

The 20-year contract is the first Iranian Petroleum Contract (IPC) and is based on the technical, contractual and commercial terms as per the Heads of Agreement (HoA) signed on November 8, 2016. Total is the operator of the SP11 project with a 50.1 per cent interest alongside the Chinese state-owned oil and gas company CNPC (30 per cent), and Petropars (19.9 per cent), a wholly owned subsidiary of NIOC.

The signing ceremony held in Tehran was attended by Iranian Minister of Petroleum, Bijan Namdar Zanganeh, Total Chairman and CEO, Patrick Pouyanné, as well as executives from the China National Petroleum Corporation (CNPC) and Petropars. During the signing ceremony, NIOC Managing Director, Ali Kardor, said $2.4 billion of foreign capital would be invested in the first phase of the development contract and that the value of the total harvested gas would amount to $23bn.

Partnership

"This is a major agreement for Total, which officially marks our return to Iran to open a new page in the history of our partnership with the country," said Pouyanné, in a statement after the meeting. "This project is in line with the Group's strategy to expand its presence in the Middle East and grow its gas portfolio by adding low cost, long plateau assets."

After the signing, the Total CEO met with the President of Iran, Hassan Rouhani.

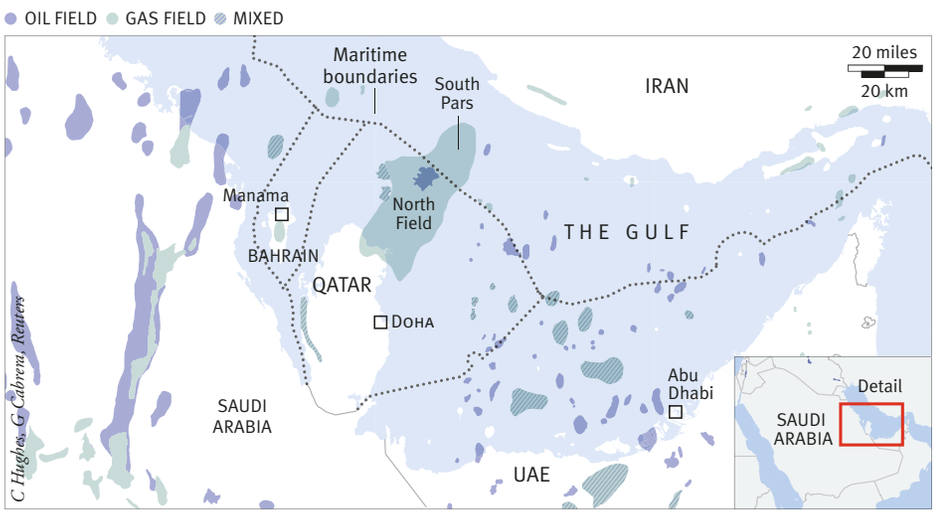
"Our policy is to have cooperation with big companies such as Total," the President stressed during the meeting. "We must make efforts toward economic growth of the Middle East to establish peace and stability in the region."

The SP11 project will be developed in two phases. The first phase, with an estimated cost of around $2bn equivalent, will consist of 30 wells and two wellhead platforms connected to existing onshore treatment facilities by two subsea pipelines. At a later stage, once required by reservoir conditions, a second phase will be launched involving the construction of offshore compression facilities, a first on the South Pars field.

Since the November 2016 HoA signature, Total has been conducting engineering studies on behalf of the consortium and initiated calls for tender in order to award the contracts required to develop the project by the end of the year.

Iran's new gas deal

Iran's contract with France's Total and China's CNPC, which will see them develop its giant South Pars offshore gas field, is the first major Western energy investment since sanctions against Tehran were lifted.



Sources: US Energy Information Administration; World Energy Atlas.

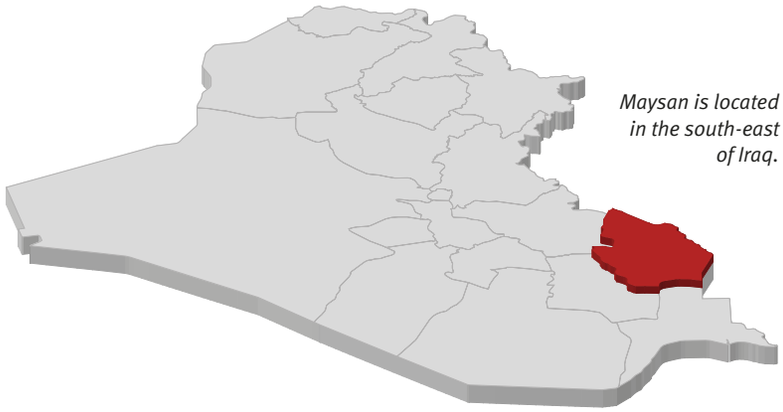
Iraq to create oil city in Maysan

Iraqi Minister of Oil, Jabbar Ali Hussein Al-Luiebi, has ordered the creation of an integrated oil city to be located in the Maysan Governorate as a means to pave the way for other projects to help further develop the city.

The plans were announced by the Minister of Oil during a recent visit to the Halfaya oil field, where Al-Luiebi explained that the project would help stimulate development and feature modern architectural designs.

"The city will be the seed for other projects that will help in adding aesthetic touches to the city," the Minister explained.

The Maysan Governorate is located in south-eastern Iraq, bordering IR Iran. Its administrative centre is the city of Amarah.



Maysan is located in the south-east of Iraq.

Iraq sets up oil shipping, trading joint venture

Iraq has formed a joint venture with a shipping company owned by a number of Middle East states to transfer, store and trade crude and oil products, according to official documents and industry sources, and reported by *Reuters*.

The venture, Al Iraqia Shipping Services and Oil Trading (AISSOT), will handle a "plethora of activities ranging from trading of petroleum products, ship chartering, oil terminals, various marine services, and bunkering," according to a company statement.

AISSOT is owned by state firm Iraqi Oil Tankers Co (IOTC) and Arab Maritime Petroleum Transport Co (AMPTC), a pan-Middle East company in which oil producers such as Saudi Arabia, the United Arab Emirates and Kuwait hold a share.

Strengthening activities

"Formation of AISSOT is based on Iraqi Oil Ministry vision to further strengthen activities of two major entities, ie AMPTC and IOTC in the field of shipping, marine services, and oil trading," the company said in a statement.

"It is also one of Iraqi Oil Ministry's initiatives to develop national oil companies to international levels."

AISSOT, which will soon start bunkering operations at ports in southern Iraq, is the second oil venture set up recently by the country.

Iraq's state oil marketer SOMO and Russia's Litasco formed a joint trading company in Dubai to market crude and may expand into oil products and petrochemicals, industry sources said.

Shutterstock

Nigeria launches $200 million fund to help local oil and gas firms

Nigeria's Minister of State for Petroleum Resources, Dr Emmanuel Ibe Kachikwu.

Nigeria's Ministry of Petroleum has launched the Nigerian Content Development Fund (NCDF) with an initial value of $200 million to support local oil and gas firms. This is in line with efforts by the government to improve access to low-cost credit across the economy.

The new Fund is expected to offer finance to energy firms setting up manufacturing facilities or acquiring assets such as oil rigs, as well as project financing and helping the refinancing of existing loans.

The NCDF would be financed through allocating the fund one per cent of the value of all contracts awarded in the state-run upstream oil and gas industry, the Petroleum Ministry said.

The Minister of State for Petroleum, Dr Emmanuel Ibe Kachikwu, told an event in the capital Abuja where the Fund was launched at the end of August that funding challenges had hampered the growth and success of indigenous manufacturers, service providers and other key players in the industry. He added that "I would like to see this fund going to cutting edge, tech-driven businesses." The goal was to increase the size of the Fund to $1 billion, he stated, without giving a timeframe.

The Minister added that the Fund would be managed by the Nigerian Content Development and Monitoring Board (NCDMB) alongside state-run Bank of Industry (BoI).

Total to invest $3.5 billion over five years in Qatari field

France's Total will invest $3.5 billion over five years in Qatar's offshore Al Shaheen oil field and expects to keep production running at 300,000 b/d in the future.

Total Chairman and CEO, Patrick Pouyanné, told a news conference in Doha to mark the inauguration of the joint venture firm that will run the field that the French firm aimed to maintain Al Shaheen's output at 300,000 b/d for "many years".

Patrick Pouyanné, Chairman and CEO at Total.

Total won a 30 per cent stake in the field last year, while state-owned Qatar Petroleum (QP) holds 70 per cent in the joint venture, called North Oil Company (NOC). The previous operator of the field was Denmark's A P Moller-Maersk.

Best offer

QP Chief Executive, Saad al-Kaabi, said Total had given the best offer for the field last year and that the new contract would bring Qatar more revenue than the previous deal. He said Total would invest $3.5bn over the next five years.

Pouyanné said Total could invest more in Qatar, as well as in neighbouring UAE.

The operation of the Al Shaheen field under the new arrangement runs for 25 years, starting on July 14, 2017.

Saudi Aramco gets approval to establish companies for energy industrial city

The Saudi government approved Saudi Aramco's plans to create two new companies that will develop and operate a new energy industrial city in Saudi Arabia, as the Kingdom seeks to expand its industrial footprint.

According to state news agency *SPA,* the city will be developed over 50 sq km of land in the oil producing region close to Abqaiq and will develop energy-related industries. Aramco will also set up another company to handle operations and maintenance of the city.

Low oil prices have slowed Saudi Arabia's economy, leading it to find ways to create manufacturing jobs and produce goods and services that have traditionally come from imports.

The Kingdom's strategy is to invest in foreign expertise that can help it develop strategic industries and foster development. A senior Aramco official said in March 2017, investments in the city are expected to be 16.5 billion riyals ($4.4bn).

Joint venture agreements

In May, Saudi Aramco signed joint venture agreements with three companies to construct the Gulf's largest shipyard. The $5.2bn project is geared to create new jobs and lessen the economy's reliance on oil, a key aspect of the Kingdom's Vision 2030.

In its recently released 2016 annual review, Saudi Aramco said the value of its direct material procurement from local manufacturers increased by $800 million to $2.9bn in 2016, which represents 43.5 per cent of its overall material procurement spending and the highest level of local content in the company's history.

Aramco recently initiated a programme called the In-Kingdom Total Value Add (IKTVA) with the goal of doubling the percentage of locally produced energy-related goods and services to 70 per cent of total spending by the year 2021.

Saudi Aramco's Abqaiq oil facility in eastern Saudi Arabia.

ADNOC unveils new, expanded partnership approach

The Abu Dhabi National Oil Company, ADNOC, announced plans to expand its partnership model across the group's entire value chain and to take a more active role in managing its portfolio of assets, as reported by the *Emirates News Agency (WAM)*.

The new initiative, underpinned by ADNOC's flexible operating model and its 2030 growth strategy, is geared to helping the group maximize value, drive business and revenue growth, while optimizing performance and expanding access for its products in key growth markets.

Investment opportunities

The plans include a range of new partnership and co-investment opportunities in the oil, gas, refining and petrochemical sectors. Upstream, this would entail the development and expansion of a regional, fully integrated drilling company, while midstream, the group would seek to create a new energy infrastructure venture. In the downstream, new partnerships and investment opportunities would be developed for the group's refinery and petrochemical assets.

"Shifting global trends are creating a new energy landscape where new rules of engagement are required," said Dr Sultan Ahmed Al Jaber, UAE Minister of State and ADNOC Group CEO. "In this new energy era, we need more creative strategies and more flexible business models to capture growth. Expanding our partnership model across the whole of our value chain and more actively managing our portfolio will allow us to both unlock value and reinvest capital into new, high growth opportunities. It will enable us to accelerate our growth, increase revenue and improve integration across the ADNOC value chain. It will also spur domestic economic growth, as well as bring new jobs and benefits to the UAE and its citizens."

As part of the plan, ADNOC is considering the IPO of minority stakes of some of its service businesses, which have attractive investment and growth profiles, supporting growth of the UAE's private sector and equity capital markets.

ADNOC would continue to be a committed, long-term majority shareholder in any businesses that are listed and would remain fully owned by the Government of Abu Dhabi.

Dr Sultan Ahmed Al Jaber, UAE Minister of State and ADNOC Group CEO.

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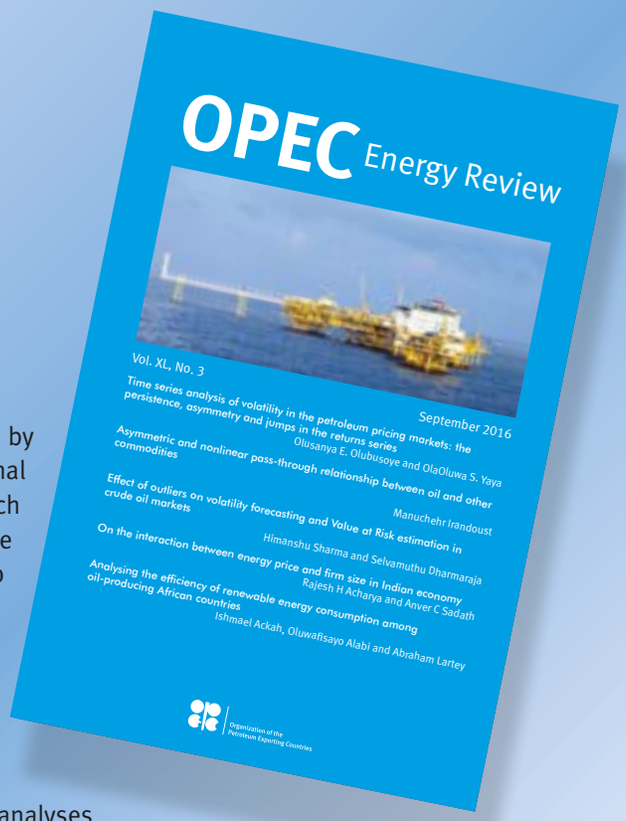


The OPEC Energy Review is a quarterly energy research journal published by the OPEC Secretariat in Vienna. Each issue consists of a selection of original well-researched papers on the global energy industry and related topics, such as sustainable development and the environment. The principal aim of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

The three main objectives of the publication are to:

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

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

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

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

OPEC Secretary General visits Nigerian President Muhammadu Buhari

In mid-August, OPEC Secretary General, Mohammad Sanusi Barkindo, visited Nigerian President Muhammadu Buhari in London at the residence of the Nigerian High Commissioner — Abuja House. The courtesy visit came just before President Buhari returned to Nigeria following medical treatment in London.

Muhammadu Buhari (r), Nigerian President, met Mohammad Sanusi Barkindo, OPEC Secretary General.

The Secretary General noted that the President had "made a remarkable recovery," and that "he was in pretty good shape, full of humour." The two reviewed current oil market conditions and the implementation of the OPEC-non-OPEC 'Declaration of Cooperation'.

President Buhari expressed his satisfaction with the steady progress being made by all participating countries in the 'Declaration of Cooperation', and urged them to remain focused and resolute. He also commended the Secretary General for the landmark decisions taken in both 2016 and 2017, and for the significant turnaround in OPEC since he assumed office in August of last year.

The President has been following events within OPEC and the oil market with keen interest. He was once Minister of Petroleum for Nigeria and has in the past represented Nigeria in OPEC for several years.

On his return to Nigeria on August 19, President Buhari was greeted by his Vice-President, Yemi Osinbajo, before speaking to the nation and urging for unity.

Buhari was elected President in March 2015, with his official inauguration in Abuja at the end of May, which was attended by 20 Heads of State from Africa and around the world, as well as representatives from scores of other countries.

Buhari during his inauguration as President in 2015.

Visitors of the OPEC Secretary General

In the course of his official duties, OPEC Secretary General, Mohammad Sanusi Barkindo, visits, receives and holds talks with numerous dignitaries.

July 6

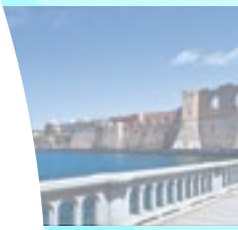
Nigerian Finance Minister visits OPEC Secretary General
Kemi Adeosun (l), Nigerian Minister of Finance, visited Mohammad Sanusi Barkindo (r), OPEC Secretary General.

July 7

Ecuador's Finance Minister visits OPEC Secretary General
Mohammad Sanusi Barkindo (l), OPEC Secretary General, received Carlos de la Torre (r), Minister of Finance, Ecuador.

July 17

Newly appointed Gabonese representatives visit OPEC Secretary General
Etienne Lepoukou (second r), Gabon's Governor for OPEC; and André-Brice Boumbendje (r), Gabon's National Representative to OPEC; met with Mohammad Sanusi Barkindo (second l), OPEC Secretary General; and Estévâo Pedro, Angola's Governor for OPEC and Chairman of the OPEC Board of Governors.



OPEC CITIES IN FOCUS

Panoramic view of Ecuador's city of Guayaquil and it's river, at sunset.

In the April 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.

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Guayaquil
the pearl of the Pacific

A witness to rich history and mounting prosperity

While the Republic of Ecuador is richly endowed with a variety of outstanding natural treasures, including crude oil, gas, gold and many other valuable minerals, it also happens to possess at least one famous pearl.

Guayaquil, formally titled Santiago de Guayaquil and commonly referred to as the 'Pearl of the Pacific', is a key city located in the western region of Ecuador. Capital of the Ecuadorian province of Guayas, the city is situated on the western bank of the Guayas River, a waterway that flows into the Gulf of Guayaquil and the Pacific Ocean. Its strategic location has enabled the city to develop rapidly through the years to become the OPEC Member's largest and most populous metropolitan centre, in addition to its most crucial port.

The OPEC Bulletin's ***Ayman Almusallam*** *takes you on a short trip to learn more about the city's rich history and its promising future.*

Guayaquil is spread out over an area of roughly 455 square kilometres and is inhabited by around 2.7 million people. Generating a quarter of Ecuador's gross domestic product (GDP), the city plays a significant role in the country's economy.

Prior to the Spanish colonial era, a group of settlers resided in the area. As the local population grew, a village was founded. In July 1538, the government of the Spanish colony recognized Guayaquil officially as the *Muy Noble y Muy Leal Ciudad de Santiago de Guayaquil* (most noble and most loyal city of St James of Guayaquil).

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Left: Street view in historic Las Penas neighbourhood in Guayaquil, Ecuador. *Above: View of the Malecon and the Guayas river in Guayaquil.*

The battle for independence

For many years, Guayaquil was prone to severe and damaging attacks by pirates. In 1687, the area was besieged by French and English pirates, which resulted in the death of many locals.

In the early 18th century, another critical attack by pirates occurred in which the city was robbed and ransoms were demanded. However, the pirates fled after a yellow fever epidemic broke out.

Almost 100 years later, locals were able to peacefully reclaim power and overthrow the Spanish regime. A few civilians, backed by a group of soldiers, settled in the city of Guayaquil. From there, they plotted to overpower Spanish resistance and apprehend the Royal Guards of Spain. This was a milestone event that led to Guayaquil's declaration of independence. It also signified a momentous victory in Ecuador's war of independence.

Colourful houses overlooking the river in Guayaquil.

Furthermore, Guayaquil was the host of the landmark conference in 1822 that brought together different parties to deliberate on how the country could regain independence over the Spanish territories.

In 1860, the battle of Guayaquil took place. This is considered one of the most important clashes of Ecuador's civil war.

The historical battle took place on the outskirts of Guayaquil between rival factions, including a military contingent from Peru, who were all vying for control of the country's territory after President Francisco Robles stepped down from power. In the end, Gabriel García Moreno's provisional government backed by General Juan José Flores emerged victorious, helping restore peace to the country.

An old railcar model at Parque Histórico *(Historic Park), a touristic attraction in Guayaquil.*

View of Guayaquil and the river Guayas at sunset.

A few years later, the city experienced a severe fire, which destroyed several important areas. Although this was a significant setback, the city responded with a broad range of investments in social and economic development, as well as in infrastructure projects.

Recovery and development

The outcome of these developments eventually led to the emergence of a thriving, modern economy, which has helped the country achieve some of the steadiest growth rates in Latin America.

Education has played an essential role in the development process as the city launched a number of universities and colleges, such as the University of Guayaquil, Escuela Superior Politécnica del Litoral and Universidad Católica de Santiago de Guayaquil.

The benefits of the new educational policy became apparent with skilled and trained workers taking on key roles in helping revitalize the city's economy.

The current mayor of Guayaquil, Jaime Nebot, in office since the year 2000, has continually emphasized the importance of urbanization, development and economic expansion. Initiatives include construction projects aimed at developing the tourism sector, as well as improvements in infrastructure and transportation.

These plans have received solid support from Rafael Correa Ecuador's President from 2007 to May 2017. Correa, who also ran the Ministry of Finance more than a decade ago, recognized the significance and the potential benefits of diversifying the economy while expanding additional lucrative industries.

An economic renaissance

In recent history, Ecuador has experienced a remarkable economic boom coupled with social transformation and significant growth in

A huge Iguana at a park in Guayaquil.

various sectors of the economy, including agriculture, business, energy and aquaculture.

With most of the international imports and exports moving through the Gulf of Guayaquil, the Port of Guayaquil has increased in prominence over the years.

These development plans and projects were supported by the remarkable oil and gas discoveries that have resulted in Ecuador becoming a major crude producer and net exporter. The country joined OPEC in 1973, but nineteen years later, it voluntarily suspended its membership. In 2007, it reactivated it once again.

Throughout its membership in OPEC, Ecuador has played a significant role in the Organization's mission to promote a lasting stability in the global oil market.

Climate and geography

The tropical savannah climate in the region of Guayaquil typically varies during the year. While it tends to be humid and hot during the first third of the year, heavy rainfalls occur, which can produce massive flooding at times. Rain decreases throughout the remaining months of the year, while it generally gets cooler.

The nation's largest city is located on the bank of Guayas River and is 60 km away from the northern part of the Guayas Gulf. The city's location and the geologic nature of its soil composition make it prone to experiencing earthquakes.

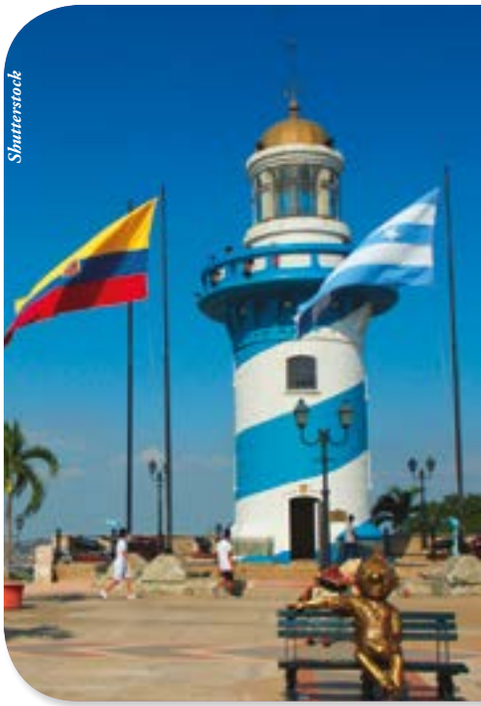
A rich culinary tradition

The charming city of Guayaquil enjoys a variety of traditional dishes. While seafood forms a dominant portion of its cuisine, many other ingredients and meals are cooked in the coastal city. *Arroz con menestra* (rice with lentils), *carne asada* (grilled beef) and shrimp or fish *ceviche* marinated in lime and tomato are just a few examples of popular dishes. These local specialties are the product of a diverse ethnic mix that has populated the city since its founding, including Spanish, Italian and West African influences.

Sport

Football forms an essential part of the sport scene in Guayaquil. This is best illustrated through the long-lasting rivalry among the city's two football clubs — Barcelona Sporting Club and Club Sport Emelec. This local derby has gained in popularity and passion over the years.

Since 2005, the city has been hosting an annual marathon, a highly-anticipated event that attracts more than 1,200 international participants from countries such as Kenya, Colombia, the United States and Venezuela. According to the competition records, Ecuadorians have the highest record of wins in the contest, followed by runners from Colombia and Kenya.



The lighthouse on top of Santa Ana hill, one of the most important interest for tourists in the city.

Typical Ecuadorean fruits on display at one of the markets.

Shrimp ceviche, marinated *in lime and tomato, is a famous dish in Guayaquil.*

An urban retail store on the outskirts of Guayaquil.

Alamy

¡Auge Vinotinto!

Venezuela's Under-20 men make footballing history

Venezuela lit up FIFA's Under-20 men's World Cup, reaching the final by playing a scintillating brand of attacking football. Could this achievement herald a new era of success for a country where baseball has traditionally been more popular? The OPEC Bulletin's ***Mathew Quinn*** *reports.*

Football in Venezuela has long existed in the shadow of the nationally more popular baseball. Given the country's outstanding history of success in baseball, it is not difficult to see why. There is hardly a city or town in Venezuela, irrespective of size or stature, which does not have a baseball team. From these small towns hail many of the great Venezuelan baseball players who have graced the playing fields of Mexico, Japan and, of course, the United States.

'Football exception'

Over the years, 358 Venezuelans have played in the US major baseball leagues, making the country the second most represented outside of the US (The Dominican Republic is the first). In 2016, 102 players born in Venezuela appeared on major league rosters. The high number of signings for the top teams, an achievement in itself, has been complemented by success and notable milestones on the field of play as well. Alex Carrasquel was the first Venezuelan-born player to break into the major leagues, as a pitcher for the Washington Senators in 1939. Luis Aparicio was the first Venezuelan inducted into the National Baseball Hall of Fame in 1984. In 2012, the Baseball Writers' Association of America granted the 'Most Valuable Player Award for the American League' to Miguel Cabrera of the Detroit Tigers, a first for a Venezuelan. In 2012, he was also the first batter in 45 seasons to achieve the 'Triple Crown'. This is a batter who completes a season leading a league in batting average, home runs and runs batted in.

These baseball feats have meant that football has played second fiddle throughout most of the country's sporting history. Given how synonymous Latin America is with footballing prowess, this has earned Venezuela the soubriquet of the continent's 'football exception.' Of the ten active members of CONMEBOL, the South American Football Confederation or the **Con**federación Suda**me**ricana de Fút**bol**, only Venezuela has never qualified for a senior FIFA World Cup. This statistic is not only attributable to the lack of popularity of the sport in the country, but also the presence of footballing behemoths Uruguay, Argentina and, the most successful team in the

Venezuela's Ronald Hernandez defends tenaciously against Japan's Tsukasa Morishima at the 2017 FIFA Under--20 World Cup Round of 16 match.

Yangel Herrera's powerful header secures Venezuela a spot in the quarter-finals.

history of the international game, Brazil, as opponents in every single qualifying campaign that Venezuela has faced.

Even compared to the other South American non-World Cup winners, Venezuela's lack of success is notable. Chile, Paraguay, Colombia, Peru and Bolivia have qualified for the senior World Cup nine, eight, five, four and three times, respectively. Ecuador, the other OPEC Member Country in the region, has appeared in three World Cup tournaments. Their most successful campaign was in Germany in 2006. While in Germany, Ecuador won their first two games against Poland and Costa Rica. This was followed by a loss to the tournament hosts, but this did not prevent Ecuador qualifying for the round of 16 against England. In a tight game, England squeezed past the Ecuadorians, with a goal from a David Beckham free-kick giving the Three Lions an undeserved lead. Regrettably, Ecuador was eliminated and England progressed to another, inevitable exit by penalty shoot-out against Portugal in the next round.

Despite this history and the considerable odds stacked against the footballing fortunes of Venezuela, the 2010s may be viewed as a decade which heralded a new dawn for the country. The 2000s saw the *Auge Vinotinto, (Vinotinto* is the nickname for the national team due to the red wine colour of their jerseys and *Auge* means rise),

ddp images

with Venezuela hosting the Copa America in 2007 where they reached the quarter-finals of that competition for the first time.

Improving performances

Yet it was the 2011 edition of the Copa America which saw Venezuela's greatest performance in that competition, as they reached the semi-finals and came agonizingly close to beating Paraguay on penalties. At one stage, qualification for the World Cup in 2014 also seemed possible, but despite a best-ever finish in a qualifying campaign, Venezuela narrowly missed out. They already cannot qualify for the World Cup in Russia in 2018, nevertheless, this summer, a momentous event happened which seems to suggest that the prospects for the national team are on the up.

The FIFA Under-20 World Cup is the most prestigious tournament in youth football and has propelled the careers of a number of household names in the game. In 2005, a diminutive attacking midfielder led Argentina to success at the tournament, collecting the Golden Ball for best player on the way. His name was Lionel Messi. Other previous winners of the award include Diego Maradona, Luis Figo, Paul Pogba and Sergio Aguero. There is a consistent history of success at the Under-20 World Cup transitioning to the senior game.

The performance of the Venezuelan team at the 2017 Under-20 World Cup in South Korea augurs extremely well for the future. It represented the best performance by any men's national team from Venezuela in a FIFA tournament. They reached the final playing a thrilling brand of football, which delighted their fans and neutrals alike.

The group stages

Venezuela opened the competition with a victory against international football heavyweights Germany. In a performance that would give a taste of what was to come for the later stages of the competition, the attacking quartet of Adalberto Penaranda, Yeferson Soteldo, Sergio Cordova and Ronaldo Pena dominated the proceedings. *Vinotinto* made the breakthrough shortly after the second half restarted, following a goalless opening 45 minutes. Pena showed strength and pace to barge past the German defense, round goalkeeper Dominik Reimann and slot the ball into the net for the opening goal. This was followed a few minutes later by a goal from Cordova following great work by Penaranda.

The footballing world was starting to take notice as Venezuela followed their win over Germany with a resounding 7–0 victory over tournament debutants Vanuatu. Aside from the ruthlessness of Venezuela's attacking display, the match in Daejeon was notable for Venezuela's goalkeeper Wuilker Farinez making history by becoming the first keeper to score in the competition, converting a penalty in the 56th minute. Remarkably, after the opening four matches and 390 minutes of action, Farinez would score more goals than he conceded, a feat which few of even the most elite goalkeepers have bested.

The final group game against Mexico was the match in which the goal of the tournament was scored, and what a worthy winner it was. Just over 30 minutes into the game, Penaranda dinked a beautiful pass through to Cordova, on the edge of the box. His deft touch brought the ball out wide where he out-muscled the Mexican defender. What followed was a sublime piece of skill, technique and patience. With the keeper at his mercy, Cordova was coolness personified, toying with, and then rounding the Mexican shot-stopper Abraham Romero, before delicately steering the ball over the line, despite the desperate efforts of a Mexican defender. The 1–0 result meant Venezuela qualified at the top of their group, with maximum points, the most number of goals scored by any team and, remarkably, no goals conceded. This was not just a victory; it was a *tour-de-force* performance by *la Vinotinto*.

Japan stood between Venezuela and a historic berth in the quarter-finals. In an exciting match, Penerando, Soteldo and Pena came close in the opening 20 minutes and it looked possible that Venezuela's array of attacking options would overwhelm the Asian champions. However, Ritsu Doan rattled the crossbar and Akito Takagi shot just wide for Japan before the break, dispelling the notion that this would be a one-sided affair. Following some solid goalkeeping by Wuilker Farinez, it ended goalless after 90 minutes, prompting extra-time. With just 12 minutes of additional time remaining, a commanding header from Yangel Herrera powered past Japanese goalkeeper Ryosuke Kojima and with that, this team advanced further in a FIFA tournament than any other Venezuelan men's team had done before, sparking jubilant scenes.

In the quarter-final, Venezuela faced the US. It was a game which Venezuela dominated but were particularly wasteful in

Venezuela's head coach, Rafael Dudamel, received a hero's welcome when the team returns to Caracas on June 13, 2017.

front of goal. Sergio Cardova had a goal ruled offside following a consultation with the video assistant referee. While Pernaranda and Chacon ensured it was a constant barrage of one-way traffic, it finished goalless after 90 minutes. For the second successive game, Venezuela went to extra time and finally, their relentless pressure paid off. Pernaranda's right footed effort broke the deadlock. In the second half of extra time, a Ferraresi header doubled Venezuela's lead. The US pulled one back but there was to be no denying Venezuela a semi-final place and the history books.

Making history

Old foes Uruguay awaited Venezuela in the semi-final. The two countries had met twice already in qualifying for the tournament. During the match, both teams were defensively solid and clear-cut goal scoring opportunities were hard to come by. Uruguay opened the scoring with an early second half penalty from Nicolas De La Cruz. It seemed inevitable Uruguay would double their lead when Nicolas Schiappacasse had a chance from point blank range; however, not for the first time in the competition, Wuiler Farinez made a mesmeric save. With full time fast approaching, it seemed Venezuela's chances of victory were depleting but then came a truly stunning free-kick by Samuel Sosa, who from 25 yards rocketed the ball to the back of the net, taking the game to extra time. Venezuela, once again showed their poise and maturity, fighting to the end. Momentum appeared to shift to Venezuela in extra-time but they could not convert their chances. A penalty shoot-out followed and goalkeeper Farinez kept out De La Cruz who could not convert his second kick of the evening. With that, Venezuela had qualified for their first ever FIFA final.

In reaching the final, Venezuela had exceeded expectations and captured the imagination of all supporters of the game with their passion and flair. The national coach, Rafael Dudamel cried throughout the entire penalty shoot-out against Uruguay. For someone who had been involved in the bleaker days of Venezuelan football, the good times were emotionally overwhelming. Dudamel was capped 57 times for his country as a goalkeeper, and even scored a goal against Argentina. The charismatic coach added verve to a tournament already glittered with great memories.

Venezuela's opponents in the final offered a contrast in footballing histories. England, where association football originates, beat Italy in the semi-final, to make it into the final. Unlike Venezuela, where football competes with the more popular baseball, despite huge public interest in other sports, nothing comes close to the English fixation with football.

However, the popularity of the game has not been translated into success for the national teams. This was the first appearance in a FIFA final by an England's men's team since the fabled victory by the senior side in 1966. The subsequent 51 years have been characterized by a mixture of near-misses and outright embarrassments.

In a testy affair, Venezuela almost drew first blood with an outrageous free kick from Ronaldo Lucena. However, it fell to Dominic Calvert-Lewin of Everton to score the game's only goal in the 35th minute, who was on hand to score following a great parry from Wauilker Farinez. England goalkeeper Freddie Woodman kept his country in the game with a string of fine saves in the second half.

Outstanding achievement

In the end England may have benefitted from tired Venezuelan legs. Venezuela's round of 16, quarter and semi-final matches had all gone to extra time, whereas England had not played a single minute of extra-time. In a hectic tournament, a total of an additional 90 minutes of football may have taken its toll. However, that should

Can Under-20 success transition to senior achievement? Gerzon Chacon in action during an international friendly match at Giants Stadium in August 2009, East Rutherford, New Jersey, US.

not lessen England's fantastic achievement in winning the trophy.

While the final result was bitterly disappointing for Venezuela's young heroes, in reality, player development rather than results is the priority in age limit football. Coach Dudamel is also in charge of the senior team and has been at the helm of the Under-20s even when the full side is playing international friendlies. As with other Latin American teams, Under-20s act as a conveyor belt to the senior ranks.

Dudamel's sights will surely be set on the ultimate prize, a place in the World Cup finals in 2022 when the senior competition is hosted in OPEC Member, Qatar. Venezuela's success with the Under-20s in South Korea must surely be seen as preparation in this regard. Many of the players for the Venezuelan team have already picked up senior caps and perhaps this could be the first generation of players to make it to the senior World Cup.

With all these positive signs, could the *OPEC Bulletin* in December 2022 feature a special article on Venezuela's success at the World Cup? Will the heroes of the Under-20 tournament repeat their feats in South Korea? Only time will tell: but until then, perhaps baseball's status as chief sport in Venezuela may be challenged by a surge in football's popularity.

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The ultimate prize: Venezuela's senior team (above) will seek to replicate Under-20 success and qualify for the 2022 World Cup.

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OFID's Ministerial Council gathers to set policy

Suleiman Al-Herbish (r), OFID Director-General, gathers with Ministers of OFID's member countries and delegates to the Ministerial Council, for a photograph.

OFID's Ministerial Council is the organization's supreme governing authority. Made up of finance ministers and other high-level representatives of OFID Member Countries, it meets once a year to review performance and set policy. This year's meeting was held on July 6 at OFID's headquarters in Vienna.

By Steve Hughes

OPEC Fund for International Development (OFID)

OFID's highest policy making body, the Ministerial Council, held its 38th annual session in Vienna in July to review the organization's performance and set policy for the coming year. The Council elected the Republic of Ecuador to the chair, represented by Carlos Alberto de la Torre, Minister of Economy and Finance. He replaces the People's Democratic Republic of Algeria, represented by Abderrahmane Raouia, Minister of Finance.

Welcoming fellow ministers, outgoing Chairman Raouia focused on OFID's commitment to the 2030 Development Agenda and working toward the Sustainable Development Goals (SDGs). "OFID's work has focused on addressing essential development needs — in particular food, water and energy resources — all of which are fundamental to economic growth, the provision of social services and improving the lives of developing societies," Raouia said. "OFID, along with its other partners in development, has a key role to play in ensuring that the [SDG] goals will be achieved in 2030." He added that OFID's advocacy had helped ensure the importance of energy was recognized as a standalone goal through SDG 7: 'Ensure access to affordable, reliable, sustainable and modern energy for all.'

The highlight of the Council's public session was the presentation of the OFID Annual Award for Development to the aQ´on Jay Programme of the Foundation for Integral Development (FUDI) in Guatemala. The programme will receive $100,000 from OFID in support of its efforts to improve maternal and child health and nutrition.

The Council also announced the winners of the 2017 OFID Scholarship Award Programme. This year, more than 20,000 students from OFID partner countries applied for a chance to complete their higher-level university studies with OFID's support. Ten young and remarkable individuals were selected from Colombia, Egypt, Guyana, Mongolia, Rwanda (two students), Sudan, Vietnam, Yemen and Zimbabwe. Since 2006, OFID has supported 40 outstanding young people to attend top ranking universities including Oxford, Harvard and Cambridge.

In the Council's working session, Governing Board Chairman and Director-General of the Kuwait Fund, Abdulwahab A Al-Bader, reported on the work of the Board since the last meeting of the Council. He disclosed that during 2016, OFID approved $1,338.6 million in fresh financing for development; an increase of around $200m over 2015. Operations continued to be led by the energy-water-food nexus, supported by the transportation sector. Together, these four areas accounted for some 73 per cent of aggregate approvals for the year.

In his statement to ministers, OFID Director-General Suleiman Al-Herbish said: "OFID has evolved over four decades. Today we are both a trusted global lending institution and a major player in the international development arena." Al-Herbish continued: "By the end of 2016, through the expert management of paid-in resources of just over $2.4 billion, we had committed more than $20bn in support of over 3,600 development operations across 134 countries. This is a remarkable achievement considering our modest size.

"The journey has been extraordinary. We have embraced new financing instruments and models, built a more diverse partnership network and, occasionally, as our Annual Report shows, we have even ventured into uncharted territory. This is shown by the subordinated debt facilities provided to banks in Honduras and Nicaragua; the first of their kind under the Private Sector facility."

Al-Herbish concluded his statement by thanking OFID's ministers and Member Countries: "For all that we have achieved in 2016 — and indeed over the past 40 years — we are mindful that nothing would have been possible without the trust of our Member Countries. Thank you all for your unwavering support. For this we are truly grateful. It has allowed OFID to mature into an organization that sets agendas and drives the sustainable development debate, month after month, year after year."

Other matters during the session included: consideration and approval of OFID's financial statements and Annual Report for 2016; and reports on the 20th Lending Programme and grant operations. The Ministerial Council comprises the finance ministers and other high-level representatives of OFID Member Countries. It meets once a year.

Executive education as the way to power the future

Professor Jonas Puck, Academic Director of the MBA Energy Management.

Nobody can reliably predict today what the future of global energy supply will look like. While fossil fuels will continue to dominate the global energy mix for many more decades, the energy mix will continue to evolve with a greater role for non-fossil fuels, particularly renewables. It begs the need to ask questions such as: How might this transition take place? What new technologies will have the potential to meet the ever-increasing demand for energy around the globe? What can the energy industry do to tackle environmental issues? And what particular challenges will this present for managers in the energy industry?

In the following interview, **Professor Jonas Puck,** *Academic Director of the MBA Energy Management, explains not only why focusing on executive education will help overcome energy challenges in the future, but also what valuable benefits an MBA in energy management can bring for professionals and executives alike who want to make sure they are ready for the imminent transformation of the energy sector.*

OPEC Bulletin: **Prof Puck, why do you think continuing education and training are crucially important for managers in the context of coping with the challenges of global energy supply in the future?**

Professor Puck: We live in incredibly dynamic times: What is an unqualified success today may be doomed to failure tomorrow. The energy sector, too, is becoming more and more unpredictable. Markets, technologies and the economic environment in general are constantly and, even more importantly, radically changing. The greater the environmental uncertainty and volatility, the more important the edge specialized education and training can give you.

What we urgently need today, especially in the energy industry, is managers who are capable of responding flexibly and adequately to changes in their environments. However, they cannot do this unless they see the broader context, are aware of how things interrelate and understand what effects their interventions will have.

So, an MBA could provide managers with this know-how and the proverbial big picture?

The right MBA can at least make a significant contribution here.

Could you expand on that a little? What benefits does an MBA with a specialization in energy management offer?

Yes, with pleasure. There are different dimensions to consider in this context. One of the most significant is the breadth of knowledge. In other words, the big picture you just mentioned. Let me give you an example: Oil prices are low, so one might think that the traditional energy sector is struggling and that renewable energies stand to benefit from this. However, the situation is far more complex. While it is true that the big oil companies are suffering as far as their upstream, ie oil-producing, activities are concerned, they are greatly benefiting from low oil prices on the downstream side of things — when it comes to refining, gas stations, etc — as people are buying much more. As a result, renewables are coming under pressure, as well because there is less demand for them when oil prices are low.

What is more, one problem with renewable energies is that they frequently fail to meet peak demand since they are subject to natural fluctuations. When the wind does not blow or the sun does not shine, no energy is produced. And this is where coal, gas and nuclear energy come in: They can help meet peak demand, and they can do so at very short notice. On some markets, an increase in the demand for renewables would, therefore, go hand in hand with greater demand for fossil fuels. This can be changed only through innovation, particularly in the field of efficient energy storage.

All this goes to show just how complex the situation is. And it becomes even more complex in view of the fact that energy supply has long ceased to be a regional issue. Nowadays, energy is a global phenomenon.

And apart from the "breadth"?

A high-quality MBA program also offers depth of knowledge. It goes without saying that essentially an MBA with an energy specialization is a general management program. And that is a good thing.

However, in the course of working on their master's thesis, for instance, students are given the opportunity and the flexibility to explore in greater detail topics they are particularly interested in, allowing them to become subject-matter experts. Moreover, our students and our lecturers come from many different areas of the energy industry. Thus, participants also greatly benefit from the insights that their colleagues bring to the program; and carefully chosen experts, who are their teachers, help them develop their understanding of the latest industry trends and developments.

Very often, people's decisions are based not only on facts but also on their attitudes and perspectives. Here, an MBA offers a unique setting; it brings together individuals who share similar concerns and skills, providing them with an opportunity to exchange views and opinions with one another in a non-hierarchical environment.

What other dimensions are there?

Getting risk management right is also crucial. Spreading risks is a good idea, especially when you operate in highly volatile and unpredictable markets. Diversification is key in this context. In order to get risk management right, it is fundamentally important to take action at different levels. To begin with, there is strategic risk management. This is where traditional oil and gas companies might experience considerable pressure in the coming years.

Although fossil fuels will very likely continue to be in great demand for a long time, their business model is under pressure. One way of managing this risk is to invest in other areas of the energy industry. The more diverse your portfolio, the better you will be able to compensate for the loss of a segment. Needless to say that the success of such measures largely depends on your ability to assess risks accurately — which is something you can learn.

Then, there is, of course, financial risk management. Here, the key question is: What can my business do as far as financial hedging is concerned, and which of the available options are the best in my particular case?

And finally, there is risk management at the executive level. How can I make sure to always achieve the best results possible for my business when interacting with the outside world, eg in the context of negotiating with clients or partners, and at the same time pursue an internal leadership strategy that safeguards my interests and those of the workforce.

All of these issues are repeatedly addressed in the course of an MBA program, and being able to share your experience with your fellow students and ask them for advice is, of course, hugely beneficial.

What feedback do you get from students?

When I meet our students on graduation day and ask them what they have benefited from the most, many tell me that they now have a much better understanding of the global interplay of a wide variety of topics. Above all else, however, they stress that they have learned to regard failures and wrong decisions as chances for new beginnings, ie as entrepreneurial opportunities. It is this mindset that enables people to create something revolutionary and, in doing so, make a contribution to meeting the global challenges facing us in the 21st century.

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

April 3 Students from various universities in the US, organized by IES Abroad.

April 6 International students who attended the World Youth Academy's International Seminar on International Relations & Business, Vienna, Austria.

April 19 Students from the Bundesgymnasium Gmunden, Austria.

April 20 Students from the Bundes-, Bundesreal- and Bundesoberstufenrealgymnasium (BG/BRG/BORG), Oberpullendorf, Austria.

April 21 Students from the WebMUN Secretariat at Webster University, Vienna, Austria.

April 25 Students from the Student Movement for International Organization (MSOI), Gorizia, Italy.

April 25 Students from the Student Movement for International Organization (MSOI), Torino, Italy.

April 25 Officials from the German Federal Armed Forces (Bundeswehr), Kaiserslautern, Germany.

April 28 Students from the HTL Ottakring, Vienna, Austria; and from the Polish Geological Institute, Warsaw, Poland.

May 8 Students from Polytechnische Schule, Gross-Enzersdorf, Austria.

May 10 Officials from the German Federal Armed Forces (Bundeswehr), Berlin, Germany.

General Legal Counsel

Within the OPEC Secretariat, the Legal Office contributes to the conduct of the affairs of the Organization by promoting the rule of law within the Organization and in its relation with Governments, organizations, enterprises and individuals and by maintaining and defending the legal claims and interest of the Organization. The Office participates in the drafting and negotiations of contracts and agreements with external entities. It provides legal support and proposes amendments in respect of the Organization's organs, statutes and programmes, as well as of financial and staff regulations. It monitors developments of relevant legal aspects pertaining to the energy sector, nationally and internationally, conducts research and publishes up to date legal articles on recent and emergent trends. It protects and advances the interests of the Organization and its Member Countries in international forums.

Objective of position:

The General Legal Counsel is to plan, organize, coordinate, manage and evaluate the work of the Legal Office in accordance with the work programme and budget so as to optimize its support to the Secretariat in achieving its overall objectives. He/she also provides legal advice and expertise on matters relating to OPEC and its Member Countries as arise from relevant international and national fora and developments. Furthermore, he/she provides legal advice and support regarding the Secretariat's Statute and Staff and Financial Regulations, as well as other internal legal issues and protects and advances the interests of OPEC and its Member Countries at international forums.

Main responsibilities:

- Plans, organizes, coordinates, manages and evaluates the work in the Legal Office by providing legal advice on: all pertinent legal developments in the global petroleum industry; matters relating to and arising from various international forums in particular the implications of developments in the legislation, judicial decision, arbitration awards, agreements and treaties of the WTO, UNCTAD, UNFCCC, UNCSD, ECT and national policies and actions on the Member Countries; internal legal issues, including reviewing contracts, as well as the application of the Staff and Financial Regulations, recommending amendments where necessary; Statutes of OPEC, suggesting amendments, as necessary, to the Statutes of the Organization or the Economic Commission Board (ECB), in accordance with the Resolutions of the Conference;
- Recommends a programme on legal research suggesting new policies and resolutions, and carrying out special legal studies on particular aspects of the energy industry, as well as international developments, with a view to ascertaining how best the interest of the Organization and Member Countries may be served;
- Ensures full responses to requests by the Conference, Board of Governors, ECB and standing committees for studies and special reports relevant to the work program of the Office;
- Develops and maintains networks with external experts and institutions in fields relating to the work of the Office;
- Keeps the Secretary General fully informed on all aspects of the work of the Office, and draws his attention to important analyses performed by it;
- Evaluates the performance of the staff of the Office and recommends to the Secretary General of staff development, salary increase, promotion and separations as appropriate;
- Ensures that the staff of the Office receives the supervision and guidance necessary to broaden and deepen their skills and continuously improve their performance;
- Prepares the annual budget for the Office.

Required competencies and qualifications:

Education: University degree in Law, Masters in International Law; PhD preferred; Certified Lawyer.

Work experience: *Advanced degree:* 12 years in positions directly related to legal aspects of the international oil industry with a minimum of four years in a managerial position, preferably at large national, regional, or international institutions; *PhD:* ten years.

Training specializations: International law — a combination of two or more of the following specializations is preferred: International energy law and policy; International and comparative petroleum law and policy; International competition law and policy; International trade law; International economic law; International environmental law and policy; International law on foreign investment; Professional management and leadership.

Competencies: Managerial and leadership skills; communication skills; analytical skills; presentation skills; interpersonal skills; customer service orientation; team-building skills; initiative; integrity.

Language: English.

Status and benefits:

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

The post is at grade B reporting to the Secretary General. The compensation package, including expatriate benefits, is commensurate with the level of the post.

Applications:

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

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

In order for applications to be considered, they must reach the OPEC Secretariat through the relevant Governor not later than **October 13, 2017,** quoting the job code: 1.1.01 *(see www.opec.org — Employment)*.

Finance Officer

Within the Support Services Division, the Finance & Human Resources Department is responsible for budgets, accounting and internal control, as well as human resources planning and management. The Department is to provide services related to managing the human and financial resources of the Organization. Within the Department, the Finance Section is responsible for all financial matters and financial control functions at the Secretariat and ensuring financial integrity of the Organization as stipulated in the Financial Regulations.

Objective of position:

The Finance Officer is responsible for financial matters and financial control functions at the Secretariat, ensuring financial integrity of the Organization in accordance with the objectives of the Section. He/she is to plan and manage financial resources of the Secretariat efficiently, as well as to manage the work programme of the Section and to supervise and guide its staff.

Main responsibilities:

Performs financial planning and cash management ensuring efficient and effective utilization of resources; coordinates the budget preparation in conformity with the guidelines and monitors the implementation of the budget; prepares reports and presentations on financial matters to the Management and the Board of Governors; checks and controls all payments received and records transactions; manages the working process and supervises staff of the Section; manages the investment of liquid funds; provides support and information to the Internal and External Auditors.

Required competencies and qualifications:

Education:

University degree in Accounting/Finance; Advanced degree preferred.

Work experience:

University degree: ten years in accounting, finance and budgeting; advanced degree: eight years.

Training specializations:

Accounting (Managerial Accounting, Financial Accounting)
Finance (financial management preferred)
Cost and benefits analysis/budgeting
Computer accounting system

Competencies:

Managerial and leadership skills;
Communication skills;
Analytical skills;
Presentation skills;
Interpersonal skills;
Customer service orientation;
Team-building skills; Initiative; Integrity.

Language: English.

Status and benefits:

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

The post is at grade D reporting to the Head of Finance & Human Resources Department. The compensation package, including expatriate benefits, is commensurate with the level of the post.

Applications:

Applicants must be nationals of Member Countries of OPEC and should not be older than 58 years.
Applicants are requested to fill in a résumé and an application form which can be received from their Country's Governor for OPEC.
In order for applications to be considered, they must reach the OPEC Secretariat through the relevant Governor not later than **October 3, 2017,** quoting the job code: 9.2.01 *(see www.opec.org — Employment)*.

Forthcoming events

European gas summit, September 26–28, 2017, Rotterdam, The Netherlands. Details: Platts, 20 Canada Square, Canary Wharf, London E14 5LH, UK. Tel: +44 207 1766142; fax: +44 207 176 8512; e-mail: cynthia_rugg@platts.com; website: www.platts.com/events/emea/european-gas/index.

Global oil and gas – SE Europe and Med conference, September 26–28, 2017, Athens, Greece. 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; website: http://global-oilgas.com/SEEMED/Home.

3rd Uganda international oil and gas summit, September 27–28, 2017, Kampala, Uganda. Details: Global Event Partners Ltd, London Office, 20-22 Bedford Row, London WC1R 4JS, UK. Tel: +44 203 488 11 91; e-mail: enquiries@gep-events.com; website: www.uiogs.com.

Cuba energy, oil and gas 2017, September 27–29, 2017, Havana, Cuba. Details: Global Event Partners Ltd, London Office, 20-22 Bedford Row, London WC1R 4JS, UK. Tel: +44 203 488 11 91; e-mail: enquiries@gep-events.com; website: www.cuba-energy.com.

Sakhalin oil and gas, September 27–29, 2017, Yuzhno-Sakhalinsk, Russia. Details: Adam Smith Conferences, 6th Floor, 29 Bressenden Place, London SW1E 5DR, UK. Tel: +44 207 017 7444; fax: +44 207 017 7447; e-mail info@adamsmithconferences.com; www.sakhalin-oil-gas.com.

World energy engineering congress, September 27–29, 2017, Atlanta, GA, USA. Details: World Alliance for Decentralized Energy, Edinburgh Quay, 133 Fountainbridge, Edinburgh EH3 9BA, UK. Tel: +44 31 625 33 33; e-mail: infor@localpower.org; website: www.energycongress.com.

Africa oil and gas summit, September 28–29, 2017, Cape Town, South Africa. Details: 3rd Floor, Archway House, 1–3 Worship Street, London EC2A 2AB, UK. Tel: +44 207 127 45 01; fax: +44 207 127 45 03; e-mail: info@oliverkinross.com; www.africaoilandgassummit.com.

Cyprus energy, oil and gas summit, October 3–4, 2017, Limassol, Cyprus. Details: Global Event Partners Ltd, London Office, 20–22 Bedford Row, London WC1R 4JS, UK. Tel: +44 203 488 11 91; e-mail: enquiries@gep-events.com; website: http://ceogs.com.

KIOGE 2017, October 4–6, 2017, Almaty, Kazakhstan. 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; website: https://kioge.kz/en.

Powering Africa: Nigeria, October 4–6, 2017, Abuja, Nigeria. Details: Energy Institute, 61 New Cavendish Street, London W1G 7AR, UK. Tel: +44 207 467 7116; fax: +44 207 580 2230; e-mail: jwarner@energyinst.org.uk; website: www.energyinst.org/events/view/5006.

Asset 2017: integrity, ageing and life extension for oil and gas assets, October 5, 2017, Aberdeen, UK. Details: Energy Institute, 61 New Cavendish Street, London W1G 7AR, UK. Tel: +44 207 467 7116; fax: +44 207 580 2230; e-mail: jwarner@energyinst.org.uk; website: www.energyinst.org/events/view/4966.

Mexico energy strategy forum, October 5, 2017, Mexico City, Mexico. Details: The Petroleum Economist Ltd, 69 Carter Lane, London EC4V 5EQ, UK. Tel: +44 207 779 8800; fax: +44 207 779 8899; e-mail: customerservice@petroleum-economist.com; website: www.petroleum-economist.com.

Climate change 2017, October 9–10, 2017, London, UK. Details: Chatham House, 10 St James's Square, London SW1Y 4LE, UK. Tel: +44 207 957 5700; fax: +44 207 957 5710: e-mail: contact@chathamhouse.org; website: www.chathamhouse.org/conferences/climate-change-2017.

International gas cooperation summit (IGCS), October 9–11, 2017, Durban, South Africa. Details: Cross-border Information (CbI), 4 Bank Buildings, Station Road, Hastings TN34 1NG, UK. Tel: +44 1424 72 16 67; e-mail: thalia@africa-energy.com; website: www.africa-energy.com/event/international-gas-cooperation-summit-igcs.

Argus European and global crude summit 2017, October 10–11, 2017, Geneva, Switzerland. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 (0) 44 34 51 16; email: me.events@argusmedia.com; website: www.argusmedia.com/events/argus-events/europe/argus-euro-crude/home.

Asia downstream technology forum, October 10–11, 2017, Bali, Indonesia. 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; website: www.europetro.com/event/56/0.

3rd oil and gas government and partnership summit 2017, October 10–12, 2017, London, UK. Details: 10–18 Vestry Street, 1st ll, London N1 7RE, UK. Tel: +44 207 11 11 615; fax: +44 207 18 37 945; e-mail: info@irn-international.com; website: www.oilgaspartnershipsummit.com.

Argus Africa oil storage and logistics 2017, October 11–13, 2017, Cape Town, South Africa. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 (0) 44 34 51 16; email: me.events@argusmedia.com; website: www.argusmedia.com/events/argus-events/europe/argus-africa-storage-and-logistics/home.

Argus Azerbaijan international petroleum summit, October 12–13, 2017, Baku, Azerbaijan. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 (0) 44 34 51 16; email: me.events@argusmedia.com; website: www.argusmedia.com/events/argus-events/russia/argus-international-petroleum-summit/home.

Kuwait oil and gas show and conference, October 15–18, 2017, Kuwait City, Kuwait. Details: Society of Petroleum Engineers, Dubai Knowledge Village, Block 17, Offices S07-S09, PO Box 502217, Dubai, UAE. Tel: +971 4 390 3540; fax: +971 4 366 4648; e-mail: spedub@spe.org; website: http://kogs2017.com.

Russian petroleum technology conference, October 16–18, 2017, Moscow, Russia. Details: Society of Petroleum Engineers, Part Third Floor East, Portland House, 4 Great Portland Street, London W1W 8QJ, UK. Tel: +44 207 299 3300; fax: +44 207 299 3309; e-mail: spelon@spe.org; website: www.spe.org/events/en/2017/conference/17rptc/homepage.html.

Mozambique gas summit, October 18–20, 2017, Maputo, Mozambique. Details: CWC Associates Ltd, Regent House, Oyster Wharf, 16–18 Lombard Road, London SW11 3RF, UK. Tel: +44 207 978 000; fax: +44 207 978 0099; e-mail: sshelton@thecwcgroup.com; website: www.mozambique-gas-summit.com.

37th Argus fuel oil and feedstock summit 2017, October 22–24, 2017, Miami, FL, USA. Details: Argus Media, Argus House, 175 St John Street, London EC1V 4LW, UK. Tel: +971 (0) 44 34 51 16; email: me.events@argusmedia.com; website: www.argusmedia.com/events/argus-events/americas/fuel-oil-summit/home.

The outlook for the oil market in 2018

July 2017

In the July 2017 edition of the *Monthly Oil Market Report (MOMR),* OPEC released its outlook for the world oil market in 2018.

The report sees the world economy expanding by 3.4 per cent in 2018, the same growth as in 2017, reflecting further improvements in the global economy. This positive momentum could impact economic stimulus programmes.

"Given the gradual ongoing recovery, the extraordinary stimulus of the past years is expected to be reduced further on both the fiscal and particularly the monetary side," it maintained.

Non-OECD countries are expected to see more robust growth than the OECD regions.

"OECD growth is forecast at a slightly lower level, while non-OECD economies are forecast to see some better growth," the report stated. "India is forecast to successfully improve its GDP growth level due to the implementation of economic reforms. Both Brazil and Russia are forecast to expand their recovery further in 2018. China will see lower growth than in 2017, although still the second-highest growth rate of major emerging economies, with domestic consumption providing a greater contribution."

The *MOMR* added that continued growth in the global economy in the year ahead would hinge on stability in the oil market, and that other important factors would include geopolitical developments and the pace of monetary policy normalization in major economies.

Looking at world oil demand growth, the report sees 2018 demand expanding at a rate of 1.26m b/d to reach a total of 97.65m b/d, which is down slightly from the current year, yet in line with the average growth seen over the last five years.

"Factors driving global oil consumption in 2018 are expected to be the ongoing growth in the world economy; road transportation demand propelled by steady vehicle sales in the US, China and India; capacity additions and expansions in the petrochemical sector, particularly in the US; and new capacities of propane dehydrogenation plants in China," the report maintained. "Uncertainties include the higher level of substitution towards other fuels, efficiency gains, subsidy reductions, as well as digitalization and technological advancements."

OECD consumption is foreseen to rise by around 190,000 b/d in 2018, while non-OECD demand is expected to increase by 1.07m b/d, with China and India as the major contributors.

The global supply picture will continue to see most new supply coming from non-OPEC countries, according to the *MOMR*.

"Non-OPEC oil supply for 2018 is forecast to grow by 1.14m b/d, higher than the 800,000 b/d growth expected for 2017, to average 58.96m b/d. On a country basis, the main contributors to growth next year are expected to be the US with 860,000 b/d, Brazil with 220,000 b/d, Canada with 170,000 b/d, and Russia with 170,000 b/d," the report stated.

Mexico and China, however, are expected to see declines of 170,000 b/d and 160,000 b/d, respectively, mainly due to an absence of new projects and heavy declines in mature fields, according to the *MOMR*. Also, in the US, shale output is expected to be somewhat impacted by cost inflation and a decline in well productivity as operators expand production beyond so-called 'sweet spots', while continued production ramp-ups are expected to support supply in Brazil and Canada. Russia's oil supply growth forecast takes into account the continuation of voluntary production adjustments into 1Q18.

Based on the above forecasts, the *MOMR* projects non-OPEC supply and OPEC NGL growth to slightly outpace incremental world oil demand, resulting in demand for OPEC crude in 2018 of 32.2m b/d. This represents a decline of 100,000 b/d from the current year, which compares to an expected increase of 300,000 b/d in 2017 over a year earlier.

The report said that a bullish economy could provide the needed movement towards a rebalanced global oil market.

"A better-than-expected improvement in the global economy could contribute further to oil demand growth in the coming year, accelerating the ongoing rebalancing in the oil market and supporting market momentum in 2018," it concluded.

MOMR ... oil market highlights

July 2017

The **OPEC Reference Basket** declined 8.1 per cent in June to $45.21/barrel. Year-to-date, the ORB value was 38.3 per cent higher at $50.21/b. Crude futures tumbled in a bear market. ICE Brent settled down 7.5 per cent to $47.55/b and NYMEX WTI dropped 6.9 per cent to $45.20/b, on concerns about rising global supply. Year-to-date, ICE Brent and NYMEX WTI prices were 28 per cent and 26 per cent higher, respectively. The ICE Brent-NYMEX WTI spread narrowed to $2.36/b. Money managers embarked on a new cycle of short-selling in June, which added to the downward pressure on prices.

World economic growth in 2018 is forecast at 3.4 per cent, the same level of growth forecast for 2017. This reflects a continued strengthening of the global recovery which is becoming more balanced, with stability in the oil market remaining a key determinant. OECD growth is forecast at a slightly lower level of 1.9 per cent in 2018, compared to 2.0 per cent in 2017. India is forecast to grow by 7.5 per cent in 2018, compared to 7.0 per cent in 2017. Brazil and Russia are both forecast to expand their recovery to 1.5 per cent and 1.4 per cent, respectively, compared to 0.5 per cent and 1.2 per cent in 2017. China will continue to grow at a slightly lower, but still considerable 6.2 per cent in 2018, compared to 6.6 per cent in 2017.

Global growth in 2017 is expected to be around 1.27 million barrels/day, broadly unchanged from previous month, to average 96.4m b/d. The latest data shows demand in India and China have remained robust, reflecting healthy manufacturing and road construction activities in the former, and rising demand in the transportation and industrial sectors in the latter. For 2018, world oil demand is anticipated to rise by 1.26m b/d, slightly below the current year's growth, to average 97.6m b/d. The OECD is expected to see growth of 200,000 b/d, while the non-OECD is forecast to increase by 1.07m b/d.

Non-OPEC **oil supply** growth was revised marginally lower to 800,000 b/d in 2017, averaging 57.82m b/d. The downward revision was mainly driven by expected lower OECD oil supply in 2H17. For 2018, non-OPEC oil supply is expected to grow by 1.14m b/d to average 58.96m b/d. US, Brazil, Canada, Russia, Kazakhstan, Congo and the UK are expected to be the main drivers of growth, while declines are foreseen in Mexico, China, Colombia and Azerbaijan. OPEC NGLs production in 2018 is expected to grow by a higher 180,000 b/d to average 6.49m b/d, partly due to Equatorial Guinea joining OPEC. In June, OPEC crude production rose by 393,000 b/d to average 32.61m b/d, according to secondary sources.

Refinery margins in the US declined further in June, as the US gasoline crack spread dropped despite the onset of the summer driving season. High inventory levels added to the weakness in the middle of the barrel, outpacing increases in the gasoil cracks. Meanwhile, in Europe and Asia, margins inched up on healthy demand amid additional export opportunities outpacing plentiful supply.

Dirty **tanker spot freight rates** were weak in general in June. VLCC freight rates declined six per cent, while the drop in Suezmax and Aframax spot rates was greater, falling by 20 per cent each, compared to May. The decline in dirty tanker spot freight rates came on the back of growing tonnage availability, as the market was not active enough to absorb the expansion in capacity. Similarly, clean tanker sentiment showed no improvements on average in June.

Total **OECD commercial oil stocks** fell in May to stand at 3,015m b. At this level, OECD commercial oil stocks are 234m b above the latest five-year average. Crude and product stocks indicate a surplus of around 148m b and 86m b above the seasonal norm, respectively. In terms of days of forward cover, OECD commercial stocks stood at 63.5 days in May, some 3.6 days higher than the latest five-year average.

Demand for OPEC crude in 2017 is estimated at 32.3m b/d, representing an increase of 300,000 b/d over the 2016 level. In 2018, the demand for OPEC crude is projected at 32.2m b/d, around 100,000 b/d less than this year.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for July 2017. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on OPEC Reference Basket and crude and oil product prices in general.

World economic prospects for 2017–18 look positive

***August* 2017**

In the August 2017 *Monthly Oil Market Report (MOMR)*, OPEC reported that world economic growth was gaining momentum, reflecting general improvements across the globe.

The *MOMR's* feature story, entitled *World economic prospects,* forecasts global growth at 3.4 per cent for both 2017 and 2018, up from 3.0 per cent in 2016. After increasing by only 1.7 per cent in 2016, OECD GDP growth is now expected at 2.0 per cent in both 2017 and 2018.

According to the report, the major emerging economies are also holding up well with high growth rates seen in India and better-than-expected performances in China, while Russia and Brazil continue to recover from recession.

The report sees this general upward trend continuing in the second half of the year with a few hurdles along the way.

"With the ongoing growth momentum and an expected continued dynamic in 2H17, there is still some room to the upside," the report explained. "At the same time, challenges remain and are mainly related to global political developments and upcoming monetary policy decisions in the US and the Euro-zone. Moreover, continuing stability in the oil market remains a key determinant for global growth."

In terms of OECD expansion, the report noted that the US economy was rebounding from a relatively low growth rate of only 1.5 per cent in 2016.

"A renewed increase in energy sector investment along with rising domestic consumption and improving exports were expected to raise growth projections to 2.1 per cent in 2017 and 2.2 per cent in 2018," the report said. "Planned tax reforms could lead to higher growth, but as political uncertainties remain, the downside risk is equally pronounced."

In terms of the Euro-zone, the report noted that growth had been relatively stable over the previous quarters and was better than expected, adding that GDP growth was now forecast at 2.0 per cent for 2017 and 1.8 per cent for 2018, up from the 1.7 per cent growth rate seen in 2016.

"Supported by the ECB's ongoing accommodative monetary policy and having overcome some political uncertainty, growth in the Euro-zone still has room to the upside, considering the expected improvement in the labour market given the need to address the high unemployment rate," the report explained.

The report said Japan is expected to experience higher growth of 1.4 per cent in 2017, up from 1.0 per cent last year, while growth in 2018 is forecast at 1.1 per cent.

"Structural reforms and ongoing monetary stimulus together with fiscal support all provide the basis for a gradually improving economy, while the upside is considered to be limited," the report added.

Looking at the emerging markets, the *MOMR* reported that China had seen better-than-expected growth in the first half of 2017, boosted by an ongoing robust property market, which is expected to result in growth of 6.7 per cent in 2017, the same level as in 2016. With risks from rising debt and overcapacity still in the picture, the report noted that growth in 2018 would be forecast at a slightly lower rate of 6.3 per cent.

Even though India's economy continues to absorb some of the consequences of economic structural reforms, such as the introduction of the Goods and Services Tax (GST), the report forecasts a solid growth rate of 7.0 per cent for 2017, which is down from last year's growth of 7.9 per cent. Growth in 2018, however, is forecast to rebound to 7.5 per cent.

Brazil and Russia continue to rebound from a two-year recession and, according to the *MOMR*, are expected to achieve growth of 0.5 per cent and 1.2 per cent in 2017, respectively, with support coming from recovering commodity prices and an improving domestic consumer base. The report noted, however, that uncertainties remain for both economies, including domestic political challenges for Brazil as well as multilateral, and more recently, unilateral sanctions in the case of Russia. These developments may impact 2018 growth, which is currently forecast at 1.5 per cent for Brazil and 1.4 per cent for Russia.

The report also looked at global monetary policies and concluded that a gradual normalization of these policies in the major OECD economies was likely given that inflation was still relatively low. It added, however, that the recent rise in the value of the euro to the US dollar may present some uncertainty in regards to future monetary policies.

"While the ECB may normalize its monetary policies quicker than anticipated, the US Fed is likely to slow down the pace of its monetary tightening," the report explained. "Such monetary policies remain influential to the oil market. Capital flows have been an important source for funding economic activity in the emerging economies, supporting oil demand. On the supply side, low interest rates have been an important driver of investments for unconventional resources, mainly in the US."

The report also noted that although the low cost of holding inventories had slowed down slightly the drawdown in excess oil stocks, OECD inventories had still seen an 87m b decline since January 2017 compared to the five-year average.

A boost in overall world economic activity during the second half of the year is forecast to provide fertile ground for solid growth in 2018.

"All in all, the improvement in economic activities in 2H17 bring the expectation that not only OECD countries but also emerging as well as developing countries more broadly will be better off by the end of the year," the report forecasted. "Moreover, some recent positive geopolitical developments give hope that reduced tensions in some regions can add to oil demand growth and support developments in these economies. Taken together, this will allow the global economy to enter the coming year with a firm basis to support better-than-projected growth in 2018."

MOMR ... oil market highlights

August 2017

The **OPEC Reference Basket** averaged $46.93/barrel in July, representing a gain of about four per cent m-o-m. Y-t-d, the Basket was almost 34 per cent higher at $49.75/b. Oil futures in New York and London recovered in July, both ending the month above $50/b, supported by falling inventories, higher demand and stronger refining margins. NYMEX WTI improved 3.3 per cent to $46.68/b and ICE Brent ended 3.4 per cent higher at $49.15/b. Y-t-d, both were more than 22 per cent higher. The Brent-WTI spread widened to $2.47/b in July, despite successive weeks of US crude inventory draws. In July, short covering, rather than increased long positions, drove oil prices higher, as hedge funds reduced short positions by the equivalent of 163m b.

The forecasts for **world economic growth** in 2017 and 2018 remain unchanged from the previous report at 3.4 per cent. OECD growth has performed better than anticipated in the current year, particularly the Euro-zone, and is forecast to grow by 2.0 per cent in 2017 and 2018. India is expected to grow by 7.0 per cent in 2017 and 7.5 per cent in 2018. Brazil and Russia are both forecast to expand their recovery to 0.5 per cent and 1.2 per cent in 2017, respectively, and 1.5 per cent and 1.4 per cent in 2018. China has performed better than expected so far this year and is now forecast to grow by 6.7 per cent in 2017 and by 6.3 per cent in 2018.

World oil demand growth in 2017 is now expected at 1.37m b/d, following an upward revision of 100,000 b/d mainly to reflect better-than-expected data from OECD regions for 2Q17. Total oil demand anticipated to average 96.49m b/d this year. For 2018, global oil demand growth is projected to increase by 1.28m b/d, slightly higher than last month's projections, with total world consumption averaging 97.77m b/d. OECD will contribute positively to oil demand in 2018, adding some 210,000 b/d, and non-OECD economies will make up the lion's share with 1.07m b/d.

Non-OPEC **oil supply growth** in 2017 was revised down by 28,000 b/d to stand at 780,000 b/d, representing a total non-OPEC supply of 57.77m b/d. Weaker-than-expected output in OECD America in 2Q17 was the main reason for the downward adjustment. For 2018, the non-OPEC oil supply growth forecast was also revised down by 42,000 b/d to 1.10m b/d to average 58.87m b/d. The US, Brazil and Canada are expected to be the main drivers of growth, offsetting declines in Mexico, China, Columbia and elsewhere. OPEC NGL production is expected to grow by 180,000 b/d to average 6.49m b/d in 2018. In July, OPEC production increased by 173,000 b/d to average 32.87m b/d, according to secondary sources.

Refinery margins in the Atlantic Basin saw mixed movements in July. US margins recorded solid gains as crack spreads for all products increased due to healthy domestic demand. In contrast, margins in Europe weakened in response to products oversupply, limited export opportunities and higher feedstock costs. Meanwhile, margins in Asia strengthened, supported by robust seasonal demand.

Dirty **tanker spot freight rates** mostly experienced negative developments in July, or remained at the previously low levels. VLCC and Suezmax average spot freight rates stayed almost flat compared with the previous month, while Aframax rates dropped by six per cent compared to a month earlier. The decline was due to low tonnage demand, limited inquiries, new tanker deliveries and port maintenance.

Total **OECD commercial oil stocks** fell in June to stand at 3,033m b. At this level, OECD commercial oil stocks are 252m b above the latest five-year average. Crude and product stocks indicate a surplus of around 142m b and 110m b above the seasonal norm, respectively. In terms of days of forward cover, OECD commercial stocks stood at 63.8 days in June, some 4.1 days higher than the five-year average.

Demand for OPEC crude in 2017 is estimated to stand at 32.4m b/d, some 400,000 b/d higher than the 2016 level. In 2018, demand for OPEC crude is forecast at 32.4m b/d, at the same level as in 2017.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for August 2017. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on OPEC Reference Basket and crude and oil product prices in general.

The impact of Hurricane Harvey

September 2017

In the September 2017 *Monthly Oil Market Report (MOMR),* OPEC reported on the impacts Hurricane Harvey was having on the oil industry in the US and worldwide.

In a feature story entitled: 'The aftermath of Hurricane Harvey', the *MOMR* reported that the massive storm had caused significant damage to the US oil hubs located along the Gulf of Mexico in the states of Texas and Louisiana.

The report noted that this was the latest of many destructive storm systems that have hit the US Gulf coast-based oil industry throughout history, including Hurricane Katrina in 2005, which took a greater toll on the industry than Harvey.

"In 2005, Hurricane Katrina temporarily shut in 1.4m b/d of US Gulf production, representing 95 per cent of output in the area. Production was slow to return as the hurricane went directly through the offshore production area, causing considerable damage to rigs and platforms," the report pointed out. "Onshore, the flooding and high winds heavily impacted the refining sector, disrupting some 1.3m b/d of refinery capacity concentrated along with US Gulf Coast, and inflicting major damage to four refineries."

Hurricane Harvey, according to the report, has had less of an impact on US crude production, temporarily disrupting around 800,000 b/d at its peak. Roughly half of this figure was from offshore production – which was spared the worst of the storm – while the other 400,000 b/d was from onshore production in the shale producing region of Eagle Ford. While offshore production has been quick to return, there is still some uncertainty regarding the status of the affected Eagle Ford output due to the accompanying severe rains and flooding.

The *MOMR* also reported that refineries and energy infrastructure – pipelines, port facilities, terminals – were impacted to a greater degree as a result of the massive bands of rainfall that stretched from Houston to Louisiana. Facilities near Corpus Christi were also buffeted by high winds.

"At its peak, around 4.8m b/d of refining capacity was offline," the report noted. "The Colonial Pipeline, which ships up to 2.5m b/d of petroleum products from Houston to the US north-east, was also shut down."

Fears related to shortfalls caused a spike in gasoline prices, which jumped by 29 per cent from the previous week to $2.14/gal, the highest level since mid-2015. However, the restart of refineries and pipelines, together with the existing high stock levels, helped bring gasoline futures prices to their previous levels in a timely fashion, and the shortfall of US product exports to nearby destinations has been accommodated by cargoes from other regions.

According to the report, this latest storm has placed downward pressure on the oil market.

"Hurricane Harvey had a bearish impact on NYMEX WTI values, which slipped five per cent from the previous week to $45.96/b," it cited. "This was due to the fact that offshore facilities were not expected to see lasting damage. Additionally, the development of the US shale industry has made US supply less vulnerable to storms. Although US Gulf output has increased since Katrina, its share in US crude production has declined from 25 per cent in 2005 to 18 per cent in 2016, largely due to the emergence of the US shale industry."

A drop in demand from US refineries was another factor weighing on prices at a time when US crude stocks were at comfortable levels of 80.4m b above the five-year average.

"Following Harvey, the US Department of Energy has made some 5.3m b of crude available for sale from its Strategic Petroleum Reserve (SPR)," the *MOMR* reported. "Last week's inventory report showed a draw of only 300,000 b in the SPR for the week ending September 1. This compares to a 20.8m b release of SPR in the aftermath of Hurricane Katrina, as part of a coordinated 60m b offer by IEA Members. OPEC had also expressed its commitment to fill any supply shortfall resulting from the effects of Hurricane Katrina."

Despite the damage and destruction, the impacts of Hurricane Harvey on US economic growth and on US oil demand are forecast to be relatively minor.

"Disruptions are expected to be largely offset by the increase in activities related to the rebuilding efforts, including $15.25 billion in aid approved by Congress," the report said. "A similar impact was seen with Hurricane Katrina, where subsequent rebuilding efforts helped to stimulate the economy. Similarly, the impact on US oil demand is expected to be negligible, with offsetting revisions seen for 4Q17."

While the report concluded that the US energy industry already appeared to be on the road to recovery, the emergence of Hurricane Irma and other storms raised the spectre that the 2017 hurricane season could end up being a particularly destructive one, with potential implications for the oil market.

"In response, OPEC reiterates its commitment to working together with other stakeholders for the stability and security of the oil market," the report noted in closing. "This is essential for sustained economic growth and the advancement of global prosperity."

MOMR ... oil market highlights

September 2017

The **OPEC Reference Basket** rose for the second-consecutive month in August to average $49.60/b, representing a gain of $2.67/b or six per cent. Year-to-date, the Basket was 30.9 per cent higher at $49.73/b. Crude futures prices also saw gains with ICE Brent increasing 5.5 per cent to $51.87/b and NYMEX WTI up 3.0 per cent at $48.06/b. Year-to-date, crude futures prices were more than 20 per cent higher. During the week of August 29 money managers cut WTI futures and options net long positions by 105,671 contracts to 147,303 lots, the US Commodity Futures Trading Commission (CFTC) said. Money managers slightly reduced Brent futures and options net length contracts by 1,296 to 416,551 lots during the same week.

World economic growth has been revised up for 2017 to 3.5 per cent from 3.4 per cent, while the growth forecast for 2018 remains unchanged at 3.4 per cent. OECD growth has performed better-than-anticipated in the current year – particularly the Euro-zone and to some extent in the US – and is now forecast to grow by 2.2 per cent in 2017 and 2.0 per cent in 2018. India is expected to grow by 6.9 per cent in 2017 and 7.5 per cent in 2018. Brazil and Russia are both forecast to expand their recovery to 0.5 per cent and 1.5 per cent in 2017, respectively, followed by growth of 1.5 per cent and 1.4 per cent in 2018. China is expected to grow by 6.7 per cent in 2017 and 6.3 per cent in 2018.

World oil demand growth in 2017 is expected to rise by 1.42m b/d after an upward revision of around 50,000 b/d. The adjustment mainly reflects better-than-expected data from OECD region for the 2Q17, particularly OECD Americans and Europe, as well as China. In 2018, world oil demand is anticipated to grow by 1.35m b/d, an increase of 70,000 b/d from the previous report. This reflects higher growth expectations for OECD Europe and China.

Non-OPEC **oil supply** is expected to grow by 780,000 b/d in 2017, unchanged from the last month due to offsetting revisions in Kazakhstan and US supply. In 2018, non-OPEC oil supply is forecast to grow by 1.0m b/d, following a downward revision to Russia and Kazakhstan, totalling 100,000 b/d. OPEC NGLs and non-conventional liquids production are seen averaging 6.49m b/d in 2018, representing an increase of 180,000 b/d, broadly in line with growth in the current year. In August, OPEC crude oil production decreased by 79,000 b/d, according to secondary sources, to average 32.76m b/d.

Refinery margins in the Atlantic Basin strengthened in August. In the US, margins rose amid expectations for a product supply shortfall in the wake of Hurricane Harvey, coupled with already firm domestic demand, which supported product crack spreads. In Europe and Asia, product markets were supported by supply outages in the US, which encouraged higher arbitrage volumes, as well as healthy seasonal demand, which helped lift refinery margins.

Average **spot freight rates** in August followed the typical trend seen in the summer months, with a weakening on most reported routes. Dirty spot freight rates fell, influenced by high vessel availability, as new deliveries were reportedly added to the fleet, putting pressure on an already oversupplied tonnage market. Clean tanker rates declined on average, influenced by lower rates registered on the West of Suez, despite a temporary hike in rates in the US due to Hurricane Harvey.

Total **OECD commercial oil stocks** fell in July to stand at 3,002m b. At this level, OECD commercial oil stocks were 195m b above the latest five-year average. Crude and products stocks indicate surpluses of around 123m b and 72m b, respectively, above the seasonal norm. In terms of days of forward cover, OECD commercial stocks stood at 62.9 days in July, some 2.7 days higher than the latest five-year average.

Based on the current global oil supply/demand balance, **OPEC crude** in 2017 is estimated at 32.7m b/d, around 500,000 b/d higher than in 2016. Similarly, OPEC crude in 2018 is estimated at 32.8m b/d, about 200,000 b/d higher than in 2017.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for September 2017. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on OPEC Reference Basket and crude and oil product prices in general.

Table 1: OPEC Reference Basket spot crude prices

$/b

Crude/Member Country	2016 Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar	Apr	May	Jun	July	Aug	Weeks 31–35/2017 (week ending) Aug 4	Aug 11	Aug 18	Aug 25	Sep 1
Arab Light – Saudi Arabia	43.47	42.70	48.26	43.32	51.92	52.29	53.63	50.68	51.64	49.30	45.21	47.12	49.63	49.97	50.34	48.83	49.68	49.36
Basrah Light – Iraq	42.01	41.88	46.79	41.97	50.87	51.66	52.66	49.82	50.75	48.56	44.55	46.43	49.26	49.54	49.90	48.34	49.36	49.21
Bonny Light – Nigeria	46.35	47.77	50.83	45.20	53.91	54.98	55.24	51.91	53.02	50.77	46.92	48.66	51.69	52.00	51.99	50.48	51.97	52.31
Es Sider – Libya	44.85	45.69	48.74	43.63	52.12	53.08	53.46	50.00	51.04	48.90	44.87	46.96	50.31	50.55	50.61	49.10	50.59	50.93
Girassol – Angola	46.06	46.66	49.37	44.95	53.41	54.41	55.21	51.89	52.68	50.36	46.46	48.75	52.31	52.44	52.62	51.15	52.64	52.98
Iran Heavy – IR Iran	42.17	41.39	47.30	42.42	51.41	51.90	53.16	50.27	51.12	49.00	44.62	46.01	48.70	48.93	49.35	47.88	48.84	48.51
Kuwait Export – Kuwait	41.88	41.22	47.04	42.14	50.93	51.48	52.85	49.87	50.81	48.65	44.37	46.19	48.70	49.00	49.43	47.89	48.76	48.43
Marine – Qatar	43.44	43.51	48.13	44.25	52.08	53.44	54.14	50.89	52.39	50.24	46.26	47.45	49.71	50.09	50.51	48.97	49.65	49.23
Merey – Venezuela	36.46	37.38	42.36	39.37	45.86	46.81	47.03	44.14	46.15	45.16	42.49	43.41	45.38	46.04	45.91	44.43	45.38	45.18
Murban – UAE	46.25	46.42	51.19	47.25	54.93	55.97	56.31	52.96	54.32	51.96	47.86	49.02	51.51	51.74	52.28	50.75	51.54	51.18
Oriente – Ecuador	40.84	41.22	45.98	41.69	48.67	48.64	50.08	46.83	48.70	46.91	43.11	45.21	47.45	48.35	48.29	46.74	47.23	47.00
Rabi Light – Gabon*	44.90	45.51	48.15	43.92	52.22	53.13	54.04	50.63	51.71	49.48	45.45	47.54	50.69	50.97	50.99	49.48	50.97	51.31
Saharan Blend – Algeria	46.35	47.09	49.79	45.13	53.82	54.84	55.06	51.40	51.84	49.80	46.07	47.96	51.31	51.55	51.61	50.10	51.59	51.93
Zafiro – Equatorial Guinea*	45.40	46.41	48.40	43.40	52.77	53.80	54.75	51.73	51.98	49.96	45.92	48.19	51.67	51.64	51.66	50.15	52.44	52.78
OPEC Reference Basket	**43.10**	**42.89**	**47.87**	**43.22**	**51.67**	**52.40**	**53.37**	**50.32**	**51.37**	**49.20**	**45.21**	**46.93**	**49.60**	**49.91**	**50.22**	**48.71**	**49.70**	**49.53**

Table 2: Selected spot crude prices

$/b

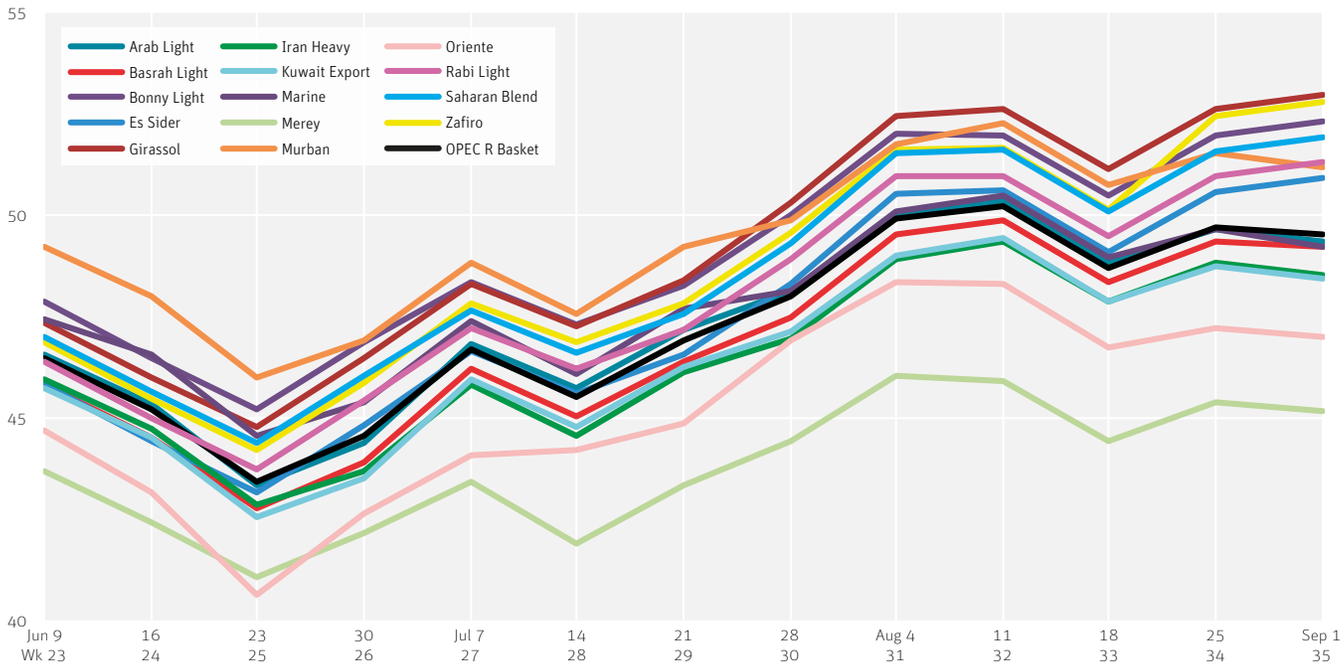
Crude/Member Country	2016 Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar	Apr	May	Jun	July	Aug	Weeks 31–35/2017 (week ending) Aug 4	Aug 11	Aug 18	Aug 25	Sep 1
Arab Heavy – Saudi Arabia	41.00	40.34	46.26	40.96	49.70	50.56	51.97	48.86	49.97	47.92	43.64	45.76	48.55	48.72	49.29	47.71	48.63	48.27
Brega – Libya	45.87	46.74	49.79	45.18	53.52	54.43	54.86	51.40	52.19	49.85	45.77	47.61	50.76	51.04	51.06	49.55	51.04	51.38
North Sea Dtd – North Sea	45.85	46.69	49.74	45.13	53.57	54.58	55.06	51.60	52.59	50.45	46.42	48.51	51.66	51.94	51.96	50.45	51.94	52.28
Dubai – UAE	43.58	43.67	48.94	43.98	52.08	53.71	54.41	51.21	52.31	50.47	46.38	47.59	50.24	50.45	50.98	49.41	50.31	49.92
Ekofisk – North Sea	45.79	47.10	49.58	44.97	53.67	54.62	55.17	51.50	52.57	50.43	46.40	48.63	52.30	52.48	52.62	50.80	52.58	53.51
Iran Light – IR Iran	43.66	44.23	47.99	43.45	51.85	52.35	52.35	49.13	50.04	47.34	43.85	47.03	50.85	51.39	51.39	49.76	51.00	50.93
Isthmus – Mexico	44.22	44.55	49.91	45.64	53.81	54.98	56.09	52.26	53.81	51.85	48.21	50.75	52.92	53.76	53.76	52.38	52.87	52.07
Oman – Oman	44.02	44.01	49.18	44.54	52.72	54.01	55.12	51.71	52.82	50.57	46.50	47.63	50.37	50.52	51.10	49.51	50.45	50.12
Suez Mix – Egypt	42.20	42.78	46.54	42.13	50.59	51.72	51.97	48.24	49.71	47.31	43.82	46.12	49.59	50.13	50.13	48.50	49.74	49.67
Minas – Indonesia*	41.26	40.28	45.20	40.72	49.68	50.63	51.19	48.35	47.95	45.96	42.65	43.96	45.91	46.57	46.33	45.02	46.21	45.51
Urals – Russia	44.06	44.48	48.24	43.83	52.28	53.42	53.67	49.94	51.55	49.04	45.52	47.82	51.30	51.83	51.83	50.20	51.44	51.38
WTI – North America	44.75	45.16	49.89	45.67	52.02	52.50	53.40	49.58	51.06	48.56	45.17	46.67	48.03	49.51	49.11	47.50	47.62	46.70

Note: As per the decision of the 109th ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108th ECB, the ORB has been recalculated including the Angolan crude Girassol, retroactive January 2007. As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the ORB has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference. From January 2009–December 2015, the ORB excludes Minas (Indonesia). As of July 2016, the ORB includes Rabi Light (Gabon).

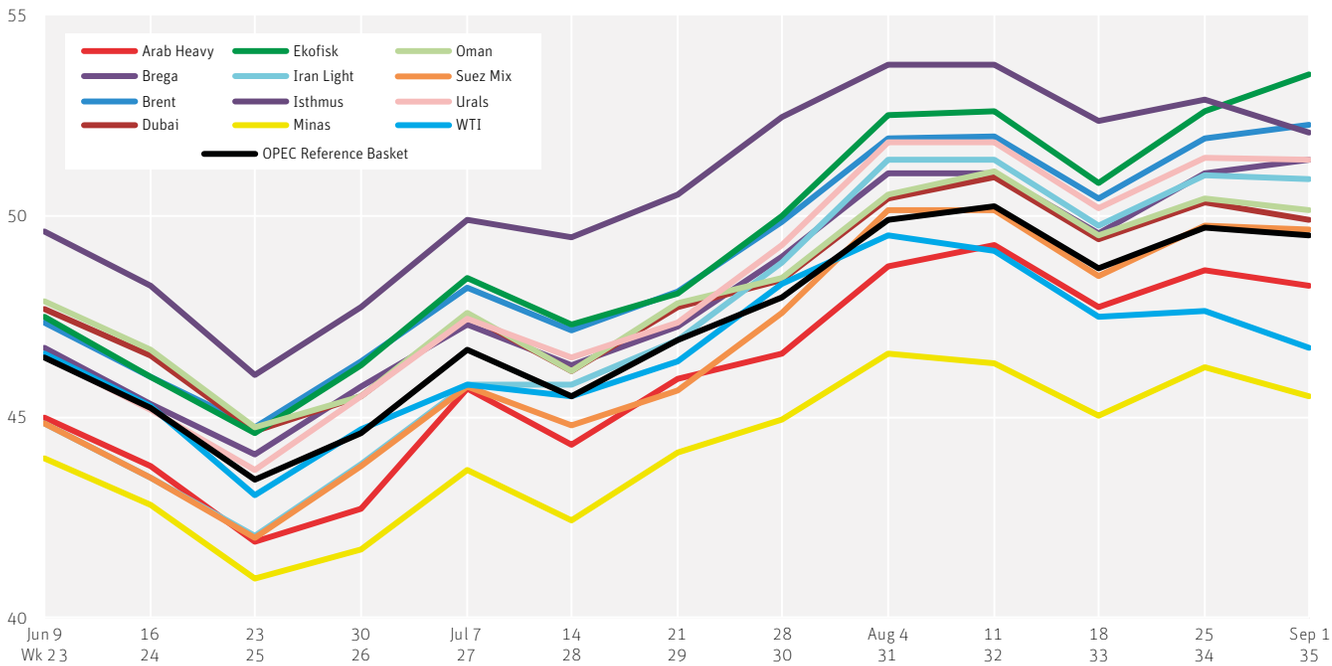
* *Indonesia joined in 1962, suspended its Membership on December 31, 2008, reactivated it again on January 1, 2016, but suspended its Membership again on December 31, 2016. Gabon joined in 1975 and left in 1995; it reactivated its Membership on July 1, 2016. Equatorial Guinea joined on May 25, 2017.*

Brent for dated cargoes; Urals cif Mediterranean. All others fob loading port.
Sources: The netback values for TJL price calculations are taken from RVM; Platt's; as of January 1, 2016, Argus; Secretariat's assessments.

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



Graph 2: Evolution of selected spot crude prices, 2017 $/b



Note: As per the decision of the 109th ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108th ECB, the basket has been recalculated including the Angolan crude Girassol, retroactive January 2007. As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the ORB has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference. As of January 2009, the ORB excludes Minas (Indonesia).
Indonesia suspended its OPEC Membership on December 31, 2008, this was reactivated from January 1, 2016, but suspended again on December 31, 2016.

Table and Graph 3: North European market — spot barges, fob Rotterdam

$/b

		naphtha	regular gasoline unleaded	diesel ultra light	jet kero	fuel oil 1 per cent S	fuel oil 3.5 per cent S
2016	August	40.52	64.07	54.91	54.28	36.83	32.87
	September	43.57	66.62	55.92	55.93	39.48	34.97
	October	48.60	70.13	61.50	61.82	43.83	38.10
	November	45.82	64.62	57.36	57.29	40.98	35.71
	December	50.90	71.37	64.50	64.89	46.70	42.28
2017	January	55.06	73.82	65.60	65.05	50.60	43.03
	February	54.82	75.66	66.35	66.13	49.73	43.13
	March	50.70	70.06	62.29	62.21	44.86	39.94
	April	51.54	75.36	64.21	64.11	46.95	41.71
	May	48.43	72.61	61.13	61.11	46.26	40.64
	June	44.69	69.62	57.81	57.06	43.95	39.68
	July	47.29	70.31	61.17	60.90	45.03	42.23
	August	51.00	75.17	65.71	64.70	46.64	44.06

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

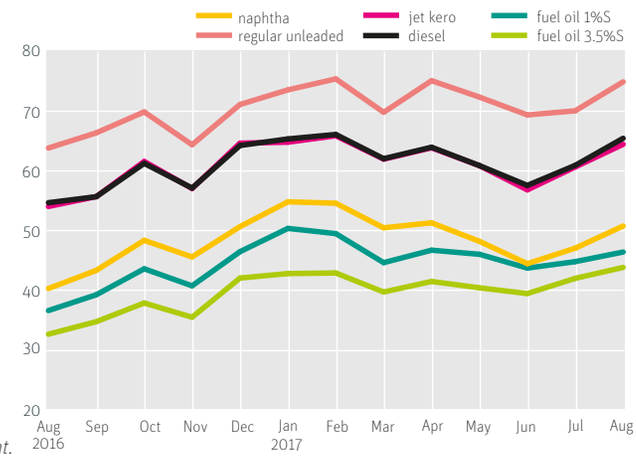


Table and Graph 4: South European market — spot cargoes, fob Italy

$/b

		naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1 per cent S	fuel oil 3.5 per cent S
2016	August	39.93	56.45	55.56	37.35	35.36
	September	43.20	59.38	57.04	40.02	37.45
	October	48.18	62.36	62.83	44.46	40.72
	November	45.09	57.83	57.93	40.71	37.30
	December	49.70	64.86	65.41	48.84	44.01
2017	January	54.21	66.95	66.54	52.19	45.77
	February	54.46	68.26	67.52	50.41	45.75
	March	49.55	62.59	63.15	46.24	42.34
	April	50.67	67.89	65.24	48.03	43.95
	May	47.31	63.74	62.28	47.10	42.85
	June	43.57	59.92	58.01	45.56	42.13
	July	46.31	61.17	62.06	45.35	43.60
	August	50.46	66.85	65.54	46.70	44.94

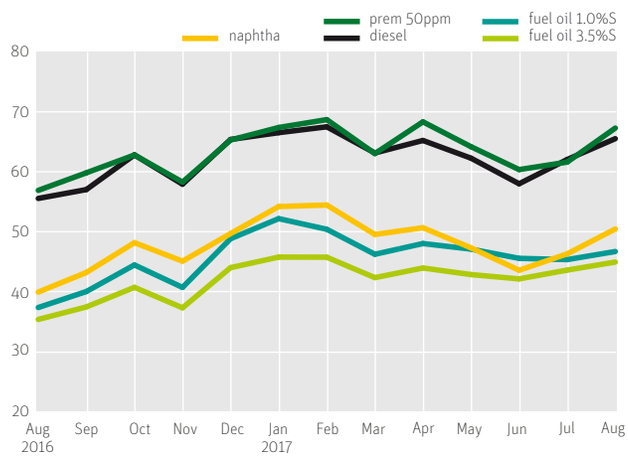


Table and Graph 5: US East Coast market — spot cargoes, New York

$/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
2016	August	58.93	53.13	56.49	48.01	36.17
	September	61.62	54.94	57.81	47.63	38.07
	October	65.19	60.48	62.00	50.95	41.15
	November	61.34	55.44	57.47	48.22	38.69
	December	68.59	62.91	63.94	55.97	46.34
2017	January	67.54	64.13	65.12	59.23	48.51
	February	64.75	64.43	67.20	59.44	47.74
	March	62.83	60.48	62.20	53.62	44.19
	April	67.65	61.79	64.80	55.17	45.96
	May	64.47	59.10	60.71	52.99	43.94
	June	60.62	54.86	56.52	50.63	41.98
	July	65.78	58.03	62.55	53.78	45.17
	August	70.86	61.59	69.45	53.97	46.26

* *FOB barge spot prices.*

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

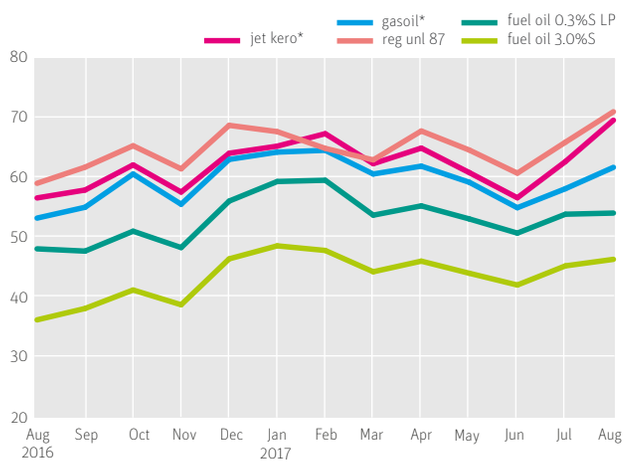


Table and Graph 6: Singapore market – spot cargoes, fob

$/b

		naphtha	premium gasoline unl 95	premium gasoline unl 92	gasoil	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2016	August	39.96	54.18	51.52	53.47	53.55	38.67	36.61
	September	42.54	58.00	55.38	54.62	55.07	41.11	38.72
	October	47.70	62.99	60.06	61.23	61.02	45.33	43.06
	November	46.82	58.99	56.51	56.84	56.63	43.90	41.68
	December	51.51	66.68	64.25	62.91	64.10	51.68	49.47
2017	January	55.71	69.47	66.77	65.15	65.17	55.05	50.47
	February	56.58	69.90	67.54	66.76	66.26	54.59	49.07
	March	50.82	64.28	61.94	62.94	61.93	50.74	45.64
	April	52.31	67.66	64.81	64.68	63.88	52.47	47.34
	May	48.71	64.40	61.68	61.19	60.82	51.58	46.01
	June	44.94	59.78	57.41	57.54	57.03	50.17	44.60
	July	45.92	61.76	59.02	61.05	59.77	50.45	45.58
	August	50.58	67.51	64.70	63.51	63.11	51.91	47.08

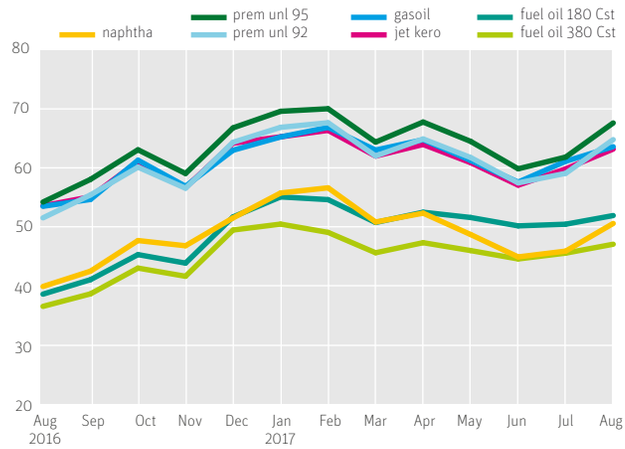
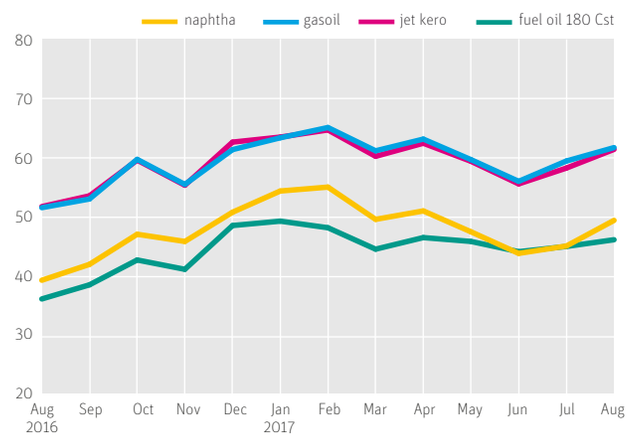


Table and Graph 7: Middle East Gulf market – spot cargoes, fob

$/b

		naphtha	gasoil	jet kero	fuel oil 180 Cst
2016	August	39.40	51.62	51.80	36.25
	September	42.07	53.08	53.61	38.63
	October	47.14	59.75	59.62	42.81
	November	45.93	55.53	55.39	41.24
	December	50.85	61.39	62.65	48.61
2017	January	54.42	63.38	63.50	49.35
	February	55.08	65.11	64.70	48.24
	March	49.65	61.19	60.26	44.63
	April	51.07	63.16	62.46	46.58
	May	47.55	59.70	59.42	45.93
	June	43.92	56.05	55.62	44.21
	July	45.16	59.47	58.28	45.09
	August	49.48	61.73	61.43	46.22



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

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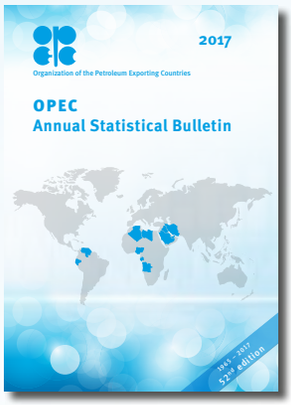

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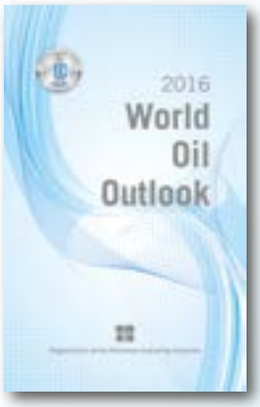

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