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Rational planning and compromise — a better way?

Over the last half century, modern technology has been a powerful force of transformation. It has changed the way we live, offering new innovations and state-of-the-art processes that, in one way or another, have touched most everyone going about their daily lives. Nowadays, no new year seems to pass without some new-fangled application bursting onto the scene with major implications for science, industry and the public at large. It is a huge, fluid and interlinked process that can — and does — affect all walks of life and will no doubt continue to astound in the years ahead as even more advances are made.

These technological applications, which have given us ever-smarter phones, self-parking cars and even the possibility to fly to Mars (although it is only a one way ticket at present), have also helped the oil industry make great developmental strides. Most importantly, modern scientific methods have created a whole host of solutions to problems that once seemed unsolvable. For example, today’s engineers can now retrieve petroleum resources from depths on the sea bed once considered unimaginable and produce ever cleaner petroleum-based products in keeping with a healthier environment.

One such process to sweep the industry, which became apparent about five or six years ago, is the exploitation or ‘fracking’ of unconventional, so-called tight oil, which is crude extracted from petroleum-bearing formations of low permeability, often shale or tight sandstone. This revolutionary oil source has lain dormant for decades, but today, through the use of modern technology, it has become a game-changer, albeit most probably only in the short term. The fact is, the advent of this new resource, which the United States and Canada, in particular, are exploiting to the full, has upset the oil market applecart, as it were.

The relatively sudden and, it must be said, unexpected, exploitation of tight oil has taken the industry by surprise, adding such large quantities to the world’s already sufficient conventional crude supplies that the global oil market is now oversupplied. And it is primarily because of this extra crude that international oil prices have fallen by 50 per cent since last summer. This price slump, although welcomed by the consumers, has far-reaching implications for the entire oil industry and casts a huge shadow over future capacity investment.

OPEC, like any responsible stakeholder, is concerned about current developments. The Organization is the first to welcome any new source of energy. It is fully cognizant of the fact that with global energy demand expected to expand considerably in the years ahead, the growing number of consumers — especially coming from Asia and the developing world — will likely need all available sources, conventional or otherwise, to meet their needs.

But surely there has to be a rational use of any new additions, especially if their introduction has the effect of destabilizing an already smooth-running market, as has been the case with tight oil. Looking at developments over the last decade one can plainly see how the industry came to be immersed in its current dilemma. In 2005, OPEC crude production stood at 29.58 million barrels/day. It then rose to around 30m b/d the following year and went on to average that level over the next eight years, in line with its current self-imposed production ceiling. Stability personified.

However, over the same time-span, non-OPEC output grew from 49.6m b/d in 2004 to 55.9m b/d at the end of 2014. That is a rise of 6.3m b/d, or almost 13 per cent. All but 200,000 b/d of this growth has come from the US and Canada — chiefly as a result of their all-out exploitation of tight oil. Good fortune for North America; not so good for others associated with the industry which has already seen countless thousands of workers lose their jobs as a result of the perceived downturn in activity.

These indisputable facts notwithstanding, certain commentators persist on laying the blame for the current price demise at the doorstep of OPEC for choosing to protect its market share — a stable, fair and responsible share at that — at its Conference in November last year. Compounding this irony, others clearly expected it to cut production once again to restore market stability, a sacrifice OPEC Members, who are developing countries themselves, have made on several occasions in the past.

It is at times like these that the Organization feels compelled to remind all parties that make up the international oil sector that this is exactly why, from day one, the Organization has been committed to establishing serious dialogue, transparency and cooperation with the other main stakeholders — especially the producers and the consumers. Only by openly and regularly discussing the latest market developments can such instances as the latest oil price decline be prevented from occurring. After all, ALL parties agree on one thing — an unstable oil market with wildly fluctuating prices serves no one’s interest.

It is a further irony that in producing to the maximum and effectively driving the oil price down, the future of tight oil in North America is now in question, due to the high cost of its extraction compared with the exploitation of OPEC’s conventional crude reserves. Perhaps, rational planning and a good helping of compromise would have brought a far better outcome — for everyone.
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World leaders and dignitaries have paid tribute to Saudi Arabia’s King Abdullah, Custodian of the Two Holy Mosques, who passed away in January.

Presidents, prime ministers and members of royalty from around the world flocked to the Saudi capital, Riyadh, to take part in his funeral, which followed afternoon prayers and was held at the Imam Turki bin Abdullah mosque.

Clothed in a simple white shroud, the late King was carried by bearers wearing the traditional red-and-white checked shemagh head gear to an unmarked grave in a Riyadh cemetery where many other citizens rest.

According to Al Arabiya News, Arab leaders who attended the funeral included Kuwaiti Emir, Sheikh Sabah Al-Ahmad Al-Sabah, Qatari Emir, Sheikh Tamim Bin Hamad Al-Thani, and Bahrain’s King Hamad bin Isa Al-Khalifa.

Oman’s Deputy Prime Minister, Fahd bin Mahmoud al Said, Turkish President, Recep Tayyip Erdogan, Pakistani Prime Minister, Nawaz Sharif, and Russian Prime Minister, Dimitri Medvedev, also attended, while Jordan’s King Abdullah II and other Middle Eastern dignitaries left the World Economic Forum in Davos, Switzerland, on news of the King’s death.

Many world leaders paid tribute to the late Saudi King. United States President, Barack Obama, referred to him as “a bold and candid leader who had the courage of his convictions”, while French President, François Hollande, described him as “a statesman whose work has profoundly marked the history of his country.”

In France, a statement by the Elysee Palace hailed “the memory of a statesman whose work has profoundly
marked the history of his country." It stressed that King Abdullah’s “vision of a just and lasting peace in the Middle East remains more relevant than ever.”

United Kingdom Prime Minister, David Cameron, said King Abdullah was a man who strengthened inter-religious dialogue in the world, while Canadian Premier, Stephen Harper, hailed the late King as a fierce defender of peace.

Indian Prime Minister, Narendra Modi, was quoted as saying that a “guiding force” had been lost with the King’s passing, while Morocco’s King Mohammad VI hailed King Abdullah as a man who dedicated his life to the service of the Arab world.

Both Egyptian President, Abdelfattah al-Sisi, and Jordan’s King Abdullah cut their visits to the Davos forum to attend the funeral.

An Egyptian presidency statement said: “The Egyptian people will not forget the historic stances of King Abdullah.”

The OPEC Secretariat in Vienna, Austria, also paid tribute to the late King.

In offering the Organization’s sincerest and heartfelt condolences to King Abdullah’s family, the Kingdom of Saudi Arabia and its people, a statement on OPEC’s website said the King provided a steady hand and wise counsel in guiding Saudi Arabia, both at home and through the often choppy waters of international affairs.

“And he participated in helping solve many international and Arab conflicts,” it affirmed.

It pointed out that, over the years, King Abdullah gave strong and steadfast support to OPEC, of which Saudi Arabia is one of the Founding Members. The King was also host of the successful Third Summit of Sovereigns, Heads of State and Government of OPEC Member Countries in 2007.

“He also showed his deep understanding of the oil market back in 2008 when he called a meeting of global stakeholders to discuss excessive speculation and volatility in the oil price. This proved to be a catalyst in helping the international oil market return to stability in subsequent years.

“King Abdullah was greatly admired for his dignity and dedication. The Arab world and the international community have lost a great leader. He was loved by his people,” it concluded.

Meanwhile, at the beginning of February, the United Nations General Assembly held a special session to commemorate the late King Abdullah, with several world leaders praising the King’s efforts in promoting peace and fighting hunger and disease.

UN Secretary-General, Ban Ki-moon, pointed to the late King’s efforts in developing Saudi Arabia and supporting the global fight against hunger.

Ban and representatives of different countries observed a minute of silence in honour of the late King.

Ban said “humility” was the last message he had received from the late King. The UN leader said he had discussed with King Abdullah the prospects of restoring the Middle East peace initiative, which the late King had put forward to end the decades-old conflict.

In his comments, Ban commended King Abdullah
for his contributions in the fields of peace, security, and humanitarian actions.

He described him as a wise leader who had directed the Kingdom’s efforts in development, worked to overcome the challenges to peace and security, helped combat terrorism, while devoting considerable time and effort to achieving rapprochement and understanding between the peoples of different cultures.

Ban said the late King was “a hero” in the fight against hunger. The Kingdom’s donation to the World Food Programme in 2008 during the food crisis amounted to $500 million. And last year it extended a large financial contribution to the humanitarian efforts in Syria and Iraq.

He pointed to the late King’s important initiatives to promote dialogue between the followers of religions and cultures. His meeting with the King in Jeddah in July 2014 had focused on resolving the conflict in the Middle East and reviving the Arab Peace Initiative, behind which he was the driving force.

Ban added that the late King’s hard work had made an impact on the Arab and Islamic worlds, as well as the international community.

Also speaking at the Assembly, the Permanent Representative of Saudi Arabia to the UN, Abdullah bin Yahya Al-Mouallimi, said: “With the passing away of the late King Abdullah Bin Abdulaziz Al-Saud, the world has lost a shining star and a unique leader, as long as the world looked forward to his leadership. He was a statesman as long as his hands touched human hearts everywhere.”

The Ambassador stressed that the late King provided aid to hungry and needy people through the World Food Programme and provided relief assistance to the victims and peoples affected by floods, natural disasters and epidemic diseases on all continents of the world.

“He was overflowing with love for peace, mutual understanding and communication between the peoples of the earth, so he launched his initiative for dialogue among followers of religions and cultures from this platform.

“And he was consistently the champion of the UN, its charter, principles and call for peace and harmony in the world,” he added.

King Abdullah, who was 90, died following a short illness. He was hospitalized in December suffering from pneumonia and had been breathing with the aid of a respirator.

Crown Prince Salman has been named the new King with Prince Muqrin Crown Prince, according to a Royal Court statement. The smooth succession indicates stability in the Kingdom. Since the death in 1952 of King Abdul Aziz, the founder of Saudi Arabia, the throne has systematically passed down to his sons.

According to a report in Arab News, King Salman, credited with transforming Riyadh during his half-century as Governor, has a reputation for austerity, hard work and discipline.

Born in December 1935, King Salman is the 25th son of King Abdul Aziz. He was appointed Governor of Riyadh province at the age of 20. He became Minister of Defense in 2011.
Given the falling oil price and the volatility seen in the international oil markets in the second half of 2014, discussions surrounding oil and energy in general were high on the agenda at the World Economic Forum (WEF) Davos meeting in January. With OPEC Secretary General, Abdalla Salem El-Badri (pictured left), in attendance, and participating in a number of public and closed sessions, the OPEC Bulletin reports from the picturesque Swiss municipality.
If you are looking for empty ski slopes, come to Davos during the annual World Economic Forum meeting. For most visitors during this week the focus is not on the piste, despite its attractiveness, but on the thoughts and discussions of global leaders from across business, government and international organizations.

The four-day event, attended by a who’s who of global political and business leaders, seems to take in the whole of Davos, as well as neighbouring Klosters too. You cannot drive, or walk if that’s your preference, without seeing some event related to the WEF experience.

Besides the main conference centre, there are many hotels and restaurants playing host to gatherings and themed day and evening events; there are an array of pavilions dotted throughout the town to promote various countries and companies; and, of course, there is a huge media presence. It is certainly easy to become subsumed into the whole Davos experience, but a weekend of rest is certainly welcome at the end!

This year’s event took place from 21-24 January under the title ‘The New Global Context’. To some this proved apt for the energy context that the world is now facing – particularly in the oil market – following the fall in oil prices that began in the middle of last year. The importance of oil and energy issues was highlighted on the first afternoon of the event with the public session titled ‘Geo-Economics of Energy’. It also proved to be an extremely popular event for attendees, with many left queueing outside for seats to become available.

Geo-economics of energy

The event was moderated by IHS Vice Chairman, Daniel Yergin, who underscored how “timely” the subject matter was given how “so much has changed, even from a year ago.” In the oil market, he went on, over the last ten years or so, it had been commonly understood that demand growth would come mainly from emerging markets, particularly in Asia, “but questions are now being raised over the nature of demand.”

And on the supply side, he said, the picture has changed in recent years with North American shale gas and shale oil development having a profound impact on the market.

These two issues were now impacting the market more directly, with Yergin stressing that while there was still no shortage of geopolitical risk, this does not seem to be part of the oil price today. It is clear, he said, that the current market situation is impacting companies and economies, and issues related to this became the focus of much of the session.

An OPEC perspective

OPEC Secretary General El-Badri was initially asked about the OPEC Conference decision to keep production unchanged back on November 27 last year. He began by stating that when the OPEC Ministers met back then they debated the energy and economic situation of the world and eventually “decided collectively to keep production at 30 million barrels/day. He said that “there were some reservations from some Ministers”, but at the end of the day everyone agreed.

He also found it interesting to recall that he was in Davos a few years ago and was asked then why OPEC would not increase supply because it was believed that at the time that there was some shortage in the market. “Now it is the other way round,” he said, “with people grilling me as to why OPEC didn’t cut in November!”

El-Badri agreed with Yergin that the current market had some over-supply and demand growth had been weaker than originally envisaged over the past year. However, on the supply side he felt it was important to stress that “OPEC has not increased its production over the past ten years,” with its level being around 30m b/d, “while non-OPEC has increased its production over this period by around 6.5m b/d.”

Elaborating on this, he added that the additions from non-OPEC were nearly all from high-cost production areas. He said that if OPEC had cut production in November, it would probably have to cut again in 2015 and 2016, with non-OPEC benefitting from OPEC’s cut if prices rebounded. In reality, he said later in an interview with Bloomberg TV, OPEC would be subsidizing non-OPEC.

He was also keen to underline that this decision was not targeting any other producing country, stressing that it was a purely an economic decision.

He did, however, emphasize that the OPEC door is always open for discussions with non-OPEC producers. In this regard, in the Bloomberg TV interview, he thanked Venezuela’s President, Nicolas Maduro Moros, who had recently been talking to both OPEC and non-OPEC

“OPEC has not increased its production over the past ten years, while non-OPEC has increased its production over this period by around 6.5m b/d.”

— Secretary General, El-Badri
countries. He added that although nothing concrete has so far been achieved, “this is the right way” to look at the current situation as any responses had to come collectively from OPEC and non-OPEC.

General agreement

There was general agreement from other panel members regarding the comments from El-Badri and Yergin. Fatih Birol, Chief Economist of the International Energy Agency (IEA), said most of the supply glut had actually come from two IEA members, the US and Canada, and also highlighted the weakness in global demand growth.

Khalid Al-Falih, President and Chief Executive Officer of Saudi Aramco, said the previous higher price environment had fuelled the non-OPEC supply growth and, along with efficiency, had “crimped demand growth to levels that do not match the supply growth.” He stressed that other factors had contributed to an acceleration in the price fall too, including developments in the financial markets, the strong dollar and the unwinding of quantitative easing.

El-Badri also emphasized in the Bloomberg TV interview that “speculation activity is still there, and still very active.”

It was also clear that panelists saw current price levels (at the time around $45/b for Brent) as unsustainable. El-Badri said the actual fundamentals did not warrant the price drop that had occurred and although a clear picture may not emerge until the middle of 2015, he was sure prices would rebound.

Birol said “the $45/b level is a temporary phenomenon and towards the end of this year we may see an upward pressure on prices again.”

And Claudio Descalzi, CEO of Eni, said: “We believe it is a cycle, it is not a structural change in the market,” adding that demand will return as businesses make the most of cheaper oil.

There was also no doubt among panelists that the current situation would have an impact on all producers, albeit to varying degrees. Birol said a big chunk of the investments curtailed in 2015 will come from the high-cost producing areas, while Descalzi mentioned shale oil, its high costs and high depletion rates.

El-Badri summed up the conundrum of producers succinctly in his interview with Bloomberg TV when stating that with current prices “if your production is a very high cost, you will get out of the market.”

There was also much talk of the need to focus minds and adopt new strategies. Arkady Dvorkovich, Deputy Prime Minister of the Russian Federation, said lower oil prices would focus Russia more on efficiency gains and drive innovation. He emphasized the significance of stability rather than high prices and “for Russia … we are better off when prices are $70 to $80, rather than $40 to $110.”

He added that Russia is also shifting its focus more towards the Asia-Pacific and has signed contracts to supply China with oil and gas.

Al-Falih stressed that Saudi Aramco was looking to balance the short-term situation with the longer-term outlook. He said the company is using the downturn as an opportunity to sharpen its fiscal discipline, but “we are as committed as ever to our long-term strategy”, emphasizing gas, downstream and petrochemicals investment and further building resilience in the company.

And Descalzi underlined the importance of now looking more closely at how technologies can help companies reduce costs.

Not losing sight of the long-term

Over the four days, what also became clear in discussions was the fact that while the current situation was to the forefront of everyone’s minds, there was a need to keep the long-term in focus. The future for oil, and energy, was about the need for more, not less.

Al-Falih said there was certainly a need to be more careful with investment flows in the years ahead, “but in our industry we need to recognize that we have to invest, and we have to invest big to meet rising demand and to replace the declines that we see every year.”

And El-Badri concluded that the industry has to be very careful how it handles the current situation and learn from the past. “We have been in this situation before”, he said, “and we need to keep the future in mind. We need to continue investing, keep our people. We should try and benefit from our previous experience of these cycles.”

If we do not invest, he said in the Bloomberg TV interview, and if we do not see new supply, then we could see prices go too far the other way at some point in the future.
Call for papers

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

The three main objectives of the publication are to:
1. Offer a top-quality original research platform for publishing 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 which 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 its readership, articles covering relevant economics, policies and laws, supply and demand, modelling, technology and environmental matters will be considered.

The OPEC Energy Review welcomes submissions from academics and other energy experts. Prospective authors wishing to submit papers should send them to: Executive Editor, OPEC Energy Review, OPEC Secretariat, Helferstorferstrasse 17, 1010 Vienna, Austria; tel: +43 1 21112-0; e-mail: prid@opec.org.

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).

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16th GECF Ministerial Meeting convenes in Qatar

Producers committed to securing global gas stability

Ministers and high-ranking officials from the world’s leading gas producers met in the Qatari capital, Doha, in December to discuss the global natural gas market situation, including how prices of the fuel have been affected by the downturn in crude oil prices.

The 16th Ministerial Meeting of the Gas Exporting Countries Forum (GECF) was attended by OPEC Members Algeria, Iran, Libya, Nigeria, Qatar, the United Arab Emirates (UAE) and Venezuela.

High-level representatives from other GECF Members, Bolivia, Equatorial Guinea, Egypt, Peru, Russia, and Trinidad and Tobago, as well as observers, the Netherlands, Norway and Oman, were also in attendance.

Strength-to-strength

The GECF has gone from strength to strength since it was established in Tehran, Iran, in 2001. Its member states today control over 70 per cent of the world’s natural gas reserves, as well as more than 80 per cent of liquefied natural gas (LNG) output. In between ministerial meetings, the work of the GECF is organized through its Secretariat in Doha.

The latest meeting, which was chaired by Dr Mohammed Bin Saleh Al-Sada, Qatar’s Minister of Energy, discussed the global gas market report as presented by GECF Secretary General, Seyed Mohammad Hossein Adeli of Iran.

His detailed report covered the latest developments in the international energy market in general and the gas market in particular.

It included a short-term forecast of supply and demand for natural gas worldwide and in specific regions and countries, as well as the evolution of LNG trade and gas price developments.

Delegates assessed the dynamics and challenges of the global natural gas market in the short, medium and long term.

They highlighted the need to monitor challenges facing the gas industry. The GECF Secretariat was urged to continue with its evaluation of developments occurring in the energy market with a focus on supply and demand.

Commenting on the market situation, Al-Sada said the GECF was committed to securing stability in the global gas markets. Increasing price volatility was the major challenge facing gas producers the world over.

He maintained that the instability was being driven by a variety of factors, including both economic and geopolitical elements.

“We need to be alert and keep monitoring the expected challenges of the gas industry due to this probability of an energy glut in the market,” Al-Sada was quoted as saying.

He pointed out that the GECF was a platform for cooperation and its existence and the success it had achieved so far were a reflection of its members’ determination to enhance cooperation.

“Yet our mutual understanding and cooperation has to grow further, especially in facing the future challenges,” he affirmed.

This, he said, entailed promoting investments in new gas projects for the benefit of producers and consumers alike.

He contended that GECF member countries had great potential to contribute to the growth of the global
Delegates pose for a group photograph.

Delegates pose for a group photograph.

The economy, which was being supported by the increase in demand for natural gas as the main component in the energy mix.

The Minister said he hoped the benefits of member countries’ cooperation and collaboration would reflect positively on the international gas industry in a manner that helped realize the interests of all participating parties.

Speaking to reporters earlier on the oil market situation, Al-Sada said OPEC and other producers were closely watching the direction of oil prices, but he maintained that the market would eventually settle.

“OPEC is watching the market closely and the development of oil prices is being studied by individual countries and the Organization’s Secretariat,” he was quoted as saying.

Interconnected

Al-Sada observed that the steep fall in crude oil prices since the summer months had adversely affected gas prices as the two elements of the energy market were interconnected.

He noted that that there was already a strong degree of conversion of gas spot prices between different regions.

Asked about the rising importance of shale gas, the Minister maintained that the super-cooled LNG would still remain the prime source of clean energy in the future.

“Both supply and demand of gas is increasing in the international market. But LNG will have an advantage over other sources as it is the cleanest and most environmentally-friendly,” he asserted.

He conceded that shale gas would affect other energy sources in the short term, but its impact in the long term would have to be seen.

During the meeting, delegates decided to start preparations for the Third GECF Summit, which will be held in Tehran in 2015. It was also decided that the 17th Ministerial Meeting of the Forum would be convened in Abuja, Nigeria, also this year.

The meeting approved the extension of GECF observer status to Peru and appointed Diezani Alison Madueke, Minister of Petroleum Resources of the Federal Republic of Nigeria, as President of the Ministerial Meeting, with Mohamed M. Oun, Deputy Vice Prime Minister for Energy, Libya, as Alternate President.

The GECF’s newly installed Secretary General, Seyed Mohammad Hossein Adeli, was attending his first meeting. He was appointed to the position at the beginning of 2014 for a two-year term, succeeding Russia’s Leonid Bokhanovsky.

He has served in the Iranian Petroleum Ministry as International Advisor, and has been the advocate and chief negotiator of many energy plans and projects in his country.

Adeli is a former Iranian Ambassador to the United Kingdom, Canada and Japan. From 1989 to 1994, he was Governor of the Central Bank of Iran. More recently, he founded the Ravand Institute for Economic and International Studies and is currently its Chairman and Chief Executive Officer.
EU-OPEC Roundtable discusses challenges in petrochemical sector

A European Union-OPEC Roundtable on the Petrochemical Industry Outlook and Challenges was held at the OPEC Secretariat in Vienna, Austria, in December 2014.

The gathering was attended by experts and analysts from OPEC Member Countries, the Organization’s Secretariat, officials from the EU and the European Commission (EC), as well as petrochemical stakeholder representatives and industry consultants. It was also made available via WebEx to Member Country representatives who could not join the event in person.

The Roundtable was co-chaired by OPEC Research Division Director, Dr Omar S Abdul-Hamid, and Principal Advisor, EC Directorate-General for Energy, Anne Houtman.

It was divided into two sessions. The first comprised a detailed overview of the international petrochemical industry, looking at the main issues involved, the outlook for the medium and long term, followed by conclusions and recommendations.

Session two was dedicated to discussions with the stakeholders present and was followed by summaries of the day’s deliberations.

In his welcoming remarks, Abdul-Hamid explained to participants that the Roundtable formed part of the ongoing EU-OPEC Energy Dialogue, which was established in 2005 to discuss issues of mutual interest and address common challenges faced by both oil-producing and consuming countries.

“This gathering is devoted to the downstream and the petrochemicals industry, which is of particular importance to both the EU and OPEC,” he stated.

“This industry has been undergoing significant changes in the past few years — changes that affect, either directly or indirectly, both parties.”

The Research Division Director stressed that the petrochemical industry played a significant role in the economies of EU Member States. “In fact, petrochemicals represent almost 25 per cent of the European chemical industry’s turnover. The industry employs directly over 400,000 people and, indirectly, two to three times more than that figure.”

Similarly, he said, petrochemicals played an important role in OPEC Member Countries, in terms of enhancing added value in the hydrocarbons chain and diversifying their economies.

“Moreover, the petrochemical industry is an important source of oil demand. It consumes around 11 per cent of total oil demand, as both a feedstock and energy source,” he affirmed.

Joint study

Abdul-Hamid pointed out that in order to look at the issue of petrochemicals in more depth, OPEC, in partnership with the EU, had commissioned a joint study entitled ‘Petrochemical Outlook: Challenges and Opportunities’.

“The study provides a thorough background on current developments in the petrochemical industry around the world. More specifically, it focuses on the competition between feedstocks, namely naphtha and ethane, as well as on the unique and challenging situation in the EU.

“It also considers the global petrochemical and feedstock consumption outlooks, some of the regional dynamics, and touches on both the challenges and opportunities the industry faces in the years to come,” he added.

In her introductory remarks, Ms Houtman stressed the importance for the EU of having energy dialogues with major oil producers — and with OPEC in particular — to discuss and exchange views on strategic energy issues, as well as energy outlooks and scenarios.

She highlighted that the EU was not only the largest global importer of crude oil, but also a major producer and importer of refined and petrochemical products.

“The refining and petrochemical industries are closely interlinked. In the past few years, the refining industry in the EU has been confronted with challenging developments, indigenous over-capacity, unbalanced diesel-petrol production, competition with increasing production capacity in the global market and strict environmental standards.”

Ms Houtman observed that the European petrochemical industry, as indicated in the study, had been confronted with major challenges, including high labour rates, strict environmental legislation, a lack of access to cheap feedstocks as in other regions and a demand which was not growing at the same pace as in other regions.

Delegates then heard a presentation from Nexant, the
international independent energy and chemicals consulting firm, which has its headquarters in the United States.

OPEC launched a project with the company in May 2014 to analyze and help understand the global and regional petrochemical industry and markets.

The objectives of the project entailed developing an overview of the petrochemicals industry, its market and drivers; formulate an understanding of the key issues and challenges facing the industry; and provide global and regional medium- and long-term outlooks, including the impact on feedstocks, in particular, ethane and naphtha.

The Nexant presentation, made by the company’s Richard Sleep and Stewart Hardy, provided the major findings of the project.

**Bright future for petrochemicals**

Looking at the overall situation, it maintained that the global petrochemical industry had a bright future and would continue to grow in tandem with world economic growth as rapidly growing populations in the developing world continued to seek new materials that were only made possible through petrochemicals.

It highlighted that the major building blocks of the petrochemical industry were ethylene, propylene, butadiene, benzene, toluene and para-xylene — basic petrochemicals that gave rise to over 90 per cent of petrochemical end-products.

After lengthy and fruitful discussions during the two sessions, delegates agreed to the following main conclusions:

- **That petrochemical demand growth will remain very closely related to GDP growth, although the multiple on GDP will continue to decrease slowly.** Increasing wealth and consumption in developing regions will remain the key driver of global petrochemical demand, stemming from their increasing populations and growing economies.
- **The profitability of the petrochemical sector is highly dependent on cost advantage, mainly in relation to feedstock optimization.**

In today’s market, ethane from associated gas in the Middle East and shale gas ethane from North America are the most cost-efficient options.

- **In North America, the discovery of shale gas has revitalized its petrochemical industry, dramatically increasing the amount of low-cost ethane on the market.**
- **In China, the increased production of methanol-based olefins derived from low-grade coal is expected to result in more than eight million tonnes of ethylene per year by 2018.**
- **The petrochemical industry in the EU has been forced into a prolonged period of restructuring as a result of increasing competitive pressure in both its export and domestic markets.** Producers have responded by closing uneconomic plants, shifting the product focus towards specialities, and most recently by investing to import attractively priced ethane from the US to improve their ethylene cost.
- **Despite this challenging landscape, European producers continue to play a leading role in providing value-added, innovative petrochemical products.**
- **Crude oil-based petrochemicals, namely naphtha, will again increase in importance in the long-term, despite developments in North America and China.**
- **Overall, the global petrochemical industry has a bright future.** The global megatrends of urbanization and population growth are highly supportive of the petrochemicals industry.

In his closing remarks, OPEC Research Division Director, Abdul-Hamid, noted that the petrochemical industry was in the midst of some significant changes, which were clearly impacting both OPEC and EU Member Countries.

“This Roundtable provided a very informative and useful presentation on the study, as well as some conclusions and recommendations to take with us for consideration. The meeting greatly benefited from an interactive discussion with our stakeholders, which provided additional expert input into our deliberations, enriching our analysis of this important issue even further,” he stated.  

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*Delegates to the Roundtable assemble for a group photograph.*
OPEC committed to longstanding 30m b/d output ceiling

Will not change strategy
— Al Mazrouei

OPEC is committed to its longstanding oil production ceiling of 30 million barrels/day and will not change this strategy heading towards the Organization’s next Ministerial Conference in June, Suhail Mohamed Al Mazrouei, United Arab Emirates (UAE) Minister of Energy, has inferred.

Addressing the 6th Gulf Intelligence UAE Energy Forum in January, he stressed that against a backdrop of falling crude oil prices, OPEC would not be resorting to cutting its oil output, stating that it expects higher-cost producers outside the Organization to do so.

The Minister explained that by not reducing output the Organization was telling the market and other producers that they needed to be rational.

“Like OPEC, they need to look at growth in the international market for oil and need to cater for that additional production to that growth,” he was quoted as saying.

International crude oil prices have fallen by around $50/b since the summer months, due to a combination of factors, including market over-supply and speculation.

But Al Mazrouei said OPEC had no intention of backing down on the decision the Organization’s 12 Member Countries made at the 166th Meeting of the Conference at the end of November last year — to retain its production ceiling for the first six months of 2015.

He also indicated that there was little prospect of the Organization holding an emergency meeting ahead of the scheduled June Conference.

“The market needs more time. It is not rational to meet or do anything at this time,” he was quoted as saying. “We have seen oversupply coming from shale oil and that needs to be corrected.”

Sudden rise in the market unlikely

Speaking about the level of crude oil prices, the Minister said that in the current environment no one could dictate the price, stating that in his opinion it was unlikely the market would see any sudden rise and it could take some time before prices moved higher.

He said the first half of 2015 would provide more data to predict what would happen. “It will all depend on what we see in this quarter and the next quarter.”

Continued Al Mazrouei: “No one can dictate the price anymore. This is not the 1970s and the 1980s.”

He maintained that a fair price for crude would be where some United States tight oil remained commercial, but not all of it. That “is the fair price for conventional oil,” he said. “Whether that is $60/b, $70/b, or $80/b — that is where oil will stabilize.”

Al Mazrouei said that under the current circumstances
it would take time for the market to stabilize. But whether that would take two or three years depended on how rational producers were.

However, the Minister said the oil price drop was not in any way affecting the UAE’s investment to expand its oil production capacity.

He explained that the government would encourage the Abu Dhabi National Oil Company (ADNOC) and the Abu Dhabi state fund, Mubadala, to look at acquisition targets and investment opportunities in a low-price environment.

Opportunity

“They will be looking at targets because this is an opportunity if you believe things will improve upwards, and we believe things will not stay for long at these oil prices.

“And so we will encourage these companies to look at targets, and we have seen in the past that these investments create best values for those who buy at that time.”

Specifically, the Minister said he did not think that the decline in oil prices should affect the contest for Abu Dhabi’s 1.6m b/d onshore oil concession.

Even though international oil companies and national oil firms were reviewing their global investments in the light of the lower oil price, he said he did not consider that the nine firms that had submitted bids for the concession in October 2013 would need to drastically change their positions.

“Those that are bidding under a long-term relationship have a long-term view of investment. They are not going to change their minds every time we have a blip or glut in the market,” he maintained, asserting that the UAE had no intention of cutting any projects in the price downturn.

“This is an opportunity … we have seen in the past that these periods of low prices create the best value,” he affirmed.

Meanwhile, the UAE’s Governor for OPEC, Dr Ali Obaid Al Yabhouni, told the Energy Forum that even though OPEC would prefer to see higher prices, its Members were ready to address the current period of lower prices as an opportunity for investment.

“We will continue to invest at lower costs. We are in this business for the long haul and will invest in a business that is robust enough to overcome low prices in the short term,” he was quoted as saying.

Al Yabhouni pointed out that OPEC had experienced previous cycles during which international crude oil prices had settled for some time in the range of $20–40/b, which was followed by periods of substantially higher prices.

He said that to him the biggest surprise of the last high-price period was that it lasted for so long. This development had led to speculation that prices would remain at higher than historic levels, in turn spurring investment in the development of marginally economic new oil sources.

Al Yabhouni observed that when crude oil prices fell, the inefficient and high-cost producers lost out, while the efficient producers benefitted from reduced industry costs. At the same time the entire global economy received a boost.

The Gulf Intelligence UAE Energy Forum has been held since 2009 under the patronage of the UAE Minister of Energy.

According to the Gulf Intelligence website, this year’s event took place at a time of profound change and growing challenges in global energy markets.

“Even though geopolitical trouble spots have all but disappeared, record United States shale oil output and stagnating economies in Europe and Asia have combined to leave markets abundantly supplied and pushed crude prices to four-year lows,” it commented.

“Just as the world was preparing to accept oil at $100/barrel as the ‘new normal’, the world appears to be entering a period of sustained low oil prices — providing benefits to some and raising serious concerns among others,” it added.
Saudi Arabia has long been known for its massive oil reserves and regular supplies of crude to consumers the world over. But today, the Kingdom is in the process of change — diversifying into other areas to support its growing economy. One such opportunity that holds great promise is petrochemicals, which some analysts say could turn out to be as big as the Gulf state’s oil sector operations. OPEC Secretariat intern, Nawaf Alsalloum, himself a Saudi national, reports for the OPEC Bulletin on this major new oil-related venture for the leading OPEC Member Country.

Growth of Middle Eastern petrochemicals industry

The petrochemicals industry is rapidly growing in the Middle East and is fast becoming one of the most crucial sectors in terms of lowering unemployment and enhancing economic diversification.

According to the Zawya business intelligence news service, as of 2013, the $89.4 billion petrochemicals industry in the region employed 148,900 people and produced 140.5 million tons of products.

And a report by ArabianBusiness has claimed that the industry’s capacity growth has risen by an impressive ten per cent a year since 2008, offering massive opportunities in relation to investment and employment. In quoting figures from the Gulf Petrochemicals and Chemicals Association (GPCA), it said that in 2013 alone, the expansion figure stood at 12.2 per cent.
In fact, petrochemical production in the Gulf Cooperation Council (GCC) region — which comprises Kuwait, Qatar, Saudi Arabia, the United Arab Emirates (UAE), Oman and Bahrain — stands today as the second-highest output globally, after Asia.

The burgeoning growth of the industry is set to have a significant impact on the global economy. The Secretary General of the GPCA, Abdulwahab Al-Sadoun, was quoted as saying: “Petrochemicals is evolving into an industry that touches nearly every sector of the GCC economy — from supply chain, equipment manufacturing, construction and agriculture, to retail and trade.”

Saudi Arabia, in particular, has been a large player in the increasing market share of the Middle Eastern petrochemical industry. The Kingdom currently boasts 26 projects costing $15bn in development and over 83,700 jobs in its operations occupied by Saudi nationals.

The Kingdom also accounts for a whopping 74.9 per cent of GCC petrochemical revenues — amounting to some $66.9bn — making it the main driver of regional industry development. This level of growth is attributed to domestic competitive advantages, such as abundant supplies of raw materials, high population growth, low regional oil prices, proximity to markets, and a new-found shift towards technological modernization and integration.

Some of the major projects currently being pursued by the Kingdom include the Petro Rabigh Petrochemical Complex, the Ras Tanura Integrated Refinery and Petrochemical Complex, and the Saudi Kayan Petrochemical Complex, among others.

However, the main project behind the transformation of the Kingdom into a petrochemical hub — King Abdullah Economic City (KAEC), along with King Abdullah Port (KAP) — is still to be constructed. Its strategic location is advantageous, as one-third of domestic plastic and petrochemical industries and 50 per cent of total production occurs in the Western region near Jeddah, Mecca and Rabigh, according to a report by ConstructionWeekOnline and figures calculated by the Middle East Economic Digest (MEED).

KAEC will provide competitive advantages, along with economies of scale, while KAP, with its potential logistical benefits, will drive distribution networks and reduce congestion.

With rising petrochemical projects set to increase the industry’s capacity, combined with regional competitive advantages and the Kingdom’s emphasis on technological innovation, Saudi Arabia is poised to become a global hub for future petrochemicals, supporting the government’s pressing plans to increase employment and diversify domestic exports.

A new city

Saudi Arabia is an example of a country that has grown so quickly, it can hardly keep up. Rapidly increasing population growth has created a number of issues, such as insufficient housing, high unemployment and increased road congestion.

As a countermeasure, the government launched KAEC, a massive project that entails building an entire city from scratch at a cost of $27bn, according to Time magazine. This will be located 100 kilometers north of Jeddah. The city will help satisfy domestic demand for housing and create job opportunities.

According to the Governor of the Saudi Arabian General Investment Authority (SAGIA), Amr Al-Dabbagh, the city will take approximately 20 years to build and “will be roughly the size of Washington DC, with a population of over 1.5m.”

KAEC Chief Executive Officer, Fahd Al-Rasheed, stated that as a result of its extreme housing scarcity, exacerbated by population growth, Saudi Arabia requires 6m housing units in the next 12 years — more than what has been built in the past six decades.

The new city will not only serve to provide more housing, it will create 40,000 industrial jobs, as well as hundreds of thousands of service employment opportunities.

Also, careful attention is being paid to living conditions, as the towns of Yanbu and Jubail, which were built in the late 1900s, have been abandoned due to lack of care towards living conditions.

KAEC will boast high-rise apartments with family-friendly features, as well as hospitals, a university and a sports stadium.

In addition to housing, the city aims to reduce congestion in the capital, Riyadh, as well as Jeddah and Dammam, another consequence of the population
growing too quickly, in fact doubling in just a decade.

A high-speed railway link will be built between Mecca and Medina, which receive millions of pilgrims annually. This will pass through KAEC. The provision of King Abdullah Port will also serve to boost regional trade and help in the transportation of pilgrims to further reduce congestion.

The main focus of the new city, however, remains boosting the industrial standing of the Kingdom. KAEC is aiming to become the ‘Plastics Valley’ of the Middle East. Hence, the majority of the industries set to be developed there will centre on plastics’ manufacturing. There will also be a $6bn aluminum complex and a container depot.

According to the Saudi Gazette, Emaar Economic City (Emaar EC), which is the company developing KAEC, signed a memorandum of understanding with one of the leading Saudi plastics packaging companies in December 2014.

The agreement with the Savola Group, through its subsidiary, Savola Packaging Systems (SPS), aims at establishing a “plastic cluster” in KAEC’s Plastics Valley.

The Chief Executive Officer of Emaar EC, Fahd Al-Rasheed, has praised the sustainable growth models of SPS, while indicating that the accord is “driving forward the development of KAEC Plastics Valley...creating a vibrant hub for the plastics industry.”

He also claimed that the move will result in much-needed employment opportunities.

Petrochemicals — from basic to sophisticated

While KAEC sets out to provide a foundation for nurturing the growing petrochemical industry, several companies have begun producing more sophisticated products and building complexes to take full advantage of the competitive advantages currently available today.

One such company is the joint venture between Saudi Aramco and US Dow Chemical — the Sadara Chemical Company (Sadara).

According to ArabNews, Sadara, with an investment amounting to $19.3bn, is planning to build the largest chemical complex in the world for the production of ethylene. In 2013, the company signed agreements with several national and international banks for a $10.5bn loan to fund the construction of the project.

According to Sadara Chief Executive Officer, Ziad Al-Labban, the Middle East has a 20 per cent market share in global ethylene production, which has grown by eight per cent since 2009.

Also, he said, due to “cost-effective feedstock pricing, strong regulatory and industrial infrastructure and proximity to markets,” the region has a competitive advantage in the market and can become “the perfect hub of the global petrochemical industry.”

Plastics and chemical giant, the Saudi Arabian Basic Industries Corporation (SABIC), is also gaining ground in the petrochemical market through sophisticated chemical production, according to SABIC’s official website.

Back in 2012, SABIC worked with Saudi Kayan to make the Kingdom the first Middle Eastern country to ship advanced petrochemical products in the form of ethanolamines and ethoxylates.

Ethanolamines are chemicals often used in consumer products and industrial processes. Ethoxylates are surfactants used in shampoos, cleaning and personal care products. They are also used in high quantities in the oil, textile and agricultural industries.

This marked shift in the Kingdom from basic to sophisticated petrochemical products has signaled a growing maturation of the petrochemical industry in the Middle East region.

Plastics and technological innovation

In keeping with its new-found focus on technological research and cooperation with foreign companies, SABIC has achieved important milestones in plastics. Of note, together with Cima NanoTech, a Singapore and US-based company, the Corporation developed the first transparent conductive polycarbonate film in June last year.

Ernesto Occhiello, SABIC’s Executive Vice President, said he believes “It has the
potential to revolutionize materials used in consumer electronics, household goods, automotive, architecture and healthcare.”

He maintained that in the age of touchscreen phones and tablets, the faster response screens, electro-magnetic interference (EMI) shielding effectiveness and lighter weight will become a common-place product to help lower costs, yet boost efficiency.

SABIC’s emphasis on technological innovation has also yielded further achievements, other than the transparent conductive polycarbonate film. This comes in the form of the joint-development of the first thermoplastic carbon composite wheel with Kringlan Composites.

This new material is expected to “replace traditional metal and aluminum alloys, due to reduced weight, emissions, and manufacturing costs in aerospace, automotive, and consumer goods,” according to Occhiello.

He pointed out that not only is the material fully recyclable and lighter, it offers major advantages to several huge industries by increasing efficiency and lowering the environmental impact.

**Logistics — distribution advantages**

King Abdullah Port (KAP) is a substantial and important project that will cement the Kingdom’s standing in the petrochemical industry and attract investors from around the globe.

The port is strategically located near the Red Sea and will connect the region with Asian and European markets, where 24 per cent of global trade already takes place. This has the considerable potential to lower logistic costs and help ensure the diversification of Saudi Arabia’s exports.

The port is also located nearby King Abdullah University of Science and Technology (KAUST) and the largest petrochemicals plant in the world — PetroRabigh — which produces 1.3m tons of ethylene and has a capacity of 900,000 tons of propylene a year, according to PetroRabigh’s official website.

PetroRabigh also combines Saudi Aramco’s huge oil supplies with Sumitomo’s technological prowess and 95 years of experience in the international marketing of petrochemicals.

Understandably, this has attracted great interest in KAEC, with around 70 companies already setting up bases to take advantage of the opportunity. The proximity of the port to PetroRabigh, along with low energy prices, will help companies save costs when transferring products and materials from land to sea.

The Red Sea Forum is also a new annual event aimed at attracting foreign investors, primarily US companies. To further encourage industrial growth and attract foreign firms, the Kingdom will help with loans to fund up to 50 per cent of a company’s investment.

In fact, the *Saudi Gazette* reported that January 2014 marked the first official export shipment from PetroRabigh to Singapore, via KAP, which consisted of 54 containers of polymer materials.

The Chief Executive Officer of PetroRabigh, Abdullah bin Saleh Al-Suwailem, pointed to the important milestone and indicated how the logistical advantages and proximity of the port allow PetroRabigh to reduce costs, access markets quickly, all while reducing congestion in Jeddah.

**Looking to the future**

The Kingdom has revamped its entire petrochemical industry and has billions invested in its future. Through ongoing and planned development of Saudi Arabia’s infrastructure, the development of industrial clusters, the integration of technology and innovation, and the strategic port to transform the distribution of goods, the Kingdom’s future looks bright as it strives to become one of the global leaders in the petrochemical industry.

Both national and international companies are ready to reap the benefits as they are flocking to take advantage of the low logistic costs, easy access to markets, high growth and demand, and abundant supply of raw materials that the Kingdom offers.

Undoubtedly, a win-win situation going forward in these testing times.
The future of oil

From wood to coal to oil: mankind has developed and improved upon its energy sources over the centuries. As with other energy sources in the past, oil’s possibilities are beginning to evolve. The OPEC Bulletin’s Maureen MacNeill talks to OPEC Senior Research Analyst, Ralf Vogel, to gain his views on the past, present and future path of oil.
Times change; nothing is stagnant.

“And times change quicker these days than 500 years ago,” says OPEC Senior Research Analyst, Ralf Vogel, when talking about the evolution of energy.

When humans first discovered fire, they discovered energy, says Vogel. This was an important milestone in human development, he says. And from this point onwards, the Iron Age, the Bronze Age and other subsequent ages developed.

However, shortly after discovering fire, people started experimenting with it. They found that food tasted better when they applied a little bit of fire. They also found that there was an energy carrier easily available, which at the time was wood. Solid fuels — primarily wood — remained dominant for thousands of years.

When people learned coal could be mined in huge quantities, it grew into the most important energy-carrier for mankind. In the 1880s, coal became widely used to generate electricity, a trend that peaked at the end of the 19th and beginning of the 20th century, Vogel explains.

Due to coal's advance, many technologies sprang up, including steam engines and electricity generation. Solid fuels held centre stage until the beginning of the 20th century, since liquids and gases — particularly flammable ones — were too difficult to handle at the time, and perceived as dangerous and highly unsafe.

Although small amounts of crude oil were used centuries before oil drilling started — documents show ancient Mesopotamia had asphalted roads and cakes of bitumen
of technology increases so we can deal with more complicated energy carriers.

“It could also be renewables,” he adds. “It could be solar, geothermal, wind. We are already seeing that.” Keeping in mind that the evolution of energy sources is ongoing, the question arises: What future opportunities lie ahead for oil?

Looking down the road

Over time oil is becoming more valued; it is getting more difficult to extract and presently enhanced oil recovery (EOR) techniques and new technologies are taking centre stage, says Vogel. These things were known before; but deposits that were inaccessible or too expensive to assess before are now feasible to develop.

“It’s not anymore just drilling a hole and you get plenty of oil out of it,” Vogel notes. “It [now] requires more sophistication.” From permafrost in Siberia to deep sea offshore drilling, more technological effort is needed to recover oil.

“All of this just makes oil more precious,” he says. Cleaner-burning gas — now becoming accessible — is likely to reach its peak as an energy provider in 30–40 years, says Vogel. “But oil is becoming a precious commodity, and due to its higher value the use for oil may slowly shift into other areas where it’s more appreciated than just for burning.” In fact, he says there are many untapped areas that are coming to light in which oil has great potential.

When wood was replaced by coal and later by oil as a burning substance, it became a more precious natural material (for instance for building furniture). Today raw sources of
Wood (i.e., forests) can serve as carbon sinks to relieve our atmosphere from excess CO₂. “Trees are growing and absorbing millions of tons of CO₂ from the atmosphere,” says Vogel. This is an issue for the future, he adds, “so we should definitely preserve the forest and, beyond that, we should re-forest the planet wherever possible.”

**Plastic composites**

These environmental considerations open up opportunities for other materials which perform well and which are recyclable, Vogel notes. In Asia, a trend is starting in the use of wood-plastic composites (WPC). This material is environmentally-friendly, containing about 50 per cent wood and 50 per cent oil-based plastic — “so, half as much wood,” says Vogel. It also has a long life, can be tailor-made for different climate conditions, with the possibility of blending antibacterial additives into it to make it last even longer, and it can be fully recycled. It can also be combined with additional plastics, re-melted and new articles can be made from old furniture, Vogel adds.

WPC can be used in many applications — from outdoor furniture, tiles and panels, to office furniture, transport pallets, etc. Though it has an astonishing growth rate of 13 per cent per year, it is still a small market. But by 2016 that market is expected to swell globally to 4.5 million metric tons, with exponential growing potential.

“It is used mostly for building products now but also increasingly has applications for automotive and other consumer goods,” says Vogel.

In general, the use of plastics is increasing, says Vogel. If today’s adults look back to their childhood, the use of plastics for bottles was unknown, as they were usually made of glass or sometimes ceramic. In addition, about 20 years ago, the headlights of cars were also made out of glass. “It was unthinkable that one day they would be made of plastic,” Vogel says. “With the discovery of performance plastics with good optical properties like polycarbonate, glass in cars is being increasingly replaced by plastic,” he says. In fact, some smaller cars are already using lightweight polycarbonates for their side windows. It makes a car lighter, more fuel efficient and more vandal-proof, Vogel notes.

“This trend is ongoing,” he says. “And we can comfortably say that once the flat glass sector of the car industry adopts this concept, polycarbonate glass applications for buildings will soon follow.” In fact, this type of flat glass is already being introduced for greenhouses because of its light weight and resistance to damage by hailstorms.

Of course, replacing glass with plastic is not a new idea. Plexiglass was created for military aircraft in World War II. Although the new material was lightweight and strong, it underwent an aging process through the influence of sunlight and temperature which left it turning first yellow and then brown. This problem, however, does not exist with polycarbonate which, in addition, can be recycled.

**Opportunities for petrochemicals**

A by-product of natural gas is natural gas condensate. It is normally ethane; but compared to methane, which has one carbon atom, ethane has two. It is a very good petrochemical feedstock and can be relatively easily converted into ethylene, which is traditionally produced from petroleum-based feedstock through steam cracking.

With massive amounts of ethane coming from gas
operations in the future, it may become more attractive for some regions, such as the US, to produce ethylene from gas-based feedstock.

“The oil industry would be advised to look to non-ethylene, such as propylene or butadiene, which is used for rubbers, or aromatics, which are used for performance plastics, bottles, carbon fibre, etc.,” Vogel says. “One has to look in depth and see what sort of petrochemicals will become important for the oil industry in future.”

One big application of oil-based materials will come in the area of transport vehicles. “It’s not only confined to windows but also to the frame, the body, which will increasingly be made of plastic,” says Vogel. By 2012 about 15 per cent of a car’s body was made of plastic.

“One hundred kilograms of plastics can in fact replace 200–300 kg of metal,” Vogel says. “And this will reduce fuel consumption by half a litre per 100 kilometres. So it’s very attractive to produce transport vehicles out of plastic and we can expect that in the future cars will be made 25–30 per cent from plastics.” He notes that such propylene- or aromatic-based performance plastics were used for about 50 per cent of the building of the Boeing 787, which helped to reduce fuel use by about 25 per cent, according to the manufacturer.

“This is a long-term trend where the oil industry would be able to retain a competitive advantage over gas and coal and where large profits can be generated,” Vogel says. “The oil-based petrochemical industry should think about slowly decoupling from ethylene and look more into on-purpose propylene technologies. It should not be any longer considered a by-product but a main product. The same is valid for butadiene, much needed for tyres, or aromatics.”

The long-term trend is clear: better-performing plastics in all sectors.

**Fuels**

Vogel sees the transport sector increasingly adopting natural gas as an alternative, which will likely appear at petrol station pumps beside diesel and gasoline. In order to compete with this, the oil industry will have to come up with higher-quality gasoline with octane numbers above 100 — a trend which has already started, he says.

“A more sophisticated chemistry will be applied to oil rather than just distillation and cracking,” he says. “This will produce higher-valued more efficient fuels … which can better compete with natural gas.”

Road transportation will continue to rely on oil for the time being, he says.

In some instances, the oil industry is starting to apply an innovative concept by combining biofuels with petroleum-based components, such as taking bioethanol and producing it with an oil-based butane stream, called bioETBE, which is a very high-performance gasoline component.

“The US is producing big amounts of that — and Japan is buying it from the US” in order to meet biofuel requirements without mixing pure ethanol into gasoline, a process with a lot of disadvantages, he says. “This hybrid fuel is a perfect solution for gasoline and makes both industries happy: the bio industry and the oil industry.”

Oil can definitely compete in the aviation transport sector, he adds. Today it is difficult to imagine an airplane running on LNG because of safety and approval issues. “So
oil will definitely have a bright future in transportation for decades to come,” says Vogel.

**Power generation**

The trend among huge centralized plants has been to move away from oil towards gas, with a revival somewhat of coal, says Vogel. However, the megatrend of moving away from solid fuels is still in place. Highly efficient natural gas-powered combined cycle power plants are coming, and the latest plan by the US Environmental Protection Agency (EPA) to reduce carbon emissions from the power sector by 30 per cent below 2005 levels is a clear signal to the industry to adopt cleaner and more efficient technologies.

Coal will still be attractive for some time because it is cheap. But tighter CO₂ emission laws are going to have a strong influence on which fuels will be chosen, though carbon capture and storage (CCS) — the process in which CO₂ is condensed to a liquid and stored underground or used for EOR at large source points — could have an impact on that trend.

“We have to look for completely new technologies and have completely new approaches where the use of oil or oil-based power generation can play a role in the future,” maintains Vogel.

He notes that only about 30–60 per cent of oil’s energy is converted in traditional power plants (in cars it is only about 40 per cent). If 90 per cent of the energy content of oil could be extracted, then we would get more out of the oil, he says. “We pay more for the oil, so we want to get more out of it.”

Into the picture come fuel cells — particularly large, stationary fuel cells. “These produce a few hundred KW of electricity and typically have the size of a shipping container,” he says. “They are ideally suited to be deployed as a modular concept for small villages or communities, supermarkets, hospitals or hotels.”

In general, Vogel says “the trend of highly efficient, decentralized power generation could actually be supportive for oil ... where power, electricity and heat (which can also be converted into cold) are needed at the same time.”

Stationary fuel cells can be run on many kinds of hydrocarbons, including natural gas or diesel, and can be configured in such a way that a reformer will transform hydrocarbons into hydrogen and CO₂. Hydrogen can be used in a fuel cell to produce electricity with a thermal efficiency of about 45–50 per cent. The heat generated can then be used to supply buildings, bringing overall thermal efficiencies to above 90 per cent. In contrast, future shipments of natural gas to fuel cells may not always be practical, as it requires some sort of infrastructure or pipeline. Thus, more easily transportable oil-based hydrocarbons that are rich in hydrogen — such as LPG or naphtha — may be ideal in many cases.

“This would definitely compete with centralized power stations which are less efficient and which on top of that require the erection of power lines or electricity distribution networks,” Vogel says. “There is the added advantage of having energy independence — not being affected by blackouts or other network problems.”

If a community grows, modules can be added. Thus, a decentralized network can be developed within a short period of time on an ‘as-needed’ basis. In the past, everybody had their own stove and heating system, notes Vogel. Then the grid came; and now the trend towards decentralized energy production is coming back.
“Developing countries; regions like Siberia, like Canada or Africa; huge countries where it may not be financially feasible to lay hundreds of kilometres of electrical lines or build a complete power station; they may all select this option in a couple of years’ time when fuel cell technology becomes more mature,” Vogel said.

In fact, it is already becoming more mature and affordable. There have been improvements in cost, overall thermal efficiency has exceeded 90 per cent and the lifetime is currently at about ten years. “If they manage to bring it up to 20 years and slash costs by 50 per cent this technology will be very competitive for broad applications.” Fuel cell technology is also being looked at for ships, particularly for use in harbours with emission restrictions. In addition, it could supply air conditioning and hot water for cruise ships. The next step could be further miniaturizing fuel cells and making them suitable for individual homes, apartments or trucks, says Vogel.

Hydrogen as a fuel for transportation is much further down the road, as too few filling stations are available. That is likely to remain the case for 20—30 years to come, he noted. “The idea is not for a hydrogen economy (as was thought would exist in the 1970s). It is about downsizing hydrocarbon-powered fuel cells over the next decades until they become suitable for transport vehicles,” says Vogel. He adds that these developments are still far away, though the outlook for larger stationary cells is very good. The market is anticipated to add 7 GW a year up to 2022.

In fact, some department stores and hospitals in the US are already powered by fuel cells. And in August 2014, a South African town became the first in the world to be powered by fuel cells, with 34 homes in Naledi to be serviced with up to 60 KW of power in a pilot project.

In recent comments to the press, Chris Griffith, the Chief Executive Officer of Anglo American Platinum — which, along with partner Ballard Power Systems, set up the pilot — said that about two million poorer households in the country have no access to the grid and could also use fuel cells. “What we have here is a world first,” stated Griffith. “Fuel cell mini-grid technology is a cost-competitive alternative to grid electrification in these remote areas and could accelerate access to electricity.”

Vogel agrees, adding that fuel cells are one of the very important technology advancements that will be emerging over the next 50 years and could become a disruptive technology tool if well managed. He further notes that fuel cell technology is extremely safe — “safer than nuclear power plants, more efficient than the most efficient centralized power plants. It is an opportunity for both gas and oil-based fuels.”

**Carbon Capture and Storage (CCS)**

Turning to CCS technology, the prospect of using CO₂ for ‘fracking’ or EOR instead of water is definitely becoming one of its most exciting applications, states Vogel. “It would be a great combination of using fossil fuels for large-scale power generation and at the same time re-injecting this undesired product, CO₂, back into the soil and getting in return the good stuff — the hydrocarbons — out of it.”

CCS can enhance...
energy security through collecting CO₂ and using it for EOR, while at the same time making hydrocarbon power generation CO₂-neutral. In 2014, about 21 large CCS projects either came into operation or were under construction, elevating the amount of sequestered CO₂ to about 20 million tonnes per year, says Vogel. “This only represents 0.1 per cent of global CO₂ emissions, but it is a step in the right direction.”

All eyes are currently on Boundary Dam, the world’s first post-combustion coal-fired CCS facility which will use CO₂ for EOR. The power plant — located in the Canadian prairies — was up and running in the autumn of 2014 (see OPEC Bulletin August/September 2014, pp22–27 for full coverage). If the Boundary Dam pilot proves to be financially feasible, it may provide the reassurance needed by many countries and companies considering similar projects and push them on to the next step.

**Synergies with renewables**

In an increasingly complex energy world, the oil industry will likely develop synergies with renewable energy industries, says Vogel. For example, he says, wind power has become quite competitive and large rotors can be seen spinning in many fields around the world. Oil can supply these big rotors with light-weight, high-performance plastics or fibre-reinforced composites.

Vogel considers this a huge, multi-billion dollar market per year. The translucent part of solar cells is also starting to be made with polycarbonate plastic materials. In both cases, oil-based backup power generating systems could be used when there is no wind for turbines or sun for solar panels.

“Backup systems running on oil and large conventional piston engines are a convenient and highly reliable solution to bridge that gap,” he says. “They can come online producing electricity within minutes ... the same thing goes for peak demand.”

In general, trends are shifting in the world, times are changing and oil demand will also evolve. These developments offer opportunities for the future oil industry.

“The shifting of oil demand to diversified and new products across the value chain and slowly away from traditional usage in power and transportation offers new opportunities for the petroleum industry to enhance customer attitudes, practice flexible approaches, synergies and partnerships, as well as engage in out-of-the-box thinking and progressive R&D strategies,” says Vogel.

But he adds: “The oil industry should be proactive in identifying trends at an early stage and embarking on them. The big trends you can’t stop; it’s better to jump on them and see where the opportunities are.”

So if one wonders what roles oil may play in the future, one must consider the energy industry in a multifaceted way, and examine other potential uses of this resource. What is clear is that oil will continue to be important to the way we live and work around the world. “Thus, oil can contribute to the sustained development of society and the industry,” Vogel says, adding: “And it is clear the oil industry will have a vital part in the future of humanity.”

Images courtesy Shutterstock.
Oil major BP has blamed the current weakness in international crude oil prices largely on the strong growth recorded in United States unconventional oil production.

In its authoritative BP Energy Outlook 2035, released in February, it said the current weakness in the oil market, which has seen crude oil prices fall by around $50/barrel since the summer months of last year, stemmed in large part from strong growth in US tight oil production.

And with output from this relatively new source of oil projected to remain robust in the near term, BP maintained that it was likely to “take several years to work through”.

The company noted that, in 2014, tight oil production drove US oil output higher by 1.5 million barrels/day — the largest single-year rise in the country’s history.

By the 2030s, the US was likely to have become self-sufficient in oil, after having imported 60 per cent of its total demand as recently as 2005, it observed.

It said US tight oil output was set to grow by about 3m b/d between 2013 and 2035, accounting for around two-thirds of global tight oil production in 2035.

**Market requirements**

“The strength of tight oil and the relative weakness of demand have reduced the market requirement for OPEC crude in recent years. This pressure on OPEC is likely to persist in the early years of the Outlook and the response of OPEC to this reduction is a key uncertainty,” said the report.

But the Outlook pointed out that “further out”, as tight oil supply growth slowed and demand strengthened, the call on OPEC crude would begin to increase, exceeding, by 2030, the organization’s historical high output of 32m b/d, recorded in 2007.

OPEC’s market share by the end of the Outlook was estimated at around 40 per cent, similar to its average over the past 20 years.

“OPEC remains a central force in the oil market for the next 20 years,” BP Chief Economist, Spencer Dale, said at the launch of the publication in London.

“I am perplexed by the idea that OPEC has lost its power,” he stressed, stating that the need for the organization’s crude had not dropped too dramatically.

“OPEC’s market share has dipped very slightly, but it retains a market share of around 40 per cent and accounts for 70 per cent of total reserves, so it is still a material player,” he was quoted as saying.

Dale asserted that the world had changed fundamentally, so the benefits of shifting the timing of oil supply were very different.

“That does not affect the fundamental power of OPEC if another temporary shock comes along — it can carry on in that vein,” he affirmed.

Commenting on the current oil market situation, Dale observed that after three years of high and deceptively steady oil prices, the fall of recent months was a stark reminder that the norm in energy markets was one of continuous change.

“It is important that we look through short-term volatility to identify those longer term trends in supply and demand that are likely to shape the energy sector over the next 20 years and so help inform the strategic choices facing the industry and policymakers alike,” he professed.

The latest edition of BP’s Outlook said that despite the dramatic recent weakening in global energy mar-
kets, ongoing economic expansion in Asia — particularly China and India — would drive continued growth in global demand for energy over the next 20 years.

Its projections saw world demand for energy rising by 37 per cent from 2013 to 2035, or by an average of 1.4 per cent a year.

The Outlook projected that demand for oil would increase by around 0.8 per cent each year to 2035.

This meant that global demand for oil, biofuels and other liquids was forecast to rise by around 19 m b/d, reaching 111 m b/d by 2035.

**Rising demand**

“The rising demand comes entirely from non-OECD countries; oil consumption within the OECD peaked in 2005 and by 2035 is expected to have fallen to levels not seen since 1986. By 2035, China is likely to have overtaken the US as the largest single consumer of oil globally,” it said.

The report stated that non-OECD oil demand growth stemmed primarily from transport (16 m b/d) — reflecting a rapid increase in vehicle ownership — and industry (8 m b/d), largely for petrochemicals.

“The global vehicle fleet (commercial vehicles and passenger cars) more than doubles from around 1.2 billion today to 2.4bn by 2035. Most of that growth is in the developing world (88 per cent), while some OECD markets are already at saturation levels,” it said.

However, Dale pointed out that there was considerable uncertainty as to just how long the Asian giants of China and India could continue to grow at such rapid rates relative to the global norm.

Climate change, he added, was another key area of uncertainty surrounding oil demand.

The report said the increased demand would be met initially by supply from non-OPEC unconventional sources and later from OPEC.

“By 2035, non-OPEC supply is expected to have increased by 13 m b/d, while OPEC production expands by 7 m b/d,” it stated.

The largest increments of non-OPEC supply would come from the US (6 m b/d), Brazil (3 m b/d) and Canada (3 m b/d), which offset declines in mature provinces such as the North Sea.

BP said OPEC’s supply growth would come primarily from natural gas liquids (NGLs) amounting to 3 m b/d and crude oil output from Iraq (2 m b/d).

The Outlook said demand for natural gas would grow fastest of the fossil fuels over the period to 2035, increasing by 1.9 per cent a year, led by demand from Asia.

Half the increased demand would be met by rising conventional gas production, primarily in Russia and the Middle East, and about a half from shale gas.

“By 2035, North America, which currently accounts for almost all global shale gas supply, will still produce around three-quarters of the total,” said the report.

BP said the overwhelming majority of the increase in traded gas would be met through increasing supplies of liquefied natural gas (LNG).

“Production of LNG will show dramatic growth over the rest of this decade, with supply growing almost eight per cent a year through the period to 2020. This also means that by 2035 LNG will have overtaken pipelines as the dominant form of traded gas,” said the report.

Increasing LNG trade, it said, would also have other effects on markets. Over time it could be expected to lead to more connected and integrated gas markets and prices across the world.

“And it is also likely to provide significantly greater diversity in gas supplies to consuming regions such as Europe and China.”

The Outlook noted that coal had been the fastest-growing of the fossil fuels over the past decade, driven by Chinese demand. However, over the next 20 years it saw coal as the slowest-growing fossil fuel, expanding by just 0.8 per cent a year, marginally slower than oil.

“The change is driven by three factors: moderating and less energy-intensive growth in China; the impact of regulation and policy on the use of coal in both the US and China; and the plentiful supplies of gas helping to squeeze coal out from power generation,” stated the report.

It maintained that energy self-sufficiency in North America — which was expected to become a net exporter of energy this year — and increasing LNG trade were also over time expected to have fundamental impacts on global energy flows.

“Increased oil and gas supplies in the US and lower demand in the US and Europe due to improving energy efficiency and lower growth will combine with continuing strong economic growth in Asia to shift the energy flows increasingly from west to east.”

“I am perplexed by the idea that OPEC has lost its power ... OPEC remains a central force in the oil market for the next 20 years.”

— BP Chief Economist, Spencer Dale
Iran again postpones oil roadshow to later in 2015

Due to the protracted nature of its ongoing nuclear talks with Western nations, Iran has again decided to postpone its oil round roadshow in London, at which it intends to announce the latest investment possibilities in its oil and gas sector.

The OPEC Member Country, which has been the subject of Western sanctions for many years as a result of a dispute over its domestic nuclear programme, had initially planned to hold the special conference in the UK capital at the beginning of November last year.

However, as Mehdi Hosseini, Head of the Iranian Oil Contracts Revision Committee, announced last summer, that date would have been too soon to enable all relevant oil companies to participate in the roadshow.

Iran and six world powers — China, France, Germany, Russia the United Kingdom and the United States — have been attempting to draw up an amicable, workable deal.

Hosseini subsequently postponed the oil conference to February 2015, but unfortunately the latest estimation for reaching a tentative agreement on the sanctions’ removal is now July this year.

“Given the overall political situation and nuclear talks, the organizer (CWC Group) suggested that it is again not the right time,” Hossein told Platts.

He said the conference organizers had now proposed September or October this year as a suitable time.

He explained that the nuclear talks would take until July to reach a conclusion and a few months later would provide a good time for the move.

Hosseini, Iran’s former Deputy Petroleum Minister for International Affairs, maintained that the current lower oil price should work in his country’s favour.

“Definitely, given this very low price, expensive oil production in other parts of the world cannot compete with that of low-cost OPEC Members,” he was quoted as saying by Platts.

He revealed that the cost of extracting oil in Iran stood at an average of $5–6/barrel, rising to a maximum of $8/b in the country’s offshore areas. By comparison, he said, North Sea crude cost $50/b and shale oil $60–$85/b.

Substantial progress

Meanwhile, Iranian President, Hassan Rouhani, has stressed that his government had made “substantial progress” in overcoming the pressures on its oil industry from the Western sanctions, including managing to boost domestic oil production.

“Despite all the sanctions and pressure, we have made substantial progress,” he pointed out at a rally broadcast on state television to mark the anniversary of the country’s Islamic Revolution in 1979.

Rouhani disclosed that oil production last year rose by 200,000 b/d to 2.9 million b/d. A substantial increase in natural gas production had also been recorded.

The country is gearing up to boost its crude output capacity by 550,000 b/d from western fields that straddle the border with Iraq as part of a four-year development plan costing more than $15 billion, according to the students’ ISNA news agency.
Royal Dutch Shell has signed an agreement to build a major petrochemical plant in southern Iraq, but it has suspended or scrapped plans for projects in two other OPEC Member Countries — Nigeria and Qatar.

As a result of the sharp downturn in international crude oil prices, the oil major said it was being forced to cut spending by around $15 billion over the next three years, leaving the company with some tough choices to make.

Shell’s Chief Executive Officer, Ben van Beurden, told reporters at a briefing in London that the spending reduction would mean delaying or canceling around 40 projects.

And he said there was the possibility that investment could be curtailed even further going forward, depending on the future direction of oil prices, which have virtually halved in value since the summer months.

The $11bn accord to build the petrochemical plant in Basra was reached in January after the green light for the project was given by the Iraqi government.

Iraq, a Founder Member of OPEC, is aiming to diversify its economy by widening its reach as a major regional energy player.

Iraqi Industry Minister, Nasser Al-Esawi, told a news conference that the Shell Nibras plant was slated to be operational within five to six years. It would produce 1.8 million tonnes of petrochemical products per year and its establishment would make Iraq the largest petrochemical producer in the Middle East.

**Petrochemical sector**

“The Nibras complex will be one of the largest (foreign) investments (in Iraq) and the most important in the petrochemical sector in the Middle East,” Al-Esawi was quoted as saying.

Shell is one of the major oil companies operating in southern Iraq. It operates the Majnoon oil field and leads the Basra Gas Company joint venture. It signed a memorandum of understanding for the Nibras scheme in 2012.

However, Shell has reportedly suspended its $12bn Bonga South West project in Nigeria for an indefinite period.

Sources said the move was consistent with the company’s announcement that 40 projects would be under the spotlight during 2015–17, as a result of the lower oil prices.

Bonga South West forms part of a complex operated by Shell’s deep-water arm, the Shell Nigeria Exploration and Production Company (SNEPCO), which pioneered Nigeria’s deep-water oil and gas production at the Bonga field.

The development of the field increased Nigeria’s oil capacity by ten per cent when output began in 2005. At full output, Bonga has the potential to add more than 200,000 barrels of crude oil and 150 million standard cubic feet of gas to Nigeria’s daily production.

And Shell has scrapped plans to build a multi-billion dollar petrochemical plant in Qatar, again because of the lower oil prices, coupled with extensive capital costs.

Both the national oil company, Qatar Petroleum (QP) and Shell announced that they had decided to pull back on the proposed $6.5bn Al Karaana petrochemicals project on the grounds it is “commercially unfeasible in the current economic climate prevailing in the energy industry.”

The companies signed a memorandum of understanding in December 2011 to conduct a feasibility study covering the construction of the plant at Ras Laffan Industrial City.

The plant, which would have been a joint-venture scheme between QP and Shell, involved providing a world-scale ethane steam cracker fed by Qatar’s massive gas reserves.

Shell’s existing projects with QP include the giant Ras Laffan Pearl GTL scheme, the world’s biggest integrated gas-to-liquids plant.
Despite lower crude oil prices, Kuwait is proceeding with its plans to boost its oil production capacity.

According to the Chief Executive Officer of the Kuwait Oil Company (KOC), Hashem Hashem, oil and gas drilling rigs would be increased by 50 per cent by early next year as part of efforts to boost production capability. The number of drilling rigs for oil and gas would rise from 80 to 120.

“We are continuing our programme, building capacity, especially in the oil and gas programme. We are not stopping ... we are growing our activities on the drilling side,” he was quoted as saying by Reuters.

Hashem revealed that KOC was aiming to add some 150,000 barrels/day of crude production to the current potential, bringing around three million b/d by early 2016.

Late last year, at a conference in Kuwait City, he announced that Kuwait planned investment of around $7 billion to develop the country’s heavy oil fields.

“Developing heavy oil projects in Kuwait is economical even with the current fall in oil prices,” he said.

KOC recently awarded a $4.1bn contract for the first phase of the Lower Fars Heavy Oil Development to Petrofac and the Greece-based, Consolidated Contractors Company.

The Lower Fars project, which will involve the drilling of some 900 wells, is situated 80 km northwest of Kuwait City and forms part of Kuwait’s plans to boost the country’s oil production capacity to 4m b/d by 2020.

The project, which is slated to produce 60,000 by 2018 in its first phase, forecasts output of 180,000 b/d by 2025 and 270,000 b/d by 2030. It will also incorporate a data acquisition programme and pilot schemes to test different heavy oil extraction methods.

According to reports, the Lower fars contract covers engineering, procurement and construction of a central processing facility to treat waste water, as well as a 165 km oil export pipeline to a tank farm at Al Ahmadi.

The Reuters report said that subsequent work to fully develop Lower Fars would involve steam injection and heavy oil production facilities, support complex, tank farms and a 270,000 b/d pipeline to the planned new $15bn Al Zour Refinery in southern Kuwait.

It said the entire Lower Fars Heavy Oil Development project was scheduled for completion by 2017.

In tandem with the crude oil expansion, the Kuwait National Petroleum Corporation (KNPC) plans to expand its refining capacity to 1.4m b/d from 937,000 b/d.

Mohammad Ghazi Al-Mutairi, the company’s CEO, stated at the December conference that KNPC would attain this target when it completed the 615,000 b/d Al-Zour facility, and upgraded existing plants to produce clean fuel.

He explained that crude density was becoming heavier in the Middle East, and refineries must be improved to process it. Al-Zour would be capable of processing all of Kuwait’s heavy crude.

The Al-Zour plant was expected to begin commercial operation by mid-2019.
The Abu Dhabi National Oil Company (ADNOC) has reached an agreement with Total of France, providing the international oil major with a ten per cent stake in the new concession to help operate oil fields in the United Arab Emirates (UAE).

According to a report by Reuters, in signing the accord Total became the first oil company to renew the 40-year onshore concession in Abu Dhabi, capital of the UAE.

**Onshore concession**

It said that some nine Asian and Western companies had submitted bids for stakes in the Abu Dhabi Company for Onshore Oil Operations (ADCO) concession. The previous agreement with oil majors, which dated back to the 1970s, expired in January last year.

Under the previous arrangement, four firms, comprising ExxonMobil, Royal Dutch Shell, Total and BP, each possessed a 9.5 per cent equity stake in the ADCO concession. After the deal expired last year, ADNOC, the state oil company, took 100 per cent of the concession.

The new Total concession is effective from the beginning of this year and relates to Abu Dhabi’s 15 principal onshore oil fields that represent more than half of the Emirate’s output.

Abu Dhabi’s fields currently produce around 1.6 million barrels/day of crude, but are expected to attain the level of 1.8m b/d from 2017, under the UAE’s oil capacity expansion programme.

**Technical leader**

Total Chief Executive Officer, Patrick Pouyanne, said in a statement after the signing that the French oil major was honoured to be the first international oil company to be chosen. It has been entrusted with the responsibility of becoming technical leader on two major groups of fields.

Meanwhile, ADNOC said in a statement that Total “presented the best technical and commercial offers,” adding that more companies would be added to the concession soon.

As well as Total, Shell and BP have made new bids, while ExxonMobil has decided against bidding, Reuters quoted sources as saying. Other firms vying for stakes include Occidental Petroleum of the United States, Italy’s ENI, the China National Petroleum Corporation (CNPC), the Korea National Oil Corporation, Norway’s Statoil and Japan’s Inpex.

A Total spokeswoman was quoted as saying that the company’s margin on the new agreement was better than the previous concession arrangement.

An ADNOC source told Reuters that the state company was negotiating separately with other companies to bring their offers in line with Total’s.

Despite the oil price slump and oversupply in global markets, the UAE remains committed to lifting its oil production capacity.

UAE Energy Minister, Suhail Mohamed Al Mazrouei, told the local National newspaper that plans remain intact to boost the country’s production capacity from 3m b/d to 3.5m b/d by 2017.

“Most of the projects are committed and under construction and we do not foresee any delays on the capacity expansion,” he was quoted as saying by Energy Intelligence.

*Patrick Pouyanne, Total Chief Executive Officer.*
Oiling the wheels of transportation:

A glimpse into Venezuela

When Isaac Capriles, a physician from Caracas, imported the first ever car — a Cadillac B — into Venezuela in 1904 he most probably never realised the significance of his acquisition. Ironically, the event went almost unnoticed. In fact, the first known picture of this automobile was taken decades later. But make no mistake — it was a landmark moment and one that signified the beginning of a new era. Already on the verge of establishing itself as an important global oil producer, the South American nation also became a part of the fascinating new-fangled culture of automobiles, the very sector its oil would help fuel. In this article, OPEC Bulletin correspondent, Saúl Castro Gómez, himself a Venezuelan, explores a side of the OPEC Founder Member that epitomizes the indefatigable bond that exists between the automobile industry and the petroleum sector. And the fact is, without the invention of the wheel, made, interestingly, in another Founder Member of OPEC, Iraq, Venezuela’s ties with United States car manufacturing and all that went with it may never have happened.

Distance and effect

Throughout the immense net of roads and highways that criss-crosses planet Earth there is one sure given — that with each minute of every passing day vehicles of all shapes and sizes are moving people and products from one place to another. Over the centuries, with the various modes of ‘moving’ utilized, humans were to call this process ‘transportation’.

As if this were somehow a narrative about the very creation of Earth itself, getting from A to B has always posed two main challenges — how to reach various geographical locations in the best manner possible — and producing methods of transport that could offer an ‘antidote’ to counteracting some of the long distances involved.

How quickly is it possible to reach a specific point on the map? In which manner can one best move and carry more goods? Does the mode of transportation utilized
offer enough reliability to be used repeatedly? Is it worth the effort for the distance covered? These were some of the questions broached by the early pioneers of transportation, who, to some extent, came up with a partial solution with the use of the sail and the assistance of certain domesticated quadrupeds.

Then, under somewhat mysterious circumstances, a simple, yet life-changing mechanical invention burst onto the scene — the wheel. It effectively transformed the world of transportation. Some evidence suggests that it was in Mesopotamia (today Iraq) circa 3600BC that the wheel was rolled out for the first time. The invention allowed individuals to be able to move objects or persons more quickly and efficiently and with less physical effort. Alongside carriages and equines, the wheel started to change everything.

More contemporarily, trains and rail brought new opportunities in the field of transportation and in parallel with industrial expansion came better and more advanced vessels. The modern automobile and the airplane made their appearances too. Overall, a great deal of time is required to talk about the different types of transport that became available.

In tandem with their development, different sources of energy became apparent to power the vehicles developed, including fossil fuels, electricity, even solar, among others. It was only through the use of these fuels that the mechanical motion desired by man was made possible. These sources of energy, especially fossil fuels, were central to the innovations that helped shape the production of suitable hardware and the creative processes being applied.

But returning to the wheel, besides being a symbolic allegory related to the automobile, it also helped confirm that neither ‘reliability’ nor ‘efficiency’ is more important than the other, but are rather ‘complementary parts’ in conceptualizing any given vehicle. In this process of conceptualization, the provider of the raw material is of the utmost importance.

While fuel is the major aspect of association between the oil and automotive sector, in reality the vehicular industry depends heavily on crude oil far beyond the provision of just gasoline. This is not so obvious to everyone, but the multitude of ways crude oil is used in specific areas of automobile production serves to remind us just how far we have come technology-wise and ultimately how this precious commodity has improved our overall standards of living.

Today, the vehicle transportation sector continues to evolve, encapsulated in new visions, new tendencies
and experimenting with a host of new technology, in response to the potential changes that will be required in the future. A candid look at the history of the automobile and its inseparable partner — the wheel — reminds us just why oil-based fuels will be the core ingredient for vehicle propulsion for the foreseeable future.

What could have been but never was

The automobile memoir is really extensive. Identifying the events involved in the evolution of car manufacturing and crediting all those individuals that made landmark decisions or incisive analyses is as difficult as finding the proverbial needle in a haystack. With certainty, it is possible to single out Karl Benz, associated with the creation of the ‘motorwagen’ in 1886, possibly the world’s first effective vehicle. But the history of the automobile goes far beyond the great engineering talents of Benz.

Should a parallelism be possible, the sheer number of ideas and patents for car production at the end of the 19th century was as high as those presented lately in the information technology sector — quite something. In both scenarios, the intention was for growth *quam celerimme*.

In many cases, there is no evidence to suggest that car manufacture proceeded beyond the prototype stage, yet many people and companies still claimed glory as pioneers for one achievement or another. However, as a ‘reference’ to the modern vehicle, despite the overwhelming dominance of gasoline, a topic that cannot be forgotten, considering its historical context, is that of electricity.

The revival of the electric car in modern times occurred in 1996 with the introduction and mass-production of the EV1 by General Motors, deemed at the time as being a revolutionary marvel. If the popular conception that things are renewed every century is correct, then the commercialization of the EV1 occurred exactly 100 years after, arguably, the first successful electric car — the ‘Electrotbat’ — went into production.

In 1886, the engineers, Pedro Salom and Henry Morris from Philadelphia, were the creative minds behind this automobile. It was introduced by the company, Morris and Salom Electric Carriage and Wagon, a long corporate name for the production of a car that was certainly robust. It weighed more than 4,250 pounds (around 2,000 kilogrammes), of which 1,600 pounds was accounted for by several big lead-acid batteries. This, of course, represented the biggest challenge intrinsically related to energy use in the form of a battery. There was a problem not only of autonomy, but also of size.

Some would argue that the ‘Flocken Elektrowagen’ was actually the world’s first electric car. It was built in 1888 by the German, Andreas Flocken. However, between the Teutonic model and the Electrobat, the latter is considered more referential as it was used regularly in urban undertakings, such as cabs and taxi lines. Hence, a level of proved operation is evidenced.

Other brands also became icons in the development of the electric vehicle, such as the case with the Baker Motor Vehicle Company, located in Cleveland, which enjoyed some success in assembling the models ‘Stanhope’ and ‘Runabout’ (there was also another successful electric runabout from the Columbia Automobile Company in Connecticut). Baker became a major producer of electric vehicles at the dawn of the 20th century, or in the period of automobile history known as the ‘Brass Era’.

Names like Thomas Parker and the Belgian, Camille Jenatzy, can be considered entrepreneurs that played an important role in the study of electric propulsion for cars. Parker, a businessman associated with the industry of locomotives in England, was acknowledged among car buffs of the epoch for creating a very functional electric car in 1894.

Daimler motorized wheelchair (1896).
In 1899, Jenatzy, nicknamed ‘Le diable,’ was the first person to break the 100 km/hour speed record onboard the electric car, ‘La Jamais Contente’.

In 1895, the ‘Arnold,’ a vehicle conceived and introduced by British engineer, Frederick Lancaster, was activated for the first time with the use of an electric starter. Though not assisted by electricity, but combustion, the Arnold is probably a fair illustration of early mutual assistance between the internal combustion engine and incipient electrical technology.

It is even possible to identify the first gasoline-electric hybrid cars. It has been said that between 1910 and 1917, in the windy city, Chicago, a company called Woods Motor sold hybrid cars which claimed a speed of 34 mph, with an approximate fuel efficiency of 48 miles per gallon.

From 1890 up to 1920, a conceptual rivalry was seen taking place between the advocates for gasoline-fuelled cars and supporters of the electric vehicle. At the beginning of the 1900s, the market for automobiles was more or less divided into thirds, taking also into account the steam-powered horseless carriages as the other available option. However, the automobile transportation sector was to reach the unavoidable turning point of prioritizing its progress. The question asked was whether this priority was to be based on ‘idealism’ or ‘realism,’ or perhaps a fusion of the two.

The characteristics of social interaction and productive apparatus in contemporary societies were indicating a sizeable change in population structures globally, not only related to size per se, but also in terms of values.

For instance, the family as a social entity was shifting gradually towards a “dual-earner model” for which proper ‘time’ allocation emerged as crucial for both work and leisure routines.

Acute considerations on aspects such as reliability, efficiency and distance were present among car manufacturers and customers alike. Beyond, nation-states also offered views on aspects such as economic growth and urbanism (concepts that are linked to the logistics of road configurations, eg, positive deviations, negative deviations and their effects on distances from suburbs to factories and offices).

One could say that the never-ending wish among humans to explore far ‘inland’ subjugated the questioning and analysis on what could have been, but never was — the commercialized electric car.

Generally speaking, some aspects that were determinant in shaping the development of the modern car include concern for car autonomy; the innovations of internal combustion technology; the possibility to refuel quickly, as with gasoline; the implementation of mass production (as with the Ford Model-T); accessible prices; and changes in societal values.

Of interest, and maybe less publicized, is the fact that none of the above would have been possible, or at least not so easily, without the provision of an abundant source of propulsion — crude oil — particularly its refined derivatives, in which one certain South American tropical nation began to become prominent.

For decades, Venezuela has occupied the consistent and reliable position of being a major producer and exporter of crude oil. This, combined with its ideal geographic location, placed it close to the hub of car-making at the time — the United States. This, in turn, provided a warranty for the entrepreneurial momentum experienced in the development of the automobile.

The first car in Venezuela

Until very recently it was thought that the first car in Venezuela was a vehicle called a Darracq of French manufacturing, brought to the country for the then first lady, Zoila de Castro, wife of President Cipriano Castro, who was in office between 1899 and 1908. This idea was accepted and embraced in Venezuelan society as an event that took place in 1904. However, over the years, historians and researchers, aiming to better understand the evolution of a country characterized by its production of crude oil, made in-depth studies to identify with absolute certainty the arrival of the first car domestically. After all, oil and vehicle transportation were intrinsically linked.

Unfortunately, the Darracq for Mrs de Castro story turned out to be incorrect. In seeking out old newspapers (not always an easy assignment) and contrasting popular beliefs with old customs records, Venezuelan historian, Javier González, managed to find out that the Darracq in question actually arrived in the country
three years later — in 1907. And it appeared to be a gift from the French government for the Castro family.

Furthermore, González discovered through reliable sources drawn from the now defunct local newspaper, El Monitor, that the actual arrival of the first vehicle in Venezuela in 1904 was instigated by one Isaac Capriles, a physician from Caracas, who imported a Cadillac B.

In part, the confusion arises out of the fact there are no pictures recording this event. Similarly, and to add more to the misperception, other investigators, such as Galo López, highlighted a car’s presence in the country in a photo taken in 1905, during a social event in Caracas. According to some sources, this other vehicle was most likely a Panhard and Levassor, also of French origin. In this way, one could openly infer that there were at least two vehicles operational in Venezuela before the Castro family’s Darracq.

But concerning Capriles’ Cadillac B, the very old customs records, which coincided with the note in El Monitor, published on April 21, 1904, appear to make it the oldest car in Venezuela.

There is not any documentation, formal or informal, indicating any automobile on Venezuelan soil before that year. The Cadillac B was disembarked at the port of La Guaira, known colloquially and rather aptly as the entrance door to South America.

Interestingly, the only available photo of the Cadillac in question was actually taken 27 years later in 1931, when the vehicle was still in very good condition. The picture was found only lately and has helped reinforce the veracity of Venezuela’s first episode of a car on its territory.

Caracas at the end of the 19th century reflected, in one way or another, considerable French influence. This was visible in the architecture and through its artistic expression. Already, the famous French impressionist painter, Camille Pizarro, had made hundreds of water colours and drawings, depicting the Euro-tropical Caracas lifestyle of the 1850s; similarly, Danish marine painter, Fritz Georg Melbye, fashioned various coastal representations.

In the book, Caracas la gentil (2005), recognized author and scholar, Pedro Elías Seijas, mentions the provincial people and locals of 1899, referring to Caracas as a “tiny tropical Paris, the small town of 90,000 inhabitants, which was the metropolis of Venezuela.”

Overall, and for a variety of reasons that stretches back to the early times of ‘good chocolate-making’, the connection between France and Venezuela is quite apparent. However, as a result of its oil exploitation and other aspects, such as sport affinities through baseball, the link between the US and Venezuela proved to be ascertained too.

Though with dissimilar processes, throughout modern history these three countries have a common factor — all have been involved in stamping important ideas on sovereign democracy within the context of Westphalian sovereignty.

As a result of the trade links between these nations, numerous business opportunities arising from Venezuela’s progressive and successful oil exploitation were realized and many North American impresarios, alongside certain ‘criollos’ found in Venezuela the possibility of achieving new goals.

This was the case with William Henry Phelps from New York City and Edgar Anzola, a native of Villa de Cura, in the Venezuelan central state of Aragua. Together, they worked on the massive importation of cars into Venezuela with special attention to the Ford Model-T, which by 1912 was clearly noticeable on the streets of many Venezuelan towns.

In fact, with the help of Phelps, Anzola trained on the functioning and maintenance of the Model-T at the iconic Ford plant in Michigan, today a national historic landmark in the US.

As one of the first formal automotive technicians in South America, in the ensuing years Anzola became a respected personality in Venezuela, dabbling in various ventures, including the production of the first Venezuelan full-length film, “La Dama de las Cayeras” in 1916, which was directed by Enrique Zimmerman.

The motivation of Phelps and Anzola led to other landmark developments as well. For example, in 1910, the Venezuelan engineer, Román Cárdenas Silva, Minister of Infrastructure during Gómez’s presidency, advocated for a comprehensive development of roads throughout the national territory.

It turned out to be more than just an infrastructure initiative. Cárdenas’ plan involved a series of daring fiscal
policies that would have positive ramifications within the national administration and specifically in facilitating growth in specific areas of the automotive industry, such as in rubber and tyres.

In 1911, a rather novel resolution was passed exempting vehicles with rubber tyres from paying taxes. The decree included an instruction for each state in the country to build properly-paved roads, in pursuit of an overall plan to install a transportation system based on the use of rubber tyres.

Over time, Cárdenas has been considered by some Venezuelan academics as being a policymaker that, with his ground-breaking ideas, effectively influenced economic growth in the country. Referred to by some as the “wizard of public finance”, he knew how to overcome the classic fluctuations of the Venezuelan economy by adhering to three simple rules — cost-reduction, income diversification, and reserving surpluses.

His vision literally helped to pave the roads of Venezuela so that modern wheels could roll efficiently, an example that was closely followed by other countries in the 20th century.

The good years in the past and the good years ahead

It has been said that the history of the modern tyre began in what the Romans called Caledonia — today Scotland. A tyre (flexible rubber) in the context of vehicle functionality is a pneumatic — that is to say air held under pressure inside the tyre.

In 1846, the young entrepreneur, William Thompson, patented the pneumatic tyre with an inner tube (nowadays pneumatic tyres are designed to shape a compression seal with the rim of the wheel).

Struggling primarily with the lack of a suitable raw material, the Thompson pneumatic tyre did not fully work commercially until more than 30 years after the first prototypes when another Gaelic, John Boyd Dunlop, applied the idea of air under pressure in a practical inflatable tyre for bicycles. This was commercialized in 1888.

Ten years later, the inventor, Frank Seiberling, was in the process of founding the Goodyear Tyre and Rubber Company, in Akron, Ohio. The company’s name was chosen, among other things, to honour the chemist, Charles Goodyear, who in the 19th century experimented and established the vulcanization process, which involved converting polymers and natural rubber in materials with great durability through the use of a multivalent mineral called sulphur. The vulcanization process, up to the present day, has had a profound impact on a variety of modern industrial tasks.

The Good Year Tyre and Rubber Company initialized activities serving the production of tyres for bicycles and carriages. However, in tandem with the oil boom, which sparked growth in distinct areas internationally, including automobile production, Venezuela found itself participating in the whole global process.

Apart from Petrolia del Táchira, probably best known as the first oil company in Venezuela, another emblematic firm also made history in the country before the oil major, Royal Dutch-Shell, arrived. That was the NY & Bermúdez Company (1885–1934).

This entity’s operations covered the exploitation of Venezuela’s ‘Guanoco Lake’, a natural phenomenon and one of the world’s biggest ‘pitch’ lakes, or deposits of asphalt. It also became involved in the proper conditioning of oil towers and the training of qualified labour forces. And all this was occurring from a location that made trading with crucial septentrional cities faster and more efficient.

Through this company’s operations, the start of concessions between Venezuela and countries like the US, France and England not only enabled Venezuela to pay its debts, but provided the possibility of becoming the country responsible for paving the streets of Paris, New York, Amsterdam and London.

What followed was a remarkable alliance of countries bent on developing roads, vehicles and pneumatic tyres.

Goodyear plant in Venezuela launched

In May 1955, in the Venezuelan industrial city of Valencia, the construction of a Goodyear plant was launched. One year later, the factory’s workers celebrated the production of the country’s first pneumatic tyre. It was part of a first consignment of 100 units named the ‘Cacique Súper Cushion’ (the word cacique, in the pre-Columbian Taíno language, means a leader characterized by strength).

By 1962, Goodyear Venezuela had attained the one million mark of pneumatics sold, not only for domestic

Tyres today use materials that show great strength and durability.
needs, but also for the international market, including exports to the US.

By this stage, the human resources employed at the plant had started to expand into a qualified labour force, dealing with wheels — objects that at first sight appear to be simple, but in reality are an essential product that require precision and quality. Hence, the workforce needed to be skilled, professional and totally committed to safety.

Obviously, rubber is the main raw material used to create a pneumatic tyre, but nowadays this can be synthetic or natural. Natural rubber is found as a whitish liquid in the rubber tree, or Hevea Brasiliensis. On the other hand, liquid synthetic rubber is produced from the polymers found in crude oil, yet another valuable use of the multi-purpose raw product.

Another important component for making tyres is carbon black. When natural gas or crude oil is burned with specific amounts of oxygen, carbon black is obtained as a soft powder.

Obviously, sulphur, other chemical components and acute procedures are also needed and all combine to play a key role in the manufacture of pneumatic tyres. Today, even steel is common as part of the materials used to strengthen the walls of tyres, making them safer.

Also today, advanced software is used for different purposes like simulating the potential design of tyres, as well as determining the consequences of using rubber with certain characteristics. The use of computers offers the chance to visualize possible limitations in a given prototype before it is assembled, hence, saving resources.

Having mentioned different aspects and meaningful anecdotes connected with the evolution of cars, with particular focus on Venezuela, the question as to how or what is required to make a product successful finally emerges.

For distance and effect, the wheel is here to stay, but beyond its impact as a product essential to the transportation sector, as is the case with fuel, in the specific case of Goodyear a great deal of its success rests on the assessment of its leadership.

Of the different training courses implemented by the company for its employees, one is of special interest. It is a new development programme called Global B (Business) C (Centre) M (Manager), which is based on the premise that the next generation of manufacturing at Goodyear will rely on leadership development.

In this regard, Global BCM selects outstanding employees working in the organization to consolidate their knowledge in a variety of areas concerning the pneumatic tyre industry.

In Akron, Ohio, in February this year, this special programme was initiated with 25 individuals, both men and women, selected out of thousands of employees for their good professional direction in Goodyear plants across four global regions.

Among them was Carlos Hernández — the first and only candidate selected from the Venezuelan plant.

As a member of the factory’s Quality and Technology Department (QTECH), Carlos Hernández has to work with the team in maintaining consumers’ level of preference for the pneumatics produced by Goodyear in the country.

The plant at Valencia is today renowned for offering products of excellent quality, in a process that has managed to overcome the challenging economic dynamics familiar to the region.

At the same time, the factory has set important benchmarks in various areas. It remains one of the most significant businesses with a high EBIT (Earnings Before Interest and Taxes). And it has achieved historical national and regional results within Occupational Safety and Health Administration (OSHA) parameters.

And since 2012, engineer, Maria Luis, has been Goodyear’s President in Venezuela, the first woman to hold this particular position out of all the company’s plants worldwide.

The Global BCM programme was initiated by Marcelo Toscani, Vice President for Global Manufacturing, and Greg Smith, Senior Vice President for Global Operations, who were tasked with the responsibility of determining the future direction of the company and how that could be best attained with the personnel at hand.

The significance of this vision is that it focuses on the importance of individuals’ performance and know-how, and not solely on technology and the raw materials available to make good tyres.

The key question for management is to consider whether the human resources employed are sufficiently ‘motivated’ and in the necessary ‘quantities’ to keep the business running at an optimum level.

Today, certain sectors — the oil sector included — are facing the challenge of overcoming acute shortages of skilled manpower. In this sense, it might be that initiatives such as the Global BCM can be of use in procuring insights on how best to progress businesses, such as the oil industry.

After all, there is a level of dependency between these two areas. The BCM programme emphasizes a common set of competencies aimed at motivating growth. It seeks to positively influence workers, instilling correct procedures for optimization and practices on ‘real-life projects’, leading to realistic scenarios.

These efforts aspire to consolidate motivation among Goodyear leaders in both the lines of management pursued and in each simple piece of action made within the corporation.

As manifested by Chief Executive Officer, Rich Kramer, in one of the sessions: “Do your absolute best job in your current role.
and the future will take care of itself.” The Global BCM development programme has held its second meeting in Goodyear’s Pulandian factory, in eastern China. Two more important gatherings are planned to take place this year.

**Global energy needs increasing**

As a consequence of the current challenges, 2015 is a year that will most probably require great awareness and talent in the management of crude oil and its derivatives. Geopolitics is evolving and the energy needs of the global population, especially in the developing world, are increasing.

The question remains as to whether oil futures prices will once again reflect the fundamentals of physical supply and demand, or if they will continue to be driven by hype and speculation, borne out of financial motivation and gain.

While oil market volatility is mitigated, the good thing is that countries like Venezuela are producing oil at steady and reliable rates, cars are continuing to be produced and run in ever-increasing numbers on all continents, while the rubber tyre is being manufactured to an ever-increasing standard and quality, with safety and durability key to the process.

All studies point to the fact that vehicle transportation will continue to rely heavily on oil as a fuel now and in the years ahead. There has been the growing notion that, due to policy support from a number of consuming countries, biofuels will contribute its share to powering vehicle transportation. But the cost of this option, as well as other obstacles, most probably means that any significant contribution to the transport sector from this source will not happen for many years.

It means that, barring the hypothetical case of a rise in the use of alternative sources of energy for transport, oil production will be central to the sector for the foreseeable future.

As Carlos Hernández sees it, when it comes to efficiency, “electric cars without high performance tyres will only be auto show cars. The tyre industry is one of the most important partners in this journey.” An efficient tyre produces less friction while the car is in motion; therefore the consumption of its fuel is lower.

Whatever the case — electric or internal combustion — an oil industry running to capacity is needed for both options as most raw materials for car components, including, of course, the synthetic tyre, originate from crude.

The oil industry is the winner on both counts. Unfortunately, it does not end there. Due to the fragility of the global economy, optimization, cooperation, good management and qualified professionals are all required in abundance to deal with the challenges that both the oil and automobile industries face today and in the years to come.

But returning to the wheel and tyre, one cannot imagine where the world would be today without these two vital commodities. Even visiting a children’s playground in any part of the world, who hasn’t seen a simple, yet effective, swing fashioned out of an old rubber tyre?

And who would have thought back in those days in Mesopotamia that the wheel and later its most efficient outer covering would become great symbols of change, progress and leadership? For Venezuela, already with the accolade of being one of the Founding Members of OPEC and a leading global oil supplier, its participation and drive in the transportation revolution will forever stand the test of time.
Venezuela appoints new Minister of Petroleum and Mining

Eng Asdrubal Chavez (pictured) has been appointed Venezuela’s new Minister of Popular Power of Petroleum and Mining, succeeding Rafael Ramirez.

A Chemical Engineer, he completed his studies at Universidad de Los Andes, Merida State, Venezuela, in 1979.

In that same year he began his career in the Venezuelan oil industry, employed as a Start-up Engineer at the country’s El Palito Refinery in Carabobo State, working on the plant’s Expansion Project (ELPAEX).

Chavez went on to hold various positions in the areas of Industrial Services, Distillation and Specialties, Conversion and Treatment, Crude and Products Movement, Programming and Economics, as well as Process Engineering.

In 1989, he was assigned to the company, UOP, in the United States, where he worked on processes specialization. The following year, he led the Expansion Project of the Crude and Vacuum Units at the El Palito Refinery.

In 1993, Chavez was appointed Superintendent of Process Engineering at the plant and the following year led the Comprehensive Study Team for the organization of the refinery.

From 1995 to 1999, he held various supervisory and managerial positions at the plant.

In 2000, Chavez was assigned to the Office of the President of the national oil company, Petroleos de Venezuela SA (PDVSA). He was at first involved in the restructuring of the Ministry of Production and Commerce and then took part in the Process of Economic Constituent.

The following year he was assigned to the company, Bitumenes del Orinoco, SA (BITOR) as Human Resources Manager, where he led the restructuring of the PDVSA affiliate.

In 2002, Chavez was named Assistant to the Board of Directors at BITOR and was subsequently appointed General Manager of the El Palito Refinery.

In August 2003, he was named Executive Director of Human Resources at PDVSA. In March the following year, he also assumed the responsibilities of Executive Director of Commerce and Supply at PDVSA and headed the company’s bargaining team for the Oil Industry Collective Bargaining Agreement 2004–06.

In January 2005, Chavez became Director of CITGO and a PDVSA representative to various affiliates and joint ventures.

He was appointed Vice President of Refining, Commerce and Supply at PDVSA in May 2007 and in December 2009 was named Deputy Minister of Petrochemistry.

Additionally, Chavez has held positions as President and Director at various PDVSA affiliates in Venezuela and abroad.

In June 2013, he was appointed Executive Secretary of Petrocaribe and in January the following year he was ratified under Presidential Decree No 739, as Deputy Minister of Refining and Petrochemistry.

In September 2014, Chavez was named Minister of Popular Power of Petroleum and Mining.

In early January 2015, he was appointed head of the Oil and Energy Unit of the High Command for Economic Recovery by Venezuelan President, Nicolas Maduro Moros.
In memoriam: Garry J Brennand

OPEC Secretariat loses true professional, mentor and friend

By Mario Alvino Fantini

In life, one of the greatest challenges seems to be finding good role models — people who embody principles and values worth emulating. This is true whether one looks at family life, one’s social environment or one’s place of employment. And finding someone who can be a good role model in each and every one of those environments is particularly difficult.

Last month, the OPEC Secretariat in Vienna lost just such a person — someone who was a consummate professional, as well as a friend and mentor to those around him, and, above all, a devoted family man: Garry John Brennand.

A British national, Garry was born in London in 1959. He studied economics at the University of York in the United Kingdom and then went on to receive a Master’s degree in economics from McMaster University in Canada.

He began working at the OPEC Secretariat in February 1986 as a Statistician in the Data Services Department. His training in economics — and his facility with numbers — were of obvious use to him there. And Garry eventually became a Senior Research Analyst in the Energy Studies Department. He spent the rest of his career there, becoming one of its most respected team members.

But it was Garry’s quick grasp of the changing complexities of the energy industry that made him admired and respected within the Secretariat. One of his colleagues, Dr Jan Ban, also a Senior Research Analyst in the Energy Studies Department, underscores this fact: “One thing I was amazed by and admired in Garry was how swiftly — I would say almost instantly — he was able to speak
about various topics and react with a good understanding on the spot.”

Ban illustrates this by recalling a visit by a high-level delegation from Japan. He says he was in the middle of giving a presentation, just turning to the kinds of topics that Garry would typically cover, when to the great surprise of both he and Garry, the Department’s supervisor suddenly asked Garry to continue with the remainder of the presentation. Ban smiles as he explains that even though Garry had absolutely no idea what was on the slides, he went along with the request — and proceeded to give what turned out to be a fabulous presentation. “Garry managed it in a way that no one realized what had happened,” Ban says with a chuckle. “He was really very bright.”

With an interest in international affairs, as well as the energy industry, Garry’s appointment at the Secretariat provided him with many opportunities to successfully combine his interests and his academic training. He seemed made for this kind of work. But few expected that his contributions to the Organization would go far beyond the economic, the technical, or the quotidian. Over time, Garry became, as others have said, one of those people one sought out for advice — to bounce ideas off, to commiserate, or to simply share a laugh.

Anne Rechbach, another longstanding colleague from the Energy Studies Department, says that “one of the first things that comes to mind [when I think about Garry] was how much we gave each other mutual support. I can’t even begin to tell you how much he supported me work-wise and privately. It was nice to have some mutual support. I can’t even begin to tell you how much he supported me work-wise and privately. It was nice to have some other analysts, researchers, and officials relied on when they needed help, and encouraged us.”

It was this combination of kindness, affability and courtesy, along with his professionalism and quick grasp of technical insights, that made Garry truly an outstanding work colleague. Ms Rechbach notes that “of all the people I’ve known at the Secretariat he was probably the one who could sit down and get something done the quickest — and you’d end up with something usable.”

In fact, Garry’s many work contributions were essential to much of the Research Division’s output. And, over the years, he became a valuable contributor to a growing amount of the Organization’s research and analysis. With his mastery of detail and his broad understanding of the always dynamic energy market, Garry became someone other analysts, researchers, and officials relied on when confronted with market complexities, or when faced with difficult oil industry scenarios.

In time, Garry also became one of the driving forces behind the preparation of the annual World Oil Outlook, one of OPEC’s flagship publications, and along with this, he was the principal modeller behind the OPEC World Energy Model (OWEM), which forms the backbone of much of the Secretariat’s analytical work. Garry worked closely with Ban and others as he routinely tweaked the model, making it an essential tool for the Secretariat’s analytical work.

But Garry was also humble about the model and was always quick to point out the limitations of relying too much on models. “There is a phrase of Garry’s that I like to repeat,” says Ban. “Whenever he was talking about models and the issues involved ... he used to say: ‘That’s true; but remember that half of the model is here [pointing to his head].’” This was his way of saying that the model was just a reflection of his understanding of how things work in the energy markets. “It is not the model that tells you how it will be; it is me telling the model how it will work,” Ban explains.

In the same way, it is hard not to remember the man behind the work. And at his funeral, held in the Austrian capital on January 19, several people spoke fondly of the many different ways that he touched their lives — both in and out of the office environment. For, above all, Garry had extremely admirable human qualities for which others will always remember him. As Dr Omar Abdul-Hamid, Director of OPEC’s Research Division, said in his eulogy: “… it was perhaps in terms of his character and personality — his qualities as a human being — that Garry really stood out.”

This is perhaps one of the things most often said about Garry. In her own tribute, Marie Brearley, another longstanding colleague, said: “Garry and I worked for more than 20 years at OPEC ... and often gave each other words of encouragement when times were not easy. There were times when Garry noticed that I was not my normal self. He would come into my office, ask if there was something he could help with — and at the same time crack a few jokes to cheer me up.”

This personality meant that Garry formed deep relationships and worked well with colleagues. It also meant that he would work on projects collaboratively, helpfully, patiently explaining difficult concepts, or particularly complex market trends. Ms Rechbach remembers that “he never minded explaining things. He would always take the time to explain something that was unclear — or, if I wanted to learn something from him, he would just stop what he was doing.”

And even though his specialized knowledge of the energy industry — and the oil market in particular — was impressive, Garry always remained approachable, willing to help others and, in the process, earning the respect of his colleagues, friends and those fortunate enough to get to know him.

In her eulogy, Ms Brearley noted that “Garry was like a teacher or professor to me because whenever he asked me to help him find information or material for his work, he would always explain to me specifically what information he needed. He never gave me the impression that I wouldn’t understand the technical stuff, but always explained the details as a teacher would. This made my work for him much more interesting.”

Even when on mission, Garry never lost his good nature and
enjoyment of life be forgotten. “Garry always had a sense of adventure when we travelled together,” says James Griffin, a friend and work colleague. “There was hard work and Garry never slacked. But he was forever looking for something to add a bit of flavour to a trip,” he says.

Griffin recalls one particular trip, when both attended the 20th meeting of the World Petroleum Congress in 2011, held in Doha, Qatar. Garry made absolutely sure there was an opportunity to get to know the local culture and traditions a little better. “I vividly remember the day out he organized at the end of the trip to Qatar,” Griffin says. “We were looking to see a little bit more of the country, only to find that Garry had organized us a ride on a camel (see below), followed by a tour of the scariest black runs you could ever dream of — although it wasn’t on skis. It was in a car — and half the time we were going down backwards! He loved it.”

Garry was also a known lover of music. He loved listening to the classics and he loved even more playing music. And when up on the stage playing his guitar before an audience, his warmth and friendliness were still apparent, even as he disappeared into the music he loved so much. “Garry was such a likeable guy,” says Douglas Linton, one of his long-time OPEC colleagues and a long-time musical collaborator. “He had a real enthusiasm about life and a deep love of music – particularly for the Beatles and Elton John.”

In fact, he recalls attending a concert with Garry. “I went with him to see a Beatles tribute concert,” recalls Linton. “I had never been to anything like that before and I wouldn’t have gone with anyone else. It was one of those concerts where they start off dressed as the Beatles in their early career and then work their way through to the end, changing outfits along the way until they look like they do on the cover of the album Abbey Road. Garry got us front row tickets and was really being supportive of the band. So much so, that the guy playing the role of ‘Paul’ stopped after one song and pointed at Garry and said: ‘Thanks mate! It is for real fans like you that we love doing this.’ Well, throughout the evening, Garry and the would-be ‘Paul’ kept smiling and waving at each other after each song — to the degree that the other bandmates apparently felt left out! During one of the final songs, the George Harrison character — in full hippie regalia — leapt to the front of the stage, played this intense solo, and then he looked right at me, and then gave me the thumbs up — only because I was sitting next to Garry! It was like he was showing ‘Paul’ that he had his own fans, too.”

Garry had very many of his own fans and they shall all miss him — on stage, at home, around the city of Vienna, and in the hallways and meeting rooms of the Secretariat. All the people whose lives he touched and who knew him well shall remember him with great fondness. And when they think of him, they shall remember his quick smile, his dry wit, his easy manner, and all those other qualities that made him stand out.

Perhaps a recent letter from OPEC’s Secretary General, Abdalla Salem El-Badri, to the Brennand family best summarizes the sentiments that abound at this time: “Upon receiving the devastating news of Garry’s sudden and unexpected passing, I am writing to convey … on behalf of all the staff of the Secretariat and myself personally, our most heartfelt and deepest condolences. I know words are of little comfort at such a time, but I would like you to know that all our thoughts and prayers are with you and your family. Garry was deeply respected as a professional and colleague by all who had the pleasure of working with him and the honour of knowing him. Garry will be most sadly missed by us all. May God rest his soul in peace and give you comfort and strength in this time of great sorrow.”

Garry Brennand served OPEC for 29 years and passed away tragically shortly after the New Year. He is survived by Caterina, his wife, and his two daughters, Jennifer and Christina, and his brother, Paul. The OPEC Secretariat shall remember his legacy of professionalism, kindness and humour for many, many years to come.
In the course of his official duties, OPEC Secretary General, Abdalla Salem El-Badri, visits, receives and holds talks with numerous dignitaries. This section is dedicated to capturing those visits in pictures.

February 17

Dr Urban Rusnak (l), Secretary General of the Energy Charter Secretariat, visited Abdalla Salem El-Badri, OPEC Secretary General.

February 18

Ambassador Marion Paradas, Permanent Representative at the Permanent Mission of France to the UN and the International Organizations in Vienna, visited Abdalla Salem El-Badri, OPEC Secretary General.
Students and professional groups wanting to know more about OPEC visit the Secretariat regularly, in order to receive briefings from the Public Relations and Information Department (PRID). In some cases, PRID visits schools to give them presentations on the Organization and the oil industry. Here we feature some snapshots of such visits.

Visits

A group of twelve curious political science students from Kuwait University took a special interest in visiting the OPEC Secretariat on January 15.

The student trip to Vienna — supported by Kuwait’s ministry of youth— included top, mostly senior students from the faculty. The students spent a week visiting various sites in Vienna to learn about political aspects of various international and intergovernmental organizations, according to accompanying professor Hasan Johar, who added that Vienna is known as a site for such institutions.

“We wanted to be on site and meet people, watch activities and decision-making, and compare it with what we learn at home,” said Johar, adding that the tour is a new idea which started over a year ago. “We earlier visited the EU and EU Parliament, and last summer went to the UN in New York and Washington.

“It’s an incentive for students, they need a certain grade-point average to come.”

OPEC represents a special stop, he stated: “Our country was one of the founder countries, and we have seen a sharp drop in oil prices the past few weeks. We depend highly on oil production and this may affect our budget and daily life. Therefore, it is important to know the reasons behind it, the impact and changes, procedures to retain balance and economic processes. We can learn our obligations as citizens… it is good to support our decision-makers.”

Johar added that he learned very much about OPEC from the visit, gaining some in-depth information to better understand the production of oil, cooperation between the Gulf region and Europe, mutual security, the world’s dependence on oil, statistical analysis, supply and demand. “It was very beneficial for myself, also the students understood; they learned a lot from this trip and their OPEC participation.

“What we hear in the media is focused on the political aspect … it is very interesting to see how different states with different political ideologies and systems can cooperate in certain interests and make this successful. It is a good model. It supports the idea to leave politics behind.”

“We are an OPEC Member, we study about OPEC,” said Kolaud Al-Reshidi, one of the students in attendance. She said though the UN and other governmental and non-governmental organizations were interesting, “OPEC is important to us, we are a petroleum-exporting country”

What was the most important thing she learned? “We thought OPEC is more political, not only a research body. We didn’t know they only do research. We thought it could help countries (politically). “It can help us with research and it’s good for us, and important for Kuwait.”

Mohammed Shafi, also a student in the group, stated that the trip as a whole was very beneficial, expanding his knowledge of science and culture, but the trip to OPEC was “absolutely more important, because Kuwait’s economy depends solely on oil revenues.

“Especially because the price of oil is reduced. I wanted to know why it happened, whether it is political or for other reasons,” stated Shafi, adding that now he knows that the economy and markets at large play the biggest role, not politics.

“I got a positive feeling today. I had no idea how OPEC countries and other countries work together in tandem, now I know how it is done, especially the call on OPEC (oil).”
A group of students from the University of Debrecen, Hungary, visited the OPEC Secretariat on November 28, 2014.

Students from the European Academy Bavaria, Munich, Germany, visited the OPEC Secretariat on December 1, 2014.

Faculty of International Relations, University of Economics in Bratislava, Slovakia, December 1, 2014.

Students from Latinomics, visited the OPEC Secretariat on December 2, 2014.
Youth cadets of the Federal Armed Forces in Bad Reichenhall, Germany, visited the OPEC Secretariat on December 4, 2014.

Students of the Lycée Jeanne d’Arc, Nancy, France, visited the OPEC Secretariat on December 17, 2014.

A group of students from universities in Costa Rica, visited the OPEC Secretariat on January 12, 2015.
OFID's Al-Herbish honoured by City of Vienna

The Director-General of the OPEC Fund for International Development (OFID), Suleiman J Al-Herbish, has been honoured by the City of Vienna in recognition of his contribution to the Austrian capital.

The award — the Grand Decoration in Gold for the Meritorious Service to the Province of Vienna — is one of the highest decorations of the City and Province of Vienna, as well as of Austria.

It was presented to Al-Herbish by Magister Renate Brauner, Vice Mayor of Vienna, on behalf of Mayor Dr Michael Häupl.

The ceremony was attended by Al-Herbish’s close family members, OFID’s management, ambassadors and the media.

Other dignitaries present included Li Yong, Director-General of the United Nations Industrial Development Organization (UNIDO), Dr Pavel Kabat, Director-General of the International Institute for Applied Systems Analysis (IIASA), and Dr Kandeh Yumkella, Chief Executive Officer of Sustainable Energy for All (SE4ALL).

In her remarks on the occasion, Ms Brauner praised Al-Herbish for his professional accomplishments which reflected his close relationship with the City of Vienna. “The city is very grateful to OFID for its involvement in social and cultural activities,” she affirmed.

In his citation, Dr Oliver Rathkolb, prominent Austrian historian and professor for contemporary history at the University of Vienna, lauded OFID for its great aspiration and overarching objective to alleviate poverty.

He praised Al-Herbish for his unflagging energy and wisdom in the development of concrete strategies for sustainable development in developing countries.

“Mr Al-Herbish and other key decision-makers in the international community remind us here in Austria — today one of the richest countries in Europe — that we have a commitment to join these efforts to reach the Millennium Development Goals,” stated Rathkolb.

He also spoke of OFID’s contribution of over 50 grants that helped support the activities of Austrian non-governmental organizations (NGOs) and other entities that were working both at home and in the developing world.

“Director-General Al-Herbish is a very distinguished friend of the City and Province of Vienna and an outstanding chief executive officer of OFID. He has transformed this institution since 2003 into a leading actor in the global SE4ALL initiative,” said Rathkolb, adding that Vienna would continue providing an inspiring, welcoming and friendly base for OFID’s important global operations.

Special relationship

Accepting the award on behalf of OFID’s colleagues, his family and OFID Member Countries and Partner Countries, Al-Herbish thanked his hosts and spoke of the special relationship that existed between OFID and Vienna, home to the institution since its establishment in 1976.

He paid special tribute to the former Austrian Chancellor, Bruno Kreisky, for his wisdom and foresight in inviting OPEC to have its headquarters in Vienna.

Al-Herbish revealed that during his tenure as Director-General of OFID, he had received 11 awards, including one from the Republic of Austria. “But this latest award holds a very special place in my heart because it comes from the city that I love dearly. Ich bin ein Wiener,” he proclaimed.

Al-Herbish also paid tribute to King Abdullah Bin Abdulaziz Al-Saud who passed away in January. He
recognized the role and contribution of the late King towards making Vienna the hub of energy. It was King Abdullah who hosted the Third Summit of OPEC Sovereigns and Heads of State in November 2007, in which the eradication of energy poverty became an objective for their aid institutions, including OFID.

He noted that, in June 2008, King Abdullah kept the issue of energy poverty eradication at the fore, with the proclamation of the Energy for the Poor Initiative, which ever since became OFID’s flagship programme, and was also behind the SE4ALL initiative which has its Secretariat in Vienna.

Al-Herbish said he believed OFID, OPEC and the King Abdullah Bin Abdulaziz International Centre for Interreligious and Intercultural Dialogue would continue to be hosted by the City of Vienna.

As a token of his appreciation, the Director-General presented two books to the Mayor of Vienna through Ms Brauner. One was the history of Vienna’s famous Deutschmeister Palais — the institution’s headquarters for over 30 years — which was published as a gift from OFID to the people and City of Vienna. The other was the recently-published Energy: the Key for Sustainable Development, which contains a collection of the Director-General’s speeches delivered throughout OFID’s campaign towards energy poverty eradication.

Al-Herbish, a Saudi national, and a former Governor of OPEC, has been at the head of OFID since November 2003. Since assuming office, he has steered OFID through a comprehensive process of institutional transformation, with the aim of making its work more relevant, efficient and visible.
Part of the larger Midal Group, which has similar operations in Bahrain, Australia, Saudi Arabia and Turkey, the OFID-sponsored Midal Mozambique aluminium plant is in the final stages of commissioning and expected to come on line before the end of this year.

With an installed annual capacity of 50,000 tons, the plant will produce aluminium rods, wires and conductors for use in electricity transmission and distribution. It will be the sole aluminium rod manufacturer in sub-Saharan Africa.

The plant will be supplied with aluminium ingots by the adjacent Mozal smelter, making it the first local downstream manufacturing operation to add value to Mozambique’s already profitable aluminium production.

Until now, the 580,000 tons of aluminium produced annually by Mozal has been exported.

**Developing manufacturing**

Commenting on OFID’s financial support for countries such as Mozambique, the Vienna-based institution’s Director-General, Suleiman J Al-Herbish, said that as a development organization, OFID is acutely aware of the importance of helping its partner countries to develop their manufacturing industries and move up the production ladder.

“OFID’s $12 million loan to Midal is further evidence of our commitment to this goal,” he pointed out.

Located on the outskirts of Maputo, the new plant is expected to have a high developmental impact in this post-conflict country, which over the past decade has emerged as one of Africa’s leading economies.

Structural reforms and sound economic management have triggered a boom in foreign investment, led by the Mozal smelter which was the first major foreign investment in the country following the civil war.

In recent years, Mozambique has become a world-class destination for mining and natural gas development.

Despite these achievements and the wealth of natural resources, the country still faces multiple challenges in terms of poverty reduction and sustainable development.

Among the many spin-offs expected from the new plant are the positive foreign exchange implications.

The move from raw materials to manufactured goods will generate significant export revenues and help replace products previously imported from South Asia and the Pacific.
Finished aluminium products have traditionally been a significant cost burden for the construction industry and the national electricity company, EDM.

The factory’s establishment is considered particularly timely, as demand for aluminium conductors is projected to grow significantly, due to increased investment in energy infrastructure in South Africa and across the sub-region. The project will also have a meaningful impact at the micro level.

**Localization a priority**

“Priority has been given to localization at every stage of project implementation,” explained Midal Chairman, Hamid Al Zayani, revealing that architectural, construction, accounting and transportation were just some of the services so far commissioned to local providers.

In terms of job creation, Al Zayani indicated that the new facility would employ over 100 Mozambicans directly in the factory.

“Indirectly, however, we expect to generate four to five times that number,” he added.

Midal has already trained a team of Mozambicans at its parent company in Bahrain to enable them to run the operations at the new plant.

Midal is also keen to use its expertise to help address some of Mozambique’s electricity challenges and, according to Al Zayani, is already engaged in discussions on ways to reduce transmission losses by using more efficient materials.

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**Mozambique at a glance**

- **Area:** 801,590 sq km
- **Population:** 26 million
- **GNI per capita:** $510

- Over the last decade, Mozambique has posted one of the highest real GDP growth rates in the world, averaging eight per cent a year.
- Its 2,470km long coastline positions it as a natural gateway to global markets for neighbouring landlocked countries.
- Its coastal waters are rich in prawns, one of the country’s leading exports.
- Natural gas reserves discovered in 2012 are estimated to be the fourth-largest in the world.
- Mozambique plays a significant role in the global production of minerals, in particular ilmenite, zircon and aluminium.
- In 2012, aluminium accounted for 31.5 per cent of the country’s national exports.
- The country was the world’s leading producer of ruby in 2012.
Forthcoming events

Nigeria oil and gas 2015, March 16, 2015, Abuja, Nigeria. Details: CWC Associates Ltd, Regent House, Oyster Wharf, 16–18 Lombard Road, London SW11 3RF, UK. Tel: +44 207 978 0000; fax: +44 207 978 0099; e-mail: sshelton@thecwcgroup.com; website: www.cwcnoig.com.

Nigeria power 2015, March 16, 2015, Abuja, Nigeria. Details: CWC Associates Ltd, Regent House, Oyster Wharf, 16–18 Lombard Road, London SW11 3RF, UK. Tel: +44 207 978 0000; fax: +44 207 978 0099; e-mail: sshelton@thecwcgroup.com; website: www.nigeria-power.com.

Oman refining and petrochemical exhibition and conference 2015, March 16–18, 2015, Muscat, Oman. Details: Omanexpo LLC, 1st Floor, SABCO Building, Wattayah, Muscat, Sultanate of Oman. Tel: +968 24 66 0124, 99 10 21 17; e-mail: ebrahim.taher@omanexpo.com; website: www.downstreamoman.com.

Oil and gas industry supply chain 2015, March 17, 2015, Moscow, Russia. Details: NGK. Tel: +49 5154 58 56, 514 44 68; fax: +49 578 72 79; e-mail: info@ngk-k.ru; website: www.ngk-k.biz/?page=meropr47.

OSV and subsea vessels North America conference, March 17–18, 2015, Houston, USA. Details: IBC Global Conferences, The Bookings Department, Informa UK Ltd, PO Box 406, West Blyfleet KT14 6WL, UK. Tel: +44 207 017 55 18; fax: +44 207 017 47 15; e-mail: energycustserv@informa.com; website: www.downstreamoman.com.

Russia-Asia energy summit, March 17–18, 2015, Singapore. 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; website: www.russia-asia-energy.com.

7th annual decommissioning and abandonment summit, March 17–19, Houston, USA. Details: DecomWorld, 7–9 Fashion Street, E1 6PX, London, UK. Tel: +44 20 74 22 43 41; e-mail: pchadney@decomworld.com; website: www.decomworld.com/decommissioning.

2nd China international NG/CNG/LNG distribution conference, March 18–19, 2015, Beijing, PR of China. Details: The Oriental Pro-Energy Consulting Organization (Topco), Zhuijiang Dingji, No 28, Guanggu Rd, Chaoyang Dist, Beijing, PR of China. Tel: +8610 58 63 43 46; fax: +8610 58 63 22 91; e-mail: topco@topcoevents.com; website: www.chinasmlng.com.

Argus-ElitePlus India oil and gas summit 2015, March 18–19, 2015, New Delhi, India. Details: Argus Media Singapore Group, 50 Raffles Place, #10-01 Singapore Land Tower, Singapore 048623. Tel: +65 6496 9966; fax: +65 6533 4181; e-mail: asiaconferences@argus-media.com; website: www.argusmedia.com/aeig.

Turkish international oil and gas conference, March 18–19, 2015, Ankara, Turkey. 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; www.turoge.com.

3rd China small-mid scale LNG world forum, March 19, 2015, Beijing, PR of China. Details: The Oriental Pro-Energy Consulting Organization (Topco), Zhuijiang Dingji, No 28, Guanggu Rd, Chaoyang Dist, Beijing, PR of China. Tel: +8610 58 63 43 46; fax: +8610 58 63 22 91; e-mail: topco@topcoevents.com; website: www.chinasmlng.com.

8th annual European gas transport and storage summit, March 23–24, 2015, Munich, Germany. Details: World Trade Group, 90 Union Street, London SE1 ONN, UK. Tel: +44 207 202 7500; fax: +44 207 202 7600; e-mail: enquire@wtgevents.com; website: www.gtsevenet.com.

9th international Fujairah bunkering and fuel oil forum, March 23–25, 2015, Fujairah, UAE. Details: Conference Connection Administrators Pte Ltd, 105 Cecil Street #07–02, The Octagon, 069534 Singapore. Tel: +65 6222 0230; fax: +65 6222 0121; e-mail: info@ccconnection.org; website: www.fujcon.com.

Oil and gas mobility Europe, March 23–25, 2015, London, UK. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.oilandgasmobilitysummit.com.

Power grid resilience, March 23–25, 2015, Washington DC, USA. Details: IQPC Ltd, Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 368 9300; fax: +44 207 368 9301; e-mail: enquire@iqpc.co.uk; website: www.powergridresilience.com.

2nd offshore safety and risk forum, March 24–25, 2015, Stavanger, Norway. Details: Fleming Gulf Conferences, Dubai Airport Free Zone, PO Box 54772, Dubai, UAE. Tel: +971 4 60 91 555; fax: +971 4 60 91 589; e-mail: info@fleminggulf.com; website: www.fleminggulf.com.

Energy efficiency world Africa 2015, March 24–25, 2015, Johannesburg, South Africa. Details: Terrapinn Holdings Ltd, First Floor, Modular Place, Turnberry Office Park, 48 Grosvenor Road, Bryanston 2021, South Africa. Tel: +27 11 516 4000; fax: +27 11 463 6000; e-mail: enquiry.za@terrapinn.com; website: www.terrapinn.com.

The solar show Africa 2015, March 24–25, 2015, Johannesburg, South Africa. Details: Terrapinn Holdings Ltd, First Floor, Modular Place, Turnberry Office Park, 48 Grosvenor Road, Bryanston 2021, South Africa. Tel: +27 11 516 4000; fax: +27 11 463 6000; e-mail: enquiry.za@terrapinn.com; website: www.terrapinn.com.

Interspill, March 24–26, 2015, Amsterdam, The Netherlands. Details: Reed Exhibitions Limited (UK), Gateway House, 28 The Quadrant, London W8 5TJ, UK. Tel: +44 20 80 80 28 38; fax: +44 20 80 80 28 38; e-mail: rxinfo@reedexpo.co.uk; website: www.reedexpo.com.

World heavy oil congress, March 24–26, 2015, Edmonton, Canada. Details: Dmg :: events, 6th Floor, Northcliff House, 2 Derry Street, London SW1E 5DR, UK. Tel: +44 20 7368 9300; fax: +44 20 7368 9301; e-mail: enquire@mgmexvents.com; website: www.powergridresilience.com.

China-Russia oil and gas 2015, March 25–26, 2015, Beijing, PR of China. Details: Argus Media Singapore Group, 50 Raffles Place, #10-01 Singapore Land Tower, Singapore 048623. Tel: +65 6496 9966; fax: +65 6533 4181; e-mail: asiaconferences@argusmedia.com; website: www.argusmedia.com/crc.

Georgian international oil, gas, energy and infrastructure conference and showcase, March 25–26, 2015, Tbilisi, Georgia. 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: www.giogie.com.
Monetary policies continue to impact oil demand growth

January 2015

The monetary policies of the world’s developed economies have been an influential driver of commodity markets since the onset of the global economic recession in 2009, according to the OPEC Secretariat in Vienna.

The Organization’s Monthly Oil Market Report (MOMR) for January said that the extraordinary monetary stimulus measures taken have increased monetary supply significantly, affecting commodity markets through three channels.

Firstly, it said, low yields in developed economies had led to increased capital flows into emerging and, to some extent, developing economies.

“This supported higher GDP growth in these countries and increased demand for commodities.”

Secondly, said the MOMR’s feature article, the low interest rate environment allowed for considerable investments to expand commodity production.

Finally, it said, inexpensive funding and concerns about higher inflation led to increased speculative and hedging investment flows into commodity markets, particularly in oil and gold.

The publication maintained that these measures supported commodity markets up to around the first half of 2013, after which they were negatively impacted by expectations of a tapering by the United States central bank, in combination with excess supply, decelerating inflation, and sluggish growth in the emerging economies.

“In contrast to other commodity markets, the oil market remained relatively stable up to the middle of last year, when it followed the downward trend of other growth-sensitive commodities, such as industrial metals.”

The MOMR pointed out that the policies of major central banks will remain an important factor to monitor in the current year.

An expected interest rate rise by the Fed by the end of the first half and contrary policies by the European Central Bank (ECB) and the Bank of Japan (BoJ) will continue to impact global economic growth.

“Given the inflation-dampening effect of the sharp decline in oil prices, central banks may have more flexibility in keeping or increasing interest rates and for pursuing other monetary policies,” affirmed the report.

It said that in the case of the ECB, more accommodative policies may have to be adopted in the face of deflationary pressure.

“These differing policies have already had a substantial effect on currency markets and thus impacted oil markets.”

The MOMR said the strong appreciation of the US dollar was one of the factors behind the recent decline in oil prices; however, the depreciation of the euro, the yen and some emerging market currencies has so far limited the positive impact on oil demand.

Furthermore, it said, an increase in US interest rates would make borrowing costs for different industries more expensive, including those for oil.

The MOMR observed that in the emerging markets, China’s central bank also recently lowered key interest rates in a push to support economic growth.

“With currently less inflationary pressure, this move and potentially further monetary supply measures are expected to support growth at above seven per cent, leading to rising crude oil demand.”

It said that, in India, the recent decline in oil prices has provided some room for the country’s central bank to lower its interest rate, in order to support the economy, potentially leading to higher crude oil demand.

“Some risk to oil demand growth in the emerging and developing economies might still come if the US central bank were to raise interest rates earlier or faster than currently anticipated, as this might lead to significant capital outflows from these countries, impacting their economic and oil demand growth.

“At the same time, structural reforms in the emerging and developing economies could also impact oil demand in 2015,” it added.
The OPEC Reference Basket averaged $59.46/barrel in December 2014, following a decline of $16.11 or 21 per cent. In annual terms, the Basket averaged $96.29/b in 2014, representing a decline of $9.58 from the previous year. ICE Brent in December plunged $16.36 to stand at $63.27/b, averaging $99.45/b for the year. Nymex WTI lost $16.52 to stand at $59.29/b in December, for a yearly value of $92.97/b. The Brent-WTI spread stood at $3.98/b.

World economic growth for 2014 and 2015 remains unchanged from the previous month at 3.2 per cent and 3.6 per cent, respectively. The OECD growth estimate is unchanged at 1.8 per cent for 2014, but the 2015 forecast has been revised up to 2.2 percent from 2.1 per cent. The forecasts for China and India remain unchanged at 7.2 per cent and 5.8 per cent in 2015, respectively.

Global oil demand is estimated to have grown by 950,000 b/d in 2014, representing an upward revision of 20,000 b/d from the previous month. The adjustment mainly reflects better-than-expected oil demand data from OECD America and China. In 2015, world oil demand is anticipated to rise by 1.15m b/d, following an upward revision of 30,000 b/d, due to expectations of higher oil requirements in OECD America and Other Asia.

Non-OPEC oil supply is estimated to have grown by 1.98m b/d in 2014, following an upward revision of 260,000 b/d from the previous report, driven by higher-than-expected growth seen at the end of the year. In 2015, non-OPEC oil supply is projected to grow by 1.28m b/d, representing a downward revision of 80,000 b/d from the previous report.

Output of OPEC NGLs and non-conventional liquids is expected to average 6.03m b/d in 2015, up from 5.83m b/d in 2014. In December, OPEC crude oil production averaged 30.20m b/d, according to secondary sources, an increase of 140,000 b/d over the previous month.

Product markets in the Atlantic Basin weakened in December as margins were affected by the drop in the gasoline and middle distillate cracks amid an oversupply of gasoline in the region. The Asian market experienced only a slight drop as increased distillate supplies were offset by winter seasonal demand and the positive performance at the top and bottom of the barrel.

Freight rates for dirty tankers saw mixed movements in December. VLCCs continued to realize the gains seen since the beginning of the fourth quarter of 2014, increasing by 16 per cent from the month before. The improvements seen in VLCC freight rates came as a result of an active market and high Asian tonnage demand. Both Suezmax and Aframax saw a negative performance, declining by nine per cent and 29 per cent, respectively, on average from a month earlier. OPEC spot fixtures dropped by 9.2 per cent from the previous month to average 11.63m b/d.

OECD commercial oil stocks fell in November by around 10m b to stand at 2,710m b. At this level, inventories were 20.3m b higher than the last five-year average. Crude indicated a surplus of 38.2m b, while product stocks remained 17.9m b below the five-year average. In terms of days of forward cover, OECD commercial stocks stood at 58.7 days, one day above the five-year average.

Demand for OPEC crude is estimated at 29.1m b/d in 2014, representing a revision of 200,000 b/d from the last report. In 2015, required OPEC crude is projected at 28.8m b/d, following a downward adjustment of 100,000 b/d.

The feature article and oil market highlights are taken from OPEC’s Monthly Oil Market Report (MOMR) for January 2015. 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.
Oil demand could benefit from drop in crude prices

The recent fall in international crude oil prices could spell good news for oil demand in the months ahead.

According to the OPEC Secretariat, global oil demand in 2015 is currently anticipated to rise by 1.17 million barrels/day.

However, its Monthly Oil Market Report (MOMR) for February points out that developments need to be monitored closely, particularly following the sharp drop in crude oil prices seen in recent months.

It noted that as prices drop, oil requirements are likely to respond positively, although this can be impacted by other factors.

For example, it said, in 2008, prices fell sharply starting in the summer with the onset of the financial crisis and the global economic recession, which also led to a deterioration of demand.

"This time the sharp fall in prices has been mainly driven by excess supply. As a result, lower prices are likely to help to accelerate the pace of oil demand growth," observed a feature article in the report.

The publication said that other factors can also impact the degree to which any acceleration in demand takes place.

In addition to economic growth, the adoption of energy policies and regulations can also influence oil requirements greatly, it said.

"These factors tend to vary considerably from one economy to another and, as a result, their impact will also differ."

The MOMR said a review of oil demand patterns going into 2015 bears this out. Preliminary data for United States oil demand shows a continuation of the positive momentum started in the fourth quarter of last year.

"Gasoline, in particular, remains a key driver behind the growth in US oil demand, largely as a result of lower oil prices."

The report affirmed that gasoline pump prices in the US currently average $2.07/gallon, down by $1.22 from a year earlier.

Preliminary data for January shows another significant rise in gasoline demand of 700,000 b/d, continuing the general positive trend seen in the previous three months.

The MOMR said that over this period, middle distillates have largely experienced the opposite trend, with preliminary data showing year-on-year growth falling for two consecutive months.

"Overall, US oil consumption has seen a noticeable rise and is expected to stay firm in the near term amid lower oil prices and as economic activities improve."

The publication said US oil demand growth is forecast to be around 180,000 b/d and could see further upward revisions as the situation continues to improve.

In OECD Europe, it said, the factors contributing to better oil demand in 2015 include the extremely low baseline relative to past years, along with the slight improvement in the overall economy.

Meanwhile, OECD Asia Pacific is also expected to see a contraction in 2015. A higher degree of fuel substitution in Japan, resulting from the expected re-start of some nuclear power plants, along with slower economic growth in that country, does not imply an optimistic outlook for oil demand in the region.

"Compared with the OECD Americas, the positive impact of lower oil prices is expected to be minimal in OECD Europe and the Asia Pacific."

"In the light of the improvement in economic growth, as well as crude oil market developments, the forecast for global oil demand growth may be subject to further upward revisions as the year progresses," the article stated.
MOMR oil market highlights ...  
February 2015

The OPEC Reference Basket ended January down $15.08 or 25 per cent to average $44.38/b, reaching its lowest value in six years as excess supply and weak demand continued to weigh on the crude oil market. ICE Brent ended January at $49.76/b, down by $13.51 from the previous month. Nymex WTI lost $11.96 to stand at $47.33/b. The Brent-WTI spread narrowed to $2.43/b.

World economic growth for 2014 remains unchanged, while the decelerating trend in emerging and developing countries has led to a revision in the 2015 forecast to 3.4 per cent from 3.6 per cent. OECD growth is unchanged at 1.8 per cent for 2014 and 2.2 per cent in 2015. China’s 2015 growth forecast has been revised to 7.2 per cent from 7.2 per cent, while India’s positive trend has lifted the 2015 growth forecast from 5.8 per cent to 6.0 per cent. Russia’s 2015 growth forecast has been revised from zero growth to show a contraction of 2.4 per cent, while Brazil is now expected to grow by 0.7 per cent in 2015, compared to 1.0 per cent previously.

Global oil demand growth in 2014 is expected to be around 960,000 b/d, broadly unchanged from OPEC’s previous monthly report. In 2015, world oil demand is projected to rise by 1.17m b/d slightly higher than in the previous report, mainly to reflect expectations of an uptick in oil requirements in OECD Americas.

Non-OPEC oil supply growth in 2014 has been revised up slightly to 1.99m b/d. This revision was mostly driven by higher output in the OECD, Brazil, Kazakhstan and China in the fourth quarter of 2014, partially offset by downward revisions from Azerbaijan, Other Asia Pacific, Australia and Mexico. In 2015, non-OPEC oil supply is projected to grow by 850,000 b/d, down by 420,000 b/d from the previous assessment. Output of OPEC NGLs is forecast to grow by 200,000 b/d to 6.03m b/d in 2015. In January, OPEC crude production decreased by 53,000 b/d to 30.15m b/d, according to secondary sources.

Product markets strengthened in the Atlantic Basin in January. Lower refinery runs supported light and middle distillate crack spreads in the US, while export opportunities lent additional support to the European market. In Asia, product markets strengthened slightly in January, as limited supplies of naphtha and fuel oil allowed margins to rise, despite the pressure of increasing gasoline and middle distillate supplies.

A general improvement in sentiment was seen in the dirty tanker market on the back of weather conditions, port delays and tight tonnage availability. Clean tanker freight rates improved East of Suez, but encountered a decline in the west, partially due to the weak medium-range tanker market. OPEC and Middle East sailings were higher than a month ago with arrivals in North America and West Asia increasing, while arrivals in Europe and the Far East fell from the previous month.

OECD commercial oil stocks declined by 18.5m b in December to stand at 2.678m b. At this level, inventories were 43m b higher than the five-year average. Crude showed a surplus of 78m b, while product stocks remained 35m b below the five-year average. In terms of days of forward cover, OECD commercial stocks stood at 58.6 days, 1.7 days higher than the five-year average.

Demand for OPEC crude is estimated at 29.1m b/d in 2014, unchanged from the last report. In 2015, required OPEC crude is projected at 29.2m b/d, following an upward adjustment of 400,000 b/d.
Sources: The netback values for TJL price calculations are taken from RVM; Platt’s; Secretariat’s assessments.

Upon the request of Venezuela, and as per the approval of the 111th ECB, BCF-17 has been replaced by Merey as of January 2009. The ORB has been revised.

<table>
<thead>
<tr>
<th>Crude/Member Country</th>
<th>2014</th>
<th>2015</th>
<th>Weeks 1-5/15 (week ending)</th>
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<tbody>
<tr>
<td></td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
</tr>
<tr>
<td>Arab Light – Saudi Arabia</td>
<td>105.74</td>
<td>106.30</td>
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<td>Basrah Light – Iraq</td>
<td>102.70</td>
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<td>Es Sider – Libya</td>
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<td>Girassol – Angola</td>
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<tr>
<td>Iran Heavy – IR Iran</td>
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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 15, 2005 (or 3W June), the ORB has been calculated according to the new methodology as approved by the 110th (Extraordinary) Meeting of the Conference. As of January 2009, the ORB excludes Minas (Indonesia).

* Upon the request of Venezuela, and as per the approval of the 111th ECB, BCF-17 has been replaced by Merey as of January 2009. The ORB has been revised as of this date.

1. Indonesia suspended its OPEC Membership on December 31, 2008.

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

Sources: The netback values for TJL price calculations are taken from RVM, Platt’s, Secretariat’s assessments.
Note: As per the decision of the 109th ECB (held in February 2008), the OPEC Reference Basket (ORB) has been recalculated including the Ecuadorian crude Oriente retroactive as of October 19, 2007. As per the decision of the 108th ECB, the basket has been recalculated including the Angolan crude Girassol, retroactive January 2007. As of January 2006, monthly averages are based on daily quotations (as approved by the 105th Meeting of the Economic Commission Board). As of June 16, 2005 (ie 3W June), the ORB has been calculated according to the new methodology as agreed by the 136th (Extraordinary) Meeting of the Conference. As of January 2009, the ORB excludes Minas (Indonesia).

Upon the request of Venezuela, and as per the approval of the 111th ECB, BCF-17 has been replaced by Merey as of January 2009. The ORB has been revised as of this date.
Table and Graph 3: North European market — spot barges, fob Rotterdam  

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<th>diesel ultra light</th>
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<th>fuel oil 1 per cent S</th>
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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  

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

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Source: Platts. Prices are average of available days.
Table and Graph 6: Caribbean market — spot cargoes, fob

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

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

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Source: Platts. Prices are average of available days.
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| Europe €       | 615                 | 615                  | 738                     | 182
| UK £           | 485                 | 485                  | 582                     | 123
| Americas $     | 814                 | 814                  | 977                     | 203
| Rest of world $| 949                 | 949                  | 1,139                   | 1,139

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