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THE ELEVENTH ARAB ENERGY CONFERENCE POSITIVE OUTCOMES CONTRIBUTING TO THE ENHANCEMENT OF ARAB ENERGY COOPERATION





The Cover



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ORGANIZATION OF ARAB PETROLEUM EXPORTING COUNTRIES (OAPEC)



The Organization of Arab Petroleum Exporting Countries (OAPEC) was founded on the basis of the agreement signed in Beirut, Lebanon on 9 January 1968 between the governments of Kingdom of Saudi Arabia, the State of Kuwait and the (then) Kingdom of Libya. The agreement stipulates that the Organization shall be domiciled in the City of Kuwait.

The principal objective of the Organization is the cooperation of the members in various forms of economic activity in the petroleum industry, the determination of ways and means of safeguarding the legitimate interests of its member countries in this industry, individually and collectively, the unification of efforts to ensure the flow of petroleum to its markets on equitable and reasonable terms, and providing appropriate environment for investment in the petroleum industry in member countries.

In 1970 the United Arab Emirates, the State of Qatar, the Kingdom of Bahrain and the Republic of Algeria joined the Organization, followed by the Syrian Arab Republic and the Republic of Iraq in 1972, Arab Republic of Egypt in 1973, then the Republic of Tunisia in 1982 (its membership was suspended in 1986). Any Arab country which derives a significant share of its national income from petroleum is eligible for membership in OAPEC upon the approval of three-quarters of the member countries, including all three founding members.



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HE AL RASHIDI: KUWAIT WILL RAISE OIL OUTPUT TO KEEP MARKET STABILITY

• OAPEC-Joint Ventures:

OAPEC has sponsored the creation of four companies: The Arab Maritime Petroleum Transport Company (AMPTC), established in 1972 with headquarters in Kuwait City, the Arab Shipbuilding and Repair Yard Company (ASRY) established in 1973 with headquarters in Bahrain, the Arab Petroleum Investments Corporation (APICORP) established in 1974 with headquarters in Khobar, Saudi Arabia, the Arab Petroleum Services Company (APSC) established in 1975 with headquarters in Tripoli, Libya.

OAPEC'S ORGANS

The Organization carries out its activities through its four organs:

- **Ministerial Council:** The Ministerial Council is the supreme authority of the Organization, responsible for drawing up its general policy.
- **Executive Bureau:** The Executive Bureau is composed of one representative from each of the member countries, drawing recommendations and suggestions to the Council, reviewing the Organization's draft annual budget and submitting it to the Council, it also adopts the regulations applicable to the staff of the General Secretariat. The resolutions of the Executive Bureau are issued by the majority of two-thirds of all members.
- **General Secretariat:** The General Secretariat of OAPEC plans, administers, and executes the Organization's activities in accordance with the objectives stated in the agreement and directives of the Ministerial Council. The General Secretariat is headed by the Secretary General. The Secretary General is appointed by resolution of the Ministerial Council for a tenor of three years renewable for similar period(s). The Secretary General is the official spokesman and legal representative of the Organization and is accountable to the Council. The Secretary General directs the Secretariat and supervises all aspects of its activities, and is responsible for the tasks and duties as directed by the Ministerial Council. The Secretary General and all personnel of the Secretariat carry out their duties in full independence and in the common interests of the Organization member countries. The Secretary General and the Assistant Secretaries General possess in the territories of the Organization members all diplomatic immunities and privileges.
- **Judicial Tribunal:** The protocol of the Judicial Tribunal was signed in Kuwait on 9 May 1978 and came into effect on 20 April 1980. The Tribunal is competent to consider all disputes related to the interpretation and application of OAPEC's establishment agreement, as well as disputes arising between two or more member countries concerning petroleum operations.



THE ELEVENTH ARAB ENERGY CONFERENCE POSITIVE OUTCOMES CONTRIBUTING TO THE ENHANCEMENT OF ARAB ENERGY COOPERATION

Under the high patronage of His Majesty King Mohammed VI of Morocco, the Eleventh Arab Energy Conference (AEC11) was held in Marrakesh, Morocco, from 1 to 4 October 2018. The theme of the Conference was “Energy and Arab Cooperation.” The Conference was chaired by HE Aziz Rabbah, the Moroccan Minister of Energy, Minerals, and Sustainable Development. Their Excellencies the Ministers of Petroleum, Energy, and Electricity, and the Heads of official delegations representing 12 Arab countries, in addition to senior officials of Arab organizations and institutions, and regional and international agencies have attended the prestigious event.

The Conference aimed at establishing an Arab institutional framework to review oil and energy issues in order to develop a pan-Arab perspective; coordinate relations among Arab institutions concerned with energy and development; harmonise energy policies with development issues; investigate present and future Arab energy requirements and the means of meeting them; identify and assess energy resources in the Arab countries, coordinate and enhance efforts towards developing these resources; as well as identifying and evaluating the impact of international energy policies on the Arab countries.

The Conference was organized by the Organization of Arab Petroleum Exporting Countries (OAPEC), the Arab Fund for Economic and Social Development (AFESD), the League of Arab States (LAS), and the Arab Industrial Development and Mining Organization (AIDMO), in addition to Morocco’s Ministry of Energy, which took on board the preparations for the Conference.

Over three days, the Conference discussions covered a number of issues including transformations in global oil and gas markets and their implications for Arab oil exports. The Conference underscored the importance of close follow up of such transformations while sparing no effort to make them serve our economies which depend greatly on oil revenues. This is in addition to continuing with energy price reforms in the domestic market. Also, the importance of expanding the use of renewables has been stressed in order to diversify energy resources to support oil resources to boost income through liberalising larger amounts of oil and gas for exportation.

The Conference also tackled energy security as a global partnership, which is one of the most important economic and political challenges currently. It called for a long-term global partnership between energy producers and consumers in a way that serves the interests of all active players in the energy market whether exporters, producers, or global energy companies.

Investment requirements to develop the energy sector in the Arab countries enjoyed special attention. Investment in energy projects under execution will reach about \$345 billion over the next 5 years. The oil sector accounts for the largest share of investments of about \$131 billion. The Conference indicated that oil and gas investments face major challenges due to their connection to oil prices. Also, oil projects funding face difficulties as a result of the deterioration of credit rating of some Arab countries. In this regard, the Conference recommended to support economic reforms, rationalise spending, and encourage the private sector to invest in petroleum projects.

The Conference also covered Arab and world energy resources: reality and future prospects. Arab countries have over 49% of the world’s conventional oil reserves, about 28% of the world’s natural gas reserves, and there are still more promising potentials to make more discoveries once an appropriate climate is created to develop investments in exploration and production. Therefore, the region is a strategic spot for global energy security. The Conference called for boosting cooperation and expertise

exchange between Arab countries.

Moreover, the Conference noted that petroleum downstream industries have gone through massive developments in the Arab countries and around the world over the past decade; mainly in establishing new highly-advanced refineries and upgrading existing one. However, the Arab refining industry needs more measures to catch up with the world's advanced standards. The Conference called for continuing to rely on natural gas as an economic and environmental alternative in light of the potential huge discoveries in the Arab countries.

As for Arab cooperation in electric power, the Conference called for accelerating the completion of legal and legislative frameworks for the establishment of a joint Arab electricity market, executing the roadmap endorsed by the Arab Ministerial Council for Electricity, cooperation between Arab countries to exchange information on power generation, transport, and renewables systems with continued update to make the most ideal use of the available capacities.

On energy demand management in Arab countries, the Conference noted an increase in energy consumption in the Arab world. It made recommendations to develop energy conservation and efficiency programs, reform energy pricing, work on a gradual lift of subsidies, and to replace current subsidies systems with social security networks directed mainly to protect those with limited income to improve their living-standards.

The Conference also tackled the issues of energy, environment, and sustainable development by reviewing the UNFCCC developments following the Paris Accord and their direct implications for international relations in general and Arab petroleum producing countries in particular as the new Accord obliges all party states (rich and poor/ developed and developing alike) to cut their emissions as per article 2 of the Accord. Also, the global target aims mainly to reach a long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels, while maintaining the efforts to limit the increase to 1.5°C. This calls for all countries to inject more money to this end.

The Conference underscored the Arab countries' continuous efforts, represented in the Arab Negotiating Group on Climate Change, to commit to their obligations endorsed by the Arab countries and their important role to maintain a pollutant-free environment while taking into consideration the measures to be adopted by the developed countries under the umbrella of the new Accord.

In the middle of these challenges, the Conference stressed the importance of having a unified, clear, and fixed Arab stance during the upcoming COP24 in December 2018 in Poland. Stress should be put on agreed principals on developmental issues like economic diversity, response measures, and financial and technical funding, as well as, differentiation between developed and developing countries, and common but differentiated responsibility.

While praising AEC11 positive and encouraging outcomes, OAPEC Secretariat General would like to express the consideration of its highest appreciation to His Majesty King Mohammed VI of Morocco for being the patron of the Conference, and laud Morocco for hosting the conference and supporting its success. HE Aziz Rabbah played a vital role in AEC11 success.

Lastly, we hope that the Arab region circumstances would allow for the implementation of the Conference recommendations which embody the Arab countries' ambitions towards economic and social development. Until the next AEC round, we hope that the Arab energy cooperation would witness further progress and growth.



THE ELEVENTH ARAB ENERGY CONFERENCE “MARRAKECH 2018” “ENERGY AND ARAB COOPERATION”



The Eleventh Arab Energy Conference (AEC11) was held in Marrakech, Morocco, from 1 to 4 October 2018 under the high patronage of His Majesty King Mohammed VI of Morocco. The theme of the Conference was “Energy and Arab Cooperation.”

The Conference was organized by the Organization of Arab Petroleum Exporting Countries (OAPEC), the Arab Fund for Economic and Social Development (AFESD), the League of Arab States (LAS), the Arab Industrial Development and Mining Organization (AIDMO), and the Moroccan Ministry of Energy.





HE Aziz Rabbah, the Moroccan Minister of Energy, Minerals, and Sustainable Development and the Conference Chairman, opened the Conference by a speech conveying the greetings of HM King Mohammed VI of Morocco, Patron of the Conference, to the ministers and members of the participating delegations, wishing the conference success.

The Minister indicated that the conference was a good opportunity to exchange views and explore the experiences of Arab countries in the energy industry. he called for boosting energy cooperation among Arab countries in a way that contributes to facing the challenges in this vital sector.

Concluding his speech, the Minister said he hoped that the conference working papers, panel discussions and technical sessions would come up with positive results and recommendations for the growth and development of the Arab world.

This was followed by the Conference organizers and sponsors' speech delivered by the Arab League (LAS) Assistant Secretary General Dr Kamal Hassan Ali, on behalf of LAS Secretary General HE Ahmed Abulghait. He conveyed the assurances of his highest consideration and appreciation to HM King Mohammed VI of Morocco for being the patron of the conference.

Dr Ali pointed out that AEC11 is held in light of accelerating developments in the Arab and international energy industry. He also touched upon the main energy indices in the Arab countries; oil's leading role in the energy system; and cooperation in its different aspects. He Ali stressed that all topics will be discussed in a scientific way which makes this conference a platform for fruitful research and a cornerstone in the progress of the Arab economic and developmental cooperation.

Their Excellencies the Ministers of Petroleum, Energy, and Electricity, and the Heads of official delegations representing 10 Arab countries, in addition to senior officials of Arab organizations

and institutions, and regional and international agencies have attended the prestigious event. A number of energy experts, representatives of Arab and international companies and petroleum research centers also took part in the Conference.

Their Excellencies the Ministers and Heads of delegations have spoken in the opening session displaying the current situation and future trends of the energy sector and



the development plans in their respective countries.

During its discussion panels and technical sessions, the Conference tackled latest world market developments, and investment approaches required for developing the energy sector while maintaining the environment and achieving sustainable development. The Conference also considered issues relevant to Arab

and international energy resources, their consumption in the Arab countries, and their conservation opportunities, in addition to electricity interconnection among Arab countries, technological developments and their implications for this important sector.

The Conference concluded by issuing a communiqué including a group of recommendations and conclusions drawn up from the Conference sessions.





HE AZIZ RABBAH: AEC11 IS A GOOD OPPORTUNITY TO BOOST ECONOMIC COOPERATION AMONG ARAB COUNTRIES

In his speech before AEC11, Moroccan Energy, Minerals, and Sustainable Development HE Aziz Rabbah conveyed the greetings and good wishes of HM King Mohammed VI of Morocco, the Conference patron.

The minister welcomed the participating delegates and thanked the organisers and sponsoring organisations for their efforts. He said that the AEC11 is a good opportunity to boost economic cooperation among Arab countries, especially on energy, beyond any political disputes. It is also a good opportunity to exchange expertise and benefit from Arab and international energy experiences.

HE Rabbah has also tackled the current status and future prospects for the energy sector in Morocco. He clarified that projected investment in the Moroccan energy sector until 2030 is estimated at around \$ 40 billion, allocated for power generation from renewables, which represents a huge investment opportunity for the private and public sectors alike, as well as, the international companies.

He added that Morocco spares no effort in developing legislations and economic regulations in order to provide appropriate climate and framework for local and foreign investors.

HE Rabbah indicated that the energy sector in Morocco is characterised by high energy demand dominated by the fossil fuel sources (oil and gas). He clarified that Morocco's total primary energy consumption was about 2.8 million tons in 2017, 55.9% of which depends on petroleum resources followed by coal with 25.5%.

He said that renewables like wind, hydroelectricity and solar energies' contribution was 5.8% in 2017, a good percentage when compared to past years. The minister concluded his speech hoping the conference would come out with scientific and practical recommendations to contribute to the development of the Arab energy industry.



ABDUL RAHMAN ABDUL KAREEM: ARAB COUNTRIES STAND A GOOD CHANCE TO CONTRIBUTE TO BALANCING THE WORLD'S OIL MARKETS

Mr Abdul Rahman Abdul Kareem, Advisor for Company Affairs at KSA's Energy, Industry and Mineral Resources Ministry, delivered a speech on behalf of the Minister, HE Eng. Khaled Al Falih. In his speech, he stressed that the Arab oil producing countries stand a good chance to play a positive role in stabilising the oil market and industry, as well as, boost international cooperation in this regard. This goes hand in hand with working together on making oil more efficient, better used, and more environment-friendly through utilising applied research, advanced technology, and cooperating to develop them.



He reiterated KSA's role in maintaining a positive balance between the interests of producers and consumers in the world's energy market, being committed to enhancing market stability, and helping to handle any shortage in supplies.

He said "as for the energy sector, the kingdom's 2030 vision launched 3 years ago is based on a number of main strategic pivots including diversifying the energy resources mix, making it more effective but less harming to the environment, and boosting power generation efficiency."

Mr Abdul Kareem drew the attention to KSA's efforts in boosting the oil industry's domestic assets (man and resources alike) in order to achieve the highest possible revenues. This is in addition to efforts on building the integrated value chain that covers all oil sectors from exploration and production, through processing and transportation and refining, to product development to be introduced to end consumers.

He indicated that Arab countries have many promising opportunities to cooperate in developing the oil and gas industry and use advanced technology in all sectors of the industry including for example developing Arab skills in exploring and extracting oil and gas reserves.



HE MOSTAFA GUITTONI: PROMISING ENERGY PROJECTS IN ALGERIA

In his speech at the conference, the Algerian Energy Minister HE Mostafa Guittoni welcomed the AEC active and vital role in providing a platform for dialogue on energy issues regionally and internationally. He gave a glimpse on the achievements and promising investment opportunities in the Algerian energy sector. The minister clarified that exploration efforts have succeeded in making about 25 oil and gas discoveries in the past 10 years. He said Algeria produces around 150 million tons of OE/Y and has 4 LNG complexes with a capacity of 56 million cubic metres/y, 6 refineries with a capacity of more than 30 million tons/y, to be upgraded to 50 million tons/y on the medium run.

HE Guittoni said that power generation capacity in Algeria has reached 18 thousand MW, while 8 new plants to boost the electrical power system are under construction in order to reach 25 thousand MW by 2025. The minister clarified that electrical interconnection average in Algeria has reached 99% compared to 60% for gas on a national level.

He also introduced Algeria's renewables national program which is expected to raise Algeria's power generation capacity from renewables to 22 thousand MW by 2030. He also highlighted Algeria's efforts that resulted in producing 400 MW from solar energy.



HE MOHAMMED AL SADA: QATAR'S ENERGY STRATEGY 2030

In his speech at the conference, Qatar's Energy Minister HE Mohammed Al Sada reviewed the main features of Qatar's Energy Strategy 2030, which aims at making the most ideal use of the natural resources, facing developmental challenges, and developing operational the capacity of Qatar's energy companies.

He clarified that the energy strategy is based on many factors including efficient use of available natural resources, continuous update of legislations in force to keep in pace with the different developments, maximising partnership between the public and private sectors, focusing on developing skilled labour's capabilities in the local labour market, and realising financial stability through cutting costs by securing funding required for the various projects in the country.

HE Al Sada indicated that Qatar's energy vision faces many domestic challenges including water distillation residues and air pollution resulting from the process, increasing CO2 emissions, rising sea levels, and sewage water treatment effects on environment.

The minister also tackled global challenges including: changing hydrocarbon prices; fluctuating demand rates and their impact on the country's income and project economics; reducing operational costs while maintaining safety and advanced technology; production efficiency; assets safety; in addition to attracting skilled labour to maintain Qatar's status in the global LNG market.

HE Al Sada clarified some of Qatar's energy strategy 2030 goals including: expanding the use of renewables, especially the solar energy, as Qatar targets 700-750MWH to feed its prime grid. He stressed that Qatar works hard to maximise the hydrocarbons value through increasing operational efficiency, reducing associated gas flaring, company mergers and attracting specialised experts in the energy sector.

The minister expected Qatar's LNG production to grow to 110 million tons/year by 2024. He then gave a glimpse on Qatar's efforts to develop downstream industries (refining and petrochemicals) and power generation sectors.





HIS EXCELLENCY AMBASSADOR DR KAMAL ALI AEC11 ORGANISERS AND SPONSORS SPEECH

The Conference organizers and sponsors' speech was delivered by the Arab League (LAS) Assistant Secretary General Dr Kamal Hassan Ali, on behalf of LAS Secretary General HE Ahmed Abulghait. He conveyed the assurances of his highest consideration and appreciation to HM King Mohammed VI of Morocco for being the patron of the conference that is held for the first time in Morocco.

He also congratulated HE Rabbah on chairing the conference. He then moved on to present AEC's historic development and goals.

In his speech, HE Dr Kamal gave an overview of the Arab energy industry explaining that the efforts of the Arab countries in developing their energy resources were not exclusive to oil and gas. These countries used these resources to generate electric power too.

Moreover, he pointed out to the ongoing preparations to hold the 11th Arab Economic and Social Development Summit scheduled for the beginning of 2019 in Beirut, Lebanon. He highlighted the energy-related issues like supporting the Arab joint electricity market, which is based on having a legislative framework, solid institutional outline, together with an integrated infrastructure. HE Dr Kamal indicated that an MOU to establish an Arab joint electricity market has been signed by 16 Arab countries in April 2017. It is expected that the market's foundation phase would be completed by the end of 2019 in collaboration with the Arab Fund for Economic and Social Development and the World Bank. The issue will be on the Arab Summit agenda in order to endorse a resolution supporting the Arab Electricity Ministerial Council efforts and measures in this regard; as well as, invite the Arab countries to endorse the roadmap agreed by the Council's ministers through signing the MOU.

The other issue is the Arab sustainable development strategy 2030; an amended version of the Arab strategy on developing the use of renewables 2030 endorsed by the 3rd Arab Economic and Social Development in Riyadh in 2013. The Arab Sustainable Energy Strategy 2030-2014 has been drafted according to an integrated vision based on the concept of sustainable energy development as part of the goals of the global agenda on sustainable development 2030 and in light of the announced energy policies in the Arab countries.

The goals of the strategy focused on securing easy and reliable access to modern energy services to all sectors of the society, increasing the contribution of renewables in the energy mix, and adopting effective measures on energy conservation and improving its efficiency.

He concluded by saying that the AEC11 organisers and sponsors work hard to come out with tangible results and recommendations to be conveyed to Arab decision makers.

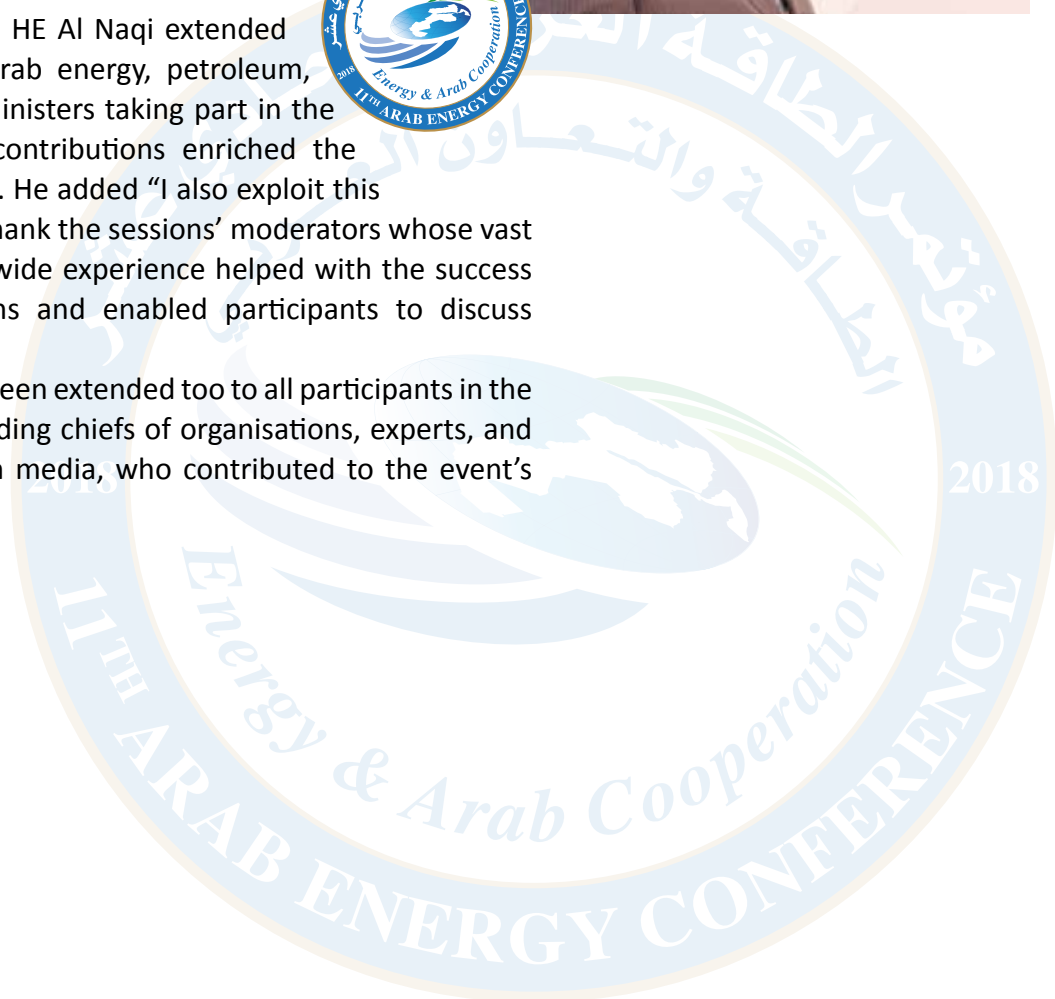


HE ABBAS AL NAQI JOINT EFFORTS CONTRIBUTED TO THE AEC11'S SUCCESS

In his speech at the AEC11 closing ceremony, OAPEC Secretary General HE Abbas Al Naqi expressed sincere thanks to HM King Mohammed VI of Morocco for having the AEC11 under his high patronage, which reflected on its success.

He also thanked Morocco's Energy, Mines, and Sustainable Development Minister and AEC11 Chair HE Aziz Rabbah for his wise management of the conference amid a busy schedule. HE Al Naqi extended thanks to the Arab energy, petroleum, and electricity ministers taking part in the event as their contributions enriched the AEC11's sessions. He added "I also exploit this opportunity to thank the sessions' moderators whose vast knowledge and wide experience helped with the success of these sessions and enabled participants to discuss relevant issues."

Thanks have been extended too to all participants in the conference including chiefs of organisations, experts, and Arab and foreign media, who contributed to the event's success.





Ministerial Session 1



THE TRANSFORMATIONS IN GLOBAL OIL AND GAS MARKETS AND THEIR IMPLICATIONS FOR ARAB OIL EXPORTS

Date: 1 October 2018

Chair: HE Dr Mohammed Al Sada, Energy & Industry Minister, Qatar

Panel: HE Eng. Tarek El Molla, Petroleum & Mineral Resources Minister, Egypt

HE Mustafa Guittoni, Energy Minister, Algeria

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

HE Ms Peg Mackey, Senior Energy Analyst, International Energy Agency

Dr Bassam Fattouh, Director, Oxford Institute for Energy Studies (OIES) presented the session's background paper analysing major transformations in the oil and natural gas markets and assessing their potential impacts on the Arab economies in general, especially the Arab energy sector. The paper also stated domestic developments that led to the reformation of the energy sector in a number of Arab countries including: energy reform policies, gradual lift of subsidies, and growing reliance on renewables in the consumed energy mix in general.

Moreover, the Chair tackled some main indicators in the energy industry including:

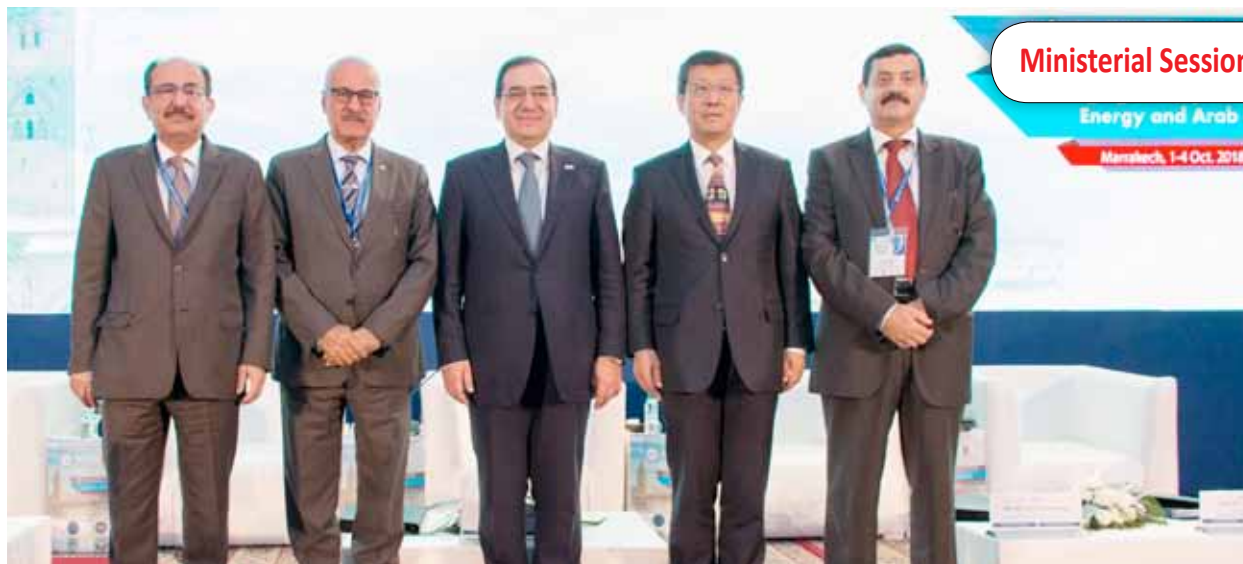
Global crude oil output is about 100 million b/d, 32.5 million b/d of which produced by OPEC countries, and about 32% by OAPEC countries

OPEC estimates that projected demand for oil

in 2023 will hit 104 million b/d, and will continue to grow up to 113 million b/d by 2040. This calls for injecting huge investments in the industry to reach the said output. According to OPEC projections announced during Algeria meeting in September 2018, maintaining market balance requires very huge investments of no less than \$11 trillion from 2018 to 2040.

On his part, HE El Molla reviewed the current oil market developments stressing the importance of collective collaboration to achieve price balance and market stability, as well as, ensure investment flow to help continuing with exploration, discovery, and development in a way that serves the interests of all parties. He underscored his country's keenness on cooperation with all OPEC and non-OPEC producers to achieve the aspired stability. HE El Molla mentioned the important role played by OPEC member countries in achieving oil and gas stability in the markets in light of their huge potentials in terms of exports and output.

HE Guittoni introduced Algeria's experience in reconsidering energy subsidies and directing these subsidies to support the economy and its sustainability. He also touched upon supply and demand and the importance of cooperation between producers and consumers on the one hand, and between all producers on the other hand.



Ministerial Session 2

Energy and Arab C

Marsa'ch, 1-4 Oct. 2018

ENERGY SECURITY AS A GLOBAL PARTNERSHIP

Date: 2 October 2018

Chair: HE Tarek El Molla, Minister of Petroleum and Mineral Resources, Egypt

Panel: HE Suleiman Al Herbish, Director-General, OFID

Dr Ibrahim Al Muhanna, Consultant, KSA
HE Dr Sun Xiansheng, Secretary General, International Energy Forum (IEF), presented the session's background paper.

The Chair underscored the importance of global partnership in securing energy supplies at balanced prices for both producers and consumers. It has become an urging need that dictates cooperation and collaboration by all parties to ensure the flow of supplies which support the countries' economics. He also stressed the importance of drawing a clear roadmap that targets coordination and cooperation on oil and gas issues, as well as, defining required goals and mechanisms to secure future energy supplies.

Key topics discussed also included:

Energy security as a concept from the perspective of producing and exporting countries versus the perspective of importing and consuming countries, especially oil and gas (the biggest and most important energy sources)

Risks threatening energy security, including geological, technical, economic, geopolitical, and

environmental factors

Role of cooperation and coordination in achieving energy security

HE Dr Xiansheng stressed the importance of cooperation and dialogue between producers and consumers, clarifying that hydrocarbon energy (oil and natural gas) would remain basic in the world's energy mix in spite of the developments in renewables.

On his part, HE Al Herbish talked about securing energy services in the Arab World and OFID Fund's role in providing some practical solutions. He pointed out that energy is the drive behind economic growth and social advancement, as it plays a basic role in the Arab countries' economic integration and growth to face surrounding inner and outer challenges.

Dr Al Muhanna reviewed the concept of energy security and its importance for rich and poor countries alike. He stressed the importance of having energy surplus in some countries, especially KSA, due to its active role in laying the foundations of security and stability in the petroleum market.

He also underscored the importance of international cooperation and coordination to realise energy security, pointing out that some eminent global economic problems, like trade wars between major players, pose a threat to the global economy and energy security that cannot be handled separately.



Ministerial Session 3



INVESTMENT REQUIREMENTS IN ARAB ENERGY SECTOR

Date: 2 October 2018

Chair: HE Dr Mohammed Weld Abdel Fattah, Oil, Energy, and Mines Minister, Mauritania

Panel: Dr Aabed bin Abdulla Al Saadoun, Chairman, Arab Petroleum Investments Corporation (APICORP)

Dr Imed Limam, Economic Advisor, AFESD

Dr Ahmed Ali Attiga, Chief Executive Officer, Arab Petroleum Investments

Corporation (APICORP), presented the background paper. He talked about investment in the Arab energy sector: reality and future. He also tackled the most significant challenges facing the sector.

Dr Attiga said it was expected that the MENA region would enter into a number of energy projects in spite of the fluctuating investment projections in the region, as \$345 billion have been allocated for ongoing projects, and additional \$574 billion for developmental works. He clarified that KSA is leading the energy sector in the region, along with other GCC countries.

Dr Attiga also reviewed:

- Challenges resulting from the close connection between energy investments and oil price fluctuations
- Difficulties in funding some energy projects in the region due to lowering some Arab countries' credit rating, as well as, the region's political and economic concerns that raise the investors' state of alarm

He hoped that structural reforms would continue in the region's economies even if happened at a slow

pace, as they would shape a sustainable framework for the economy's evolution, whether in size or quality.

The Chair on his part tackled the issue of energy investments in the Arab countries and the required mechanisms for their sustainability; most importantly:

- Endorsing legislations, strategies, and mid-term and long-term plans to encourage investment
- Including renewables in the energy mix while nationalizing their technologies in collaboration with the private sector
- Developing the governmental administrative system, and promoting good governance and the use of technology

The minister also gave an overview of the energy industry in Mauritania and the efforts to attract giant global energy companies to do business there.

Dr Al Saadoun on his part tackled energy investment challenges and opportunities in the Arab region saying that Arab countries have various investment opportunities, especially in the electricity sector. The demand for electricity has grown between 7% and 8%/year, which calls for injecting \$260 billion of investments to produce 117 GW from conventional energy resources, and about 70 GW from renewables to keep in pace with the growing demand for electrical power.

Dr Limam talked about the most important energy investment challenges in the MENA region. He touched upon international factors affecting investment; the impact of Arab countries' financial situation on funding the energy industry; and the close ties between foreign investments in the Arab countries and oil prices.



Technical Session 1

ARAB AND WORLD ENERGY RESOURCES: REALITY AND EXPECTATIONS

Date: 2 October 2018

UAE's Energy and Industry Ministry Under Secretary and its Representative at OAPEC Executive Bureau HE Dr Matar Al Neyadi chaired the first technical session. He introduced the session by reviewing the role of modern technology in: the development of energy industry especially petroleum (like shale oil and gas production); maximising the use of sour gas and renewables as complementary resources; electricity interconnection projects between countries; in addition to the transportation sector in terms of growing use of electrical vehicles and those powered by natural gas.

The session included 4 technical papers. Eng. Torki H. Hemsh, OAPEC's Petroleum Expert in Exploration and Production, presented the first paper titled the "Arab and World Energy Resources", which tackled the main features of the world energy consumption, in addition to the Arab and world's proven oil and gas reserves. The paper concluded that the Arab World has a significant position in supplying the world with energy since the majority of projections show that oil and natural gas would remain on top of the energy mix beyond the year 2040, with a stake of more than 50%.

Dr Majid A. Al Moneef presented the second technical paper on the "Petroleum and

Transformations of the Global Energy System". He tackled the influence of the trade system on oil; the energy system transformations and their impact on oil trade and investments. This includes energy policies in consuming countries especially China, where the impact of energy transformations is expected to be more visible. The paper also introduced options available for Arab countries to benefit from the current transformations in the energy industry.

The third paper was presented by Mr Walter Suzart, Technology Leader/ Technical Advisor, Halliburton, who spoke about "Managing Control of Naturally Fractured Reservoir During the Hydraulic Fracture."

Dr Mohamed Farahat, Advisory Engineer from the Arab Fund for Economic and Social Development, presented the fourth paper titled "Renewable Energy Resources in the Arab World and their Uses in Electric Power Generation." The paper introduced the world's renewables and their specifications and uses in power generation. It also tackled the Arab countries' announced goals on expanding power generation by using these resources, a glimpse on the planned and ongoing projects, and the most significant challenges in establishing renewables-powered electricity generation plants.



Technical Session 2



PETROLEUM DOWNSTREAM INDUSTRIES IN ARAB COUNTRIES AND THE WORLD

Date: 2 October 2018

Dr Samir Al Kotob, Engineering Consultant, Arab Fund for Economic and Social Development (AFESD), chaired the second technical session. He started by giving an overview on the development of the petroleum industry and the role of downstream industries in maximising the importance of petroleum industry and its vital economic role in the Arab countries.

This was followed by the first technical paper presented by Eng. Imad Makki, Senior Refining Expert, Organization of Arab Petroleum Exporting Countries (OAPEC), on the “Refining Industry in Arab Countries and the World: Challenges & Opportunities.” The paper reviewed the main features of the oil refining industry in the Arab countries and the world tackling the current situation and future challenges. It made a number of conclusions, most importantly, underscoring the importance of providing full support for the refining industry in the Arab countries through utilizing global expertise.

The second paper was presented by Dr Abdulwahab Al Sadoun on the “Features and Trends of the Petrochemicals Industry in the GCC, Arab Countries and the World.” It gave an overview of the petrochemicals industry, with special focus on the most important developments and projects in the GCC and Arab countries. He also tackled integration between refining and petrochemicals industries, and the economic advantages of such projects.

Dr Lamya Abu Shahba from the Egyptian Natural Gas Holding Company (EGAS), presented the third paper on the “Arab and World Natural Gas Industry:

Egypt as a Regional Hub for Gas Trading.” The paper gave an overview of the natural gas industry development in the Egyptian market, which is one of the biggest natural gas markets in the region. It also highlighted the most important promising gas discoveries in Egypt and the Mediterranean during 2016-2018, which resulted in drawing a comprehensive strategy to develop the whole sector and boost the benefits of these discoveries. This was complemented by executive measures and ongoing projects to transform Egypt into a regional hub for gas trading.

Dr Mamun Absi Halabi presented a paper in collaboration with Dr Saad Okasha and Dr Hassan Qabazard, on “Maintaining the Competitive Edge of Arab Petroleum Energy Resources in a Rapidly Changing World Energy Scene.” He started by underscoring the leading position of the Arab petroleum industry; major developments in the world’s energy industry in the past decade, especially shale oil and gas and renewables; and their implications for the oil and gas industry in the Arab producing countries. The paper made a number of conclusions, including that the oil industry will maintain its leading position in the short and medium terms. In order to keep this position, the Arab petroleum industry should keep in pace with global technological developments, especially in the downstream industry and transportation. The paper expected oil demand to be affected by electrical vehicles by 2050. It called for more support for Arab petroleum research institutions due to their role in providing technological solutions for the energy and petroleum industry.

Technical Session 3



ARAB COOPERATION IN ELECTRIC POWER FIELD

Date: 3 October 2018

Mauritania's Oil, Energy, and Mines Minister HE Dr Mohammed Weld Abdul Fattah chaired the third technical session on the nature and components of the Arab electrical interconnection project, which aims at connecting three unified Arab electricity grids including: The Octal Electrical Interconnection project, GCC Interconnection project, and the Maghreb Interconnection project.

Three technical papers were presented at the session. Dr Jamila Mattar from the Arab League presented a paper on the agreements on electrical energy exchange among Arab Countries. She started by giving an overview of the electrical interconnection projects between Arab countries and their economic importance as part of the Arab integration projects. She also talked about the reality of the Arab electricity sector and the main features of the joint Arab electricity market. She called for gathering momentum and support for the Arab electricity market, whether in terms of legislative or institutional framework, while expecting to complete its establishment phase by 2019, in collaboration with the Arab Fund for Economic and Social Development and the World Bank.

The second paper was presented by Dr Mohamed Yusuf Al Hamad from the GCC Interconnection Authority, on "Expanding the Gulf Cooperation Council's (GCC's) Electric Power Interconnections beyond the GCC Electrical Grid System and

Establishing Electric Power Regional Trade Markets." The paper reviewed the GCC's Electric Power Interconnection project and its expansion plans to include other Arab countries, as well as, Africa and Europe. The paper also tackled the availability of renewables to be used in this project.

On his part, Dr Samir Al Kotob from the Arab Fund for Economic and Social Development (AFESD) presented the third paper on "The Role of Arab Electric Interconnections in Maximizing the Exploitation of Generated Energy in Non-Dispatchable Renewable Energy Units." The paper tackled the results of a secondary study on comprehensive interconnection prepared by the Fund in 2013 to assess the benefits of Arab electrical interconnection grids within 2 groups of Arab countries; the first includes: the Maghreb (Morocco, Algeria, Tunisia) and the second includes Egypt and Jordan.

The lecturer also talked about types of electricity consumption in the Arab countries; heavy consumption during peak times (in light of power plants response challenges); the limited capacity of power grids and the need to upgrade them with the latest technology in terms of transfer, measure, and programming. He added that healthy electrical grids should be flexible and have the ability to respond effectively to increasing electricity demand under the pressure of change and future challenges. This is in addition to reliable electrical interconnection in terms of sustainability and continuity.



Technical Session 4



ENERGY DEMAND MANAGEMENT IN ARAB COUNTRIES

Date: 3 October 2018

Dr Majid A. Al Moneef chaired the fourth technical session that included three technical papers.

Mr Abdulfattah Arefi Dandi from OAPEC presented the first paper on the “Arab Energy Demand Outlook 2040”. The paper analysed the patterns and trends of energy consumption in the Arab countries between 1980 and 2017, and the main influencing factors on consumption like the economic and population growth, as well as, domestic energy prices. It also aimed at estimating total consumption of energy resources until 2040 through establishing economic patterns that conform to energy conditions and available data in the Arab countries. The paper concluded by a number of recommendations including the importance of endorsing balanced policies that focus on domestic fuel price reforms, gradual lift of governmental energy subsidies simultaneously with taking measures to mitigate the impacts of such steps to compensate families of limited income and protect them from possible inflation shocks. This is in addition to stressing the importance of using renewables as complementary energy resources (not as alternatives for oil and gas) and the necessity of improving energy efficiency in the Arab countries.

The second paper was presented by Dr Chadi Abdalla from the International Monetary Fund (IMF) titled “Energy Subsidies Reform Policies in

Arab Countries”, which stated that energy reform policies in the MENA region have contributed to providing low fuel prices even in light of the recent increase in prices compared to other international groups. Energy has been treated as a tool of wealth distribution to the members of the society. The paper also indicated that energy subsidies policies in the region had various negative impacts on the region’s economies, especially the pressure on these countries’ public budgets. These policies encouraged excessive consumption of energy in a way that could drain natural resources. They also resulted in losing appetite for investment in energy efficiency and renewables. The paper explained that the countries in the region are facing real difficulties in implementing some energy subsidies policies and fuel price increases, which started back in 2014. The paper also gave an overview of the energy subsidies policies in the Arab countries and some foreign countries.

Dr Mohamed Salah Elsobki from the Faculty of Engineering, Cairo University, presented a paper on “Improving Energy Efficiency in the Industrial Sector in Arab Countries”. It tackled the issue of securing the existence of energy resources while reducing the state’s subsidies without affecting the economic and industrial growth through proposing an incentive mechanism to raise energy efficiency in the industrial sector.

Technical Session 5



ENERGY, ENVIRONMENT, AND SUSTAINABLE DEVELOPMENT

OAPEC Secretary General HE Abbas Ali Al Naqi chaired the session on 3 October 2018. He started by referring to the UN member countries' endorsement of the 17 sustainable development goals (2016-2030) on 25 September 2018. The goals fall under the basic sustainable development economic, social, and environmental dimensions in order to pave the way to solve the problem of poverty, food security, energy, and climate change.

HE Al Naqi indicated that the seventh goal read "ensuring that everyone has access to modern, reliable, and sustainable energy at affordable costs." He explained that the Arab region has large oil and gas reserves estimated at about 716.3 billion barrels of oil (or about 48.4% of the world's total) and about 53.5 trillion cubic metres of gas (or about 27.2% of the world's total) by the end of 2017. He added that many studies and projections confirm that fossil fuel would maintain its status in the energy mix for long decades to come.

HE Al Naqi reiterated the world's interest in climate change issues and their potential

impacts, therefore, countries started intensifying efforts to mitigate and adapt to these issues.

In the same vein, the Arab countries have signed and endorsed the UNFCCC, Kyoto Protocol, and most recently the Paris Accord in 2015 during the COP 22 due to these agreements' importance, as well as, the possibility of their influence over fossil fuel demand, particularly oil and gas, on the long and medium run (in terms of restricting fossil fuel use).

Three technical papers have been presented at the session. Morocco's Secretary of State for Sustainable Development HE Dr Nuzha Al Wafi presented the first paper titled "Sustainable Development 2030: a case study on Morocco." The paper focused on three basic pivots: preparing the national sustainable development strategy; the strategic vision and sustainable development bets; and requirements for the national sustainable development strategy. The lecturer pointed out that Arab countries, like the rest of the world, are required



to implement the Paris Accord and the sustainable development goals. She clarified that Morocco is among the leading countries in sustainable development in connection to environment and climate change. She said that the year 2019 will see Morocco adding new constitutional concepts to the citizens' environmental and sustainable development rights. HE Al Wafi stressed the importance of separating economic development from the excessive exploitation of natural resources. She explained that Morocco's national sustainable development strategy comprises of transforming into a comprehensive green economy by 2030.

The second paper was presented by Dr Mohammed Al Sayyad, Advisor at the Oil & Gas Holding Company (Nogaholding) in Bahrain on the "Developments in UNFCCC after Paris Agreement". He gave a historic background on: the UNFCCC following the Paris agreement; the orientation of states and groups and economic blocs on the progress of the post-Paris agreement negotiations; the extent of the impact of the measures taken to tackle global warming (including OAPEC countries); NDCs;

global agreement on low-carbon economy; the impact of energy policies in main consuming and producing countries post-Paris agreement 2015 on the world energy mix; the ambitious vision of the Paris agreement on diverting growth tracks in light of NDCs'; and the Arab countries' opportunities in light of activating these initiatives to achieve sustainable development.

Dr Ahmed Badr, Executive Director, Regional Center for Renewable Energy and Energy Efficiency (RCREEE) presented the third paper on the "Role of IOCs in the De-Carbonization Process using RE and EE, and the Challenges they Face." He reviewed the IOCs' efforts in mitigating petroleum industry's emissions by increasing investments in clean technology and energy efficiency in response to growing global pressure on reducing greenhouse emissions on the one hand and mitigating climate change impacts on the other hand. This is in addition to reducing operating costs to maintain competitiveness margin with renewables. The paper also gave an overview of the challenges and obstacles facing global oil companies in executing clean technology projects.



Closing Session

The closing session of the Eleventh Arab Energy Conference (AEC11) was held on 3 October 2018. Morocco's Secretary of State for Sustainable Development HE Dr Nuzha Al Wafi chaired the session on behalf of HE Aziz Rabbah, the Moroccan Minister of Energy, Minerals, and Sustainable Development and the Conference Chairman.

OAPEC Secretary General HE Abbas Ali Al Naqi, LAS Assistant Secretary General Dr Kamal Hassan Ali, AFESD Engineering Consultant Dr Samir Al Kotob, and Director of Mineral Resources at AIDMO Mr Abdul Hamid Thameri took part in the session.

HE Al Wafi started the session by expressing Morocco's pride for hosting the AEC11 in light of the accelerating developments of the energy industry on Arab and international levels. She welcomed hosting more Arab events in Morocco in the future.

On his part, HE Al Naqi gave a closing speech on behalf of the organising and sponsoring organisations. Then, the conference communiqué was delivered by Mr Abdul Kareem Ayed, Director of Information and



Library Department at OAPEC.

HE Al Wafi then delivered a speech on behalf of HE Rabbah thanking all participating countries, organisations, companies, and Arab and international research centres, as well as, the conference organizing committee for their sincere efforts in preparing for and organizing the conference in a way that contributed to its success.

After that, Mr Ayed read a cable that was sent from HE Rabbah to His Majesty King Mohammed VI on behalf of their excellencies the Arab petroleum, oil, energy, and electricity ministers and delegations that participated in the conference, in which they expressed their ample gratitude for the hospitality and warm welcome they received in Morocco.



151ST MEETING OF OAPEC EXECUTIVE BUREAU & OAPEC SCIENTIFIC AWARD 2020 NEWS

OAPEC Executive Bureau held its 151st Meeting on 1 October 2018 in Marrakesh, Morocco. It was chaired by HE Dr Matar Al Niyadi, Undersecretary at the Energy and Industry Ministry/ UAE's Representative at the Executive Bureau. UAE is president of the current round 2018.

His Excellency the Chairman opened the meeting welcoming Their Excellencies the members of the Executive Bureau and wishing them a pleasant stay in Morocco. His Excellency the Chairman extended thanks to Morocco for the hospitality and warm welcome. He also thanked OAPEC Secretariat General for arranging the meeting.

On his part, OAPEC Secretary General HE Abbas Ali Al Naqi welcomed the conveners and thanked Morocco for hosting the Organization's meetings while wishing success for this event.

He then reviewed the main discussion points on the agenda: OAPEC's 2019 projected budget (Secretariat General and Judicial Tribunal) and its activities in 2018, as well as, specifying OAPEC Scientific Award 2020's topic.

Environmental research relevant to petroleum and energy has been chosen as a topic for the 2020 Award.

The next meeting will be held in Kuwait on 20-21 December 2018, followed by the 101st Meeting of OAPEC Ministerial Council.

OAPEC JOINT VENTURES' 47TH COORDINATION MEETING



OAPEC Secretariat General held the 47th Coordination Meeting for OAPEC Joint Ventures on 4 October 2018 in Marrakesh, Morocco. The meeting was chaired by HE Abbas Ali Al Naqi, OAPEC Secretary General; and it was attended by the joint ventures' CEOs and GMs as representatives of their companies. Also, the General Manager of the Arab Oil Training Institute took part in the meeting.

The meeting aimed at highlighting the activities, and the financial and operational results of the joint ventures during 2017 and the first half of 2018. Cooperation, collaboration, and challenges facing these companies were also discussed. A report on the minutes of meeting will be submitted to the next meeting of OAPEC Ministerial Council in December 2018.

The revision of the joint ventures' activities in 2017 and the first half of 2018 showed that despite the difficult conditions facing a number of these companies, they managed to achieve good operational and financial results. While the rest have been impacted by fierce competition and the surrounding difficult circumstances in some Arab countries but nevertheless are trying to develop and improve their businesses. Meanwhile, the Secretariat General has started working on a report following this meeting which will include recommendations to support these joint ventures in the next stage.



TO HIGHLIGHT OAPEC'S ROLE IN BOOSTING GLOBAL PETROLEUM INDUSTRY'S PROGRESS

HE AL NAQI: WE ARE DELIGHTED TO TAKE PART IN THE 24TH WORLD ENERGY CONGRESS

The UAE Organising Committee of the 24th World Energy Congress has announced the Organisation of Arab Petroleum Exporting Countries (OAPEC) will exhibit at the 2019 Congress taking place from the 9 to 12 September in Abu Dhabi - under the patronage of His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE.

For over fifty years, OAPEC has represented the interests of the top 11 leading Arab oil-exporting nations. At the 24th World Energy Congress, OAPEC will emphasise cooperation among its oil exporting members. OAPEC is also focused on further establishing international relations to help cultivate new innovations and technological developments within the energy industry.

The collaboration between the 2019 Congress and OAPEC is another step towards the Congress reaching its goal of tackling global energy challenges and furthering the energy debate. By bringing together energy leaders from across the Middle East and North Africa alongside global stakeholders, the Congress will be an opportunity to address the key issues affecting the entire energy spectrum.

Dr Matar Al Neyadi, Undersecretary at the UAE Ministry of Energy and Industry and Chairman of the UAE Organising Committee for the 24th World Energy Congress, said: "It will be an honour to welcome OAPEC at the 24th World Energy Congress as they take their place as one of our most valuable exhibitors. Working with them, we look forward to addressing the critical role stability and global investment can have in achieving future global energy prosperity. OAPEC's exhibition stand will showcase Abu Dhabi and the UAE, positioning it at the epicentre of the global energy industry. Alongside OAPEC and our partners, we are excited by the standard



of exhibitors and contributors we have already revealed and look forward to announcing further supporters as we progress towards next year's Congress."

HE Abbas Ali Al-Naqi, Secretary-General of OAPEC said: "OAPEC is delighted to be part of the 24th World Energy Congress, bringing Arab energy leaders and experts to Abu Dhabi next September". He added that OAPEC will seek to get closer to the views of the world's influential players on the future of the changing energy sector.

The 24th World Energy Congress will be the longest-running and most influential energy gathering in the world. The four-day event will allow public and private actors from across the entire energy spectrum to showcase the world's most innovative initiatives to drive global energy transition. Under the theme "Energy for Prosperity", the Congress will bring together 2,500 exhibitors, 500 CEO's, 70 ministers, and 4,000 delegates from across the world to pioneer new ways of thinking and crystalize action around energy to deliver an equitable and sustainable future.

S&P GLOBAL PLATTS ANNUAL EUROPEAN REFINING SUMMIT

OAPEC Secretary General HE Abbas Ali Al Naqi took part in S&P Global Platts annual European Refining Summit held in Brussels, Belgium, on 13 and 14 September 2018. He gave a speech in which he reviewed the oil refining industry developments in OAPEC member countries in general, including the construction of new advanced refineries and the upgrading of existing ones. He underscored the significance of these projects in facing the Arab refining industry challenges and boosting its competitive role in the global markets.

HE Al Naqi also participated in a dialogue session on the global markets' developments. The session covered the change in petroleum products trade flow, the implications of recent developments on competition in US, MENA, Russia, Asia, and Latin America. He stressed that Arab countries, especially GCC, invest large amounts of money in refining development projects to secure sustainability of petroleum products supplies to global markets. That calls for cooperation from consumers too to ensure demand security that serves the interests of both sides.

The event takes place on a yearly basis. Experts from around the world gather to discuss the challenges facing the oil refining industry and exchange views to develop the industry. The summit tackled a number of topics this year including the following:

- Setting the scene for the European refining market today
- IMO 2020: Scrubbers vs refining investment, ensuring enough fuel and scrubbers, non-compliance threats and enforcement challenges — Latest on scrubber uptake rates and refineries investment in production facilities – is it up to the shipping or refining industry to find a solution? To what extent will there be non-compliance? Will there be enough 0.5%? Will there be enough scrubbers? Who will enforce all this?
- Competitiveness of European refiners against the backdrop of climate change policy directives
- Oil products consumption - developments, challenges and opportunities for jet fuel,



gasoline and diesel

- Shedding light on digitalization and the internet-of-things
- Global market developments and trade flows — Assessing competition from the US, Middle East, Russia, Africa, Asia and Latin America markets
- Implications of recent and proposed M&As, and finance and investment developments, challenges and opportunities — Impacts of major M&As, and global investments in refining capacity on oil products supply and trade flows
- Overview on the latest petrochemicals and oil storage developments — Petrochemicals/refinery integration, feedstock pricing and increasing demand levels, and latest oil storage challenges and new opportunities

At the end of the summit, the participants reviewed the most important recommendations and proposals that could contribute to boosting the refining industry to face challenges, including the necessity of allocating investments to upgrade oil refineries to conform to environmental legislations and face the severe challenges imposed by the new advanced giant refineries in the Middle East and Asia.

Engineer Emad Mekki, Senior Refining Expert, from OAPEC's Technical Affairs Department accompanied the Secretary General to the summit.



ORGANIZATION OF ARAB PETROLEUM
EXPORTING COUNTRIES (OAPEC)

OAPEC'S CALENDAR OF EVENTS

Event	Date	Venue
OAPEC's 152 nd Executive Bureau Meeting	20-21 December 2018	Kuwait
OAPEC's 101 st Ministerial Council Meeting	23 December 2018	Kuwait

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Petroleum Developments in the World Market and Member Countries*

1. Oil Market

1. Prices

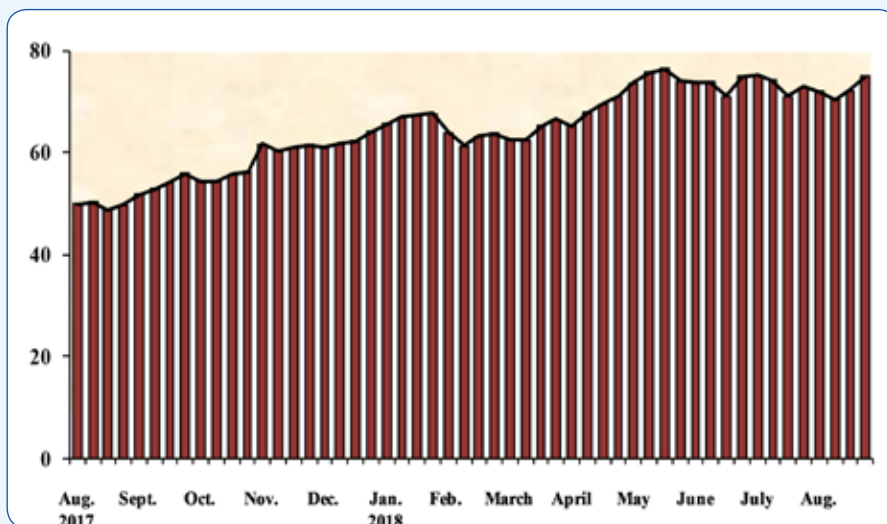
1-1 Crude Oil Prices

Weekly average price of OPEC basket decreased during the first week of August 2018, to reach \$71.88/bbl, and continue to decline during the second week, to reach its lowest level of \$70.36/bbl, then raised thereafter to reach \$74.96/bbl during the fourth week, as

shown in **figure 1**:

On monthly basis, OPEC Reference Basket in August 2018, averaged \$72.3/bbl, representing a decrease of \$1/bbl or 1.4% comparing with previous month, and an increase of \$22.7/bbl or 45.7% from the same month of previous year. Worries that the escalating US-world trade dispute will lower oil demand, as well as on a US stock build and perceived supply glut, were major stimulus for the decrease in oil prices during the month of August 2018.

Figure - 1 Weekly Average Spot Price of the OPEC Basket of Crudes 2017 - 2018 (\$/bbl)



Key Indicators

- In August 2018, **OPEC Reference Basket decreased** by 1.4% or \$1/bbl from the previous month level to stand at \$72.3/bbl.
- **World oil demand** in August 2018, **increased** by 0.1% or 0.1 million b/d from the previous month level to reach 100.6 million b/d.
- **World oil supplies** in August 2018, **decreased** by 0.4% or 0.4 million b/d from the previous month level to reach 100.4 million b/d.
- **US tight oil production** in August 2018, **increased** by 1.7% to reach about 7.4 million b/d, whereas **US oil rig count decreased** by 1 rig from the previous month level to stand at 941 rig.
- **US crude oil imports** in August 2018, **decreased** by 0.9% from the previous month level to reach 8 million b/d, whereas **US product imports increased** by 11% to reach about 2.4 million b/d.
- **OECD commercial inventories** in July 2018 **increased** by 22 million barrels from the previous month level to reach 2838 million barrels, whereas **Strategic inventories** in OECD-34, South Africa and China **remained stable** at the same previous month level of 1850 million barrels.
- **The average spot price of natural gas** at the Henry Hub **increased** in August 2018 to reach \$2.96/million BTU.
- **The Price of Japanese LNG imports** in July 2018 **increased** by \$0.01/m BTU to reach \$9.8/m BTU, and **the Price of Korean LNG increased** by \$0.2/m BTU to reach 10/m BTU, whereas **the Price of Chinese LNG imports remained stable** at the same previous month level of \$8.5/m BTU.
- **Arab LNG exports to Japan, Korea and China** were about 3.819 million tons in July 2018 (a share of 27.9% of total imports).

* Prepared by the Economics Department.

Table (1) and **figure (2)** show the change in the price of the OPEC basket versus last month and the corresponding month of last year:

	Aug. 2017	Sep.	Oct.	Nov.	Dec.	Jan. 2018	Feb.	Mar.	Apr.	May	June	July	Aug.
OPEC Basket Price	49.6	53.4	55.5	60.7	62.1	66.9	63.5	63.8	68.4	74.1	73.2	73.3	72.3
Change From previous Month	2.7	3.8	2.1	5.2	1.3	4.8	-3.4	0.3	4.7	5.7	-0.9	0.1	-1.0
Change from same month of previous Year	6.5	10.5	7.6	17.5	10.4	14.5	10.1	13.4	17.1	24.9	28.0	26.4	22.7

* Effective June 16, 2005 OPEC replaced its seven-crude basket with one comprised of eleven crudes, one from each member country (weighted according to production and exports to major markets). Effective 1 January and mid of October 2007, Angola's Girassol and Ecuadorian Oriente crudes have been incorporated to become the 12th and 13th crudes comprising the new OPEC Basket. As of Jan., 2009, the basket excludes the Indonesian crude. As of Jan. 2016, the basket price includes the Indonesian crude. As of July 2016, the basket price includes the Gabonese crude. As of Jan. 2017, the basket excludes the Indonesian crude. As of June 2017, the basket price includes the Equatorial Guinean crude "Zafiro". As of June 2018, the basket includes the Congolese crude "Djeno".

Figure - 2 Change in the Price of the OPEC Basket of Crudes, 2017-2018 (\$/bbl)



Table (3) in the annex show spot prices for OPEC basket and other crudes for the period 2016-2018.

1-2 Spot Prices of Petroleum Products

- US Gulf

In August 2018, the spot prices of premium gasoline decreased by 2.8% or \$2.6/bbl comparing with their previous month levels to reach \$91.6/bbl, and spot prices of fuel oil decreased by 5.4% or \$3.6/bbl to reach \$62.6/bbl, whereas spot prices of gas oil increased by 1.9% or \$1.6/bbl to reach \$85.1/bbl.



- Rotterdam

The spot prices of premium gasoline increased in August 2018, by 1.3% or \$1.2/bbl comparing with previous month levels to reach \$95/bbl, and spot prices of gas oil increased by 0.6% or \$0.5/bbl to reach \$88.5/bbl, whereas spot prices of fuel oil decreased by 2.7% or \$1.8/bbl to reach \$65.7/bbl.

- Mediterranean

The spot prices of premium gasoline increased in August 2018, by 2.1% or \$1.8/bbl comparing with previous month levels to reach \$87.8/bbl, and spot prices of gas oil increased by 0.6% or \$0.5/bbl to reach \$88.7/bbl, whereas spot prices of fuel oil decreased by 2.9% or \$2/bbl to reach \$66.4/bbl.

- Singapore

The spot prices of premium gasoline increased in August 2018, by 2% or \$1.7/bbl comparing with previous month levels to reach \$84.8/bbl, and spot prices of gas oil increased by 1.7% or \$1.5/bbl to reach \$88/bbl, whereas spot prices of fuel oil decreased by 2% or \$1.4/bbl to reach \$69.1/bbl.

Figure (3) shows the price of Premium gasoline in all four markets from August 2017 to August 2018.

Figure - 3

Monthly Average Spot Prices of Premium Gasoline, 2017-2018

(\$/bbl)

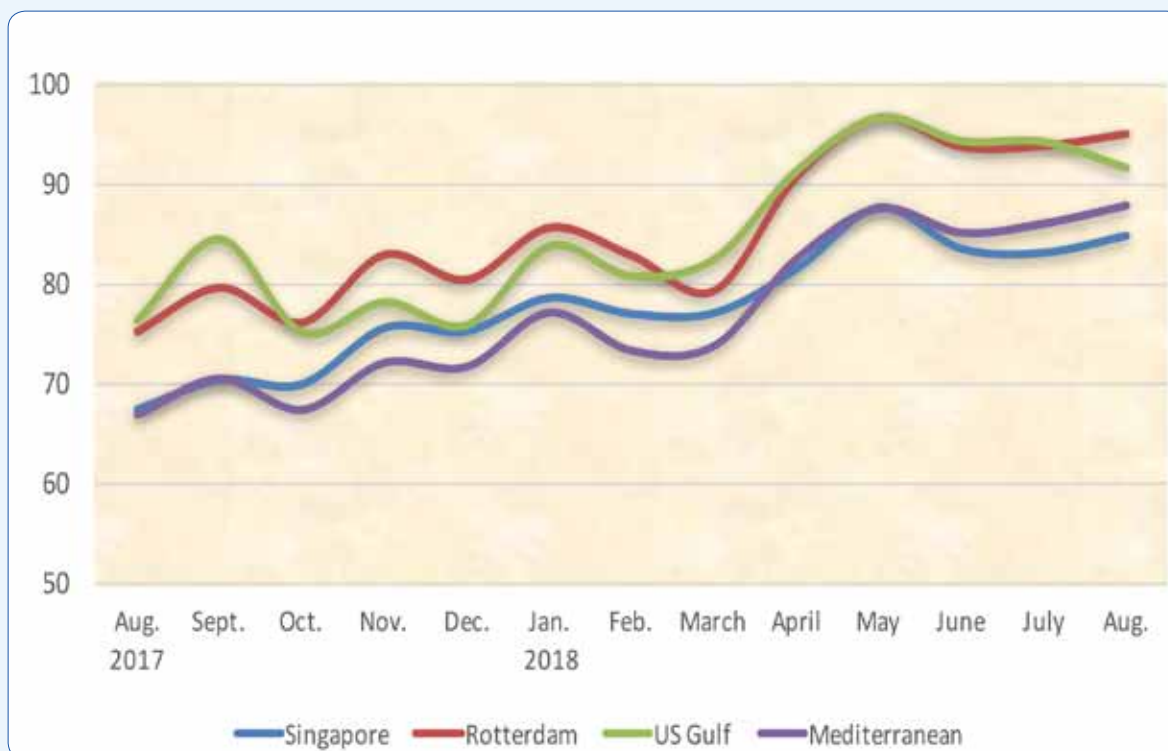


Table (4) in the annex shows the average monthly spot prices of petroleum products, 2016-2018.

1-3 Spot Tanker Crude Freight Rates

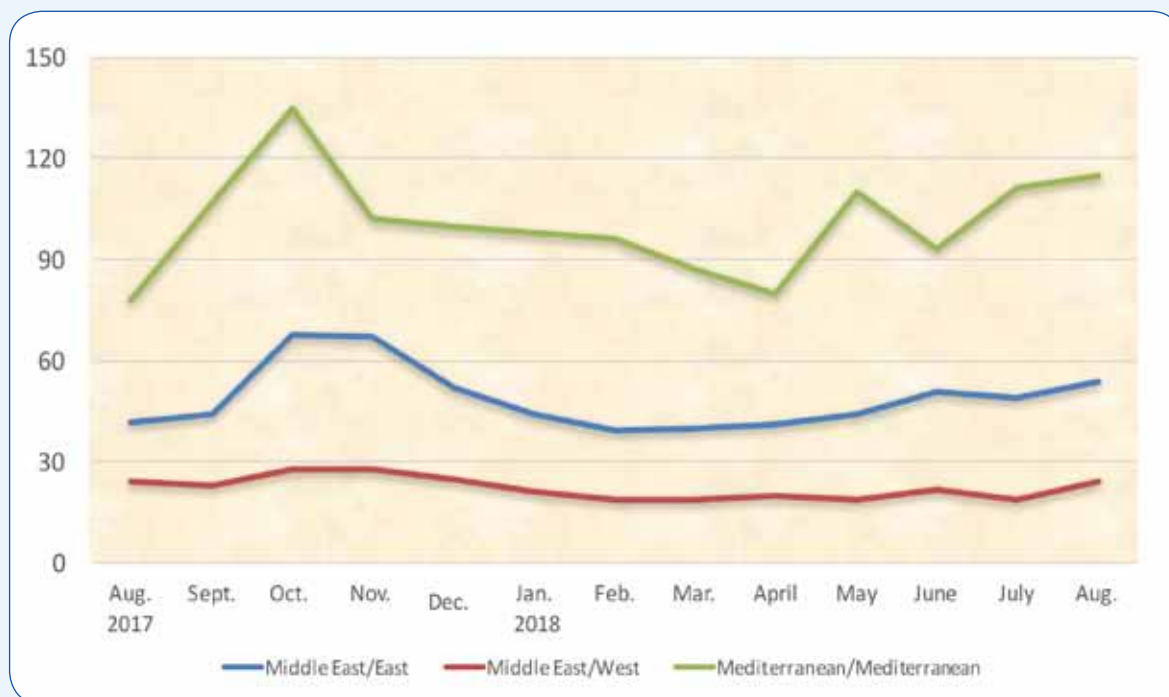
In August 2018, Freight rates for crude oil for tanker size (230-280 thousand deadweight tons (dwt)), leaving Middle Eastern ports to the East, increased by 5 points or 10.2% comparing with previous month to reach 54 points on the World Scale (WS)*, freight rates for crude oil for tanker size (270-285 thousand deadweight tons (dwt)), leaving Middle Eastern ports to the West, increased by 5 points or 26.3% comparing with previous month to reach 24 points on the World Scale (WS).

And freight rates for inter - Mediterranean for small to medium sized tankers (80-85 thousand deadweight tons (dwt)), increased by 4 points or 3.6% comparing with previous month to reach 115 points on the World Scale (WS).

Figure (4) shows the freight rates for crude oil to all three destinations from August 2017 to August 2018.

Figure - 4 Monthly Spot Crude Oil Tanker Freight Rates, 2017 -2018

(World Scale)*



* World Scale is a method for calculating freight prices. One point for the WS means 1% of the standard price of freight in the direction in the WS book, which is published annually by the World Scale Association. The book contains a list of prices in the form of US dollar per ton, called "World Scale 100," for all the major routes in the world.

1-4 Spot Tanker Product Freight Rates

In August 2018, monthly spot Tanker freight rates for petroleum products [for tanker size 30-35 thousand deadweight tons (dwt)], leaving Middle Eastern ports to the East, decreased by 17 point, or 14.4% comparing with previous month to reach 101 points on WS.



And Freight rates for Petroleum Products across Mediterranean [for tanker size 30-35 thousand deadweight tons (dwt)], decreased by 8 points, or 6.3% to reach 120 points on WS, freight rates for petroleum products [for tanker size 30-35 thousand deadweight tons (dwt)], leaving Mediterranean to North-West Europe decreased by 8 points, or 5.8% to reach 130 points on WS.

Figure (5) shows the freight rates for oil products to all three destinations from August 2017 to August 2018.

Figure - 5

Monthly Spot Product Tanker Freight Rates, 2017 -2018

(World Scale)

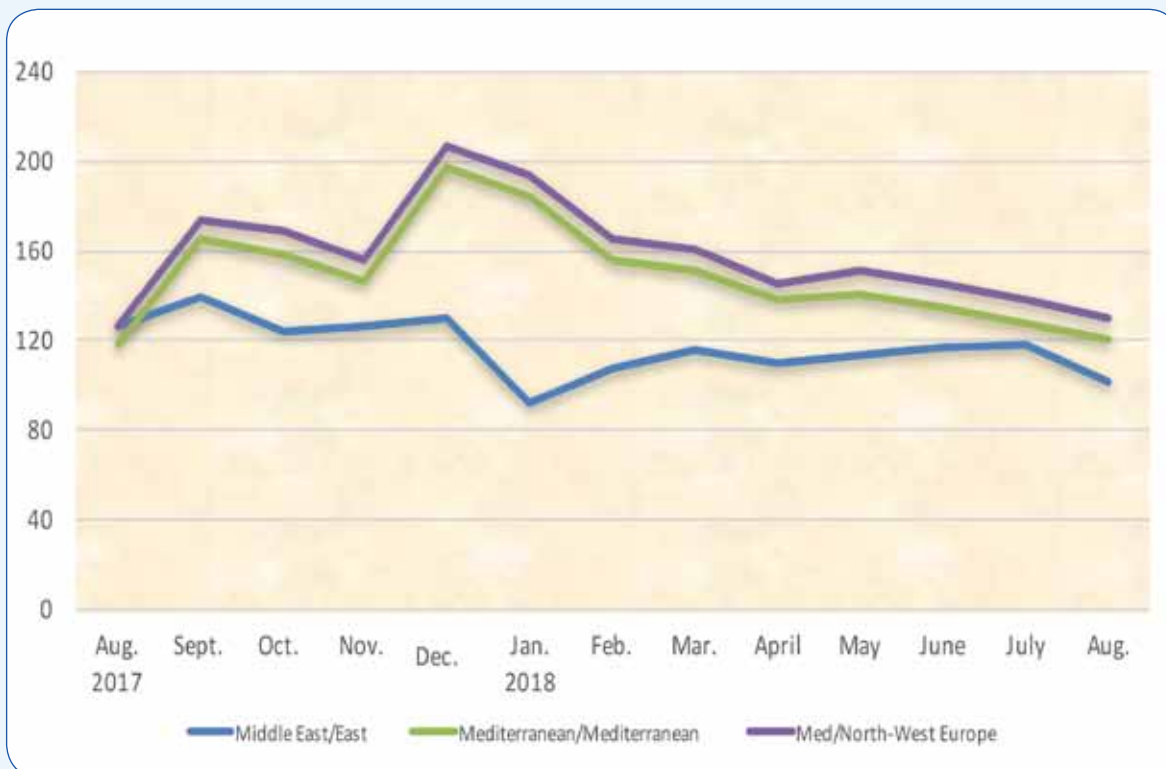


Table (5) and **(6)** in the annex show crude and products Tankers Freight Rates, 2016-2018.

2. Supply and Demand

Preliminary estimates in August 2018 show an increase in world oil demand by 0.1% or 0.1 million b/d, comparing with the previous month level to reach 100.6 million b/d, representing an increase of 0.9 million b/d from their last year level.

Demand in OECD countries decreased by 0.7% or 0.3 million b/d comparing with their previous month level to reach 47.9 million b/d, representing an increase of 0.1 million b/d from their last year level. Whereas demand in Non-OECD countries increased by 0.8% or 0.4 million b/d comparing with their previous month level to reach 52.7 million b/d, representing an increase of 0.8 million b/d from their last year level.

On the supply side, preliminary estimates show that world oil supplies for August 2018 decreased by 0.4% or 0.4 million b/d, comparing with the previous month to reach 100.4 million b/d, representing an increase of 2.6 million b/d from their last year level.

In August 2018, OPEC crude oil and NGLs/condensates total supplies increased by 1% or 0.4 million b/d, comparing with the previous month to reach 39.2 million b/d, the same last year level. Whereas preliminary estimates show that Non-OPEC supplies decreased by 1.3% or 0.8 million b/d, comparing with the previous month to reach 61.2 million b/d, representing an increase of 2.6 million b/d from their last year level.

Preliminary estimates of the supply and demand for August 2018 reveal a shortage of 0.2 million b/d, compared to a surplus of 0.3 million b/d in July 2018 and a shortage of 1.9 million b/d in August 2017, as shown in [table \(2\)](#) and [figure \(6\)](#):

Table 2 World Oil Supply and Demand (Million b/d)

	August 2018	July 2018	Change from July 2018	August 2017	Change from August 2017
<i>OECD Demand</i>	47.9	48.2	-0.3	47.8	0.1
<i>Rest of the World *</i>	52.7	52.3	0.4	51.9	0.8
<i>World Demand</i>	100.6	100.5	0.1	99.7	0.9
<i>OPEC Supply :</i>	<u>39.2</u>	<u>38.8</u>	<u>0.4</u>	<u>39.2</u>	<u>0.0</u>
<i>Crude Oil</i>	32.7	32.3	0.4	32.7	0.0
<i>NGLs & Cond.</i>	6.5	6.5	0.0	6.5	0.0
<i>Non-OPEC Supply</i>	58.8	59.5	-0.7	56.3	2.5
<i>Processing Gain</i>	2.3	2.4	-0.1	2.3	0.0
<i>World Supply</i>	100.4	100.8	-0.4	97.8	2.6
<i>Balance</i>	(0.2)	0.3		(1.9)	

Source: Energy Intelligence Briefing Sep. 19, 2018.

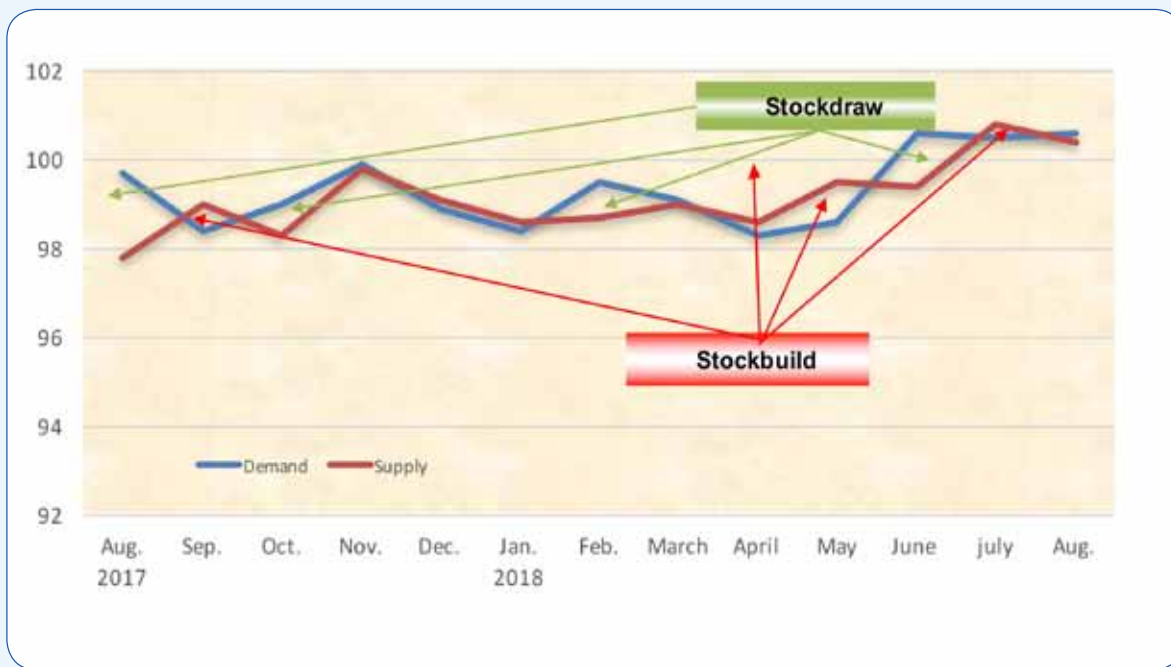
* include 0.2 million b/d of oil needed to fill up the supply system for crude and products, and strategic reserves.



Figure - 6

World Oil Supply and Demand

(Million b/d)



Tables (7) and (8) in the annex show world oil demand and supply for the period 2016-2018.

US tight oil production

In August 2018, US tight oil production increased by 122 thousand b/d or 1.7% comparing with the previous month level to reach 7.4 million b/d, representing an increase of 1.7 million b/d from their last year level. The US oil rig count decreased by one rig comparing with the previous month level to reach 941 rig, a level that is 127 rig higher than last year, as shown in table (3) and figure (7):

Table 3

US tight oil production*

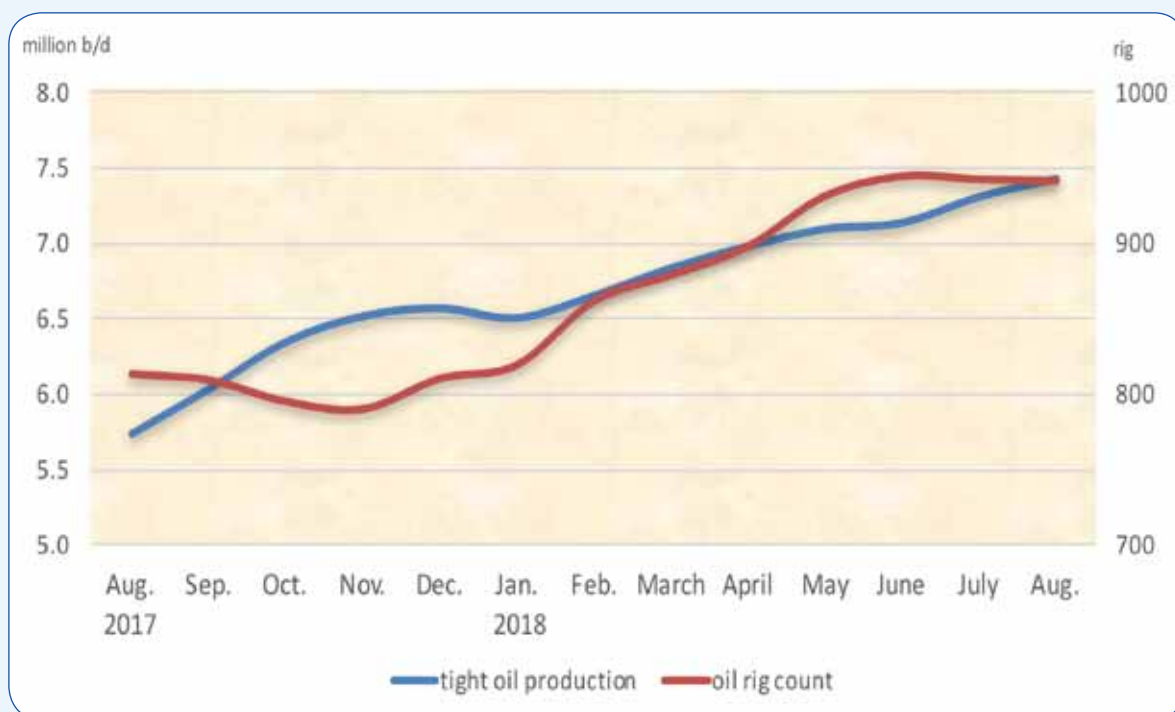
(Million b/d)

	August 2018	July 2018	Change from July 2018	August 2017	Change from August 2017
<i>tight oil production</i>	7.431	7.309	0.122	5.730	1.701
<i>Oil rig count (rig)</i>	941	942	-1	814	127

Source: EIA, Drilling Productivity Report for key tight oil and shale gas regions, September 2018.

* focusing on the six most prolific areas, which are located in the Lower 48 states. These six regions accounted for 92% of domestic oil production growth during 2011-2014, Bakken, Eagle Ford, Haynesville, Niobrara, Permian, Appalachia (Utica and Marcellus), in addition to Anadarko region which become the target of many producers in the recent years, as of July 2017, there are 129 operating rigs in the Anadarko region.

Figure - 7 US tight oil production and oil rig count



3. Oil Trade

USA

In August 2018, US crude oil imports decreased by 71 thousand b/d or 0.9% comparing with the previous month level to reach 8 million b/d. Whereas US oil products imports increased by 241 thousand b/d or 11% to reach about 2.4 million b/d.

On the export side, US crude oil exports decreased by 362 thousand b/d or 19.3% comparing with the previous month level to reach 1.5 million b/d, and US products exports decreased by 302 thousand b/d or 5.8% to reach 4.9 million b/d. As a result, US net oil imports in August 2018 were 833 thousand b/d or nearly 26.7% higher than the previous month, averaging 4 million b/d.

Canada remained the main supplier of crude oil to the US with 45% of total US crude oil imports during the month, followed by Saudi Arabia with 10%, then Iraq with 8%. OPEC Member Countries supplied 33% of total US crude oil imports.

Japan

In August 2018, Japan's crude oil imports increased by 465 thousand b/d or 16% comparing with the previous month level to reach 3.4 million b/d. And Japan oil products (excluding LPG) imports increased by 21 thousand b/d or 3.7% comparing with the previous month to reach 583 thousand b/d.



On the export side, Japan's oil products exports increased in August 2018, by 81 thousand b/d or 16% comparing with the previous month, averaging 588 thousand b/d. As a result, Japan's net oil imports in August 2018 increased by 405 thousand b/d or 13.6% to reach 3.4 million b/d.

Saudi Arabia was the big supplier of crude oil to Japan with a share of 34% of total Japan crude oil imports, followed by UAE with 30% and Qatar with 9% of total Japan crude oil imports.

Table (4) shows changes in crude and oil products net imports/(exports) in August 2018 versus the previous month:

Table 4 USA, Japan and China Crude and Product Net Imports / Exports (Million bbl/d)

	Crude Oil			oil Products		
	August 2018	July 2018	Change from July 2018	August 2018	July 2018	Change from July 2018
USA	6.424	6.134	0.290	-2.466	-3.009	0.543
Japan	3.392	2.927	0.465	-0.005	0.055	-0.060

Source: OPEC Monthly Oil Market Report, various issues 2018.

4. Oil Inventories

In July 2018, OECD commercial oil inventories increased by 22 million barrels to reach 2838 million barrels – a level that is 191 million barrels lower than a year ago. It is worth mentioning that during the month, commercial crude inventories in OECD decreased by 13 million barrels to reach 1077 million barrels, whereas commercial oil products inventories increased by 36 million barrels to reach 1762 million barrels.

Commercial oil inventories in Americas increased by 10 million barrels to reach 1480 million barrels, of which 565 million barrels of crude and 915 million barrels of oil products. Commercial oil inventories in Pacific increased by 6 million barrels to reach 394 million barrels, of which 158 million barrels of crude and 236 million barrels of oil products. And Commercial oil Inventories in Europe increased by 7 million barrels to reach 965 million barrels, of which 354 million barrels of crude and 611 million barrels of oil products.

In the rest of the world, commercial oil inventories increased by 9 million barrels to reach 2738 million barrels, and the Inventories at sea increased by 9 million barrels to reach 1170 million barrels.

As a result, Total Commercial oil inventories in July 2018 increased by 31 million barrels to reach 5576 million barrels – a level that is 254 million barrels lower than a year ago.

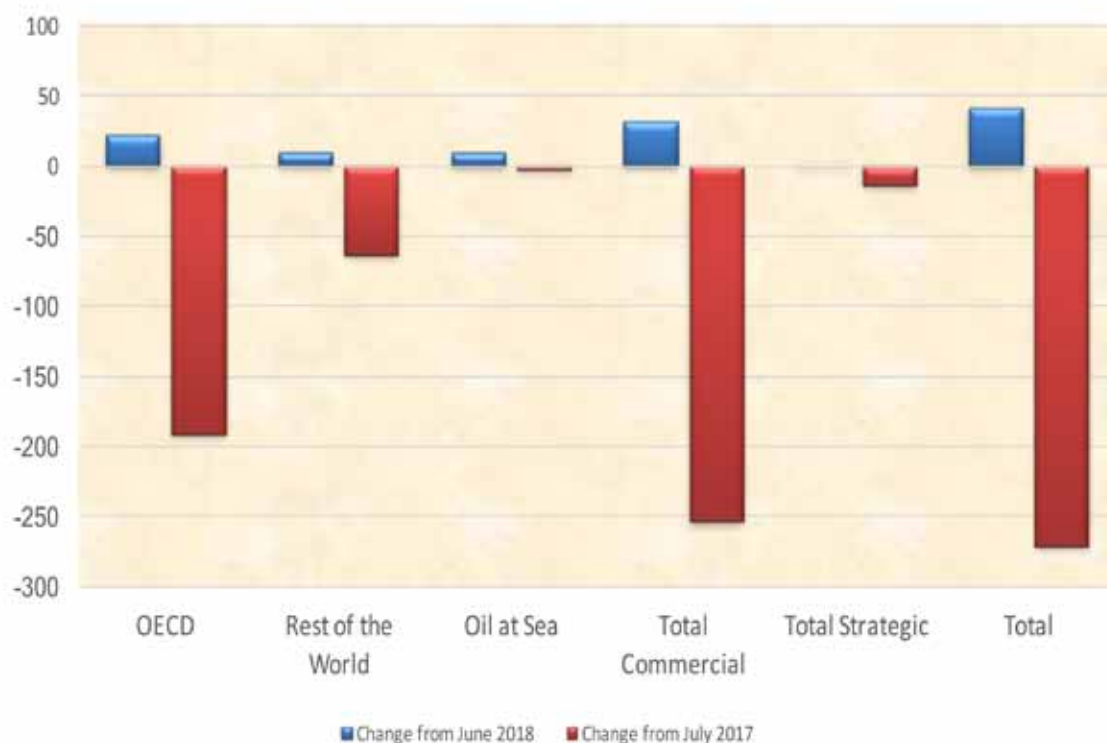
Strategic inventories in OECD-34, South Africa and China remained stable at the same previous month level of 1850 million barrels – a level that is 14 million barrels lower than a year ago

Total world inventories, at the end of July 2018 were at 8596 million barrels, representing an increase of 41 million barrels comparing with the previous month, and a decrease of 271 million barrels comparing with the same month a year ago.

Table (9) in the annex and **figure (8)** show the changes in global inventories prevailing at the end of July 2018.

Figure - 8 Changes in Global Inventories at the End of July 2018

(Million bbl)





II. The Natural Gas Market

1- Spot and Future Prices of Natural Gas in US market

The monthly average of spot natural gas price at the Henry Hub in August 2018 increased by \$0.13/ million BTU comparing with the previous month, to reach \$2.96/ million BTU.

The comparison, shown in [table \(5\)](#), between natural gas prices and the WTI crude reveal differential of \$8.8/ million BTU in favor of WTI crude.

Table 5

Henry Hub Natural Gas and WTI Crude Average Spot Prices, 2017-2018

(\$/ Million BTU¹)

	Aug. 2017	Sep.	Oct.	Nov.	Dec.	Jan. 2018	Feb.	Mar.	Apr.	May	June	July	Aug.
<i>Natural Gas</i> ⁽²⁾	2.9	3.0	2.9	3.0	2.8	3.9	2.7	2.7	2.8	2.8	3.0	2.8	2.9
<i>WTI Crude</i> ⁽³⁾	8.3	8.3	8.9	9.8	10.0	11.0	10.7	10.8	11.4	12.1	11.7	12.2	11.7

1. British Thermal Unit.

2. Henry Hub spot price.

3. WTI – West Texas Intermediate Crude oil price, in dollars per barrel, is converted to dollar per million BTU using a conversion factor of 5.80 million BTU/bbl.

Source: <http://www.eia.gov/dnav/ng/hist/rngwhhdM.htm>

2- LNG Markets in North East Asia

The following paragraphs review the developments in LNG Markets in North East Asia, concerning prices and Japanese, Chinese and South Korean imports of LNG and their sources, and Spot LNG Exporters Netbacks.

2.1. LNG Prices

In July 2018, the price of Japanese LNG imports increased by \$0.01/million BTU comparing with the previous month to reach \$9.8 million BTU, and the price of Korean LNG imports increased by \$0.2/million BTU comparing with the previous month to reach \$10/ million BTU, whereas the price of Chinese LNG imports remained stable at the same previous month level of \$8.5/ million BTU.

2.2. LNG Imports

Total Japanese, Korean and Chinese LNG imports from various sources, increased by 3% or 404 thousand tons from the previous month level to reach 13.709 million tons.

[Table \(6\)](#) shows the prices and quantities of LNG imported by Japan, South Korea, and China for the period 2016-2018.

Table6 LNG Prices and Imports: Korea, Japan, and China 2016-2018

	Imports (thousand tons)				Average Import Price (\$/million BTU)		
	Japan	Korea	China	Total	Japan	Korea	China
2016	82767	33257	26017	142041	6.9	6.9	6.5
January 2016	7245	3338	2464	13047	7.9	8.0	7.3
February	7370	2998	1801	12169	8.0	7.8	6.9
March	7959	3282	1702	12943	7.2	7.3	6.6
April	6382	2177	1861	10420	6.4	6.6	6.6
May	5455	2218	1425	9098	5.9	6.0	6.3
June	6193	2484	2146	10823	6.0	5.7	6.0
July	6460	1918	1604	9982	6.3	5.9	5.4
August	7656	1971	2257	11884	6.7	6.3	6.0
September	6671	2236	2527	11434	7.1	6.8	6.1
October	6282	3187	1838	11307	7.2	7.3	6.7
November	7545	3422	2659	13626	7.1	7.5	6.8
December	7549	4026	3733	15308	7.1	7.3	7.1
2017	6969	3138	3191	13298	8.1	8.0	7.3
January 2017	8302	4294	3436	16032	7.5	7.9	7.0
February	7790	3600	2372	13762	7.9	8.0	7.0
March	8143	3527	1991	13661	7.7	7.8	6.9
April	6573	2337	2171	11081	8.2	7.8	7.0
May	6239	2488	2911	11638	8.5	8.3	7.3
June	6185	3460	3038	12683	8.3	7.8	7.1
July	6817	2716	3121	12654	8.3	7.9	7.4
August	7259	2603	3140	13002	8.3	8.2	7.4
September	5821	2368	3454	11643	8.1	8.1	7.2
October	6137	2760	3567	12464	7.8	8.1	7.4
November	6411	3328	4056	13795	7.9	7.7	7.7
December	7953	4176	5029	17158	8.1	8.3	8.1
January 2018	8263	4144	5184	17591	8.7	8.7	8.4
February	8294	4588	3993	16875	9.2	9.9	8.6
March	7934	4304	3254	15492	9.5	9.4	8.7
April	5608	3217	3254	12079	9.4	9.3	8.7
May	6407	2784	4150	13341	9.6	9.8	8.5
June	5547	3758	4000	13305	9.8	9.8	8.5
July	6813	2746	4150	13709	9.8	10.0	8.5

Source: World Gas Intelligence various issues.



2.3. Sources of LNG imports

Australia was the big supplier of LNG to Japan, Korea and China with 4.467 million tons or 32.6% of total Japan, Korea and China LNG imports in July 2018, followed by Qatar with 18.9% and Malaysia with 9.3%.

The Arab countries LNG exports to Japan, Korea and China totaled 3.819 million tons - a share 27.9% of total Japanese, Korean and Chinese LNG Imports during the same month.

2.4. LNG Exporter Netbacks

With respect to the Netbacks at North East Asia markets, Russia ranked first with \$9.17/million BTU at the end of July 2018, followed by Indonesia with \$9.0/million BTU then Malaysia with \$8.95/million BTU, and Australia with \$8.90/million BTU. LNG Qatar's netback reached \$8.60/million BTU, and LNG Algeria's netback reached \$8.10/million BTU.

Table (7) shows LNG exporter main countries to Japan, South Korea, and China and their netbacks at the end of July 2018.

Table7 LNG Exporter Main Countries to Japan, Korea and China, And Their Netbacks at The End of July 2018

	Imports (thousand tons)				Spot LNG Netbacks at North East Asia Markets (\$/million BTU)
	Japan	Korea	China	Total	
Total Imports, of which:	6813	2746	4150	13709	
Australia	2383	454	1630	4467	8.90
Qatar	749	1005	836	2590	8.60
Malaysia	869	113	293	1275	8.95
Indonesia	353	269	305	927	9.00
Russia	465	—	64	529	9.17

* Export Revenues minus transportation costs, and royalty fees.
Source: World Gas Intelligence various issues.

Tables Annex

