Organization of Arab Petroleum Exporting Countries

www.oapecorg.org

Vol. 45 No. 2 February

2019

OIL & GAS INDUSTRY IN AFRICA: CURRENT DEVELOPMENTS & FUTURE PROSPECTS

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OAPEC Monthly Bulletin is published by the General Secretariat of OAPEC- Information and Library Department. (ISSN: 1018-595X)

> Annual Subscription (11 issues)

Arab Countries

Individuals: KD **10** or equivalent in USD \$ Institutions: KD **15** or equivalent in USD \$

Other Countries

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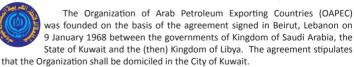


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ORGANIZATION OF ARAB PETROLEUM EXPORTING COUNTRIES (OAPEC)



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.







QATAR PETROLEUM & TOTAL: IGNIFICANT GAS DISCOVERY IN SOUTH AFRICA







5TH GCC POWER TRADE FORUM

• 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.
- 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

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.





OIL & GAS INDUSTRY IN AFRICA: CURRENT DEVELOPMENTS & FUTURE PROSPECTS

The oil and gas industry in the African Continent is making important and pivotal progress nowadays. It has gained special significance in the global energy industry, as Sub-Saharan Africa accounts for about 30% of the world's oil and gas discoveries which prove the promising potentials for developing the energy sector in this region. Moreover, Africa's proximity to Asian and European markets gives it preference and relative advantage in securing oil and gas supplies to areas of high and increasing demand for oil and gas.

Africa is especially important to OAPEC since many of its member countries are from the continent, namely Algeria; Libya; Egypt; and Tunisia. Also, a number of Arab oil exporting countries, namely UAE; KSA; Iraq; and Kuwait account for 44% of the African oil imports.

Data available at OAPEC show an increase in the total proven crude oil reserves in Africa in general, including the Arab countries, from 53.4 billion barrels by the end of 1980 to about 127 billion barrels by the end of 2017, representing about 7% of the world's total proven oil reserves. Total crude oil production in Africa has reached about 7 million barrels/day by the end of 2017.

As for natural gas, proven natural gas reserves have risen from 6 trillion cubic metres in 1980 up to about 15 trillion cubic metres by the end of 2017. Arab countries top other African countries with Algeria being the largest gas producer in the continent. Africa has also witnessed important developments in terms of the natural gas industry as Egypt's Mediterranean gas discoveries in (Zohr offshore field), will contribute to securing more gas supplies for Africa and the rest of the world markets. Egypt targets increasing its natural gas production from the current 6.8 billion cubic feet/day to 7.8 billion cubic feet/day by the end of this year 2019.

On refining, African refineries' capacities have risen in recent decades at a rate of 1.2% per annum, double the world's 0.6% average registered in the same period. Total refining capacities in these countries have reached around 3.5 million barrels/day in 2017 compared to 2.2 million barrels/day in 1980. The refineries' total petroleum products

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output has reached about 2 million barrels/day in 2017. Three countries, namely Algeria; Egypt; and South Africa, were accounted for three quarters of the African refineries' output in 2017.

A recent OAPEC study under the title "Current Developments in the Oil and Gas Sectors in African Countries" suggested that African oil production will reach about 8.5-10.3 million barrels/day in 2040, representing about 8.3-8.9% of the world's total oil output. The study added that oil demand in African countries will increase by about 2.5% per annum until 2040. It estimated that natural gas demand will also increase between 3.5%-3.7% per annum to reach between 5.1 million-5.3 million BOE during the period 2015-2040. This is an indicator of important future developments in the energy industry in Africa.

The study also explains that African countries depend on 3 primary resources to meet their energy needs; topped by oil, then natural gas, and finally coal. It is worth noting that natural gas consumption has risen in the last three decades. The study also finds that African countries rely heavily on bioenergy with a share of about 47.6% of the total energy demand in Africa in 2015. The study forecasts that Africa will enjoy energy surplus during 2040, with an oil surplus of 2.3-3.3 million barrels/day. Oil demand size will be between 68-72.9% of the oil output in 2040. As for natural gas, projected surplus will be between 154-179 billion cubic metres, which means that projected gas demand will be 64.3-66.5% of the projected production.

In the same vein, OAPEC Secretariat General has been working for years on coordinating and cooperating with the African Petroleum Producers Organization (APPO) to identify cooperation opportunities in energy, oil, and natural gas to serve the interests of the Arab and African oil and gas exporting and importing countries alike.

OAPEC Secretariat General hopes to see further progress in the oil and gas industry in Africa to contribute to achieving prosperity through economic and social development in these countries, as well as, securing energy supply and demand to help stabilising the international oil and gas market.

COLLABORATION OPPORTUNITIES BETWEEN BAHRAIN & SAUDI ARAMCO DISCUSSED

HE Sheikh Mohammed bin Khalifa Al Khalifa, Bahrain's Minister of Oil, met on Sunday, 3 February 2019, with Mr. Ahmed Othman Al Khowaiter, Chief Technology Officer at Saudi Aramco, in the presence of a number of officials from the National Oil and Gas Authority (NOGA) and the Oil and Gas Holding Company (Nogaholding).



The Minister welcomed Mr. Al Khowaiter, praising the close cooperation and sincere bilateral efforts in the implementation of several oil projects, referring to the new pipeline project, one of the most important joint ventures with Saudi Aramco, which represents a great model for the projects that reflect the insights and common vision of the leaderships of the two brotherly countries. During the meeting, the Minister discussed opportunities of cooperation and exchange of expertise in carbon capturing, storing and utilizing that enhances oil production through the use of CO2 injection technology and the establishment of a CO2 transmission and distribution network.

An information exchange document was signed on the sidelines of the meeting, in addition to the setup of a joint team to prepare a joint feasibility study on boosting oil production by utilizing local CO2 and that produced by Aramco. The agreement was signed by Dr. Dhafer Al Jalahma, Acting CEO of Nogaholding, and Mr. Ahmed Al Khowaiter, Chief Technology Officer at

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Saudi Aramco.

During the meeting, Mr. Al Khowaiter reviewed the latest developments on the Middle East carbon capture, utilize and storage conference that will be organized by NOGA under the patronage of Bahrain's Minister of Oil in January 2020, with the participation of the Minister of Petroleum, Industry and Mineral Resources of the Kingdom of Saudi Arabia and a large number of specialists, CEOs, technicians and stakeholders. The conference will focus on the process of establishing the value of carbon, both in boosting oil production and enhancing the production of urea and methanol, in addition to promoting agricultural production, cement production and other uses.

At the end of the meeting, Mr. Al Khowaiter thanked HE Al Khalifa, for the warm welcome and continued support and valuable guidance that contributes to the achievement of the desired objectives, wishing NOGA further prosperity and realization of the strategic goals of Bahrain's 2030 Vision.



QATAR PETROLEUM & TOTAL: SIGNIFICANT GAS DISCOVERY IN SOUTH AFRICA

Qatar Petroleum (QP) and Total announced a significant gas and oil condensates discovery in Brulpadda field off the coast of South Africa. HE Eng. Saad Sherida Al Kaabi, Qatar's Minister of State for Energy Affairs, said in a press statement that the Brulpadda discovery



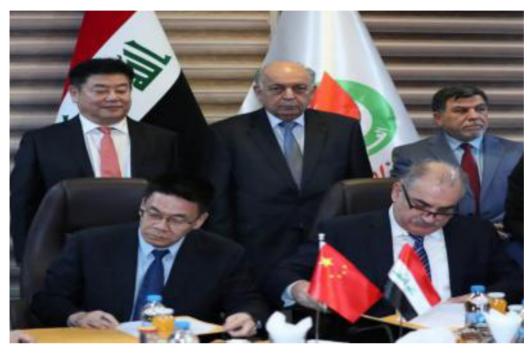
is the first discovery in Qatar Petroleum's international exploration ventures.

He added that the discovery opens the door to new exploration operations targeting gas-rich-plays in the same exploration area, which covers 19,000 square kilometers, with water depths ranging from 200 to 1,800 meters. It is operated by Total with a share of 45%, alongside Qatar Petroleum (25%), CNR International (20%) and Main Street (10%).





IRAQ SIGNS DEAL WITH CHINA'S SINOPEC FOR ONSHORE & OFFSHORE SEISMIC SURVEY



Iraq's Deputy PM for Energy Affairs and Minister of Oil HE Thamer Al Ghadhban witnessed the signing ceremony of an oil contract between Iraq and China's Sinopec to conduct a seismic survey for two oil exploration blocks.

In a press statement, HE Al Ghadhban said his ministry was going ahead with executing its strategic plans to boost oil and gas reserves by domestic and international efforts.

He said that under the contract, the seismic survey will include one offshore block in the Arabian Gulf and another in Al Faw. He added that this activity emphasizes the ministry's keenness on contributing to national efforts on investment projects.

He continued saying he hoped that the two blocks' potentials would be huge since this area is promising with huge oil formations.

On his part, Mr Nashwan Noori, GM of Iraqi Oil Exploration Company (OEC), said that the onshore block seismic survey will be conducted by local efforts while Sinopec will be in charge of the offshore seismic surveys. He pointed out that the company has great expertise in executing 2D and 3D seismic surveys using the latest technology.

Iraqi Oil Ministry's Spokesperson Mr Assem Jihad said the signing covered geological and seismic survey and research for the first exploration activity in Iraq's territorial waters in the Gulf.





ALGERIA: BECHAR SOLAR PLANT PROJECT



HE Moustapha Guitouni, Algeria's Energy Minister, said that his country will complete building a 300 megawatts (MW)-solar-plant in Bechar province. The plant will be the largest of its kind in Africa.

He clarified that this important project comes under the umbrella of the national strategy on renewables production. H Guitouni added that Algeria works on generating 22,000 MW of solar power by 2030 as the country has been producing a total of 400MW of solar power since 2011. He stressed that the country will continue its efforts and investments in developing this sector especially in southern provinces.





1ST ARAB ENVIRONMENTAL MEDIA CONFERENCE



Kuwait's Acting Undersecretary of the Ministry of Oil and its representative at OAPEC Executive Bureau, HE Sheikh Talal Al Athbi Al Sabah stressed the importance of cooperation with local media, governmental bodies, and civil society organisations to spread petroleum awareness and knowledge as a new method to integrate with the oil industry and its progress.

He was talking during the First Arab Environmental Media Conference, which was held recently by Kuwait Environment Protection Society (KEPS) as HE Sheikh Talal Al Athbi Al Sabah delivered a speech on the behalf of the Minister of Oil, where he discussed Kuwait's media role in creating awareness on all levels. He also talked about the oil industry and its relationship with the environment, including ways in which better forms of environmental preservation and protection could be implemented.

He drew the attention to the fact that the conference is a first step in the environmental media awakening and that its topic calls for support as it coincides with a dire need for spreading a balanced environmental media knowledge given the environment's role in global sustainable development progress which harmonises with HH the Emir Sheikh Sabah Al Ahmad's vision.









EGYPS 2019

OAPEC Secretary General HE Abbas Al Naqi said that oil and gas consuming and producing countries have become more aware of the current and future challenges following over twenty years of dialogue.



In his speech at the 3rd International Oil and Gas Exhibition & Conference (EGYPS) held in Egypt from 11 to 13 February 2019, HE Al Naqi reviewed the current global energy scene. He expected the global GDP to continue growing supported by growing world population. He also expected continued growth of global demand for energy until 2040.

HE Al Naqi added "Oil is forecasted to remain the largest contributor to the energy mix, with a share of nearly 28% by 2040, higher than gas and coal.

Fossil fuels are projected to remain the dominant component in the global energy mix, with a share of 75% in 2040."

The Secretary General's speech focused on three key issues that are vital for the producers and consumers alike, namely investment, energy security, and climate change.

On investments, HE Al Naqi said "According to the latest data published by APICORP (one of OAPEC joint ventures), the committed investments in MENA region which include investments in



OAPEC Activities



energy projects currently under execution are estimated at \$345 billion for the period between 2018-2022. The oil sector accounts for the largest share of investments at \$131 billion, with the majority in upstream projects. Total committed gas investments are relatively equal at \$106 billion, followed by petrochemicals at \$14 billion."

He also tackled energy security stressing that the security of supply and the security of demand are two faces of the same coin. He added that security is the main key factor in the stability of the entire market, to the benefit of producing and consuming countries, as well as those who are investing in the oil industries. HE Al Naqi clarified that by promoting transparency between the major players in the oil market (producers and consumers), the world will definitely take a major step towards energy security.

Regarding the United Nations Framework Convention on Climate Change (UNFCCC) negotiations, HE Al Naqi said that all OAPEC member countries, which are part of the convention, played a great role during the negotiations taking into consideration to match the environmental issues and the interest of its member countries as a group. He stated that OAPEC, with other concerned organizations, play a vital role to clarify the expected adverse measure of climate change policies and actions of Paris Agreement on their economies.

He continued saying that while following up the current UNFCCC negotiation developments, OAPEC emphasizes the importance of the principles of common but differentiated responsibilities, capacity differences, equity, historic responsibility on emissions, as well as, priorities on achieving sustainable development with their priorities and national strategies. He reiterated that OAPEC welcomed the Paris Agreement that resulted from COP 21 as all its Member Countries have signed the Agreement.

He said "It is important, however, to remember that the implementation of the Paris Agreement should continue to be guided by the principles and provisions laid out by the UNFCCC, particularly the principles of common but differentiated responsibilities and respective capabilities. The unique situation of developing countries, in particular, should be given the priority it deserves, including those developing countries whose economies highly depend on a single source such as oil for their sustainable development."

The Secretary General also talked about OAPEC member countries' efforts on sustainable development issues, stressing that oil will remain





the engine of economic growth and development in most producing countries despite efforts to diversify their economies away from hydrocarbons.

On his part, Egypt's Petroleum and Mineral Resources Minister HE Eng. Tarek El Molla said that the results announced by EGYPS 2019 are a positive indicator in terms of the entry of new mega companies in exploration operations in Egypt like Exxon Mobil and the return of Shell through bidding and winning 5 exploration blocks via EGAS tenders in 2018.

He pointed out that the 3rd round of EGYPS has witnessed an increasing participation which reflects trust in the investment climate in Egypt as each new round of EGYPS announces the past rounds' initiatives, plans, and outcomes.

It is worth mentioning that EGYPS 2019 round

On the sidelines of EGYPS 2019, Egypt's Petroleum and Mineral Resources Minister HE Eng. Tareq El Mulla discussed with his Bahraini counterpart HE Sheikh Mohamed bin Khalifa Al Khalifa means of promoting bilateral cooperation in the oil and gas sector. The executive position of the Egyptian Bahraini Gas Derivative Company in Suez Gulf, has been reviewed along with the current oil market developments, price levels, and OPEC+ efforts to achieve stability.

came under the slogan "North Africa and the Mediterranean: Meeting Future Energy Needs." HE Al Naqi took part as a keynote speaker in the international organisations' session held on the first day of the conference along with OPEC Secretary General, HE Mohammed Barkindo, and IEF Secretary General HE Dr Sun Xiansheng.

The conference consisted of 6 sessions on: strategic and technical issues, as well as, energy security, women, health, safety, finances, and investment. Over 200 speakers and experts took part in these sessions with an ausience of more than 1200 participants.

And for the first time this year, the conference discussed digital technology in energy and youth empowerment. The associating exhibition had more than 400 companies from 13 countries.



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5TH GCC POWER TRADE FORUM

OAPEC Secretary General HE Abbas Al Naqi tookpart in the 5th GCC Power Trade Forum held in Kuwait on 17-18 February 2019. The event was organized by the GCC Interconnection Authority with the participation of a group of Arab and foreign power trade experts under the slogan "Developing Power Markets to Support Economic Recovery in the GCC."

HE Al Naqi took part as a keynote speaker in the first session of the forum under the title "Developing Economic Cooperation in the Energy Sector" by presenting a paper on the "Growing Importance of Renewables in the Energy Mix."

The forum aims at accelerating the steps of power trade in the GCC region, as well as, activating necessary mechanisms to improve the efficiency of power services in the region through close coordination between all concerned parties in the Gulf.

The forum tackled various issues on the economic and population growth, urban expansion, and economic prosperity. It has also discussed some creative solutions for power supply challenges in economic terms harmonising with the global development in



this sector. Furthermore, the forum covered the fourth revolution in connection to renewables and their most ideal uses.

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5TH ANNUAL GCC ENERGY STRATEGY FORUM 2019

OAPEC Secretary General took part in the Petroleum Economist's 5th Annual GCC Energy Strategy Forum held on 5 February 2019 in Kuwait under the patronage of the Kuwaiti Oil Minister and Minister of Electricity and Water HE Dr Khaled Al Fadhel. Mr Hashem Saved Hashem, Chairman Deputy and Chief Executive Officer at Kuwait Petroleum Corporation represented HE AI Fadhel at the event and



delivered a speech on the minister's behalf.

OAPEC Secretary General HE Abbas Al Naqi gave a speech at the opening of the forum summing up OAPEC and its member countries' role and contributions to the world energy market as they account for about 705 billion barrels of oil, or 47.9%, of the world's total reserves with the OAPEC GCC members' share representing about 33.7% of the world's total oil reserves. He added that the member countries have about 53 trillion cubic metres of proven gas reserves, or 26.4% of the world's total reserves, with the OAPEC GCC members' share representing about 20.6% of the world total.

As for the future of the oil sector globally, HE Al Naqi sees that oil will remain the largest source of energy supported by growing demand by petrochemicals and transportation with a share of 28% by 2040. He stressed that fossil fuel (oil, gas, and coal) will remain the main component of the world's energy mix with a share of 75% by 2040. As for oil and gas combined, it is expected that they will form 50% of the global energy mix in the same year. The Secretary General pointed out that total energy investments in the MENA region will be about \$345 billion between 2018 and 2022. The oil sector accounts for most of the investment by about \$131 billion, followed by gas (\$106 billion), energy (\$95 billion), and petrochemicals (\$14 billion). He clarified that the investments of OAPEC members from the GCC region are \$170 billion, representing about 50% of the MENA region's total investments.

OAPEC Secretariat General was represented by a delegation headed by His Excellency the Secretary General, and members including the Director of the Technical Affairs Department Dr Samir Al Karaesh; Senior Refining Expert Eng. Emad Mekki; Petroleum Expert Eng. Turki Al Hemish; Petrochemicals Expert Dr Yasser Al Baghdadi; and Gas Industries Expert Eng. Wael Abdul Mo'ati. The delegation also included Miss Ala'a Al Omran, Press and Translation Affairs Coordinator, representing the Press and Library Department.



OAPEC Activities

HE AL NAQI: CLOSE RELATIONSHIP BETWEEN OIL PRICES AND THE SIZE OF PETROLEUM INVESTMENTS

OAPEC Secretary General HE Abbas Al Naqi said that global oil and gas investments have witnessed a slight recovery recently following a sharp decline of 26% in 2015 and 24% in 2016.

In a press interview with Kuwait's Al Jarida Newspaper, HE Al Naqi expected the MENA region to intensify its investment business and expand its energy sector. He pointed out to one of OAPEC joint venture, APICORP's, estimates that showed that scheduled investments' size in the MENA region's energy sector was \$574 billion between 2013 and 2017, \$187 billion of which in the power sector, \$169 billion in the gas sector, and \$150 billion in the oil sector.

He clarified that investments in ongoing energy projects are estimated at about \$345 billion between 2018 and 2022, \$131 billion of which in the oil sector, \$106 billion in the natural gas sector, and \$14 billion in petrochemicals projects. GCC countries' investments are \$171 billion.

HE Al Naqi drew the attention to the fact that investments in the oil and natural gas sector are related directly to oil prices. He added that in spite of the decline in prices, many Arab countries announced continuing with their investment plans in order to maintain global market balance. However, the uncertainty that governs the market currently, along with discouraging business environment, still represent a serious challenge



facing the expansion of investments.

He pointed out that huge investments in exploration and production must be in parallel with stability, security, and ensuring continued global oil demand, in order for them to be justified. He clarified that the security of supply for the consuming countries should be met with security of demand for the producing and exporting countries.

The Secretary General has tackled various issues in the interview, especially OAPEC's role in coordinating its member countries' petroleum policies, OAPEC's 2018 achievements, and its Arab and international activities in line with its annual plan drawn up in coordination with its member countries.

OAPEC & IEF BILATERAL RELATIONS

OAPEC Secretary General HE Abbas Al Naqi received the International Energy Forum (IEF) Secretary General, HE Dr Sun Xiansheng, in his office on 4 February 2019. The meeting tackled a variety of issues on aspects of close cooperation between the two organisations, especially in conferences and research work.

At the end of the meeting, HE Al Naqi stressed OAPEC's keenness on boosting cooperation with regional and international organisations specialized in energy, petroleum, environment, and sustainable development, which contributes to furthering cooperation between petroleum exporting and petroleum importing countries.



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OAPEC CLIMATE CHANGE ACTIVITIES IN Q1 OF 2019

Upon an invitation by the Arab League (LAS), OAPEC took part in the 22nd Arab Negotiating Group meeting at the Arab League headquarters in Cairo, between 5 and 7 February 2019. The members of the Arab Negotiating Group on Climate Change and a representative from ESCWA took part in the meeting. Mr Abdul Kareem Ayed represented OAPEC Secretariat General.

In his contributions, Mr Ayed pointed out to the petroleum-related topics and the consequences of the climate change policies and the Paris Agreement on the Arab oil sector especially in the transition period from negotiations on texts to negotiating executive issues that would affect the Arab interests whether directly or indirectly.

After extensive discussions, the Arab Negotiating Group on Climate Change agreed a number of key points in terms of the Arab negotiating stance during the 2019 negotiations, which draws up a strategic vision on the execution of the Paris Agreement within the framework of the Katowice COP in a way that does not harm the Arab interests so that the Arab Group's mechanism does not contradicts with any of these points when negotiating any text.

Following are the most important key points in the next stage of negotiations:

 Activating national climate change committees in the Arab countries due to their importance in informing the concerned authorities in each country on climate change and coordinating amongst themselves to take any measures required for the implementation of the Paris Agreement within the framework of Katowice COP

- Reviewing the outcomes of the Katowice COP with the concerned authorities in each individual country and making a national plan for implementation
- Coordinating with scientific and research institutions and relevant Arab and regional organisations to support national efforts on climate change
- Sustainability of national and regional institutional action to serve climate change issues in the Arab region
- Continued following up on relevant national and regional activities and documents issued by the various authorities and benefitting from the national/regional institutions operating in the Arab countries to develop skills for a positive impact on common Arab interests
- Primary agreement on holding the 12th workshop on developing the Arab negotiators' skills and the 23rd Meeting for the Arab Negotiating Group on 7 and 8 April 2019 at the ESCWA headquarters in Beirut before the start of the Arab Sustainable Development Forum on 9 to 11 April 2019
- Providing full support to Palestine during its presidency of the Group of 77 and China
- Working on ensuring Arab participation in the Katowice Experts' Committee concerned with evaluating the impact of response measures under the umbrella of its duties according to the conference resolution

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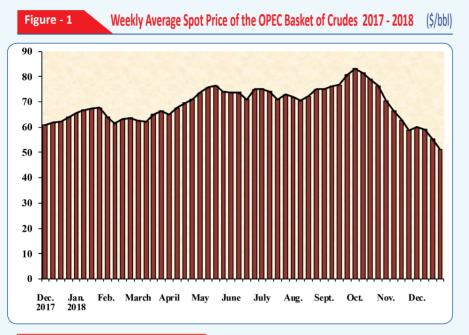
Petroleum Developments in the World Market and Member Countries*

1. Oil Market

1. Prices

1-1Crude Oil Prices

Weekly average price of OPEC basket increased during the first week of December 2018, to reach \$60/bbl, then decline thereafter to reach its lowest level of \$51.3/bbl during the fourth week, as shown in **figure 1**:



monthly On basis, OPEC Reference Basket in December 2018, averaged \$56.9/bbl. representing a decrease of \$8.4/bbl or 12.8% comparing with previous month, and a decrease of \$5.2/bbl or 8.3% from the same month of previous year. Concerns about global oversupply and deteriorating oil demand, amid high uncertainty about global economic growth, as well as weak refining margins, were major stimulus for the decrease in oil prices during the month of December 2018 to reach its lowest level since October 2017.

Key Indicators

- In December 2018, **OPEC Reference Basket decreased** by 12.8% or \$8.4/bbl from the previous month level to stand at \$56.9/bbl.
- *World oil demand* in December 2018, *decreased* by 0.7% or 0.7 million b/d from the previous month level to reach100.1 million b/d.
- *World oil supplies* in December 2018, *decreased* by 0.5% or 0.5 million b/d from the previous month level to reach100.8 million b/d.
- US tight oil production in December 2018, increased by 1% to reach about 8 million b/d, whereas US oil rig count decreased by 5 rig from the previous month level to stand at 953 rig.
- US crude oil imports in November 2018, increased by 1.2% from the previous month level to reach 7.6 million b/d, whereas US product imports decreased by 11.3% to reach about 1.8 million b/d.
- **OECD commercial inventories** in December 2018 **increased** by 6 million barrels from the previous month level to reach 2862 million barrels, whereas **Strategic inventories** in OECD-34, South Africa and China **decreased** by 1 million barrels from the previous month level to reach 1831 million barrels.
- *The average spot price of natural gas* at the Henry Hub *decreased* in December 2018 to reach \$4.04/ *million BTU.*
- The Price of Japanese LNG imports in November 2018 increased by \$0.03/m BTU to reach \$10.9/m BTU, and the Price of Korean LNG increased by \$0.07/m BTU to reach 11.2/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 and Korea* were about 2.767 million tons in November 2018 (a share of 27% 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:

Table 1	Char	Change in Price of the OPEC Basket of Crudes, 2017-2018								(\$/bbl)			
	Dec. 2017	Jan. 2018	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
OPEC Basket Price	62.1	66.9	63.5	63.8	68.4	74.1	73.2	73.3	72.3	77.2	79.4	65.3	56.9
Chamge From previous Month	1.3	4.8	-3.4	0.3	4.7	5.7	-0.9	0.1	-1.0	4.9	2.2	-14.1	-8.4
Change from same month of previous Year	10.4	14.5	10.1	13.4	17.1	24.9	28.0	26.4	22.7	23.7	23.9	4.6	-5.2

* 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".

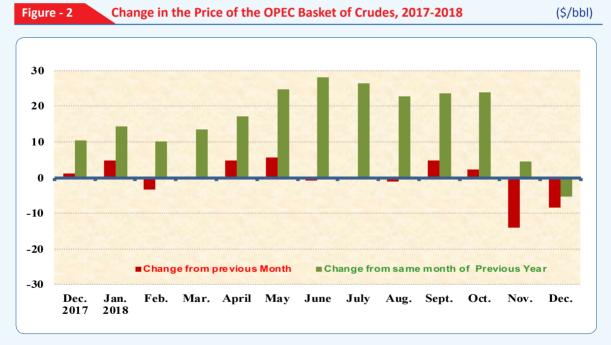


Table (3) in the annex show spot prices for OPEC basket and other crudes for the period 2016-2018.

1-2 Spot Prices of Petroleum Products

- US Gulf

In December 2018, the spot prices of premium gasoline decreased by 12.3% or \$8.7/bbl comparing with their previous month levels to reach \$62.3/bbl, spot prices of gas oil decreased by 15.6% or \$12.5/bbl to reach \$67.5/bbl, and spot prices of fuel oil decreased by 13.3% or \$7.9/bbl to reach \$51.6/bbl.



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- Rotterdam

The spot prices of premium gasoline in December 2018, decreased by 12% or \$9.2/bbl comparing with their previous month levels to reach \$67.6/bbl, spot prices of gas oil decreased by 13.7% or \$11.8/bbl to reach \$74.6/bbl, and spot prices of fuel oil decreased by 15.2% or \$9.5/bbl to reach \$53.1/bbl.

- Mediterranean

The spot prices of premium gasoline decreased in December 2018, by 13.5% or 9.1/bbl comparing with previous month levels to reach 58.4/bbl, spot prices of gas oil decreased by 14% or 11.9/bbl to reach 73.2/bbl, and spot prices of fuel oil decreased by 15.3% or 9.9/bbl to reach 54.6/bbl.

- Singapore

The spot prices of premium gasoline decreased in December 2018, by 12.7% or \$8.7/bbl comparing with previous month levels to reach \$60/bbl, spot prices of gas oil decreased by 14.9% or \$12.2/bbl to reach \$69.9/bbl, and spot prices of fuel oil decreased by 17.4% or \$11.9/bbl to reach \$56.4/bbl.

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

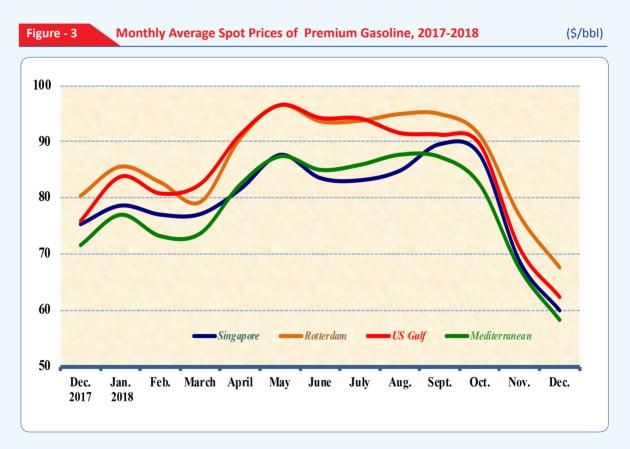


Table (4) in the annex shows the average monthly spot prices of petroleum products, 2017-2018.



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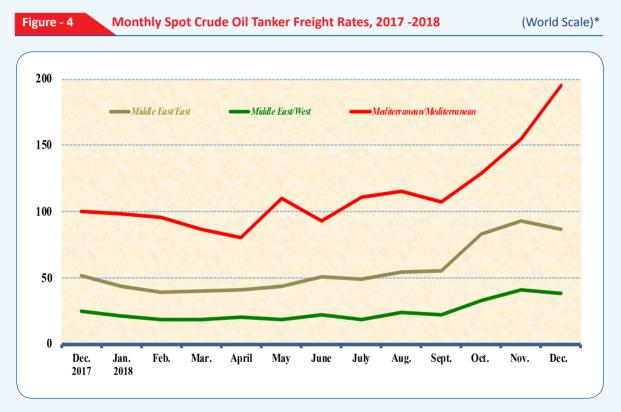
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1-3 Spot Tanker Crude Freight Rates

In December 2018, Freight rates for crude oil for tanker size (230-280 thousand deadweight tons (dwt)), leaving Middle Eastern ports to the East, decreased by 6 points or 6.5% comparing with previous month to reach 87 points on the World Scale (WS*).

And freight rates for crude oil for tanker size (270-285 thousand deadweight tons (dwt)), leaving Middle Eastern ports to the West, decreased by 3 points or 7.3% comparing with previous month to reach 38 points on the World Scale (WS), whereas freight rates for inter - Mediterranean for small to medium sized tankers (80-85 thousand deadweight tons (dwt)), increased by 40 points or 25.8% comparing with previous month to reach 195 points on the World Scale (WS).

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



* 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 December 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, increased by 51 points, or 38.6% comparing with previous month to reach 183 points on WS.

And Freight rates for Petroleum Products across Mediterranean [for tanker size 30-35 thousand deadweight tons (dwt)], increased by 59 points, or 36% comparing with previous month to reach 223 points on WS, freight rates for petroleum products [for tanker size 30-35 thousand deadweight tons (dwt)], leaving Mediterranean to North-West Europe increased by 61 points, or 35.5% comparing with previous month to reach 233 points on the World Scale (WS).

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

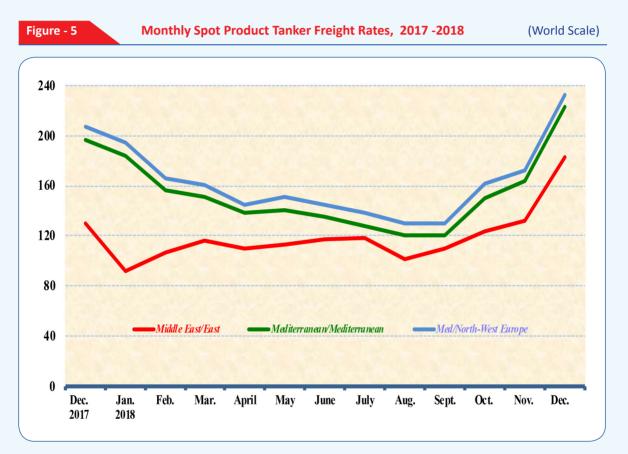


Table (5) and (6) in the annex show crude and products Tankers Freight Rates, 2017-2018.

2.Supply and Demand

Preliminary estimates in December 2018 show a decrease in world oil demand by 0.7% or 0.7 million b/d, comparing with the previous month level to reach 100.1 million b/d, representing an increase of 1.3 million b/d from their last year level.

Demand in OECD countries increased by 0.8% or 0.4 million b/d, comparing with the previous month level to reach 48.8 million b/d, representing an increase of 0.3 million b/d from their last year level. Whereas demand in Non-OECD countries decreased by 1.9% or 1 million b/d comparing with their previous month level to reach 51.8 million b/d, representing an increase of 1.1 million b/d from their last year level.





(Million b/d)

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On the supply side, preliminary estimates show that world oil supplies for December 2018 decreased by 0.5% or 0.5 million b/d, comparing with the previous month to reach 100.8 million b/d, representing an increase of 2.8 million b/d from their last year level.

In December 2018, OPEC crude oil and NGLs/condensates total supplies decreased by 1.5% or 0.6 million b/d, comparing with the previous month to reach 38.6 million b/d, representing a decrease of 0.2 million b/d from their last year level. Whereas preliminary estimates show that Non-OPEC supplies increased by 0.2% or 0.1 million b/d, comparing with the previous month to reach 62.3 million b/d, representing an increase of 3.2 million b/d from their last year level.

Preliminary estimates of the supply and demand for December 2018 reveal a surplus of 0.8 million b/d, compared to a surplus of 0.5 million b/d in November 2018 and a shortage of 0.8 million b/d in December 2017, as shown in table (2) and figure (6):

World Oil Supply and Demand

	December 2018	November 2018	Change from November 2018	December 2017	Change from December 2017
OECD Demand	48.4	48.0	0.4	48.1	0.3
Rest of the World *	51.8	52.8	-1.0	50.7	1.1
World Demand	100.1	100.8	-0.7	98.8	1.3
OPEC Supply :	<u>38.6</u>	<u>39.2</u>	<u>-0.6</u>	<u>38.8</u>	-0.2
Crude Oil	31.9	32.6	-0.7	32.3	-0.4
NGLs & Cond.	6.7	6.6	0.1	6.5	0.2
Non-OPEC Supply	60.0	59.9	0.1	56.8	3.2
Processing Gain	2.3	2.3	0.0	2.3	0.0
World Supply	100.8	101.3	-0.5	98.0	2.8
Balance	0.8	0.5		(0.8)	

Source: Energy Intelligence Briefing Jan. 23, 2019.

Table 2

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

Tables (7) and (8) in the annex show world oil demand and supply for the period 2017-2018.





Tables (7) and (8) in the annex show world oil demand and supply for the period 2017-2018.

US tight oil production

In December 2018, US tight oil production increased by 81 thousand b/d or 1% comparing with the previous month level to reach 8 million b/d, representing an increase of 1.5 million b/d from their last year level. The US oil rig count decreased by 5 rig comparing with the previous month level to reach 953 rig, a level that is 142 rig higher than last year, as shown in table (3) and figure (7):

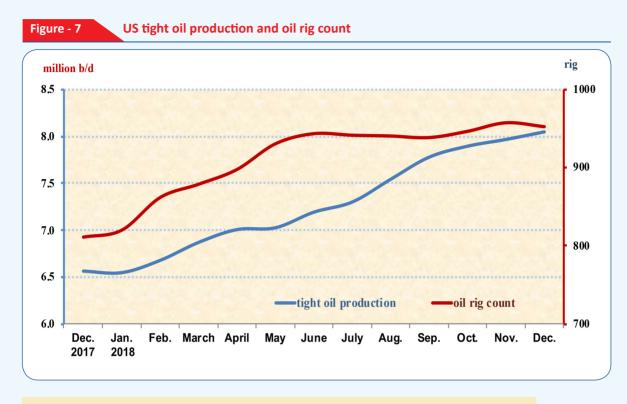
Table 3 US tight oil production* (Million b/d)									
	December 2018	November 2018	Change from November 2018	December 2017	Change from December 2017				
tight oil production	8.045	7.964	0.081	6.560	1.485				
Oil rig count (rig)	953	958	(5)	811	142				

Source: EIA, Drilling Productivity Report for key tight oil and shale gas regions, January 2019.

* 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.







3.Oil Trade

USA

In November 2018, US crude oil imports increased by 88 thousand b/d or 1.2% comparing with the previous month level to reach 7.6 million b/d. Whereas US oil products imports decreased by 224 thousand b/d or 11.3% to reach about 1.8 million b/d.

On the export side, US crude oil exports increased by 160 thousand b/d or 7.1% comparing with the previous month level to reach 2.4 million b/d, and US products exports increased by 88 thousand b/d or 1.6% to reach 5.4 million b/d. As a result, US net oil imports in November 2018 were 384 thousand b/d or nearly 20.3% lower than the previous month, averaging 1.5 million b/d.

Canada remained the main supplier of crude oil to the US with 50% of total US crude oil imports during the month, followed by Saudi Arabia with 12%, then Mexico with 9%. OPEC Member Countries supplied 33% of total US crude oil imports.

Japan

In November 2018, Japan's crude oil imports increased by 32 thousand b/d or 1% comparing with the previous month level to reach 3.1 million b/d. And Japan oil products imports increased by 53 thousand b/d or 8% comparing with the previous month to reach 730 thousand b/d.

On the export side, Japan's oil products exports increased in November 2018, by 133 thousand b/d or 31.8% comparing with the previous month, averaging 551 thousand b/d. As a result, Japan's net oil imports in November 2018 decreased by 48 thousand b/d or 1.4% to reach 3.3 million b/d.

Saudi Arabia was the big supplier of crude oil to Japan with a share of 37% of total Japan crude oil imports, followed by UAE with 29% and Kuwait with 9% of total Japan crude oil imports.





China

In November 2018, China's crude oil imports increased by 1.3 million b/d or 14.1% comparing with the previous month level to reach 10.5 million b/d. Whereas China oil products imports decreased by 28 thousand b/d or 2% comparing with the previous month to reach 1.5 million b/d.

On the export side, China oil products exports increased in November 2018, by 152 thousand b/d or 15% comparing with the previous month, averaging 1.2 million b/d. As a result, China's net oil imports in November 2018 increased by 1.1 million b/d or 11.5% to reach 10.7 million b/d.

Table (4) shows changes in crude and oil products net imports/(exports) in November2018 versus the previous month:

Table 4

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

		Crude Oi	il	oil Products			
	November 2018	October 2018	Change from October 2018	November 2018	October 2018	Change from October 2018	
USA	5.181	5.253	-0.072	-3.675	-3.363	-0.312	
Japan	3.120	3.088	0.032	0.179	0.258	-0.080	
Japan	10.397	9.148	1.249	0.293	0.472	-0.180	

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

4. Oil Inventories

In December 2018, OECD commercial oil inventories increased by 6 million barrels to reach 2862 million barrels – a level that is 9 million barrels higher than a year ago. It is worth mentioning that during the month, commercial crude inventories in OECD increased by 3 million barrels to reach 1098 million barrels, and commercial oil products inventories increased by 3 million barrels to reach 1765 million barrels.

Commercial oil inventories in Americas increased by 3 million barrels to reach 1526 million barrels, of which 609 million barrels of crude and 917 million barrels of oil products. And Commercial oil Inventories in Europe increased by 5 million barrels to reach 923 million barrels, of which 330 million barrels of crude and 593 million barrels of oil products. Whereas Commercial oil inventories in Pacific decreased by 2 million barrels to reach 414 million barrels, of which 159 million barrels of crude and 255 million barrels of oil products. In the rest of the world, commercial oil inventories increased by 19 million barrels to



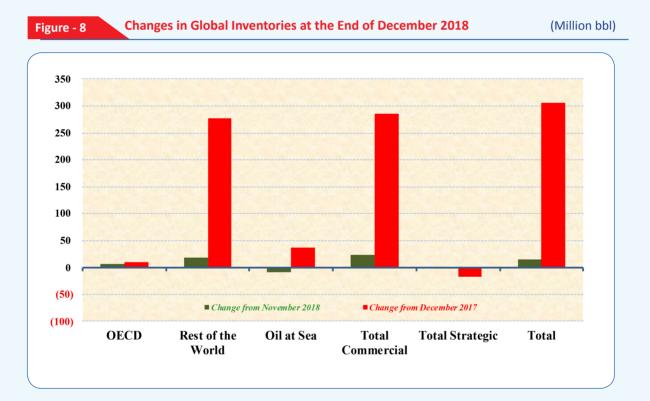
reach 2943 million barrels, whereas the Inventories at sea decreased by 8 million barrels to reach 1209 million barrels.

As a result, Total Commercial oil inventories in December 2018 increased by 24 million barrels to reach 5805 million barrels – a level that is 286 million barrels higher than a year ago.

Strategic inventories in OECD-34, South Africa and China decreased by 1 million barrels to reach 1831 million barrels – a level that is 17 million barrels lower than a year ago

Total world inventories, at the end of December 2018 were at 8845 million barrels, representing an increase of 15 million barrels comparing with the previous month, and an increase of 306 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 December 2018.



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 December 2018 decreased by \$0.05/ million BTU comparing with the previous month, to reach \$4.04/ million BTU.



The comparison, shown in **table (5)**, between natural gas prices and the WTI crude reveal differential of \$4.5/ million BTU in favor of WTI crude.

Table 5 Henry Hub Natural Gas and WTI Crude Average Spot Prices, 2017-2018								(\$/ Million BTU ¹)					
	Dec. 2017	Jan. 2018	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Natural Gas ⁽²⁾	2.8	3.9	2.7	2.7	2.8	2.8	3.0	2.8	2.9	3.0	3.3	4.1	4.1
WTI Crude ⁽³⁾	10.0	11.0	10.7	10.8	11.4	12.1	11.7	12.2	11.7	12.1	12.2	9.8	8.5

1. British Thermal Unit.

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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 November 2018, the price of Japanese LNG imports increased by \$0.03/ million BTU comparing with the previous month to reach \$10.9 million BTU, and the price of Korean LNG imports increased by \$0.07/million BTU comparing with the previous month to reach \$11.2/ 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 9.1% or 1.354 million tons from the previous month level to reach 16.287 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									
			orts nd tons)	Average Import Price (\$/million BTU)					
	Japan	Korea	China	Total	Japan	Korea	China		
2016	82767	33257	26017	142041	6.9	6.9	6.5		
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		
August	7575	2920	4710	15205	10.2	10.2	8.5		
September	6274	3358	4370	14002	10.6	10.8	8.5		
October	6538	3795	4600	14933	10.9	11.1	8.5		
November	6345	3952	5990	16287	10.9	11.2	8.5		

Source: World Gas Intelligence various issues.

Table7

2.3. Sources of LNG imports

Australia was the big supplier of LNG to Japan and Korea with 3.352 million tons or 31% of total Japan and Korea LNG imports in November 2018, followed by Qatar with 17.9% and Malaysia with 13.5%.

The Arab countries LNG exports to Japan and Korea totaled 2.767 million tons - a share 27% of total Japanese and Korean 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 \$9.31/million BTU at the end of November 2018, followed by Indonesia with \$8.99/million BTU then Malaysia with \$8.93/million BTU, and Australia with \$8.81/million BTU. LNG Qatar's netback reached \$8.26/million BTU, and LNG Algeria's netback reached \$7.44/million BTU.

 Table (7) shows LNG exporter main countries to Japan, South Korea, and

 China and their netbacks at the end of November 2018.

	(tł	Imports nousand tor	ıs)	Spot LNG Netbacks at North East Asia Markets (\$/million BTU)
	Japan	Korea	Total	
Total Imports, of which:	<u>6345</u>	<u>3952</u>	<u>10297</u>	
Australia	2345	852	3197	8.81
Qatar	753	1095	1848	8.26
Malaysia	859	534	1393	8.93
Russia	495	141	636	9.31
Indonesia	287	121	408	8.99

LNG Exporter Main Countries to Japan, Korea and China, And Their Netbacks^{*} at The End of November 2018

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





Tables Annex