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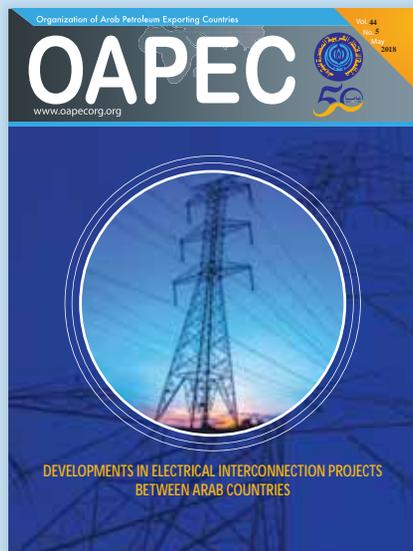
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## DEVELOPMENTS IN ELECTRICAL INTERCONNECTION PROJECTS BETWEEN ARAB COUNTRIES



# 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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• **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.



## DEVELOPMENTS IN ELECTRICAL INTERCONNECTION PROJECTS BETWEEN ARAB COUNTRIES

Electrical interconnection projects are one of the bright and prominent energy cooperation aspects between Arab countries. For long decades, Arab countries paid great attention to these projects due to their importance and vital role in reaping various economic, technical, and environmental benefits, including: reducing capital investment required for electricity projects; reciprocal backup between these countries in case of emergency power cuts; making use of the difference in peak hours due to time difference; in addition to exchanging expertise.

Arab cooperation in the electricity sector is distinguished by the presence of specialized bodies in this field that encourage and coordinate relevant policies among Arab countries including: the Arab Ministerial Council for Electricity, GCC Interconnection Authority, Arab Union of Electricity, and the Arab Fund for Economic and Social Development.

The past two years witnessed increasing activity on boosting bilateral electrical interconnection projects between Arab countries. Many MOUs have been signed in this regard including between: Egypt and KSA; Egypt and Sudan; Kuwait and Iraq; KSA and Jordan; Algeria, Libya, and Tunisia; and Iraq and Syria. This is in addition to the already existing key interconnection projects, most importantly: the octal project (between Egypt, Iraq, Jordan, Lebanon, Libya, Palestine, Syria, Turkey); the Maghreb interconnection project (between Libya, Tunisia, Algeria, Morocco); and the GCC interconnection project. These interconnection projects tell a real success story.

Electricity generation in Arab countries relies heavily on natural gas and oil; they claim the biggest portion of power generation resources. Natural gas is used as fuel for power generation plants, especially the combined cycle plants (their efficiency is 55%-60% higher than ordinary plants with 35%), as natural gas contributes to reducing fuel use.

The increasing demand for electricity is a key challenge for the countries in the region. APICORP estimated investment in the MENA region to reach about \$260 billion to meet the increasing demand for electricity. This is due to the accelerating growth of population, and the requirements of the economic and social development. APICORP explained that the MENA power production capacity needs to increase at a rate of 6.4% per annum between 2018 and 2022 (equal to 117 GIGAWATTS).

Available data indicate that Arab countries consumption for power generation purposes in 2017 reached about 241 million tons of oil equivalent (equal to consuming about 4.6 million barrels of oil equivalent per day). Total maximum electrical load in Arab countries by the end of 2017 reached about 210 GIGAWATTS, while total generated power reached about 1076 terawatts/hour; and the total combined generating capacity reached about 288 GIGAWATTS.

In the light of the continued current growth in demand and power consumption, it is expected that maximum demand in Arab countries would increase to about 240 GIGAWATTS by 2030, which would lead to Arab countries bearing additional large financial burdens.

A study prepared by OAPEC under the title “The Role of Natural Gas in Realizing Sustainable Development in the Arab Countries” indicates that in spite of the increasing growth in electricity consumption in some Arab countries, there are still millions of people in the Arab countries that do not have access to modern power services, especially electricity. Therefore, electricity demand inside the Arab region is expected to rise in the coming years. This situation calls for a wise management of energy resources, increasing efficiency of usage, and endorsing mechanisms that use less units of energy to get biggest possible output.

The League of Arab States (LAS) on its part announced on 16 April 2017 that their excellencies the Ministers of Electricity from 16 Arab countries have signed an MOU to establish the Common Joint Arab Market for Electricity. It is due for completion by 2036. LAS clarified that Arab countries have gone far in preparing for the market’s institutional frameworks and follow up mechanisms. LAS also explained that the Arab countries are not qualified currently to establish a unified Arab grid on a commercial basis due to technical issues in some Arab countries.

On another note, Arab countries have promising opportunities to generate electrical power from renewables, especially solar, wind, hydropower, and biomass resources, which would hopefully contribute actively in increasing the utilization of Arab electrical interconnection projects. Among OAPEC member countries that made a significant progress in this sector: the UAE, Algeria, KSA, and Egypt.

While observing the good and well-considered developments to increase Arab cooperation in electrical interconnection projects, OAPEC Secretariat General highly appreciate these achievements, and welcome the efforts of some Arab countries in using renewables in the electricity sector, in collaboration with the private sector and global expertise. OAPEC also calls for considering the recommendations of the study on “The Feasibility of Comprehensive Arab Electrical Interconnection and Evaluating the Use of Natural Gas in Exporting Electricity” prepared by the Arab Fund for Economic and Social Development, as well as, the recommendations issued by the 10th Arab Energy Conference on: activating the Arab electrical interconnection grids; the establishment of an Arab energy market; developing natural gas projects; and the completion and updating of Arab electrical grids data. It is worth mentioning that the 11th Arab Energy Conference, scheduled to be held in Marrakech, Morocco, from 1 to 4 October 2018, will allocate a key session on Arab cooperation in the electricity sector.

OAPEC also reiterates that raising awareness among consumers on electricity consumption and conservation is a key factor to face current and future electricity power challenges.



## The Tunisian Ambassador to the State of Kuwait Receives OAPEC Delegation



OAPEC Secretariat General delegation headed by the Secretary General HE Abbas Al Naqi made a visit to HE Ahmed bin Al Sagher, the Tunisian Ambassador to the State of Kuwait. Issues of mutual interests have been discussed in the meeting.

## OAPEC Secretary General Receives TOGY Delegation



OAPEC Secretary General HE Abbas Al Naqi received The Oil & Gas Year (TOGY) delegation in his office on 16 May 2018. TOGY conducted an extensive interview with HE Al Naqi in which he tackled a variety of issues on Arab and international developments in the oil and gas industry, energy, environment, and climate change. The Secretary General has also been introduced to the nature of TOGY’s publications and specialized reports on the oil, gas, and energy sector.

On their part, TOGY delegation expressed sincere thanks and appreciation to HE Al Naqi and his staff for their fruitful cooperation and for facilitating the extensive press interview that will be published in TOGY later this year.

# Year of Zayed 2018

## AL NAQI: THE LATE SHEIKH ZAYED HAD A PROMINENT ROLE IN SUPPORTING THE ARAB PETROLEUM INDUSTRY

OAPEC Secretary General HE Abbas Al Naqi hailed the great legacy of the late Sheikh Zayed al Nahyan, the founding President of the UAE, in supporting the Organisation since its establishment in 1968. The UAE was one of the first Arab countries to join the Organisation in 1970.



the most important Arab conferences on energy.

The Secretary General recalled the UAE's initiative in hosting the 10th Arab Energy Conference in 2014, as well as, other official meetings and scientific conferences and seminars organised by OAPEC,

which reiterates the UAE's continuation in executing Sheikh Zayed's vision in providing all kinds of support to Arab joint action on energy and petroleum.

In a statement to the UAE's Al Bayan Newspaper, Al Naqi added that among the many aspects of Sheikh Zayed's support of the Arab petroleum industry is Abu Dhabi's hosting of OAPEC's Ministerial Council and Executive Bureau meetings in 1971, and the 27th Ministerial Council meeting on 7 December 1981; in addition to, hosting the headquarters of the Arab Engineering Consultancy Company, one of OAPEC's former joint ventures.

He also drew the attention to the UAE's significant presence in OAPEC's specialised coordinating committees where they presented many proposals and visions that have been transformed into key action plans that contributed to the development of the Organisation's work.

Al Naqi said Sheikh Zayed's sponsorship and hosting of the first Arab Energy Conference in Abu Dhabi in 1979, prove his leading role in supporting the Arab petroleum industry. This conference formed the basic milestone in the progress of the Arab Energy Conference, which is considered one of

Al Naqi said that the Year of Zayed 2018 is an important opportunity to highlight the eternal legacy of one of the most loved leaders by all Arab people; being one of the founders of the joint Arab action in all political, economic, and social aspects.

### OAPEC PARTICIPATES IN THE NATIONAL PLANNING INSTITUTE CONFERENCE

OAPEC Secretariat General presented a paper on the **"Role of Oil Refining in Boosting Sustainable Development in OAPEC Member Countries"** at the Annual International Conference organised by the National Planning Institute in Cairo, Egypt, on 5-6 May 2018. The event was held under the auspices of HE Eng. Sherif Ismail, Egypt's Prime Minister under the slogan "Industrialisation and Sustainable Development."

OAPEC was represented by Eng. Emad Mekki, Senior Refining Expert, Technical Affairs Department.

### OAPEC PARTICIPATES IN THE ARAB INTERNATIONAL INDUSTRIAL CONFERENCE & EXHIBITION

OAPEC Secretariat General presented a paper on the **"Development of Petroleum Products' Standard Specifications in OAPEC Member Countries"** at the Arab International Industrial Conference & Exhibition held in Cairo, Egypt, from 6 to 8 May 2018. The event was under the auspices of HE Dr Khaled Abdul Ghaffar, Minister of Higher Education and Scientific Research.

OAPEC was represented by Eng. Emad Mekki, Senior Refining Expert, Technical Affairs Department.



## OAPEC PARTICIPATED IN BONN'S CLIMATE CHANGE MEETINGS



The 48th sessions of the UNFCCC Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) convened in Bonn, Germany, from 30 April to 10 May 2018. The Bonn Climate Change Conference also included the fifth part of the first session of the Ad Hoc Working Group on the Paris Agreement (APA 1-5), in the presence of more than 3400 participants. OAPEC participated as Observer and was represented by Mr. Abdul Kareem Ayed.

The meetings focused on facilitating the execution of the Paris Agreement agenda that has to be finalised in December 2018. Many outcomes and decisions have been reached;

most importantly on preparing a memo by the heads of the SBSTA and the Paris Agreement team to look into all clauses and propose means for progress. An additional negotiations round will be held from 3 to 8 September 2018 in Bangkok, Thailand for the second part of the 48th sessions of the UNFCCC Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) and the sixth part of the first session of the Ad Hoc Working Group on the Paris Agreement.

As for Talanoa Dialogue 2018, it seeks to evaluate global efforts at this stage towards achieving mitigation goals on the long run according to the Paris Agreement in order to help adding information to the NDCs presented by the parties in the future.

Due to the complexity of the Paris Agreement agenda and the willingness of the parties to not delete or merge any of the components of the memos at this stage, negotiators see that the parties should endorse a draft negotiation text during the Bangkok sessions to pave the way for Poland's outcome end of this year 2018.

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## RENEWABLES COOPERATION EXPLORED BETWEEN BAHRAIN AND APICORP



HE Abdul Hussein Mirza, Bahrain’s Electricity and Water Minister, met with The Arab Petroleum Investments Corporation (APICORP), one of OAPEC’s joint ventures, to discuss cooperation in the renewables sector. During his meeting with APICORP’s CEO Mr Ali Atiga and the accompanying delegation including the Deputy Chairman for Investment Ms Asma Mahrous, the minister welcomed cooperation with all companies and firms specialized in electricity, water, and renewables.

## ASRY AGM



ASRY (Arab Shipbuilding & Repair Yard) held its Ordinary General Meeting No. 43 at the Company’s headquarters in the Kingdom of Bahrain under the chairmanship of His Excellency Sheikh Daij bin Salman Al Khalifa, Chairman of the Board of Directors and Chairman of the Company’s General Assembly. The meeting was attended by representatives of the shareholding states and by ASRY’s Executive Management.

Sheikh Daij commented after the meeting that overall developments and the positive work progress in the various activities of the company during the second half of 2017 and the first quarter of 2018 were discussed. He expected the company to post positive results in the current year 2018 under the umbrella of the company’s new roadmap.





## Petroleum Developments in the World Market and Member Countries\*

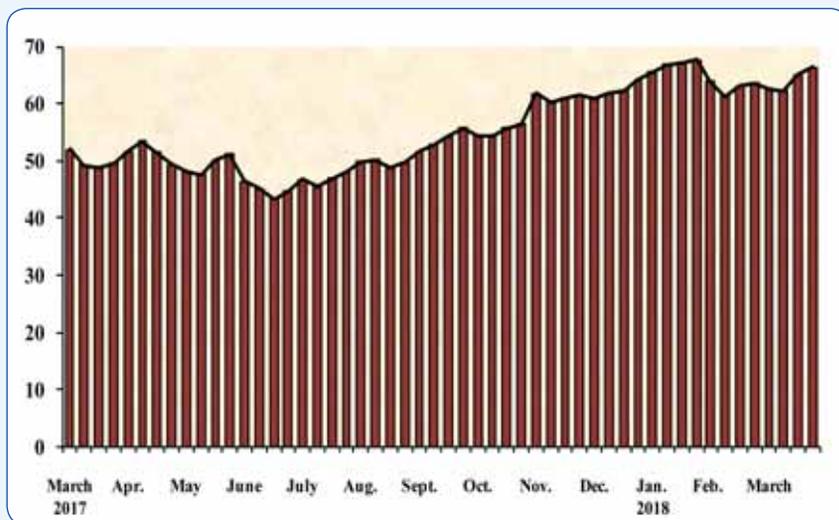
### 1. Oil Market

#### 1. Prices

##### 1-1 Crude Oil Prices

Weekly average price of OPEC basket decreased during the first week of March 2018, to reach \$62.5/bbl, and continued to decline, to reach its lowest level of \$62.3/bbl during the second week, then raise thereafter, to reach \$66.4/bbl during the fourth week, as shown in **figure 1**:

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



On monthly basis, OPEC Reference Basket in March 2018, averaged \$63.8/bbl, representing an increase of \$0.3/bbl or 0.4% comparing with previous month, and an increase of \$13.4/bbl or 26.7% from the same month of previous year. Wide-ranging support from production adjustments under the Declaration of Cooperation between OPEC and non-OPEC through year 2018, as well as weaker US dollar, geopolitical tensions, expectations of higher oil demand, and large US crude stock draws, were major stimulus for the increase in oil prices during the month of March 2018.

#### Key Indicators

- In March 2018, **OPEC Reference Basket increased** by 0.4% or \$0.3/bbl from the previous month level to stand at \$63.8/bbl.
- **World oil demand** in March 2018, **decreased** by 0.5% or 0.5 million b/d from the previous month level to reach 99.1 million b/d.
- **World oil supplies** in March 2018, **increased** by 0.4% or 0.4 million b/d from the previous month level to reach 99 million b/d.
- **US tight oil production** in March 2018, **increased** by 1.4% to reach about 6.8 million b/d, and **US oil rig count increased** by 17 rig from the previous month level to stand at 879 rig.
- **US crude oil imports** in February 2018, **decreased** by 6.2% from the previous month level to reach 7.5 million b/d, and **US product imports decreased** by 7.3% to reach about 2 million b/d.
- **OECD commercial inventories** in February 2018 **decreased** by 26 million barrels from the previous month level to reach 2841 million barrels, and **Strategic inventories** in OECD-34, South Africa and China **remained stable** at the same previous month level of 1852 million barrels.
- **The average spot price of natural gas** at the Henry Hub in March 2018 **increased** by \$0.02/million BTU comparing with the previous month level to reach \$2.69/million BTU.
- **The Price of Japanese LNG imports** in February 2018 **increased** by \$0.5/m BTU to reach \$9.2/m BTU, **the Price of Chinese LNG imports increased** by \$0.3/m BTU to reach \$8.6/m BTU, and **the Price of Korean LNG increased** by \$1.2/m BTU to reach \$9.9/m BTU,
- **Arab LNG exports to Japan, Korea and China** were about 4.386 million tons in February 2018 (a share of 26% 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:

	Mar. 2017	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan. 2018	Feb.	Mar.
OPEC Basket Price	50.3	51.4	49.2	45.2	46.9	49.6	53.4	55.5	60.7	62.1	66.9	63.5	63.8
Change From previous Month	-3.1	1.1	-2.2	-4.0	1.7	2.7	3.8	2.1	5.2	1.3	4.8	-3.4	0.3
Change from same month of previous Year	15.7	13.5	6.0	-0.6	4.2	6.5	10.5	7.6	17.5	10.4	14.5	10.1	13.4

\* 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".

**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 March 2018, the spot prices of premium gasoline increased by 2.1% or \$1.7/bbl comparing with their previous month levels to reach \$82.5/bbl, and spot prices of gas oil increased by 0.7% or \$0.5/bbl to reach \$73/bbl, whereas spot prices of fuel oil decreased by 2.6% or \$1.4/bbl to reach \$52.8/bbl.



**- Rotterdam**

The spot prices of premium gasoline decreased in March 2018, by 4.2% or \$3.5/bbl comparing with previous month levels to reach \$79.3/bbl, whereas spot prices of gas oil increased by 1.4% or \$1.1/bbl to reach \$78.6/bbl, and spot prices of fuel oil remained stable at the same previous month level of \$55.2/bbl.

**- Mediterranean**

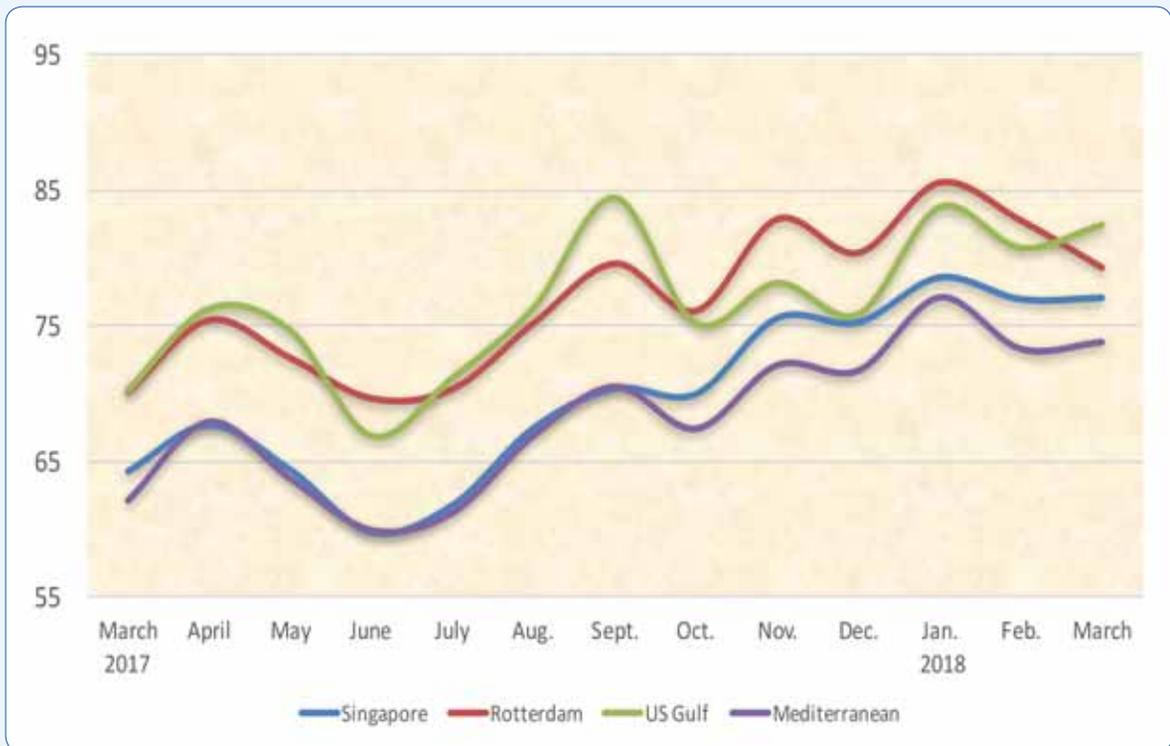
The spot prices of premium gasoline increased in March 2018, by 0.7% or \$0.5/bbl comparing with previous month levels to reach \$73.8/bbl, spot prices of gas oil increased by 1.4% or \$1.1/bbl to reach \$78.7/bbl, and spot prices of fuel oil increased by 0.2% or \$0.1/bbl to reach \$56.4 bbl.

**- Singapore**

The spot prices of premium gasoline increased in March 2018, by 0.1% or \$0.1/bbl comparing with previous month levels to reach \$77.1/bbl, spot prices of gas oil increased by 0.4% or \$0.3/bbl to reach \$78.3/bbl, whereas spot prices of fuel oil decreased by 0.2% or \$0.1/bbl to reach \$56.9/bbl.

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

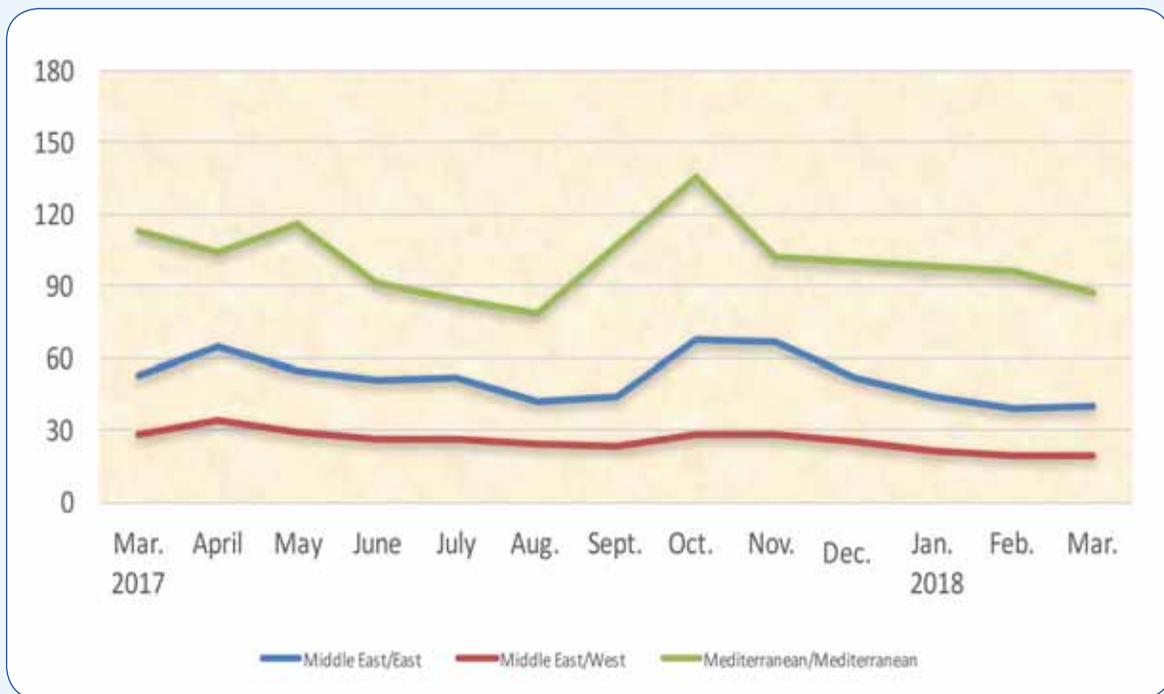
### 1-3 Spot Tanker Crude Freight Rates

In March 2018, Freight rates for crude oil for tanker size (230-280 thousand deadweight tons (dwt)), leaving Middle Eastern ports to the East, increased by one point or 2.6% comparing with previous month to reach 40 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, remained stable at the same previous month level of 19 points on the World Scale (WS).

Whereas freight rates for inter - Mediterranean for small to medium sized tankers (80-85 thousand deadweight tons (dwt)), decreased by 9 points or 9.4% comparing with previous month to reach 87 points on the World Scale (WS).

**Figure (4)** shows the freight rates for crude oil to all three destinations from March 2017 to March 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 March 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 9 points, or 8.4% comparing with previous month to reach 116 points on WS.



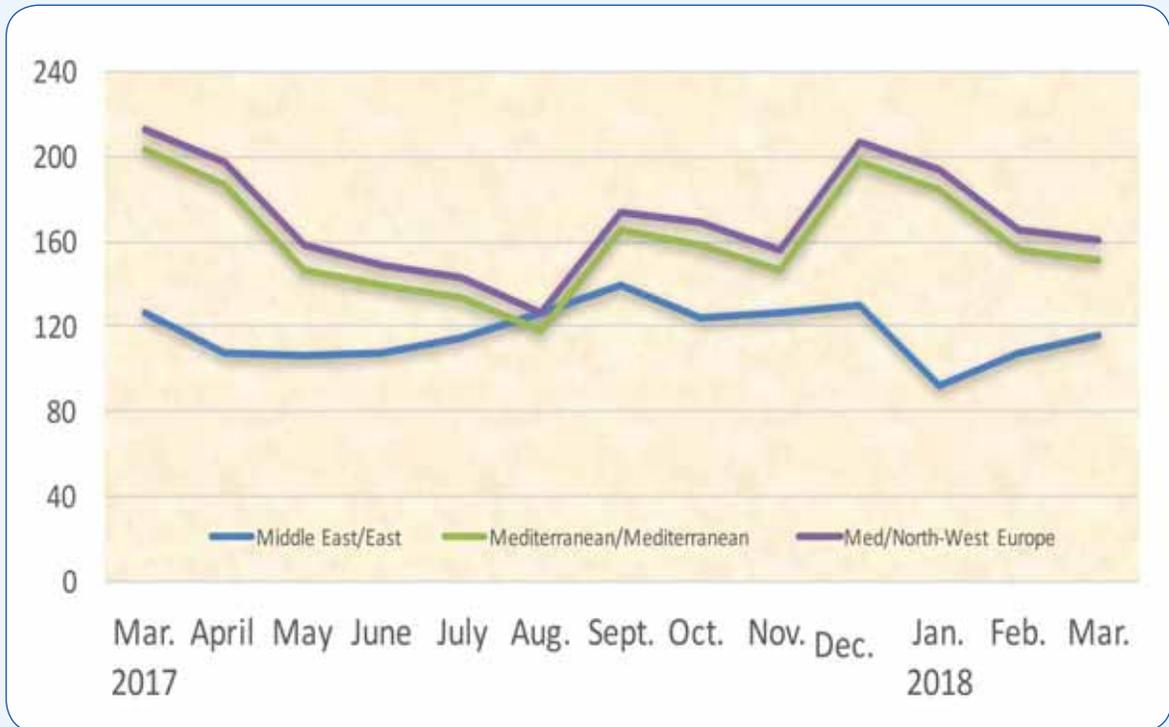
Whereas Freight rates for Petroleum Products across Mediterranean [for tanker size 30-35 thousand deadweight tons (dwt)], decreased by 5 points, or 3.2% to reach 151 points on WS, and freight rates for petroleum products [for tanker size 30-35 thousand deadweight tons (dwt)], leaving Mediterranean to North-West Europe decreased by 5 points, or 3% to reach 161 points on WS.

**Figure (5)** shows the freight rates for oil products to all three destinations from March 2017 to March 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 March 2018 show a decrease in world oil demand by 0.5% or 0.5 million b/d, comparing with the previous month level to reach 99.1 million b/d, representing an increase of 1.6 million b/d from their last year level.

Demand in OECD countries increased by 1.7% or 0.8 million b/d comparing with their previous month level to reach 47.9 million b/d, the same previous month level. Whereas demand in Non-OECD countries decreased by 0.6% or 0.3 million b/d comparing with their previous month level to reach 51.1 million b/d, representing an increase of 1.6 million b/d from their last year level.

On the supply side, preliminary estimates show that world oil supplies for March 2018 increased by 0.4% or 0.4 million b/d, comparing with the previous month to reach 99 million b/d, representing an increase of 2.4 million b/d from their last year level.

In March 2018, OPEC crude oil and NGLs/condensates total supplies remained stable at the same previous month level of 38.1 million b/d, representing a decrease of 0.1 million b/d from their last year level. Whereas preliminary estimates show that Non-OPEC supplies increased by 0.7% or 0.4 million b/d, comparing with the previous month to reach 61 million b/d, representing an increase of 2.5 million b/d from their last year level.

Preliminary estimates of the supply and demand for March 2018 reveal a shortage of 0.1 million b/d, compared to a shortage of 0.8 million b/d in February 2018 and March 2017, as shown in [table \(2\)](#) and [figure \(6\)](#):

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

	March 2018	February 2018	Change from February 2018	March 2017	Change from March 2017
<i>OECD Demand</i>	47.9	48.1	0.8	47.9	0.0
<i>Rest of the World</i>	51.1	51.4	-0.3	49.6	1.6
<i>World Demand</i>	<b>99.1</b>	<b>99.5</b>	<b>-0.5</b>	<b>97.5</b>	<b>1.6</b>
<i>OPEC Supply :</i>	<u>38.1</u>	<u>38.1</u>	<u>0.0</u>	<u>38.2</u>	<u>-0.1</u>
<i>Crude Oil</i>	31.5	31.6	-0.1	31.7	-0.2
<i>NGLs &amp; Cond.</i>	6.6	6.5	0.1	6.5	0.1
<i>Non-OPEC Supply</i>	58.7	58.3	0.4	56.1	2.6
<i>Processing Gain</i>	2.3	2.3	0.0	2.4	-0.1
<i>World Supply</i>	<b>99.0</b>	<b>98.7</b>	<b>0.4</b>	<b>96.7</b>	<b>2.4</b>
<i>Balance</i>	<b>(0.1)</b>	<b>(0.8)</b>		<b>(0.8)</b>	

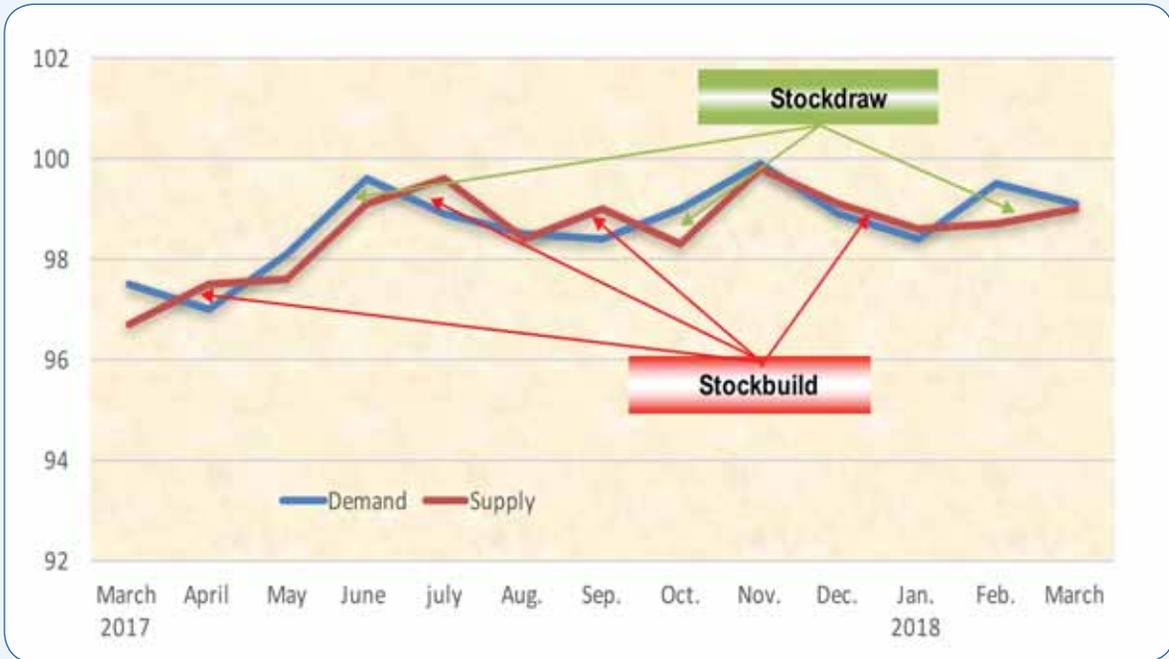
Source: Energy Intelligence Briefing Apr. 13, 2018.



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 March 2018, US tight oil production increased by 93 thousand b/d or 1.4% comparing with the previous month level to reach 6.753 million b/d, representing an increase of 1.3 million b/d from their last year level. The US oil rig count increased by 17 rig comparing with the previous month level to reach 879 rig, a level that is 200 rig higher than last year, as shown in table (3) and figure (7):

Table 3

US tight oil production\*

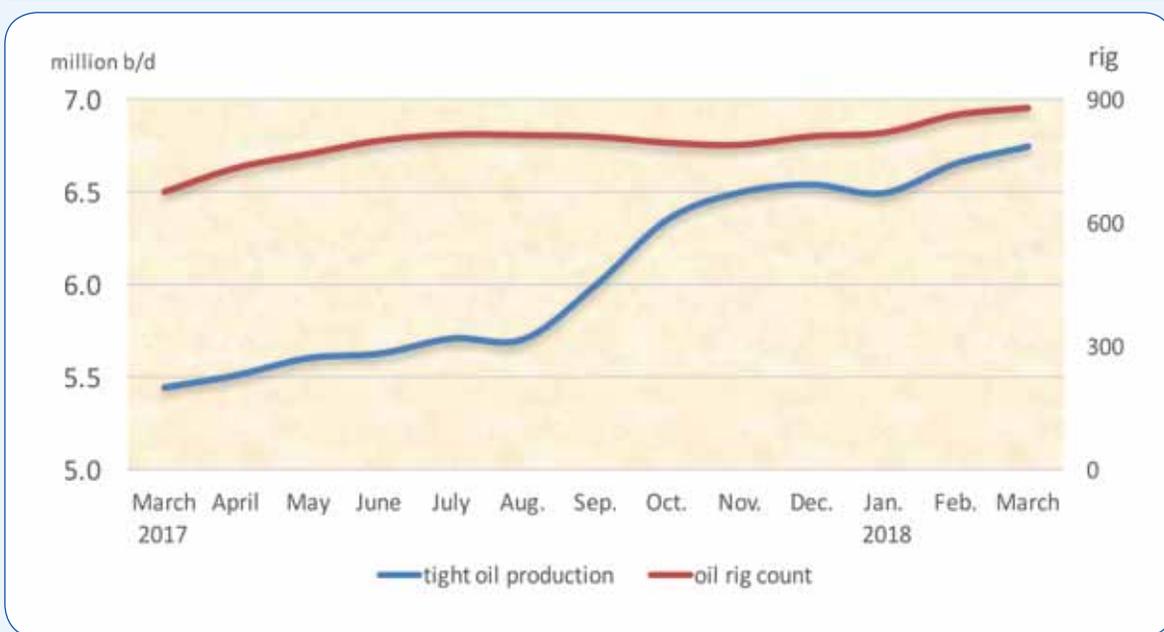
(Million b/d)

	March 2018	February 2018	Change from February 2018	March 2017	Change from March 2017
<i>tight oil production</i>	6.753	6.660	0.093	5.443	1.310
<i>Oil rig count (rig)</i>	879	862	17	679	200

Source: EIA, Drilling Productivity Report for key tight oil and shale gas regions, April 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 February 2018, US crude oil imports decreased by 499 thousand b/d or 6.2% comparing with the previous month level to reach 7.5 million b/d. And US oil products imports decreased by 157 thousand b/d or 7.3% to reach about 2 million b/d.

On the export side, US crude oil exports increased by 165 thousand b/d or 12.1% comparing with the previous month level to reach 1.5 million b/d, whereas US products exports decreased by 401 thousand b/d or 8.1% to reach 4.6 million b/d. As a result, US net oil imports in February 2018 were 419 thousand b/d or nearly 11% lower than the previous month, averaging 3.4 million b/d.

Canada remained the main supplier of crude oil to the US with 47% of total US crude oil imports during the month, followed by Saudi Arabia with 9%, then Iraq with 8.8%. OPEC Member Countries supplied 34% of total US crude oil imports.

#### Japan

In February 2018, Japan's crude oil imports decreased by 428 thousand b/d or 13% comparing with the previous month to reach 3 million b/d. And Japan oil products imports decreased by 12 thousand b/d or 1.7% comparing with the previous month to reach 710 thousand b/d.

On the export side, Japan's oil products exports increased in February 2018, by 7 thousand b/d or 1.3% comparing with the previous month, averaging 530 thousand b/d. As a result, Japan's net oil imports in February 2018 decreased by 447 thousand b/d or 12.3% to reach 3.2 million b/d.



Saudi Arabia was the big supplier of crude oil to Japan with a share of 42% of total Japan crude oil imports, followed by UAE with 23% and Kuwait with 8% of total Japan crude oil imports.

### China

In February 2018, China’s crude oil imports decreased by 1.2 million b/d or 12% to reach 8.4 million b/d. And China’s oil products imports decreased by 114 thousand b/d or 7% to reach 1.5 million b/d.

On the export side, China’s crude oil exports reached 10 thousand b/d. Whereas China’s oil products exports decreased by 48 thousand b/d or 4.3% to reach 1 million b/d. As a result, China’s net oil imports reached 8.8 million b/d, representing a decrease of 11.5% comparing with the previous month level.

Russia was the big supplier of crude oil to China with 16% of total China’s crude oil imports during the month, followed by Saudi Arabia with 14% and Angola with 12%.

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

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

	Crude Oil			oil Products		
	February 2018	January 2018	Change from January 2018	February 2018	January 2018	Change from January 2018
USA	5.996	6.660	-0.664	-2.591	-2.835	0.244
Japan	2.994	3.421	-0.428	0.180	0.199	-0.019
China	8.425	9.502	-1.077	0.410	0.476	-0.066

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

## 4. Oil Inventories

In February 2018, OECD commercial oil inventories decreased by 26 million barrels to reach 2841 million barrels – a level that is 220 million barrels lower than a year ago. It is worth mentioning that during the month, commercial crude inventories in OECD increased by 2 million barrels to reach 1103 million barrels, whereas commercial oil products inventories decreased by 27 million barrels to reach 1738 million barrels.

Commercial oil inventories in Americas decreased by 8 million barrels to reach 1470 million barrels, of which 584 million barrels of crude and 886 million barrels of oil products. Commercial oil inventories in Pacific decreased by 14 million barrels

to reach 391 million barrels, of which 179 million barrels of crude and 212 million barrels of oil products.

And Commercial oil Inventories in Europe decreased by 3 million barrels to reach 980 million barrels, of which 340 million barrels of crude and 640 million barrels of oil products.

In the rest of the world, commercial oil inventories increased by 18 million barrels to reach 2744 million barrels, and the Inventories at sea increased by 12 million barrels to reach 1182 million barrels.

As a result, Total Commercial oil inventories in February 2018 decreased by 8 million barrels to reach 5585 million barrels – a level that is 143 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 1852 million barrels – a level that is 31 million barrels lower than a year ago

Total world inventories, at the end of February 2018 were at 8619 million barrels, representing an increase of 5 million barrels comparing with the previous month, and a decrease of 208 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 February 2018.

**Figure - 8**

**Changes in Global Inventories at the End of February 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 March 2018 increased by \$0.02/million BTU comparing with the previous month level to reach \$2.69/million BTU.

The comparison, shown in **table (5)**, between natural gas prices and the WTI crude reveal differential of \$8.1/ million BTU in favor of WTI crude.

**Table 5** Henry Hub Natural Gas and WTI Crude Average Spot Prices, 2017-2018

(\$/ Million BTU<sup>1</sup>)

	Mar. 2017	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan. 2018	Feb.	Mar.
<i>Natural Gas</i> <sup>(2)</sup>	2.9	3.1	3.2	3.0	3.0	2.9	3.0	2.9	3.0	2.8	3.7	2.7	2.7
<i>WTI Crude</i> <sup>(3)</sup>	8.6	8.8	8.4	7.8	8.1	8.3	8.3	8.9	9.8	10.0	11.0	10.7	10.8

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 February 2018, the price of Japanese LNG imports increased by \$0.5/million BTU comparing with the previous month to reach \$9.2 million BTU, the price of Chinese LNG imports increased by \$0.3/million BTU comparing with the previous month to reach \$8.6/ million BTU, and the price of Korean LNG imports increased by \$1.2/million BTU comparing with the previous month to reach \$9.9/ million BTU.

#### 2.2. LNG Imports

Total Japanese, Korean and Chinese LNG imports from various sources, decreased by 4.1% or 716 thousand tons from the previous month level to reach 16.875 million tons.

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

**Table 6 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
<b>2016</b>	<b>82767</b>	<b>33257</b>	<b>26017</b>	<b>142041</b>	<b>6.9</b>	<b>6.9</b>	<b>6.5</b>
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
<b>2017</b>	<b>6969</b>	<b>3138</b>	<b>3191</b>	<b>13298</b>	<b>8.1</b>	<b>8.0</b>	<b>7.3</b>
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

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 5.277 million tons or 31.3% of total Japan, Korea and China LNG imports in February 2018, followed by Qatar with 17.7% and Malaysia with 10.7%.

The Arab countries LNG exports to Japan, Korea and China totaled 4.386 million tons - a share 26% 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 \$9.24/million BTU at the end of February 2018, followed by Indonesia with \$9.08/million BTU then Malaysia with \$9.03/million BTU, and Australia with \$8.99/million BTU. LNG Qatar's netback reached \$8.73/million BTU, and LNG Algeria's netback reached \$8.26/million BTU.

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

**Table 7** LNG Exporter Main Countries to Japan, Korea and China, And Their Netbacks at The End of February 2018

	Imports (thousand tons)				Spot LNG Netbacks at North East Asia Markets (\$/million BTU)
	Japan	Korea	China	Total	
<b><u>Total Imports, of which:</u></b>	<b><u>8294</u></b>	<b><u>4588</u></b>	<b><u>3993</u></b>	<b><u>16875</u></b>	
<b>Australia</b>	2693	954	1630	<b>5277</b>	<b>8.99</b>
<b>Qatar</b>	664	1488	836	<b>2988</b>	<b>8.73</b>
<b>Malaysia</b>	1289	228	293	<b>1810</b>	<b>9.03</b>
<b>Indonesia</b>	785	318	305	<b>1408</b>	<b>9.08</b>
<b>Russia</b>	710	253	64	<b>1027</b>	<b>9.24</b>

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



**Tables Annex**





## ANNOUNCEMENT

### OAPEC AWARD FOR SCIENTIFIC RESEARCH FOR THE YEAR 2018

Pursuant to its policy of encouraging scientific research by awarding two prizes on a biennial basis (First Prize KD 7000, Second Prize KD 5000, equivalent to USD \$23000 and USD \$16000), upon the resolution number 1/147 of OAPEC Executive Bureau at its meeting dated 14/5/2017. The Organization of Arab Petroleum Exporting Countries (OAPEC) is pleased to announce that the research field selected for the “OAPEC Award for Scientific Research for the Year 2018” is:

#### “Petroleum and Energy- Related Economic Research Including Supply, Consumption and Prices”

##### Research Field:

The economic dimension represents a major component of energy industry, in general, and oil and gas in particular. Economic research addressing petroleum and energy industry covers a broad spectrum of expanses, including supply, demand, trade movements, prices trend, petroleum revenues, investment, and the various energy policies. Correlation between energy and sustainable development goals, as well as numerous other aspects, are also targeted by the research. A whole host of addressable thrusts are tackled in the different parts of the research. The economic aspect, pertinent to one of the proposed petroleum and energy, should be tackled by the researcher. These domains include:

1. **Current and Future Developments in Energy Markets.**
2. **Global Supply of Various Energy Sources.**
3. **Global Energy Demand: Current and Future Prospects.**
4. **Developments in Energy Prices and Their Implications for Demand and Supply Levels.**
5. **Energy Subsidy Policies and Their Impacts on Domestic Economies.**
6. **Petroleum Revenues and Their Impact on Producing Countries' Economies.**
7. **Investment in Energy, Enhancing The Role of The Private Sector: Current Status and Future Prospects.**
8. **The Energy Policies in The Main Consuming Countries and Their Implications for The Energy Future.**

##### Conditions for Submitting the Research

1. The research may be submitted by one or more author(s). Institutions and organizations are excluded.
2. The research submitted must be new and original, and has not been granted an award previously.
3. The author(s) shall agree in advance to give OAPEC the right to print and publish the research in case his/her/their win one of the prizes. A signed statement to this effect must be submitted with the research (sample provided below). The author(s) will maintain all other rights, including patent rights (if applicable). OAPEC shall not exercise its right to publish the winning research for a period of six months commencing with the date of advising the winning author (s) with the decision of the Award Committee.
4. A statement by the author(s), attesting that the research is original. Segments fully or partially adopted from other sources should be properly cited. A detailed list of all references used must also be attached.

5. Four hard copies and a digital copy of the research (either in Arabic or English) should be submitted, along with the Curriculum Vitae of each researcher, to the Organization of Arab Petroleum Exporting Countries.
6. The deadline for submitting the research is 31<sup>st</sup> May, 2018. No submission will be accepted after that date.
7. Prizes are awarded to individuals of all nationalities advised of the Award Committee's decision.
8. **The award will not be presented twice consecutively to the same recipient.**
9. Any research that does not fulfill the above conditions shall be disregarded.

Researchers will be notified by OAPEC Secretariat of the Award Committee's decision. The winners will be officially announced at the end of the OAPEC's Ministerial Council in 2018. For further information you may contact the OAPEC General Secretariat at:

**Organization of Arab Petroleum Exporting Countries (OAPEC)**  
**Secretariat of the Award Organizing Committee**  
**P.O.Box 20501 Safat 13066 Kuwait**  
**Tel.: (+965) 24959766 - Fax: (+965) 24959755**  
**E-mail: oapecaward2018@oapecorg.org**  
**Website: www.oapecorg.org**

**Organization of Arab Petroleum Exporting Countries (OAPEC)**  
**OAPEC AWARD FOR SCIENTIFIC RESEARCH FOR THE YEAR 2018**

**Field**

**“Petroleum and Energy-Related Economic Research  
Including Supply, Consumption and Prices ”**

Statement of relinquishment of printing and publication right for the research

I, undersigned:

Hereby undertake to relinquish all printing and publications right of the research submitted by me entitled:

to the Organization of the Arab Petroleum Exporting Countries (OAPEC), in the event of winning one of the two prizes of OAPEC Award for Scientific Research for the year 2018.

Name: .....

Signature: .....

Date: / /