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GCC Energy Statistics Report

2016

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Introduction

GCC-STAT is pleased to issue a publication entitled “GCC Energy Statistics Report 2016", the energy statistics included in this report is considered a great value to decision-makers and to many interested parties, as the energy sector in the Gulf area witnesses rapid development in various felids such as oil, natural gas, sustainable energy and electricity, which is an important contributor for the economic growth in the member countries which in turn is linked to development and many other fields, therefore it was important to provide statistical data with high quality and credibility to enable stakeholders of this sector as well as researchers, economists and other data users to study energy from a broader and a longer-term perspective, analyze the ways and prospects of developing this sector all of which contribute in decision-making and policy-making that in turn contribute to the growth and prosperity of the region. This report represents a number of detailed statistical tables and figures in various levels whether overall at the level of the GCC as an economic bloc or detailed way at the level of member countries, along with highlighting some phenomena or important changes.

Addition to providing printed hardcopy publication, the center uploads all its editions on its website in order to enable all interested parties to access from anywhere and at any time through the following link: https://www.gccstat.org/ar/statistic/publications

GCC -STAT expresses its thanks and gratitude to all national statistical centers in GCC for their efforts and cooperation in providing the required data for the preparation of this report, which has had a great impact in the issuance of this publication of high quality and comprehensive.
As well the center expresses its thanks and gratitude to all team members from the center who worked on the preparation and issuing this publication to come into being in a timely manner and with the required quality.

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Notes for Users

Countries and Organizations	
Meaning	**Abbreviation**
The United Arab Emirates	UAE
Kingdom of Bahrain	BH
Kingdom of Saudi Arabia	KSA
The Sultanate of Oman	OM
The State of Qatar	QA
The State of Kuwait	KU
Gulf Cooperation Council	GCC
Organization of the Petroleum Exporting Countries	OPEC
Organization of Arab Petroleum Exporting Countries	OAPEC
Arab Union of Electricity	AUE
Units	
Thousand	"000
Thousand Barrel	1000 B
million	m
billion	b
Barrel /Day	B/D
Cubic feet /Day	Cu.Ft./Day
Cubic meters	cu.m
Giga watt-hour	GWH
Centistoke (viscosity measurement unit)	cSt
Abbreviation	
Data unavailable	...
Not applicable	Na
The real value is zero	0

General Notes: A group of statistical detailed tables were added as an appendix at the end of the report to present information and additional data for users.

Executive summary

The report presents a number of statistical indicators that serve the stakeholders and stakeholders in the energy sector in the member countries in general, in this context, the most important results can be noted as follows:

- Crude oil production in GCC countries increased by 2.9% in 2016 compared to the year 2015.
- Crude oil exports to GCC countries recorded an increase by 3.3% in 2016 compared to the year 2015.
- Natural gas production in GCC countries witnessed an increase by 1.4% in 2016 compared to the previous year.
- The amount of electricity production in GCC countries recorded an increase in 2016 by 2.1% compared to 2015.
- The amount of electricity consumption in GCC countries recoded an increase in 2016 by 1.0% compared to the previous year.
- The Kingdom of Saudi Arabia recorded the highest amount of crude oil production in 2016 among GCC countries with a contribution of 57%.
- The State of Qatar recorded the highest rate of natural gas production in 2016 among GCC countries by 38%.
- The Kingdom of Saudi Arabia recorded the highest rate of electricity production and consumption in 2016 among GCC countries by 54% and 51%, respectively.

Chapter One

Introduction

Statistical concepts and terminologies

Methodology used

1.1 Introduction

The energy sector is an important economic sector in the GCC countries, in terms of providing public revenues to member countries or providing employment opportunities, in addition to the importance of this sector within the scope of objectives and indicators of sustainable development for its association and its direct impact on the environment, which requires systematic statistical follow-up within official statistical programs, and strengthen cooperation, coordination and integration between the center, partners and relevant institutions to ensure the availability of indicators and data needed to serve all stakeholders to study and develop this sector from all fields.

To achieve these goals, the center has paid special attention to the statistical coverage of the energy statistics sector by including it as a key topic within its annual statistical strategy and program, energy statistics data contribute in providing a digital statistical picture of the reality and role of the energy sector in its various fields, and enable sector managers to develop the necessary policies and interventions to utilize available resources and develop decisions related to investment of energy sector outputs. This report includes a set of statistical tables in its following chapters, these chapters cover the most important data available from official sources in the Member countries, which are reviewed in accordance with international recommendations and standards on energy statistics, in order to provide a statistical picture for use and comparisons, in addition to provide coordinated data at the level of the GCC countries as an economic bloc as well as at the level of each of the Member countries.

1.2 Statistical concepts and terminologies

All the statistical concepts, definitions and terminologies used in this publication are based on the international standards of (IRES) developed by the United Nations Statistics Division, the Energy Statistics of the International Energy Agency and the European Statistical Office (Eurostat).

Primary energy production (Primary Production):

Is the capture or extraction of fuels or energy from natural energy flows, the biosphere and natural reserves of fossil fuels within the national territory in a form suitable for use. Inert matter removed from the extracted fuels and quantities re-injected, flared or vented are not included.

Energy Transformation (Secondary Production):

(Middle block in the energy balance) is the manufacture of energy products through the process of transformation of primary fuels or energy (the processes that convert an energy product into another energy product, which, in general, is more suitable for specific uses) For example:-

- Electricity: Transformation in the Electric Power Plant of petroleum products) crude oil and natural gas) to electricity.
- Refineries: Transformation in the Refinery Plant of crude oil to petroleum products.
- Other: such as GasTo Liquid (GTL) plants for the transformation of, natural gas to liquefied natural gas (LNG).

Final Energy Consumption:

Its flows are reflecting energy consumption by energy consumers, as well as non-energy use of energy products. The final consumption is measured by the deliveries of energy products to all consumers. It excludes deliveries of fuel and other energy products for use in transformation processes and the use of energy products for energy needs of the energy industries.

Crude Oil:

Is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as Sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.

Natural Gas Liquids (NGL):

Are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate). The natural gas may be extracted with crude oil (associated gas) or from a gas field without crude oil. The NGL may be removed from the natural gas stream close to the well-head or transported to a distant gas processing plant.

Liquefied Petroleum Gases:

LPG are light paraffinic hydrocarbons derived from the refinery processes, crude oil stabilization and natural gas processing plants. They consist mainly of propane (C_3H_8) and butane (C_4H_{10}) or a combination of the two. They could also include propylene, butylene, isobutene and isobutylene. LPG are normally liquefied under pressure for transportation and storage.

Gasoline:

Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land-based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (Tetraethyl lead) and TML (tetramethyl lead). Motor gasoline can be divided into two groups: Unleaded motor gasoline and leaded motor gasoline.

Kerosene type jet fuel (Jet Fuel):

This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA). This category includes kerosene blending components.

Naphtha:

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production). Naphtha comprises material in the 30°C and 2l0°C distillation range or part of this range. Naphtha imported for blending is reported as an import of naphtha, then shown on the Interproduct Transfer row, as a negative entry for naphtha, and a positive entry for the corresponding finished product.

Gas / Diesel Oil:

(Distillate fuel oil): Gas/diesel oil is primarily a medium distillate distilling between 180°C and 380°C. Several grades are available depending on uses such as Solar, transport and heating vehicles and some other gaseous oils (eg, light heating oil for industrial and commercial uses, marine diesel oil and diesel used in railway trains, and heavy gaseous oils distilled between 380 ° C and 540 ° C which are used as petrochemical feed oils).

Fuel Oil:

This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10 cSt at 80°C. The flash point is always above 50°C and density is always more than 90 kg/l.

Natural Gas:

It comprises gases, occurring in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both "nonassociated" gas originating from fields producing hydrocarbons only in gaseous form, and "associated" gas produced in association with crude oil as well as methane recovered from coal mines (colliery gas).

Natural Gas Marketed:

Is the amount of gas ready for marketing after separating the amount of gas re-injected in the field as well as the burning gas.

Electricity:

Is transfer of energy through the physical phenomena involving electric charges and their effects when at rest and in motion. It can be generated through different processes such as: the conversion of energy contained in falling or streaming water, wind or waves; the direct conversion of solar radiation through photovoltaic processes in semiconductor devices (solar cells); or by the combustion of fuels.

1.3 Methodology used

- **Data sources**

The statistics in this publication are from official sources in the GCC countries, where the national statistical agencies of the GCC countries are the official source of the data of the GCC-STAT, which in turn is the link between the GCC-STAT and data producers from other authorities such as ministries, government agencies and others, some of the data that were not available were based on data from other international organizations such as the Organization of Petroleum Exporting Countries (OPEC), the Organization of Arab Petroleum Exporting Countries (OAPEC) and the Arab Union of Electricity (AUE).

- **Data collection and processing mechanism**

Energy data are collected from national statistical agencies in member countries through annual statistical publications published on the websites of member countries, the data published by national agencies and ministries as well as international organizations are also used to compare data and verify their accuracy, consistency and quality.

The data are then reviewed, audited and coordinated according to the publishing schedules, some units are converted from one formula to another for example (production of crude oil from 1,000 metric tons barrels, Natural gas production from one million cubic feet to one million cubic meters. Etc.).

- **Time period (data reference time)**

Presents data published in this release a time series from 2011-2016.

Chapter Two

GCC Energy Statistics at the level of Gulf countries

2.1 Crude oil in GCC countries

Oil was discovered for the first time in the Arabian Peninsula in the Kingdom of Bahrain in 1932, and then discoveries continued to neighboring countries. The process of production of crude oil witnessed a rapid developments due to the rise in global demand and the expansion of oil use, in addition to the development of factors, tools and techniques of research, exploration and oil extraction, the production and marketing of crude oil has contributed to the recovery of the economies of member countries, which for many years has been the main source of public revenue, which in turn contributed to the development of many member countries and modernization projects that enabled member countries to enter a new stage of progress, development and growth, in addition, oil has enabled member countries to strengthen their regional and international standing on more than one level.

The amount of crude oil produced in the GCC in 2016 was about 6.716.1 million barrels per year equivalent to 18.4 million barrels per day, an increase of 2.9% compared to the year 2015. While crude oil exports amounted to about 13.5 million barrels per day for the year 2016 and an increase of 3.3% compared to the year 2015, as shown in Table 1.

Table 1: Crude oil in GCC countries for the years 2015 – 2016

Variables	2015	2016	Growth rate (%)
Crude oil production (million barrels / day)	17.8	18.4	2.9
Crude oil exports (million barrels / day)	13.1	13.5	3.3
Crude oil reserves (billion barrels / year) *	463.5	496.1	7.0
Natural gas liquids (million barrels / day) *	3.2	3.4	7.6

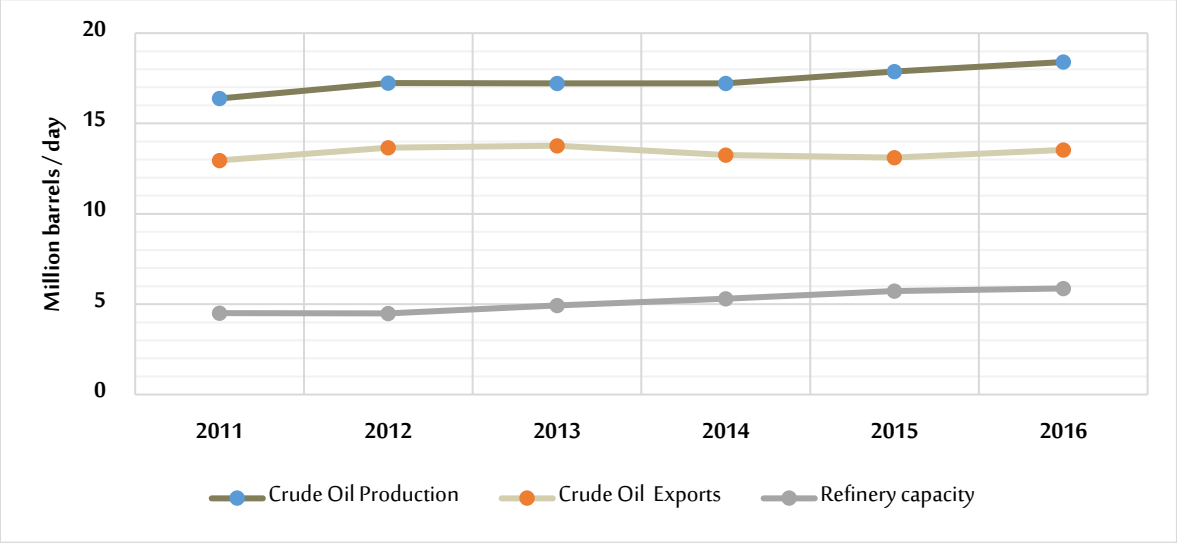
* Data source: Organization of Petroleum Exporting Countries (OPEC), Organization of Arab Petroleum Exporting Countries (OAPEC)

In addition, the GCC countries occupy the first place in the world in terms of volume of crude oil reserves, which reached in the year 2016 about 469.1 billion barrels, an increase of 7.0% over the year 2015, Table 1 also shows an increase in the production of natural gas liquids for 2016 by 7.6% over the previous year.

The amount of crude oil produced in the GCC countries grew from 2011 to 2016 with an increase rate of 12.3% in 2016 compared to 2011, this came as a result of the increase in the capacity of refineries as it reached 30.3% as a result of the opening of new refineries in some of the GCC countries as well as the expansion of existing

refineries, this was also reflected in the total quantity of crude oil exported from the GCC countries to the world, which increased by 4.5% in 2016 compared to 2011 as shown by the general trend of indicators in Figure 1.

Figure 1: Crude oil in GCC countries during the period 2011 – 2016



The crude oil reserves recorded an increase by 496.1 billion barrels in 2016 compared to 495.8 billion barrels in 2011, a slight increase of 0.1% as shown in Figure 2, this is the result of new discoveries of oil fields in some GCC countries, the volume of natural gas liquids production increased in 2016 by 18.2% from the previous year as shown in figure 3.

Figure 2: Crude oil reserves in GCC countries during the period 2011 – 2016

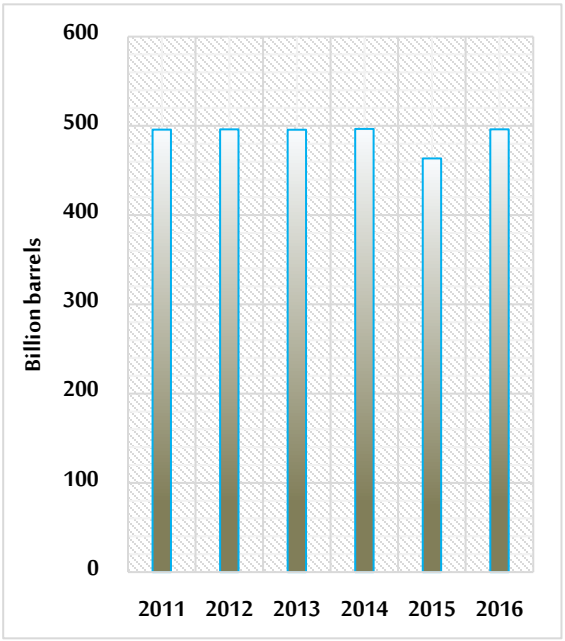
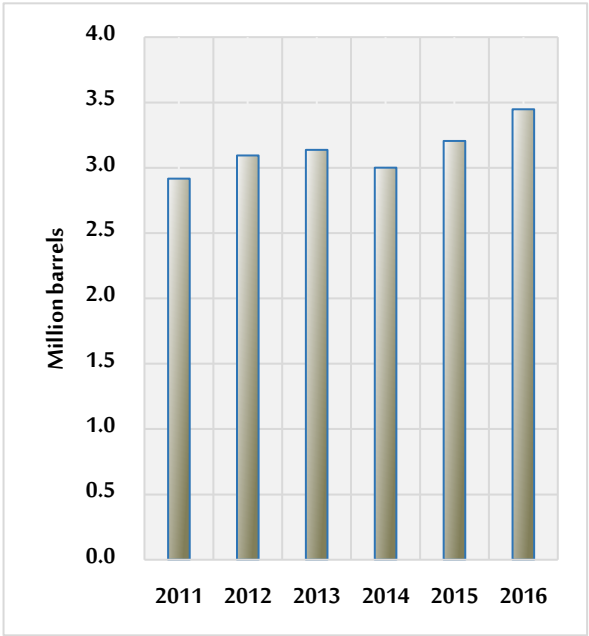


Figure 3: Natural gas liquid production in GCC countries during the period 2011 – 2016



2.2 Natural gas in GCC countries

Natural gas is one of the most important sources of fossil energy resources, it consists of a number of gases and residues of organisms decomposed in the oceans, then subjected to pressure and heat, which lasted for thousands of years, it is characterized by its low cost and ease of extraction and high efficiency, as well as the low number of pollutants that emit the environment is almost friendly, and natural gas is a clean alternative to coal.

The data in Table 2 indicate that the production of natural gas in the GCC countries reached 483.7 billion cubic meters in 2016, with a growth rate of 1.4% from the previous year, while the production of marketed natural gas was 407.8 billion cubic meters and a slight growth rate of 0.3% in 2016 compared to the year 2015, while natural gas reserves recorded a decrease of 0.6% during the same period.

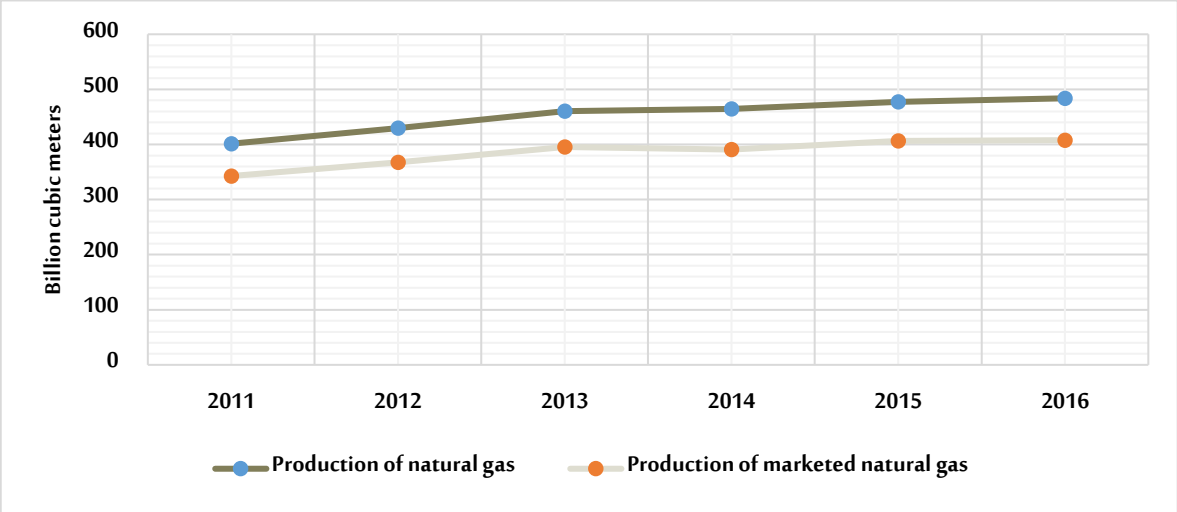
Table 2: Natural gas in GCC countries for the years 2015 – 2016

Variables (Billion cubic meters)	2015	2016	Growth rate (%)
Production of natural gas	477.2	483.7	1.4
Production of natural gas marketed	406.4	407.8	0.3
Natural gas reserves *	41,925.0	41,669.0	-0.6

*Data source: Organization of Petroleum Exporting Countries (OPEC)

The general trend of the quantity of production of natural gas and marketed natural gas indicates a continuous increase in the level of production quantity from 2011 to 2016, the percentage of increase in natural gas production reached 20.5% at the end of 2016 compared to 2011, and the production of natural gas marketed increased by 19.0% during the same period as shown in Figure 4.

Figure 4: Natural gas in GCC countries during the period 2011 – 2016



2.3 Electricity in GCC countries

Electricity is one of the energy carriers that can be used for many purposes. Electricity is used in all human activities, including industrial production, household use, agriculture, trade, machinery operation, lighting and heating, etc.

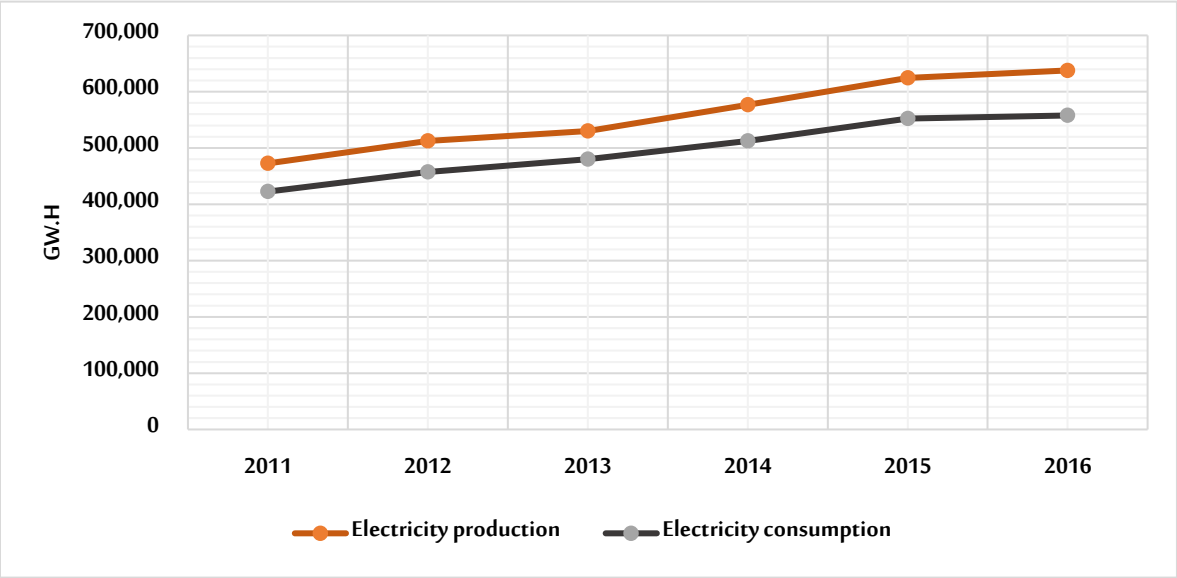
It is clear from the data in Table 3 that the total quantity of electricity production in the GCC countries in 2016 was 637,738 GWh, an increase of 2.1% compared to the previous year, while the total electricity consumption amounted to 557,761 GWh In 2016 and an increase of 1% compared to the year 2015.

Table 3: Electricity production and consumption in GCC countries for the year 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	624,745	637,738	2.1
Electricity consumption	552,506	557,761	1.0

On the other hand, electricity production recorded an increase by 34.9% in 2016 compared to 2011, accompanied by an increase in consumption by 32% for the same years of comparison (Figure 5). This was due to the increase in population, urbanization and economic activities in the GCC region, where the population increased from 45,757,080 in 2011 to 53,446,862 in 2016, an increase of 16.8%.

Figure 5: Electricity production and consumption in GCC countries during the period 2011 – 2016



2.4 Petroleum derivatives production in GCC countries

The GCC countries rank first in terms of world ranking in crude oil production. Total crude oil production for 2016 reached 18.4 million barrels per day. The amount of crude oil entering the refineries in 2016 reached 1.935.9 million barrels and a relevant increase of 1.5 % from the previous year.

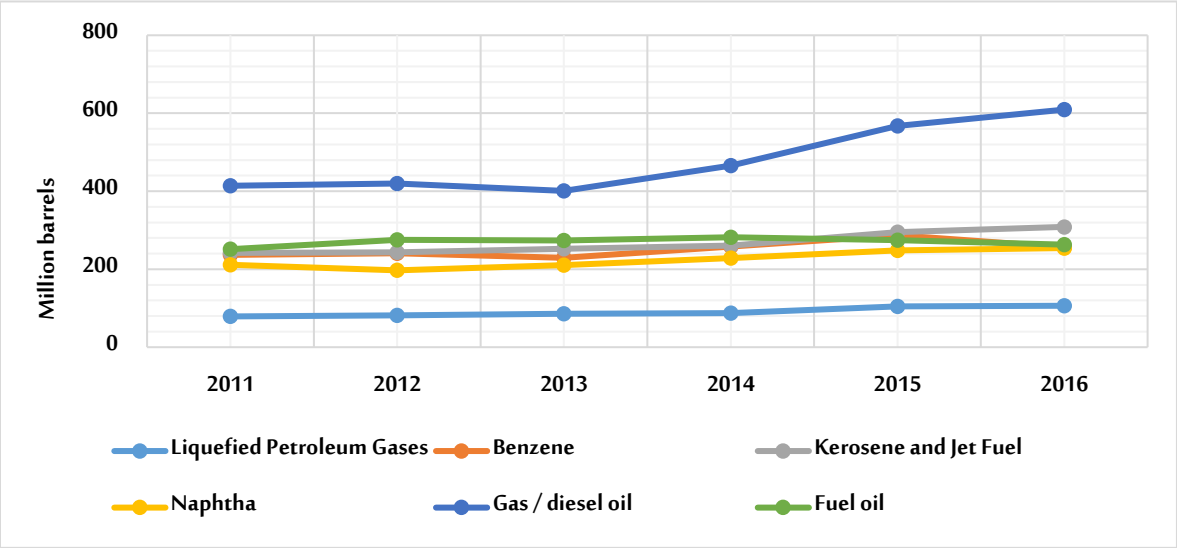
Gas oil / diesel production grew by 7.3% compared to 2015, the highest growth rate among petroleum products, followed by the production of kerosene and jet fuel by 4.6%, naphtha by 2.6% and liquid petroleum gas by 2% while Gasoline decreased by 10.7% during the year 2016 compared to the previous year. Fuel oil also decreased by 4.1% in 2016 compared to 2015 as shown in Table 4.

Table 4: Petroleum derivatives production in GCC countries for the year 2015 – 2016

Main oil derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	104.2	106.2	2.0
Gasoline	287.0	256.3	-10.7
Kerosene and jet fuel	294.9	308.5	4.6
Naphtha	247.8	254.2	2.6
Gas / diesel oil	567.7	609.3	7.3
Fuel oil	274.4	263.1	-4.1

The time series from 2011 to 2016, as shown in Figure 6, shows the extent of the change in the production of petroleum derivatives, where the rise of all petroleum derivatives during the period mentioned in varying percentages, the production of gas / diesel oil increased by 47.2%, followed by the production of liquefied petroleum gas by 34.7%, followed by the production of kerosene and jet fuel by 27.6%, Naphtha production recorded an increase by 20.1%, followed by gasoline production of 8.4% and fuel oil production by 4.7%.

Figure 6: Petroleum derivatives production in GCC countries during the period 2011 -2016



2.5 Petroleum derivatives consumption in GCC countries

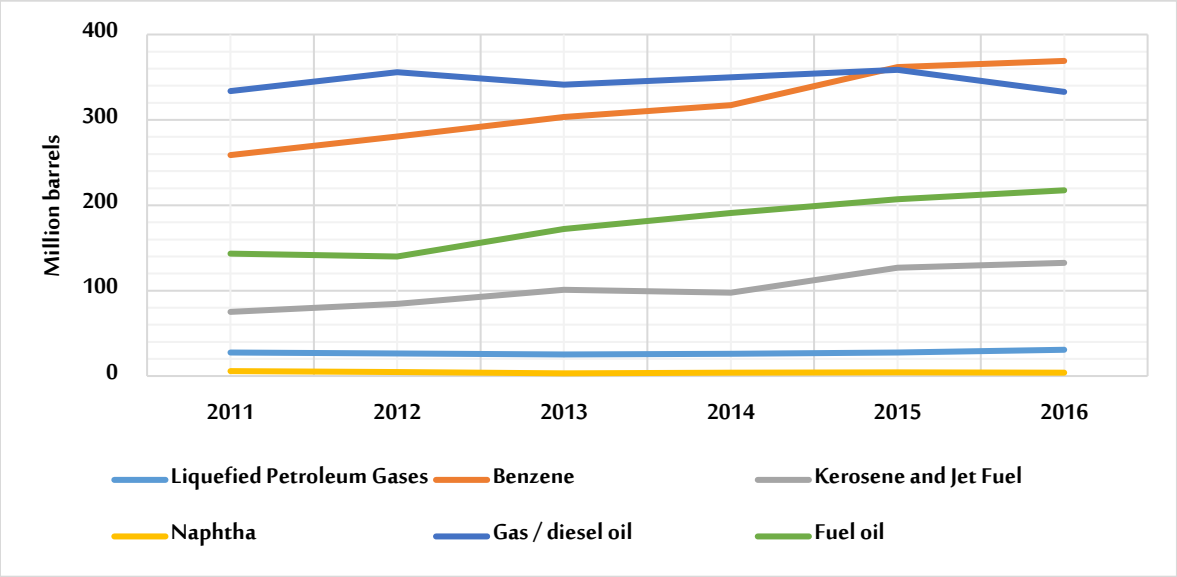
Table 5 shows the changes in the consumption of petroleum derivatives during the years 2015 and 2016 for the GCC countries, where the liquefied petroleum gases recorded the highest rate in the percentage of change compared to the growth rates of other petroleum derivatives, by 11.7% in 2016 compared to 2015, while the percentage of gas oil / diesel consumption recorded the largest decrease by 7.2% compared to other values of petroleum derivatives consumption during the period 2015 to 2016.

Table 5: Petroleum derivatives consumption in GCC countries for the year 2015 – 2016

Main oil derivatives (million barrels)	20 15	2016	Growth rate (%)
Liquefied petroleum gases	27.5	30.7	11.7
Gasoline	361.7	369.0	2.0
Kerosene and jet fuel	126.8	132.5	4.5
Naphtha	4.3	4.0	-5.4
Gas oil / Diesel	358.6	332.8	-7.2
Fuel oil	207.2	217.5	5.0

Figure 7 indicates that the general trend of petroleum derivatives consumption quantities during the period from 2011 to 2016 increased unevenly from a derivative to another by the end of 2016 compared to 2011, except for naphtha consumption, which decreased by 29.3%, as well as the consumption of gas oil / diesel decreased by 0.3%, where the consumption of kerosene and aviation fuel increased by 76.4% and it is the highest among the oil derivatives, followed by the consumption of fuel oil by 51.8%, then the consumption of gasoline by 42.6%, and finally the consumption of liquefied petroleum gas by 12.1%.

Figure 7: Petroleum derivatives consumption in GCC countries during the period 2011 – 2016



Chapter Three

GCC Energy Indicators

3.1 Energy statistics in the United Arab Emirates

3.1.1 Crude oil in the United Arab Emirates

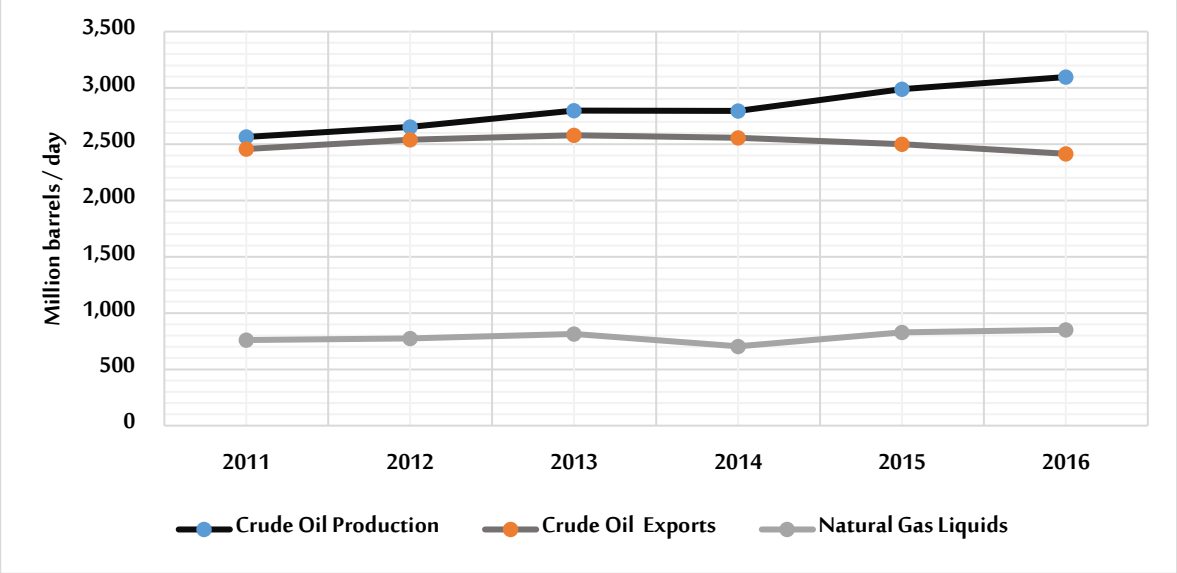
The United Arab Emirates is the second GCC country to produce crude oil from among the GCC countries, where crude oil production in 2016 amounted to 1,130.2 million barrels per year, equivalent to 3.0 million barrels per day, an increase of 3.6% than 2015, an increase reached to 20.8% compared to 2011. Table 6 also shows exports of crude oil and natural gas liquids for the years 2015-2016.

Table 6: Crude oil in the United Arab Emirates, for the years 2015 – 2016

Variables (Million barrels/day)	2015	2016	Growth rate (%)
Crude oil production	2.9	3.0	3.6
Crude oil exports	2.5	2.4	-3.5
Natural gas liquids	0.82	0.85	2.8

Figure 8 shows the general trend of the most important indicators of crude oil, crude oil exports and natural gas liquids of the United Arab Emirates during the period from 2011 to 2016. The figure shows that there is an increase in the production of crude oil and natural gas liquids by 20.8% and 12.1% respectively, while crude oil exports declined by 1.7%.

Figure 8: Crude oil in the United Arab Emirates, during the period from 2011 to 2016



3.1.2 Natural gas in the United Arab Emirates

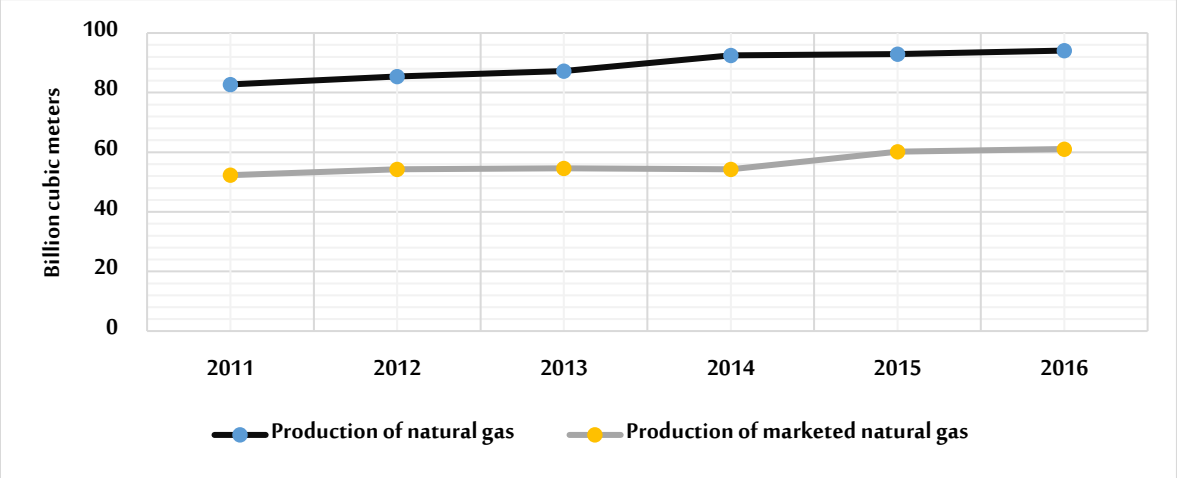
The UAE natural gas production during the year 2016 amounted 94.1 billion cubic meters, an increase of 1.2% over the previous year. The production of marketed natural gas reached 61.0 billion cubic meters, an increase of 1.5% over the year 2015. As the natural gas imports recorded a decrease of 2.2% in 2016 compared to the year 2015 as shown in Table 7.

Table 7: Natural gas in the United Arab Emirates, for the years 2015 – 2016

Variables (Billion cubic meters)	2015	2016	Growth rate (%)
Natural gas production	92.9	94.1	1.2
Production of marketed natural gas	60.1	61.0	1.5
Natural gas imports	22.9	22.4	-2.2

Figure 9 shows the changes in total natural gas production and natural gas marketed at the level of the United Arab Emirates during the period from 2011 to 2016. It is noted that the rate of the two types of gas production has increased slowly, with the exception of 2014 for marketed natural gas, the quantity of production decreased from 54.6 billion cubic meters in 2013 to 54.2 billion cubic meters in 2014, a decrease of 0.7%. In general, the percentage of natural gas production and natural gas marketed during the period from 2011 to 2016 increased by 13.7% and 16.8%, respectively.

Figure 9: Natural gas in the United Arab Emirates, during the period 2011 – 2016



3.1.3 Electricity in the United Arab Emirates

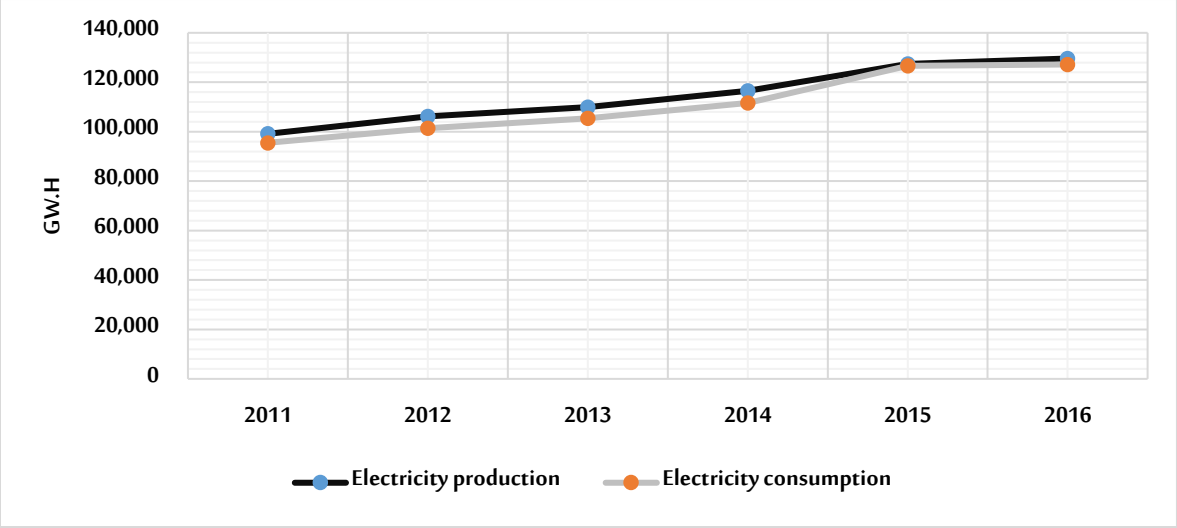
The electricity sector in the United Arab Emirates is witnessing remarkable growth through the increase in the level of electricity production, as Table 8 shows, the production rate increased in 2016 compared to the year 2015 by 1.8% and the consumption rate increased by 0.5% during the same period.

Table 8: Electricity production and consumption in the United Arab Emirates, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	127,366	129,596	1.8
Electricity consumption	126,582	127,205	0.5

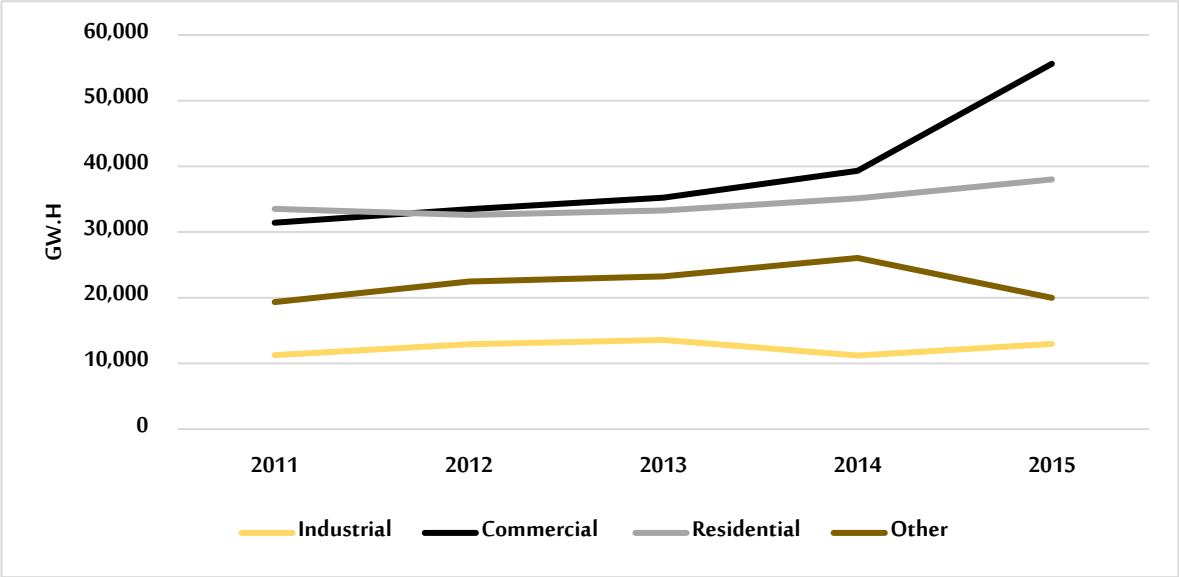
Figure 10 shows a continuous rise in electricity production from 2011 to 2016, reaching its peak of 129,596 GWh in 2016, an increase of 30.7% over 2011. This was also accompanied by a rise in the amount of electricity consumption during the same period by 33.2%.

Figure 10: Electricity production and consumption in the United Arab Emirates, during the years 2015 – 2016



On the other hand Figure 11 shows the general trend of electricity consumption by sectors in the UAE during the period 2011-2015. It is noted that the consumption in most sectors has increased gradually, noting that the amount of consumption in the commercial sector has increased to 77.0% in 2015 compared to 2011, while the rest of the sectors recorded a slight increase, where the industrial sector recorded a consumption rate of 15.3%, the residential sector 13.4% and finally other sectors by 3.3%.

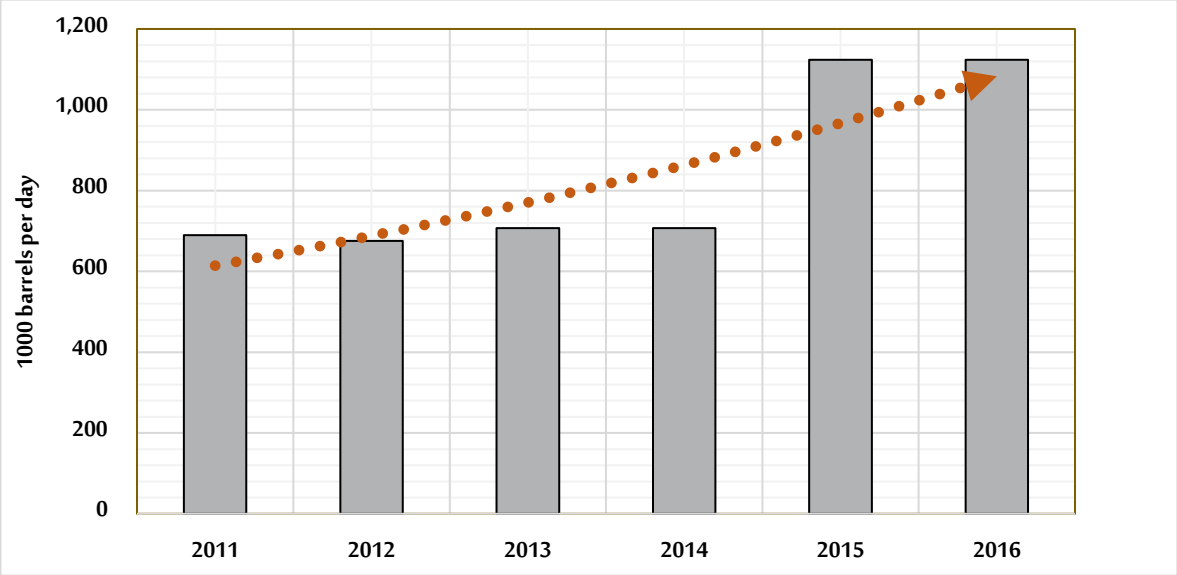
Figure 11: Electricity consumption in the United Arab Emirates, by sector during the period 2011-2015



3.1.4 Petroleum derivatives in the United Arab Emirates

In the UAE, there are four refineries located in Abu Dhabi, Ruwais, Jebel Ali and Fujairah. The total capacity reached 1,127 thousand barrels per day in 2016, an increase of 62.8% compared to 2011, where the capacity of refineries at that time amounted to 690 thousand barrels per day. The volume of crude oil entering the refineries increased significantly during 2016 reaching 69.6% compared to 2011. This shows the importance of refining the petroleum derivative products and their entry into many petroleum industries. Therefore, the country undertakes additional importance to the process of refining and benefiting from crude oil (Figure 12).

Figure 12: Refinery power in the United Arab Emirates, during the period 2011 – 2016



- Petroleum derivatives production

The statistical data in Table 9 indicate that the production of petroleum derivatives in the United Arab Emirates increased in 2016 compared to 2015. Gasoline production recorded the highest increase among other petroleum derivatives by 18.9%, while the production of fuel oil recorded the largest decrease during the same period, reaching 49.8%.

Table 9: Petroleum derivatives production in the United Arab Emirates, for the years 2015 – 2016

Main oil derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	11.6	9.2	-20.7
Gasoline	41.9	49.8	18.9
Kerosene and jet fuel	91.1	98.4	7.9
Naphtha	88.6	100.1	12.9
Gas oil / diesel	66.4	78.5	18.2
Fuel oil	17.2	8.6	-49.8

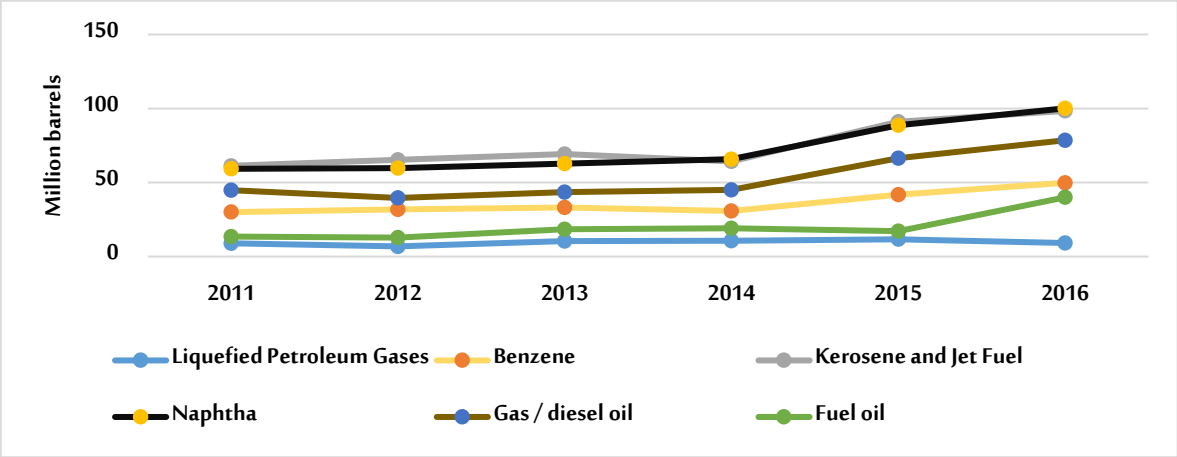
Figure 13 shows the performance of this sector indicators, where the total production of gas oil quantities decreased between 2011 and 2012, and then return to a rise of 78.5 million barrels in 2016. The total production of liquefied petroleum gas increased during the period to reach 9.2 million barrels in 2016 compared to 9.0 million barrels in 2011, with a growth rate of 2.2% for the same comparison years.

Gasoline production fluctuated between the high and low during the comparison period. It witnessed a continuous increase from 2011 to 2013 and then declined by 7.7% with a production volume of 30.6 million barrels in 2014 compared to the previous year. However, it achieved growth in 2016, total production reached about 49.8 million barrels.

The total production of kerosene and aviation fuel reached its peak in 2016 by 98.4 million barrels. While the total production of fuel oil fluctuated clearly during the period from 2011 to 2016, which amounted to about

13.4 million barrels in 2011 to decline slightly in 2012, after that, total oil fuel production increased in 2013 and 2014 where total production reached 19.1 million barrels in 2014, then fell again and reached 8.6 million barrels in 2016. Finally, the production of naphtha increased continuously from 2011 to 2016 with an increase of 68.9%.

Figure 13: Petroleum derivatives production in the United Arab Emirates, during the period 2011 – 2016



- Petroleum derivatives consumption

Table 10 shows the growth rate in the consumption of petroleum derivatives of the United Arab Emirates for the years 2015 and 2016. Fuel oil recorded a growth rate of 149.9% in 2016 compared to 2015. The consumption of kerosene and jet fuel recorded the lowest percentage of petroleum derivatives, which amounted to 2.8% in 2016 compared to the previous year.

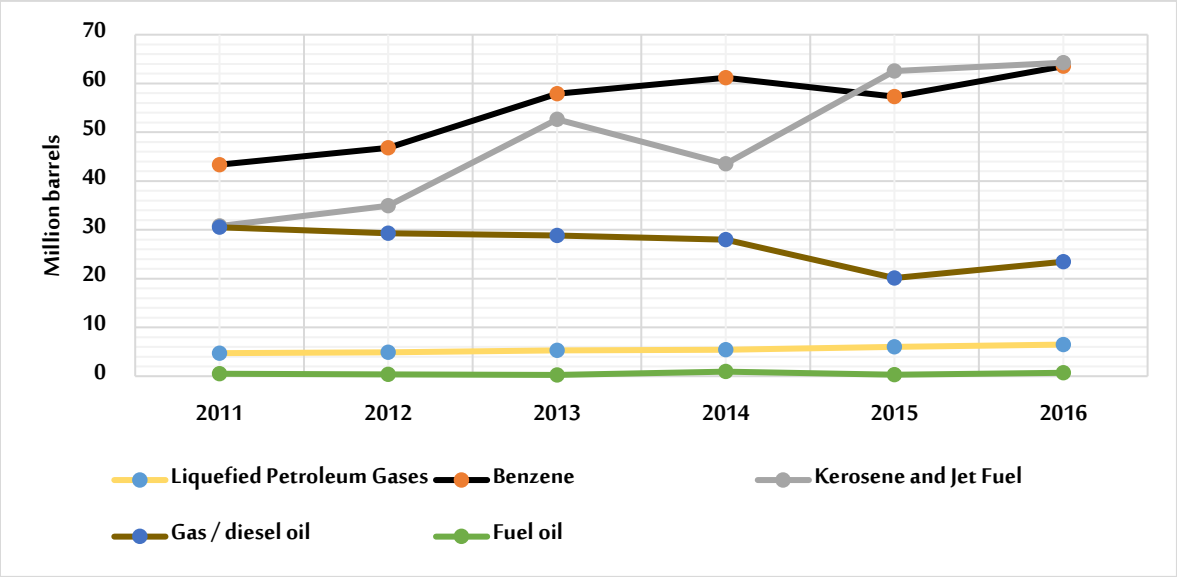
Table 10: Petroleum derivatives consumption in the United Arab Emirates for the years 2015 – 2016

Main oi l derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	6.0	6.4	8.0
Gasoline	57.3	63.5	10.8
Kerosene and jet fuel	62.5	64.2	2.8
Gas oil / Diesel	20.1	23.4	16.4
Fuel oil	0.2	0.6	149.9

Figure 14 shows the changes in the consumption indicators of petroleum derivatives in the UAE. Noted the total consumption of liquefied petroleum gas has increased from 4.7 million barrels in 2011 to reach 6.4 million barrels in 2016. Total gas oil consumption in 2016 about 23.4 million barrels, compared to 2011, the total consumption of gasoline in the United Arab Emirates reached about 43.3 million barrels in 2011 and the quantity increased to 63.5 million barrels in 2016 with a rise of 46.5% compared to 2011.

The total consumption of kerosene and aviation fuel reached its peak in 2016, reaching 64.2 million barrels, the total consumption of fuel oil witnessed a clear fluctuation from 2011 to 2016, with consumption of about 0.4 million barrels in 2011 declining significantly for two consecutive years (2012 and 2013), then it increased again and the total consumption reached 0.9 million barrels in 2014, then fell again to 0.2 million barrels in 2015 and returned to rise in 2016 with a growth rate of 149.9% compared to the year 2015, with a total consumption of 0.6 million barrels .

Figure 14: Petroleum derivatives consumption in the United Arab Emirates, during the period 2011 – 2016



3.2 Energy statistics in the Kingdom of Bahrain

3.2.1 Crude oil in the Kingdom of Bahrain

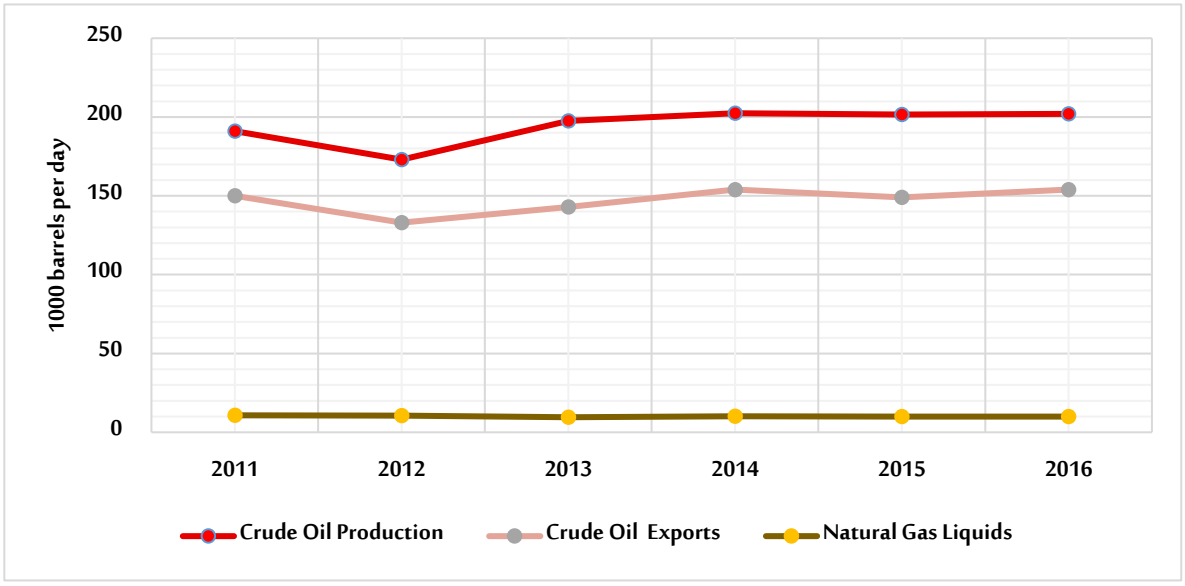
The total crude oil production in the Kingdom of Bahrain for the year 2016 amounted 73.9 million barrels, with an average production of 202.6 thousand barrels per day, as shown in Table 11, a rise of 0.5% compared to the year 2015. The total crude oil exports amounted 154.0 thousand barrels per day during 2016, and it is the considered the highest by 3.4% than in 2015, where the total exports amounted to 149.0 thousand barrels per day in 2015.

Table 11: Crude oil in the Kingdom of Bahrain for the years 2015 – 2016

Variables (Thousand barrels per day)	2015	2016	Growth rate (%)
Crude oil production	201.5	202.6	0.5
Crude oil exports	149.0	154.0	3.4
Natural gas liquids	10.0	10.0	0.0

Figure 15 shows the production of crude oil, crude oil exports and natural gas liquids production during the period from 2011 to 2016, it is noted that oil production decreased in 2012 to reach 173.0 thousand barrels per day and then gradually increased again until in 2016 it reached 202.6 thousand barrels per day, an increase of 6.5% compared to 2011, exports also increased to 2.7% in 2016 compared to 2011.

Figure 15: Crude oil in the Kingdom of Bahrain, during the period 2011 – 2016



3.2.2 Natural gas in the Kingdom of Bahrain

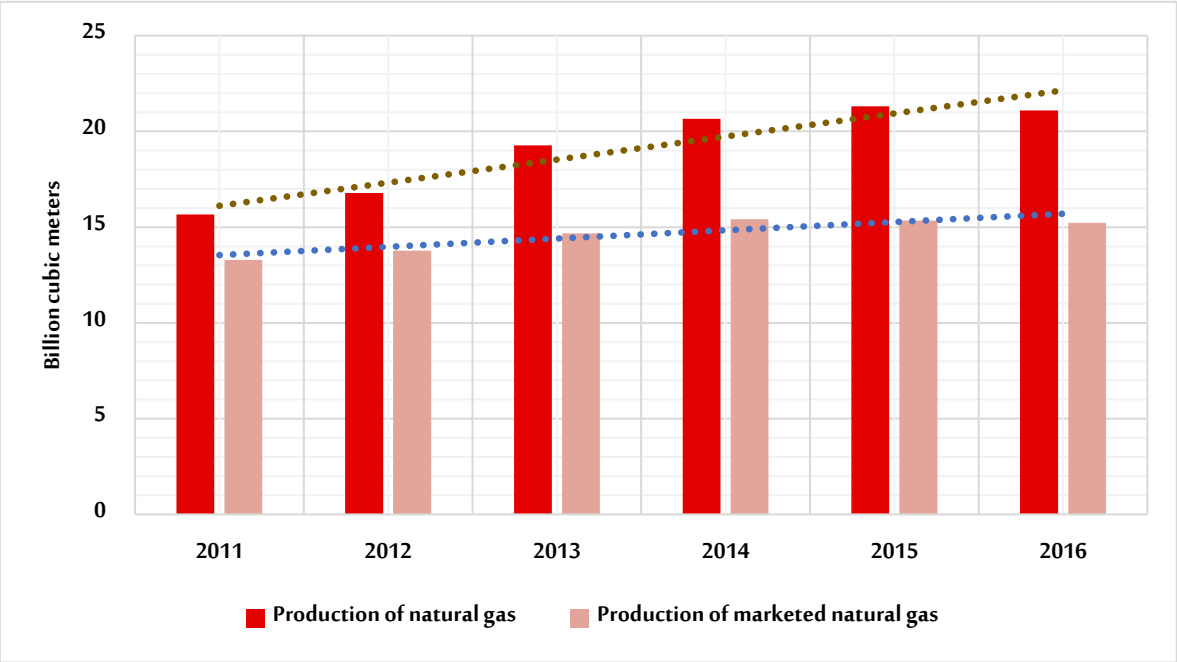
As for natural gas statistics in the Kingdom of Bahrain, there were very slight changes in the indicators, as the quantities of natural gas production decreased in 2016 than what it was in 2015 by 1.0% and the marketed natural gas production decreased by 0.8% for the same comparison years as shown in Table 12.

Table 12: Natural gas in the Kingdom of Bahrain, for the years 2015 – 2016

Variables (Billion cubic meters)	2015	2016	Growth rate (%)
Natural gas production	21.3	21.0	-1.0
Marketed natural gas production	15.3	15.2	-0.8

Figure 16 shows the changes in the total natural gas production for the Kingdom of Bahrain during the period from 2011 to 2016, it is noted that the increase in the production of natural gas, accompanied by an increase in the production of natural gas marketed until 2016, the percentage of change in the production of natural gas and the production of natural gas marketed in 2016 compared to 2011 was about 34.7% and 14.5%, respectively.

Figure 16: Natural gas in the Kingdom of Bahrain, for the period 2011 – 2016



3.2.3 Electricity statistics in the Kingdom of Bahrain

Electricity is produced in the Kingdom of Bahrain through the Sitra station for electricity and water production and Riffa power station, where these two stations provide 21% of the total power of the government network, while the rest percentages are distributed to other stations, and they are Al Had station and Al Azl station and Al Dour station. It is also benefiting to be linked with Alba Company and Al Rabt Al Khaliji. Natural gas and diesel fuel are used to generate electricity. The amount of natural gas used in generating electricity in 2016 was about 4,888 million cubic meters, an increase of 4.6% than 2012, while the use of diesel in the production of electricity decreased by 75.5% at the end of 2016 compared to 2012, as a result of the development and technology used in power plants in recent years.

Electricity production in the Kingdom of Bahrain in 2016 reached 17,046 GWh, recording a decrease of 0.8% compared to the previous year. Electricity consumption in 2016 was about 16,270 GWh, a decrease of 1.7% compared to the year 2015, (Table 13).

Table 13: Electricity production and consumption in the Kingdom of Bahrain, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	17,183	17,046	-0.8
Electricity consumption	16,552	16,270	-1.7

Figure 17 shows the production and consumption of electricity in the Kingdom of Bahrain for the period 2011-2016. The overall trend shows that production increased to 23.3% in 2016 compared to 2011, while consumption increased to 32.7% during the same period.

Figure 17: Electricity production and consumption in the Kingdom of Bahrain, during the period 2011 – 2016

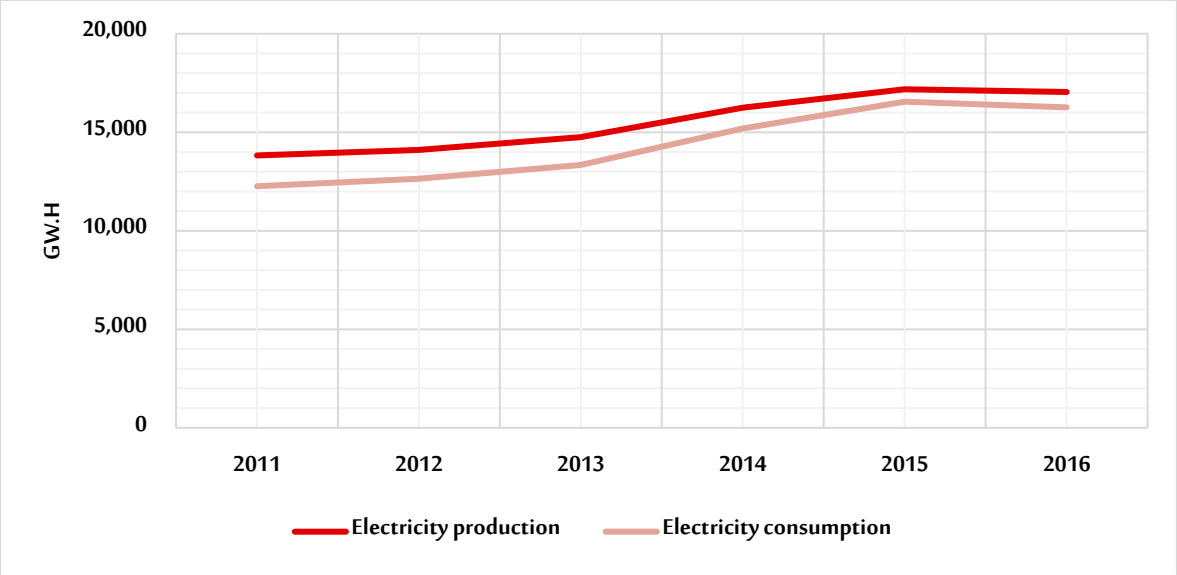
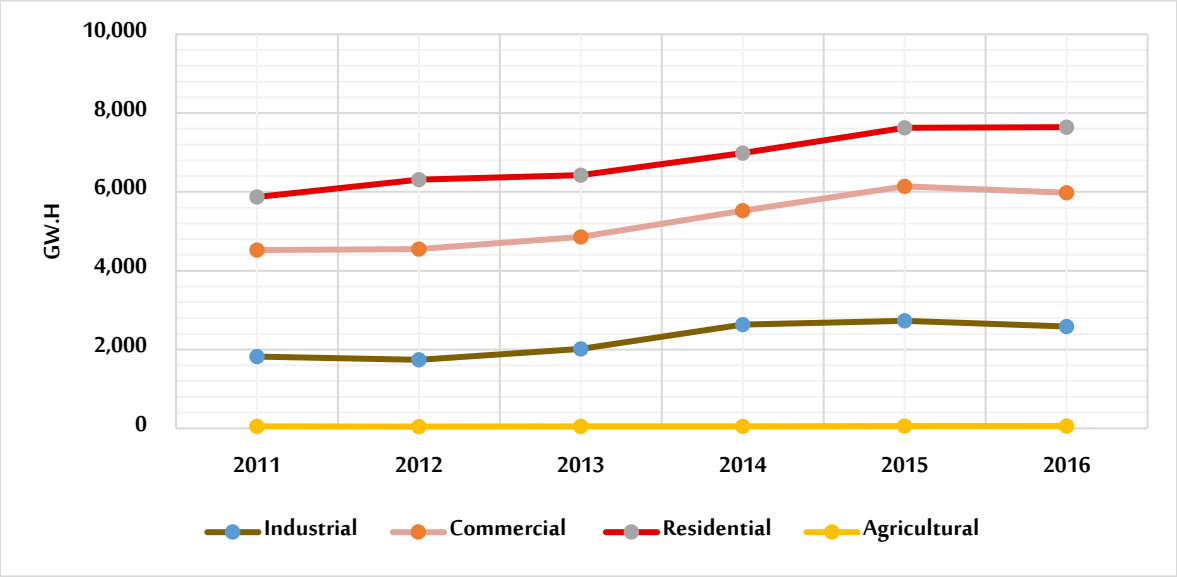


Figure 18 shows the distribution of electricity consumption by sector, where electricity consumption in the industrial sector increased by 42.1% in 2016 compared to 2011. Other sectors also witnessed a rise in the consumption rate with 32.2% in the commercial sector, 30.2% in the residential sector and 26.8% in the agricultural sector.

Figure 18: Electricity consumption in the Kingdom of Bahrain, by sectors during the period 2011 – 2016



3.2.4 Petroleum derivatives in the Kingdom of Bahrain

Crude oil is produced in the Kingdom of Bahrain through the Bahrain field and the Abu Saafa field. The oil imported from Saudi Arabia and the oil produced from the Bahrain field are then pumped to the refinery.

- Petroleum derivatives production

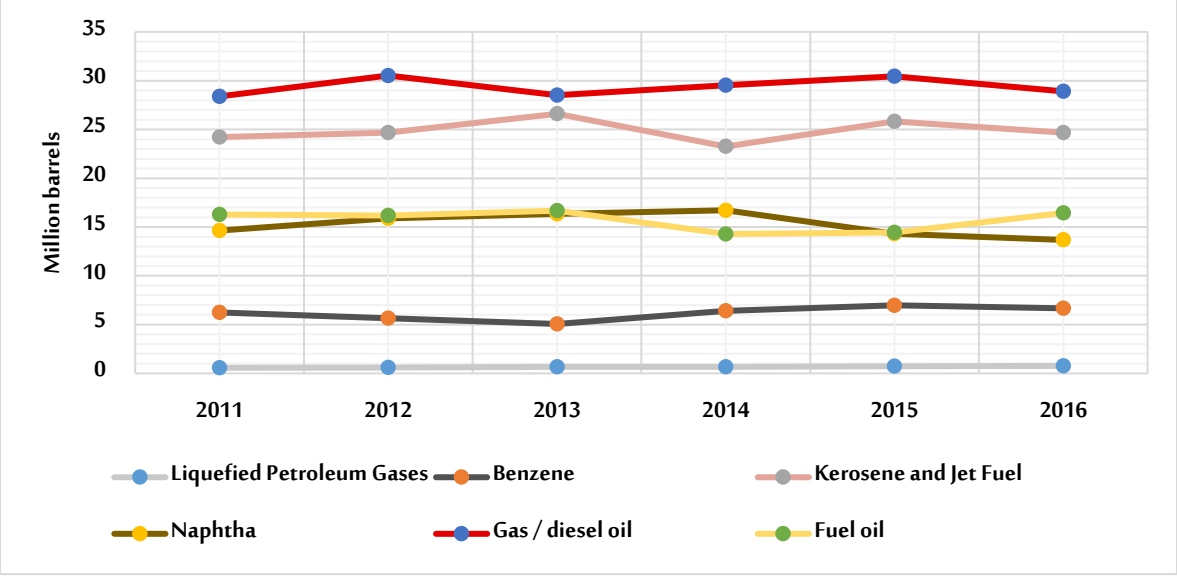
Table 14 shows an increase in the total production of fuel oil by 13.9% in 2016 compared to 2015. The total production of liquefied petroleum gas increased by 4.5% during the same period. In contrast, the production of gas oil decreased in 2016 compared to the year 2015 by 5.1%, Gasoline by 4.6% and naphtha, kerosene and jet fuel also decreased by 4.5% during comparison years.

Table 14: - Petroleum derivatives production in the Kingdom of Bahrain, for the years 2015 – 2016

Main oil derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	0.73	0.76	4.5
Gasoline	6.9	6.6	-4.6
Kerosene and jet fuel	25.8	24.6	-4.5
Naphtha	14.3	13.6	-4.5
Gas oil / Diesel	30.4	28.8	-5.1
Fuel oil	14.4	16.4	13.9

During the period from 2011 to 2016, the production of petroleum derivatives in the Kingdom of Bahrain witnessed a fluctuation as shown in figure 19, where the production of liquefied petroleum gas recording the highest increase among other oil derivatives with a growth rate of 33.8%, compared to a decrease in Naphtha production by 6.7%, the remaining oil derivatives also witnessed an increase in variable rates. Gasoline production increased by 6.6%, kerosene and jet fuel by 1.9%, gas oil by 1.8% and fuel oil by 1.1%.

Figure 19: Petroleum derivatives production in the Kingdom of Bahrain, during the period 2011 – 2016



- Petroleum derivatives consumption

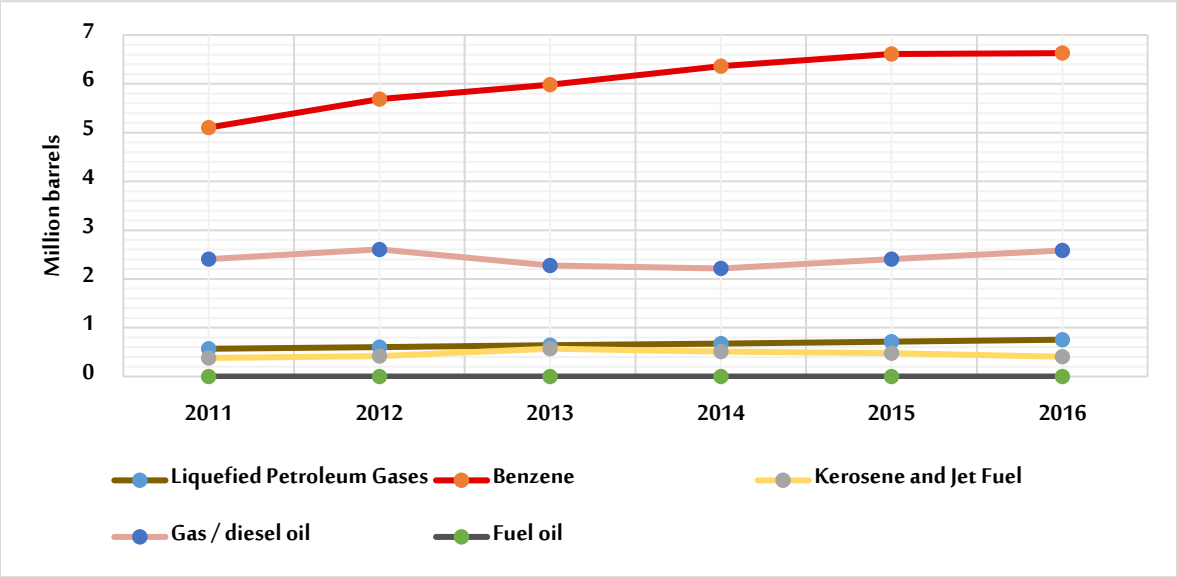
Total consumption of petroleum gases and gas oil / diesel increased by 5.3% and 7.5% respectively between 2015 and 2016, followed by total gasoline consumption by 0.3%, total consumption of kerosene and jet fuel decreased in 2016 to 409.0 thousand barrels compared with 478.0 thousand barrels in 2015, a decrease of 14.4% (Table 15).

Table 15: Petroleum derivatives consumption in the Kingdom of Bahrain, for the years 2015 – 2016

Main oil derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	0.71	0.75	5.3
Gasoline	6.61	6.62	0.3
Kerosene and jet fuel	0.47	0.40	-14.4
Gas oil / Diesel	2.4	2.5	7.5

It is clear from Figure 20 that the consumption of liquefied petroleum gas witnessed an increase, which is the highest among other oil derivatives, to reach 0.75 million barrels in 2016 and a rise of 32.7% compared to 2011, while the gas oil / diesel was 7.5% less increase than the same Period.

Figure 20: Petroleum derivatives consumption in the Kingdom of Bahrain, during the period 2011 – 2016



3.3 Energy statistics in the Kingdom of Saudi Arabia

3.3.1 Crude oil in the Kingdom of Saudi Arabia

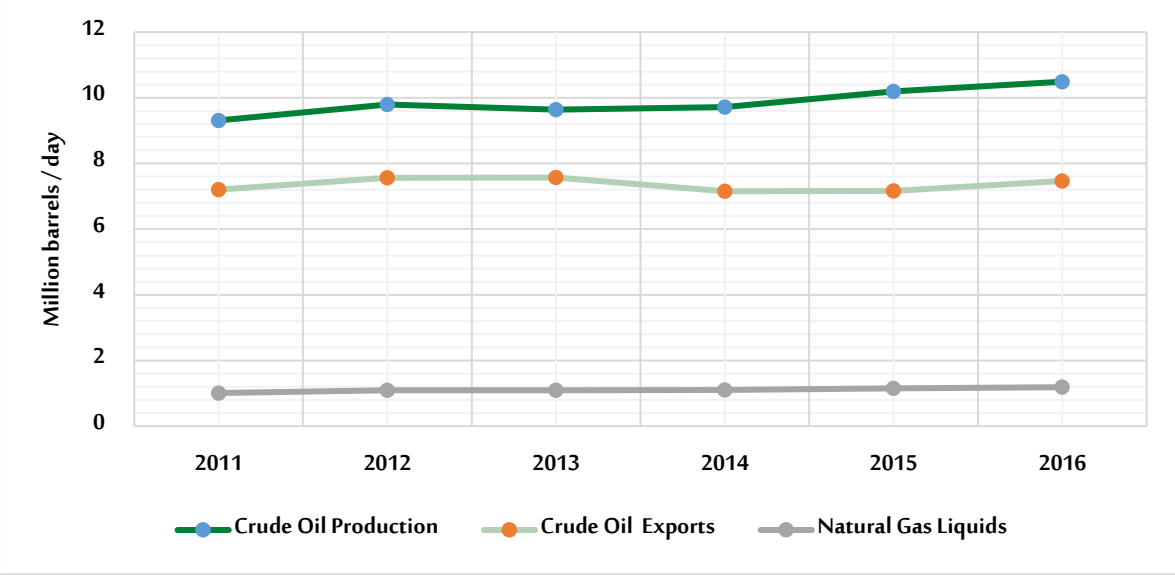
The Kingdom of Saudi Arabia occupies the first position in the production of crude oil among the GCC countries, where the total crude oil produced 3,828.4 million barrels per year and a daily average of 10.4 million barrels in 2016, Saudi Arabia's crude oil production increased by 2.9% compared to the year 2015. As the total crude oil exports reached 7.4 million barrels per day during 2016 with a growth rate of 4.2% compared to 2015. Total natural gas liquids production reached 11.8 million barrels per day, a growth of 2.7% compared to the previous year (Table 16).

Table 16: Crude oil in the Kingdom of Saudi Arabia, for the years 2015 – 2016

Variables (Million barrels per day)	2015	2016	Growth rate (%)
Crude oil production	10.1	10.4	2.9
Crude oil exports	7.1	7.4	4.2
Natural gas liquids	1.15	1.18	2.7

Figure 21 shows the general trend of crude oil and natural gas liquids indicators for the time series from 2011 to 2016. Crude oil production recorded an increase by 12.7% compared to 2011, as well as oil exports increased by 3.6% and natural gas liquids by 17.5% compared to 2011.

Figure 21: Crude oil in the Kingdom of Saudi Arabia, during the period 2011 – 2016



3.3.2 Natural gas in the Kingdom of Saudi Arabia

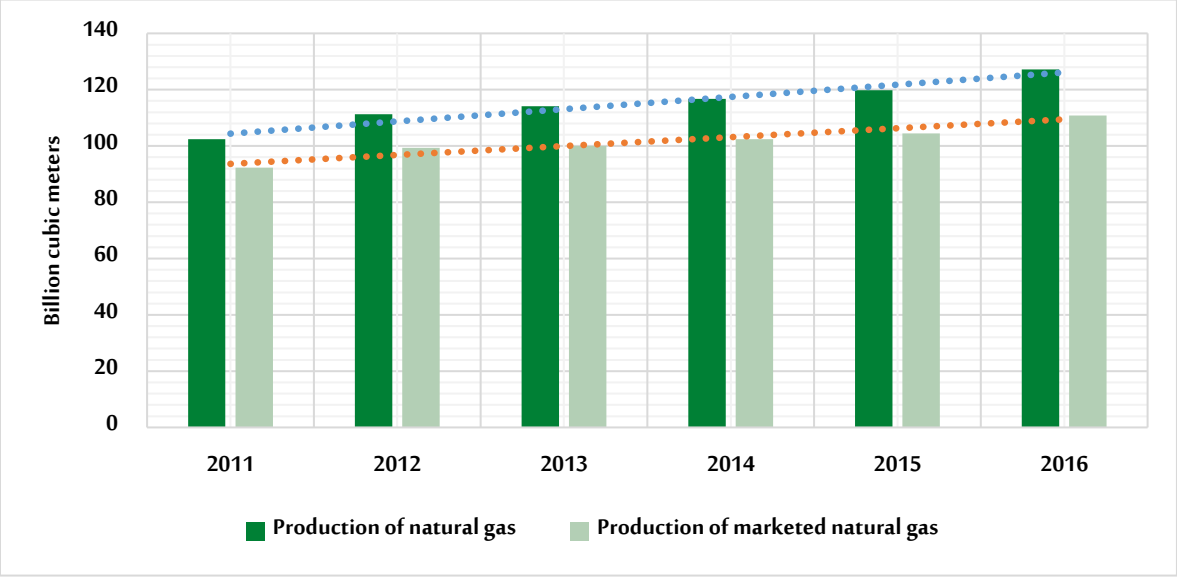
The natural gas indicators in the Kingdom witnessed slight changes in the values of the indicators, where the quantities of natural gas production and the production of natural gas marketed in 2016 increased compared with the previous year at an equal rate of 6.1% as shown in Table 17.

Table 17: Natural gas in the Kingdom of Saudi Arabia, for the years 2015 – 2016

Variables (Billion cubic meter)	2015	2016	Growth rate (%)
Natural gas production	119.8	127.1	6.1
Production of natural gas marketed	104.4	110.8	6.1

Figure 22 shows an increase in the production of natural gas and the production of natural gas marketed by 24.2% and 20.2% respectively in 2016 compared to 2011.

Figure 22: Natural gas in the Kingdom of Saudi Arabia, during the period 2011 – 2016



3.3.3 Electricity in the Kingdom of Saudi Arabia

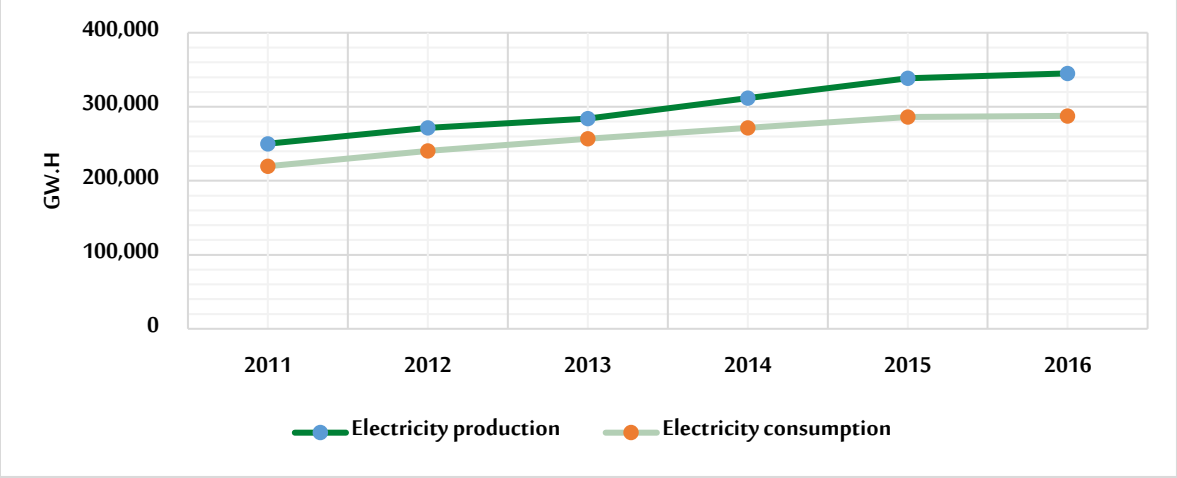
Electricity is produced in the Kingdom of Saudi Arabia through power plants and desalination plants and from major subscribers (some large companies that produce electricity by themselves and export surplus to the governmental network) where in 2016 production was 345,104 GWh of electricity and an increase of 2.0% over the year 2015 as shown in Table 18, electricity consumption in the Kingdom of Saudi Arabia reached 287,692 GWh in 2016 compared to 286,038 GWh in 2015 with an increase of 0.6% (Table 18).

Table 18: Electricity production and consumption in the Kingdom of Saudi Arabia, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	338,327	345,104	2.0
Electricity consumption	286,038	287,692	0.6

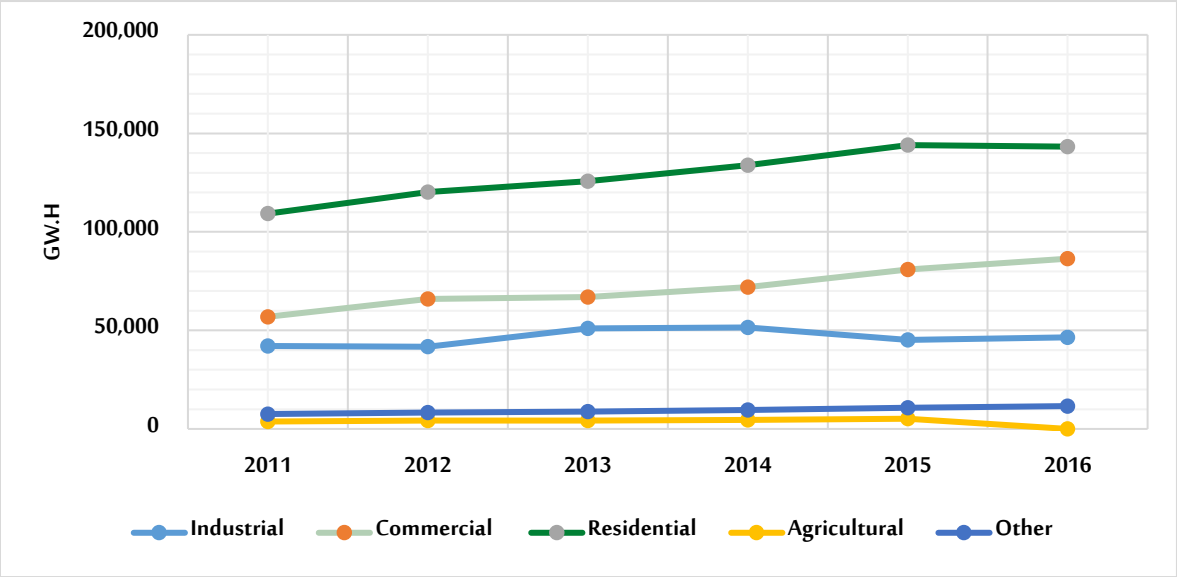
Figure 23 shows electricity production and consumption during the period from 2011 to 2016. It is clear from the general trend of indicators in the figure that there is an increase in the percentage of electricity production and electricity consumption in the Kingdom of Saudi Arabia by 38.0% and 31.0%, respectively, this increase is attributed to many reasons, including the increase of the population in the Kingdom where the population increased from 28,171,083 in 2011 to 31,787,580 in 2016.

Figure 23: Electricity production and consumption in the Kingdom of Saudi Arabia, during the period 2011 – 2016



On the level of electricity consumption in the Kingdom of Saudi Arabia by sectors during the period from 2011 to 2016, the industrial sector recorded a rise of 10.4%, the commercial sector by 51.8%, the residential sector by 31.1% and other sectors by 53.2%. Figure 24 shows the general trend of these indicators.

Figure 24: Electricity consumption in the Kingdom of Saudi Arabia by sectors during the period 2011 -2016



3.3.4 Petroleum derivatives in the Kingdom of Saudi Arabia

- Petroleum derivatives production

The number of refineries in the Kingdom of Saudi Arabia are nine refineries, with a design capacity of 2,899 thousand barrels per day according to available data for 2016. Production capacity increased by 37.6% compared to 2011, reaching at that time 2,107 thousand barrels per day, this increase is due to the opening of new refineries in the Kingdom.

The amount of crude oil entering the refineries during the year 2016 increased by 42.4%. Where the quantity in 2016 was about 1026.8 million barrels compared to 721.1 million barrels in 2011.

Table 19 shows an increase in the total production of kerosene and jet fuel by 16.3%, its value in 2016 reached 89.4 million barrels, followed by an increase in the total naphtha production which was 10.2%, followed by gas oil / diesel by 9.4% and finally fuel oil by 3.2%.

The total quantity of liquefied petroleum gas decreased by 6.9% compared to 2015, the total production reached 15.6 million barrels in 2016 compared to 16.7 million barrels in 2015. As well the total quantity of gasoline production decreased from 179.9 million barrels in 2015 to reach to 137.0 million barrels in 2016 with a decrease of 23.8%.

Table 19: Petroleum derivatives production in the Kingdom of Saudi Arabia, for the years 2015 – 2016

Main petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	16.7	15.6	-6.9
Gasoline	179.9	137.0	-23.8
Kerosene and jet fuel	76.9	89.4	16.3
Naphtha	68.7	75.7	10.2
Gas oil / Diesel	351.4	384.6	9.4
Fuel oil	163.1	168.3	3.2

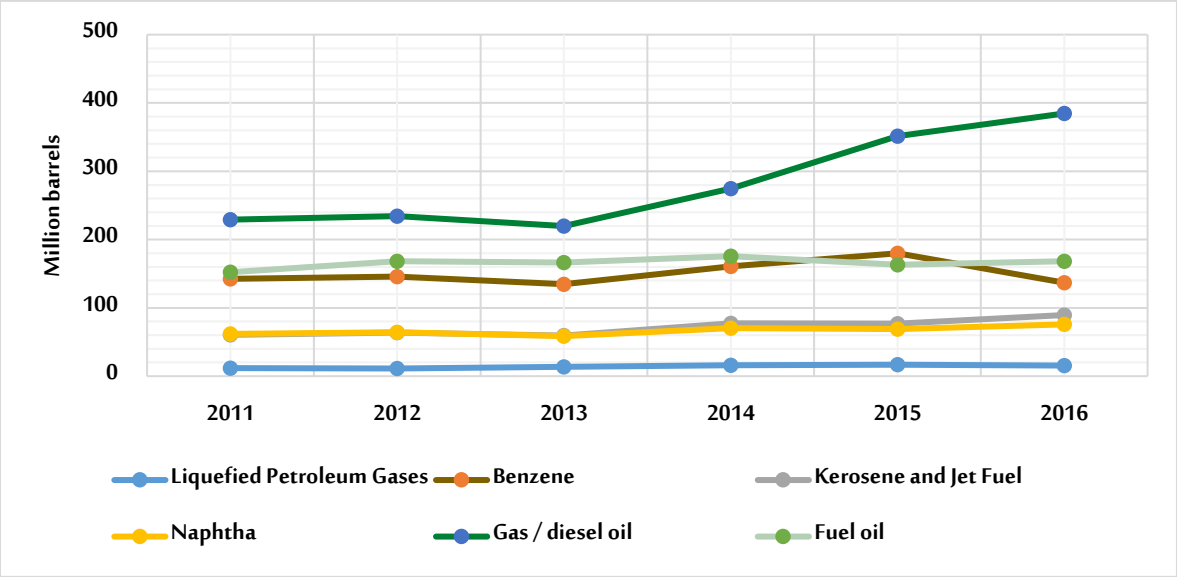
It is clear from Figure 25 that the total production of gas oil witnessed an increase between 2011 and 2012, but then decreased by 6.1% in 2013, and again it achieved a remarkable increase in 2016 by reaching 384.6 million barrels. The total production of liquefied petroleum gases in 2016 reached to 15.6 million barrels, an increase of 30.4% compared to what it was in 2011.

The production of gasoline witnessed a fluctuation during the same period, after the increase in 2012 compared to 2011, it declined by 7.7% and a production volume of 134.6 million barrels in 2013, to increase again in 2014 and 2015 to reach its peak in 2015 with a total production of 179.9 million barrels, then decreased again and reached 137.0 million barrels in 2016.

Total production of kerosene and aviation fuel reached its peak in 2016, with production reaching to 89.4 million barrels, an increase of 47.4% compared to 2011. On the other hand, the total production of fuel oil increased during the period from 2011 to 2016 to about 152.1 million barrels in 2011, and then decreased

slightly in 2013, and then returned to rise in 2014 to bring the total production to 175.6 million barrels, and then fell again and reached 163.1 million barrels in 2015, and increased again in 2016 with a growth rate of 3.2% compared to 2011 with a total production of 168.3 million barrels. Finally, the production of Naphtha witnessed an increase by 22% in 2016 compared to 2011.

Figure 25: Petroleum derivatives production in the Kingdom of Saudi Arabia, during the period 2011 – 2016



- Petroleum derivatives consumption

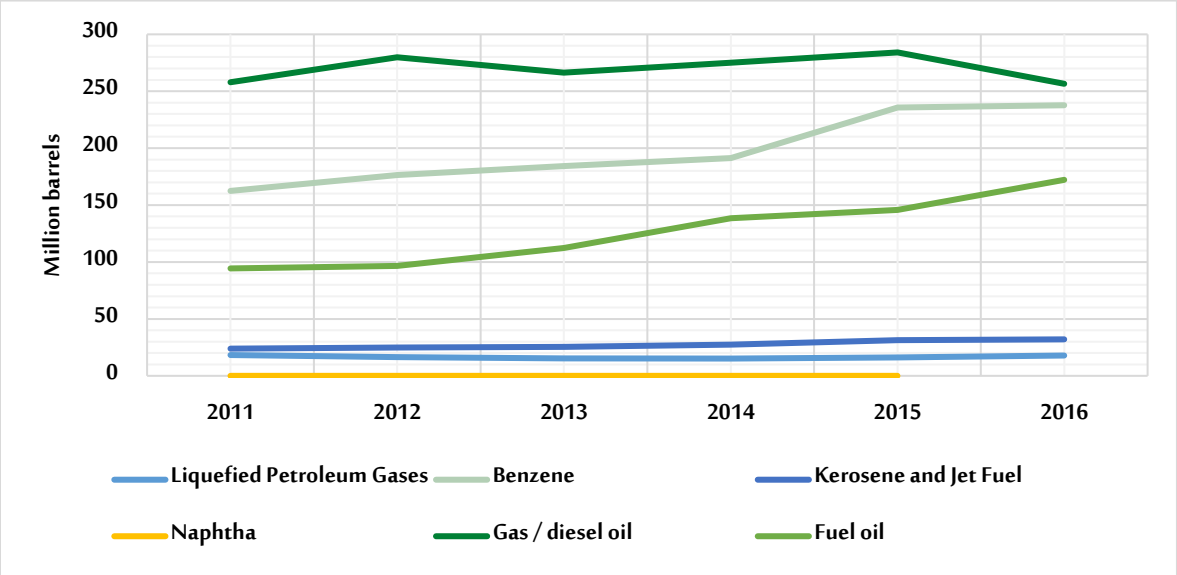
Table 20 shows an increase in the total consumption of petroleum gases at a growth rate of 11.5% and total fuel oil by 18.2% between 2015 and 2016, while the total consumption of kerosene and jet fuel grew by 2.2% during the same period of comparison, the total production of gas oil reached 256.5 million barrels, a decrease of 9.7% in 2016 compared to 2015, and the gasoline consumption witnessed a slight increase during the period 2015 and 2016 by 0.8%.

Table 20: Petroleum derivatives consumption in the Kingdom of Saudi Arabia, for the years 2015 – 2016

Main petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	16.1	17.9	11.5
Gasoline	235.7	237.7	0.8
kerosene and jet fuel	31.3	32.0	2.2
Gas oil / Diesel	284.1	256.5	-9.7
Fuel oil	145.6	172.1	18.2

At the level of total consumption of liquefied petroleum gases, the total declined gradually from 2011 to 2014, and then increased to reach a consumption quantity of 17.9 million barrels by the end of 2016. The statistics also showed that there is a continuous increase in the total consumption of gasoline from 2011 to 2016 with an increase of 46.3%. The data indicate fluctuation in the total consumption of gas oil, which was at its highest levels in 2015 with an amount of 284.1 million barrels, while the value in 2016 reached 256.5 million barrels, and it is the lowest value of the index. There was a continuous growth in the total consumption of the kerosene and jet fuel reached 32.0 million barrels in 2016, while in 2011 about 23.8 million barrels with an increase by 34.1%, as well as the increase in the total fuel oil consumption to reach 172.1 million barrel in the year 2016, compared to 94.4 million barrel in 2011 recording an increase of 82.5% (Figure 26).

Figure 26: Petroleum derivatives consumption in the Kingdom of Saudi Arabia, during the period 2011 – 2016



3.4 Energy statistics in the Sultanate of Oman

3.4.1 Crude oil in the Sultanate of Oman

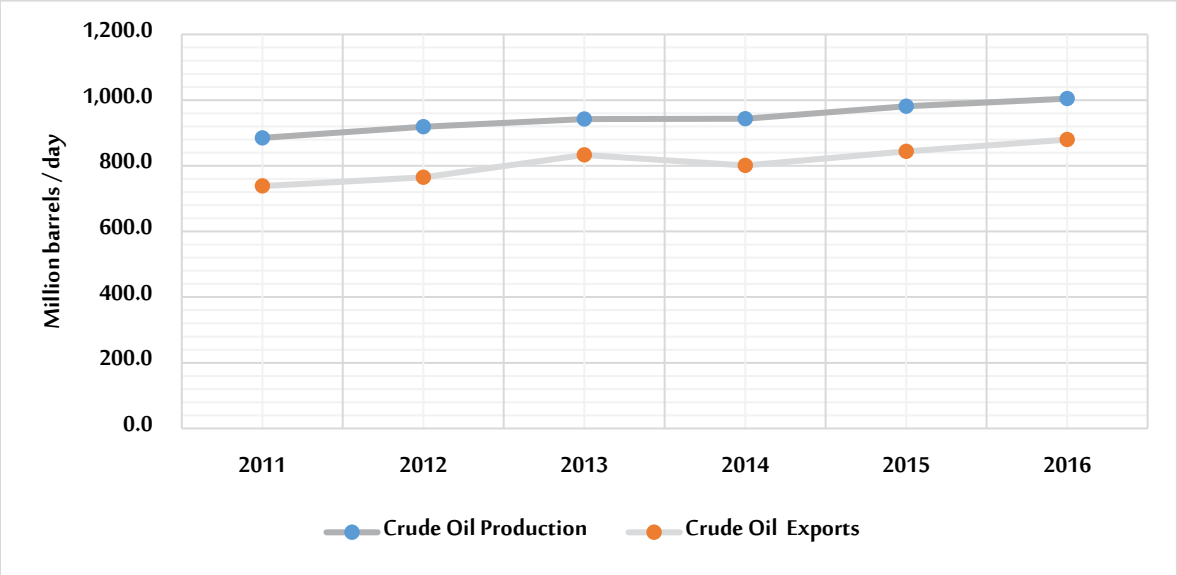
The total production of crude oil in the Sultanate of Oman was 366.5 million barrels in 2016 with a daily average production reached 1.0 million barrels according to table 21, it represents an increase of 2.4% compared to 2015. Total crude oil exports reached 0.87 million barrels per day during 2016, growing by 4.2% compared to 2015, total exports were 0.84 million barrels per day.

Table 21: Crude oil in the Sultanate of Oman, for the years 2015 – 2016

Variables (million barrels / day)	2015	2016	Growth rate (%)
Crude oil production	0.98	1.0	2.4
Crude oil exports	0.84	0.87	4.2

Figure 27 shows the general trend of total crude oil production in the Sultanate of Oman during 2011-2016. The data show fluctuations in the quantities of crude oil produced, reaching its maximum in 2016 with a quantity of 1.0 million barrels per day compared to 0.88 million barrels per day in 2011 and a growth rate of 13.5% for the same period of comparison. As the export of crude oil witnessed a significant increase from 2011 to 2013, after which it fell again in 2014 to witness growth in the following two years to reach 0.87 million barrels per day in 2016, an increase of 19.2% compared to 2011.

Figure 27: Crude oil production in the Sultanate of Oman, during the period 2011 – 2016



3.4.2 Natural gas in the Sultanate of Oman

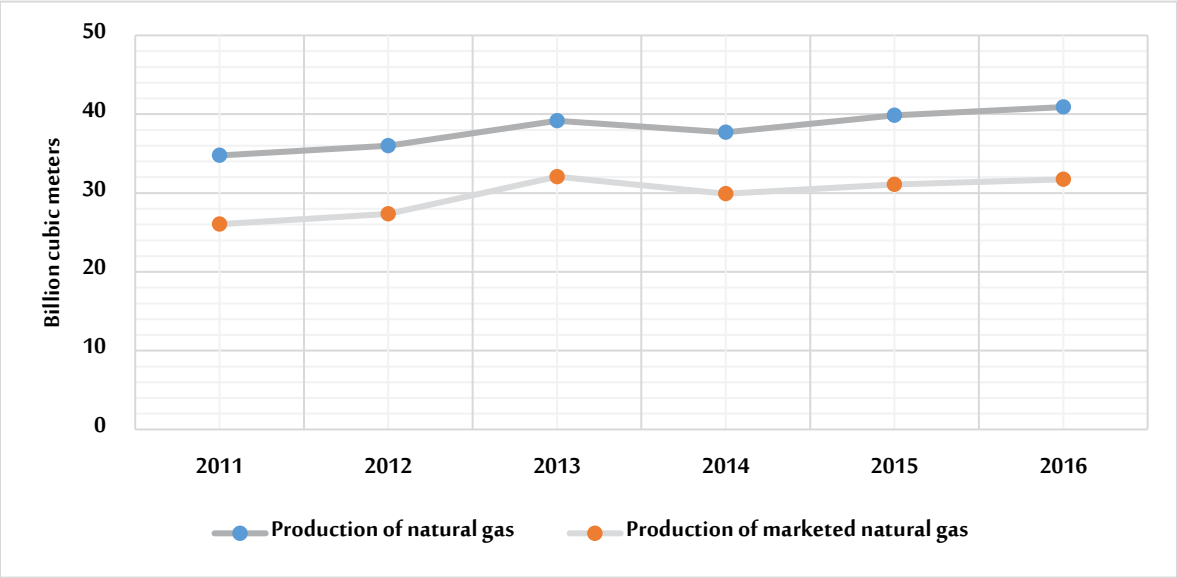
Total natural gas production increased by 2.6% in 2016 compared to 2015, and total marketed natural gas production increased by 2.1% during the same period (Table 22).

Table 22: Natural gas in the Sultanate of Oman, for the years 2015 – 2016

Variables (billion cubic meters)	2015	2016	Growth rate (%)
Natural gas production	39.8	40.9	2.6
Marketed natural gas	31.0	31.7	2.1

Natural gas production recorded an increase 17.7% in the year 2016 compared to the year 2011, it is noted from Figure 28 that the rate of production of natural gas is gradually rising during the period 2011-2016 except for 2014, which witnessed a decline in production, as for marketed natural gas it witnessed continuous growth during the period from 2011 to 2016, with a slight decrease in 2014 with a growth rate of 21.8% in 2016 compared to the previous year.

Figure 28: Natural gas in the Sultanate of Oman, during the period 2011 – 2016



3.4.3 Electricity in the Sultanate of Oman

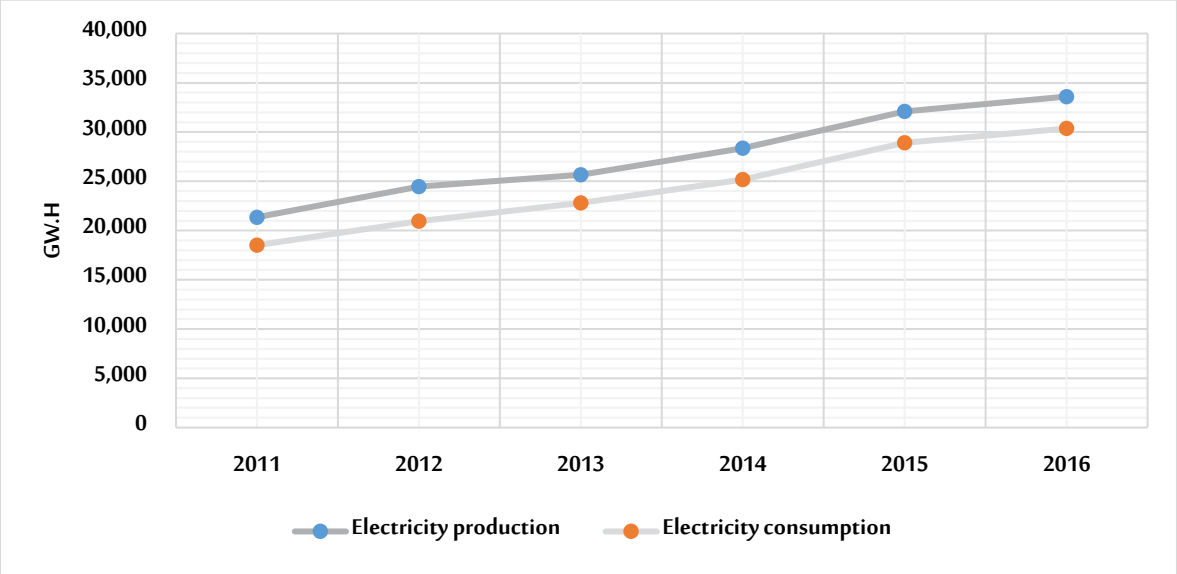
Electricity is produced in the Sultanate of Oman through the main associated company (Muscat Electricity Distribution, Mazoon and Majan), Rural Areas Electricity Company and Dhofar Power Company, where electricity production reached 33,600 GWh in 2016 with an increase of 4.7% compared to 2015. Where the total electricity consumption in the Sultanate of Oman reached 30,359 GWh in 2016 compared with a consumption rate of 28,912 GWh for 2015, an increase of 5.0% as shown in Table 23.

Table 23: Electricity production and consumption in the Sultanate of Oman, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	32,082.0	33,600	4.7
Electricity consumption	28,912	30,359	5.0

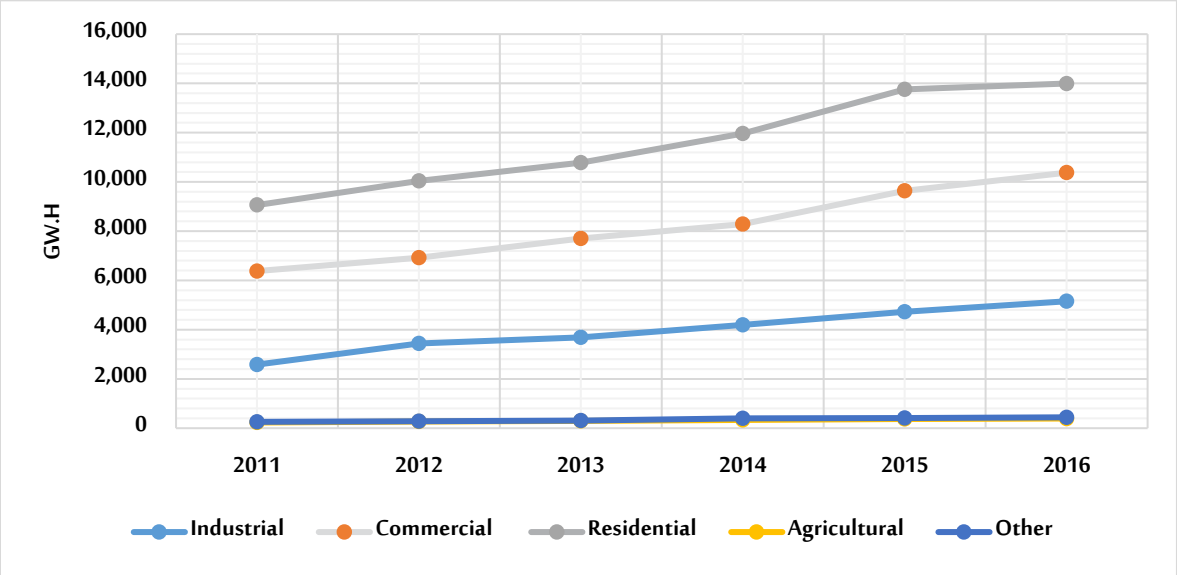
Figure 29 shows a continuous growth from 2011 to 2016 on the level of total electricity production and consumption at the level of the Sultanate of Oman, where the production of electricity recorded an increase by 57.3% in 2016 compared with 2011, as well the electricity consumption recorded an increase by 64.0% in 2016 compared to the year 2011 and this is linked to the increase in the number of members in all sectors industrial, residential or services, etc.

Figure 29: Electricity production and consumption in the Sultanate of Oman, during the period 2011 – 2016



Most sectors witnessed an increase in electricity consumption during 2011 – 2016 as shown in figure 30, industry sector recorded the highest electricity consumption among all other sectors with an increase of 99.5%, followed by other sectors by 71.3%, then agriculture sector by 70.3%, after that commercial sector 62.6%, and finally residential sector by 54.5%.

Figure 30: Electricity consumption in the Sultanate of Oman, by sectors during the period 2011 – 2016



3.4.4 Petroleum derivatives in the Sultanate of Oman

Crude oil is refined in the Sultanate of Oman through Al-Fahal port refinery and Sohar refinery, the design capacity reached 222 thousand barrels per day in 2016, and 65.1 million barrels of crude oil and condensates were pumped in 2016, a decrease of 12.2% compared to 2011.

- Petroleum derivatives production

Total production of kerosene and aviation fuel increased by 0.6% in 2016, comparison with the previous year as shown in table 24, while other petroleum derivatives decreased during the period from 2015 to 2016, fuel oil recorded the highest decrease compared with other derivatives by 28.3%, followed by liquefied petroleum gas with a decrease of 13.9%, as gasoline and gas oil recorded the same decrease percentage 1.4% for each, finally naphtha production recorded a decrease by 0.7%.

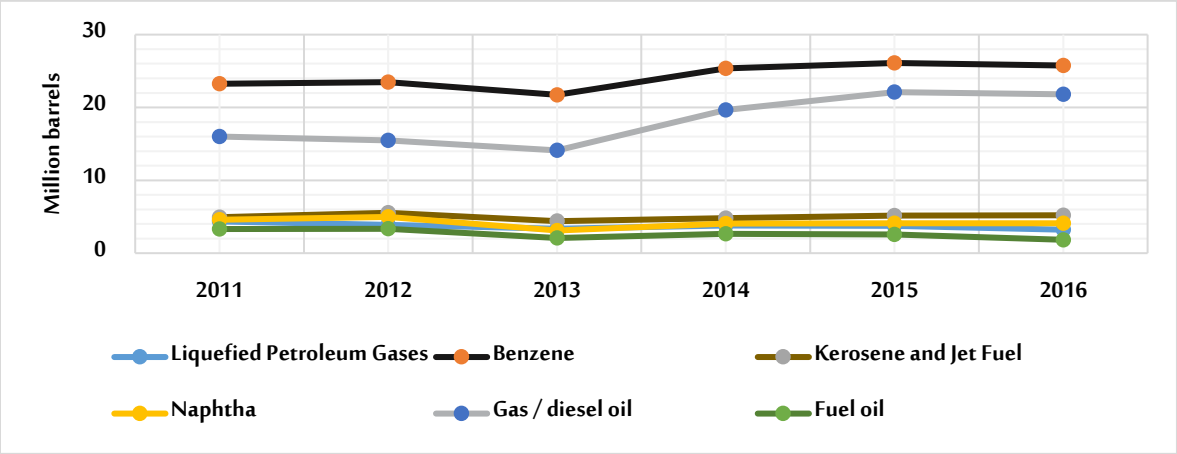
Table 24: Petroleum derivative production in the Sultanate of Oman, for the years 2015 – 2016

Main Petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	3.7	3.2	-13.9
Gasoline	26.1	25.7	-1.4
Kerosene and jet fuel	5.1	5.2	0.6
Naphtha	4.1	4.0	-0.7
Gas oil / Diesel	22.1	21.8	-1.4
Fuel oil	2.5	1.8	-28.3

The comparisons in Figure 31 show that the total production of kerosene and aviation fuel increased between 2011 and 2012, but it decreased in 2013 by 20.7% compared to the previous year, while the total production witnessed increase in 2016 to 5.2 million barrels. As for the liquefied petroleum gases, it witnessed a decrease from 2011 to 2013 and then increased by 13.4% with a production volume of 3.7 million barrels in 2014 followed by a clear decline for the years 2015 and 2016, the total gasoline production reached its peak in 2015, as it reached 26.1 million barrels after the fluctuating increase in 2011, the total fuel oil production recorded a

decrease in 2011 and 2016 by 44.5% in 2016 compared with 2011, and gas oil production increased by 36.1% in 2016 compared to 2011. Naphtha production recorded a decline by 11.1% in 2016 compared to 2011.

Figure 31: Petroleum derivative production in the Sultanate of Oman, during the period 2011 – 2016



- Petroleum derivatives consumption

The consumption of liquefied petroleum gases increased by 14.0%, the total consumption of kerosene and aviation fuel by 15.4% between 2015 and 2016 as shown in table 25, while the total consumption of gas oil decreased in 2016 as it reached 14.5 million barrels and a decrease of 10.6% compared to 2015, followed by a decrease in the total consumption of gasoline by 6.7%, then followed by a decrease in the total consumption of naphtha by 5.4% of the same period of comparison.

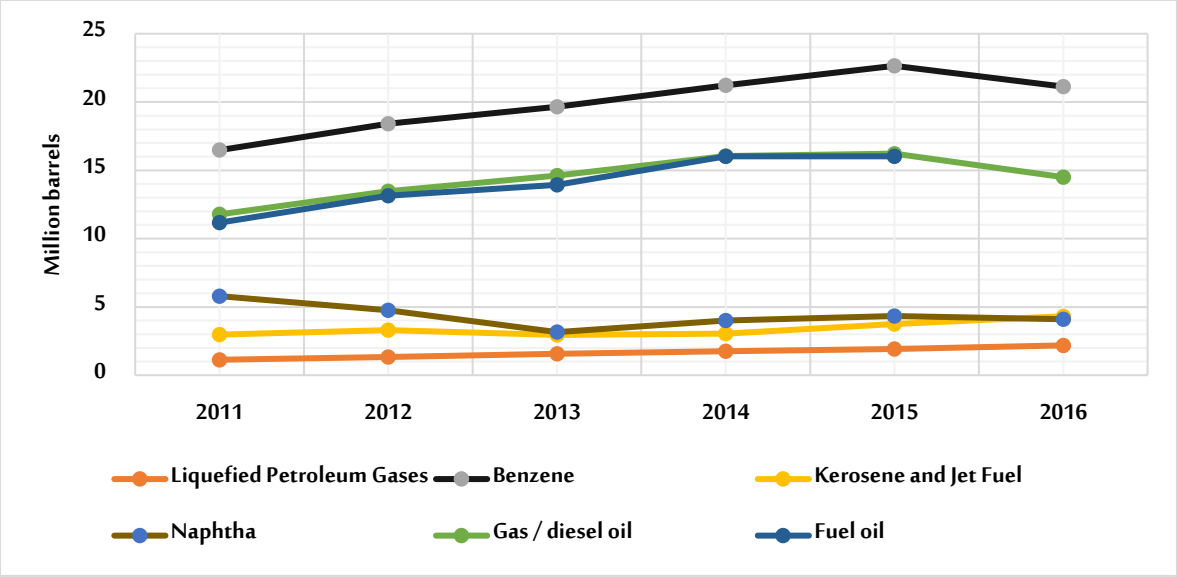
Table 25: Petroleum derivatives consumption in the Sultanate of Oman, for the years 2015 – 2016

Main petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	1.9	2.1	14.0
Gasoline	22.6	21.1	-6.7
kerosene and aviation fuel	3.7	4.3	15.4
Naphtha	4.3	4.0	-5.4
Gas oil / Diesel	16.2	14.5	-10.6
Fuel oil	16.0	-	-

The total consumption of liquefied petroleum gas reached about 2.1 million barrels in 2016, compared to 1.1 million barrels in 2011 with an increase of 92.6%, the total consumption of gasoline increased to 21.1 million barrels in 2016 with an increase of 28.2% compared to 2011. Statistics show that there is a continuous increase in the total consumption of fuel oil during the period 2011-2015, which recorded an increase in consumption by 43.5% in the year 2015 compared to 2011.

Available data indicate that the quantity of consumption of gas oil reached about 14.5 million barrels in 2016 and a change of 23.2% compared to 2011. As for the naphtha total consumption index, there has been a continuous decrease in the years 2011 to 2013, followed by a rise in 2014 and 2015, and then declining again in 2016. The consumption of kerosene and jet fuel increased during the period from 2011 to 2016 by 45.2% (Figure 32).

Figure 32: Petroleum derivatives consumption in the Sultanate of Oman, during the period 2011-2016



3.5 Energy statistics in the State of Qatar

3.5.1 Crude oil in the State of Qatar

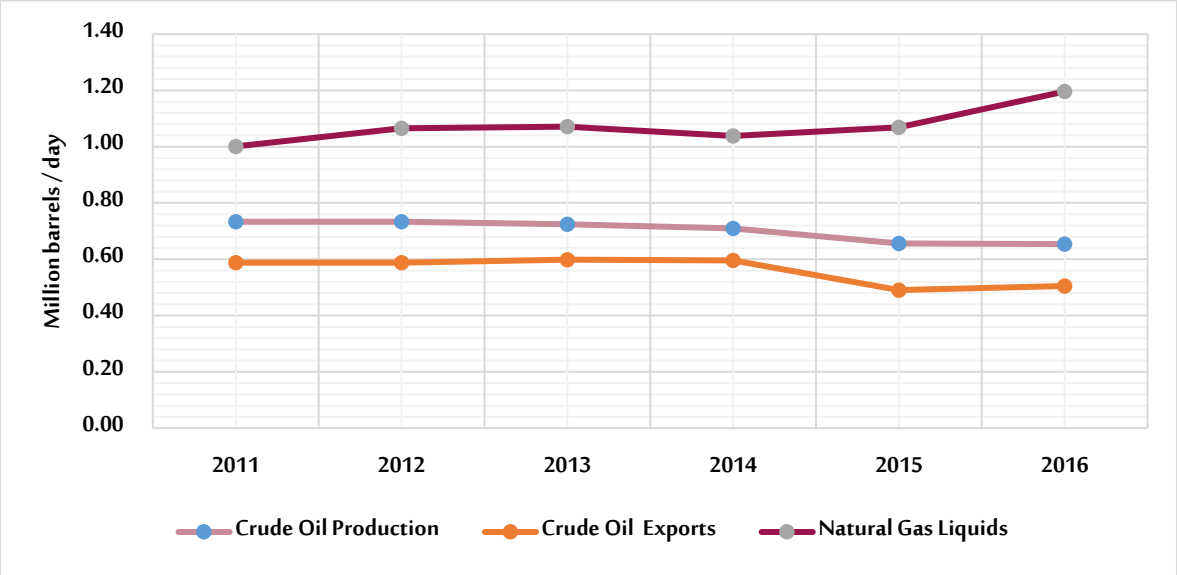
The total production of crude oil in the State of Qatar reached 238.7 million barrels with a daily average 654.0 thousand barrels a decrease by 0.3% compared to 2015 as shown in table 26. The total exports of crude oil reached 505.0 thousand barrel per day during the year 2016 an increase of 2.9% compared to 2015, as well the production of liquefied natural gas increased from 1.0 million barrel per day in 2015 to 1.1 million barrel per day in 2016 with an increase of 11.9%.

Table 26: Crude oil in the State of Qatar, for the years 2015 – 2016

Variables (million barrels / day)	2015	2016	Growth rate (%)
Crude oil production	0.656	0.654	-0.3
Crude oil exports	0.49	0.50	2.9
Liquefied natural gas	1.0	1.1	11.9

The total crude oil production recorded a decrease in 2016 by 10.8% compared to 2011, as well the exports decreased during the same period it recorded a decrease by 14.1%, liquefied natural gas recorded an increase by 19.5% in 2016 compared to 2015 as shown in figure 33.

Figure 33: Crude oil in the State of Qatar, during the period 2011 – 2016



3.5.2 Natural gas in the State of Qatar

The production of natural gas in 2016 reached about 181.2 billion cubic meters, and it witnessed changes in the indicator values during the years 2015 – 2016, where the total quantity of natural gas production decreased to 1.7%, as well the total production of marketed natural gas decreased by 3.8% during the same year of comparison (table 27).

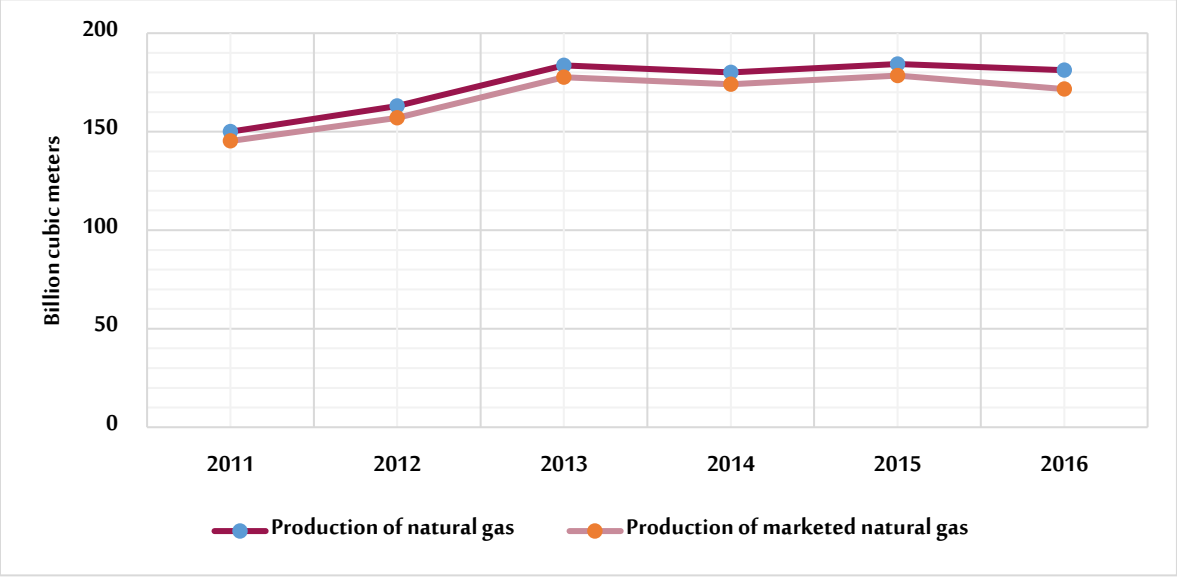
Table 27: Natural gas in the State of Qatar, for the years 2015 – 2016

Variables (billion cubic meters)	2015	2016	Growth rate (%)
Natural gas production*	184.3	181.2	-1.7
Marketed natural gas production	178.4	171.6	-3.8

* Data source: (OPEC)

From the other hand the production of natural gas recorded an increase of 20.8% in 2016 compared to 2011, and the indicator of total marketed natural gas production recorded an increase by 18.1% in 2016 compared to 2015 (figure 34).

Figure 34: Natural gas in the State of Qatar, during the period 2011 – 2016



3.5.3 Electricity in the State of Qatar

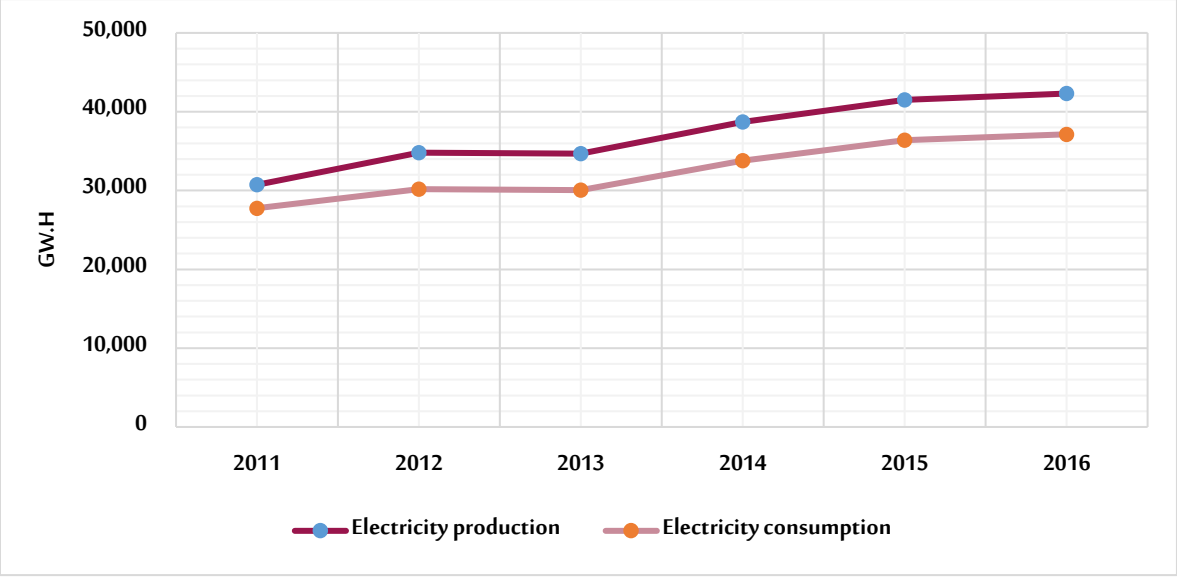
The production of electricity increased by 1.9% in 2016 compared to 2015, where electricity production reached 42,307 GWh in 2016 compared to 41,499.0 GWh in 2015. As well the total electricity consumption in the State of Qatar reached 37,134 GWh during 2016 with an increase of 2.1% compared to 2015 as shown in table 28.

Table 28: Electricity production and consumption in the State of Qatar, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	41,499	42,307	1.9
Electricity consumption	36,377	37,134	2.1

Besides the production of electricity increased by 37.7% in 2016 compared to 2011, as well the electricity consumption increased by 33.8% during the same period (figure 35).

Figure 35: Electricity production and consumption in the State of Qatar, during the period 2011 – 2016



The available data indicate a continued increase in electricity consumption by the sectors used, the consumption in the industrial sector increased by 32.3% in 2016 compared to 2011. As well the residential sector witnessed an increase by 34.5% in the same period as a result of the increasing number of population as well as the industrial activities in the State of Qatar (figure 36).

Figure 36: Electricity consumption in the state of Qatar, by sectors during the period 2011 – 2016

3.5.4 Petroleum derivatives in the State of Qatar

In 2016, the design capacity of the refineries in Qatar amounted to 429 thousand barrels per day, in addition, 75 million barrels of crude oil and condensates were pumped to the refineries in 2016, an increase of 41.1% compared to 2011.

- Petroleum derivatives production

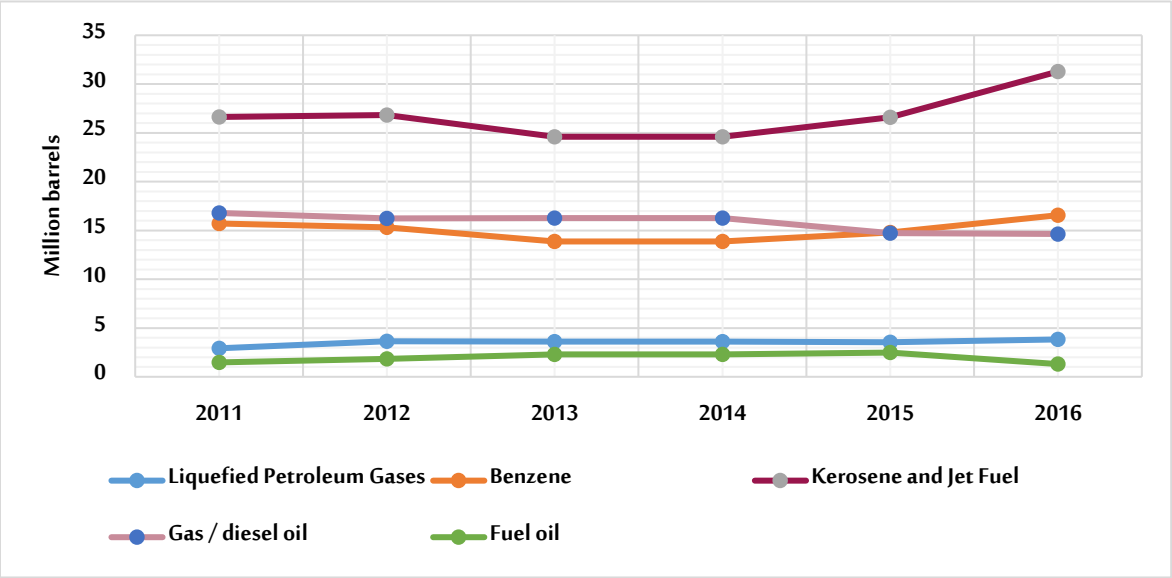
The data in Table 29 indicate a growth in the petroleum derivatives production in 2016 compared to 2015. The production of kerosene and jet fuel recorded the highest increase among other petroleum products by 17.6% in 2016 compared to 2015. The fuel oil recorded the lowest percentage among other petroleum derivatives by 47.5% during the same period.

Table 29: Petroleum derivatives production in the State of Qatar, for the years 2015 – 2016

Main petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	3.5	3.8	8.1
Gasoline	14.7	16.5	12.0
Kerosene and jet fuel	26.6	31.2	17.6
Gas oil / Diesel	14.7	14.6	-0.5
Fuel oil	2.4	1.3	-47.5

The statistical data show that the total production of kerosene and aviation fuel increased by 17.4% in 2016 compared to 2011. Gas oil production also recorded a decrease of 12.8% for the same period of comparison. The total production of gasoline peaked in 2016, reaching 16.5 million barrels, an increase of 5.5% compared to 2011. As for the production of fuel oil, it fluctuated between 2011 and 2016. In general, there has been a decrease of 10.8%. It is also showing that there is a fluctuation in the total production of liquefied petroleum gases in the State of Qatar during the period 2011-2016, its lowest level was in 2011 by 2.9 million barrels and the highest level in 2016 by 3.8 million barrels, an increase of 31.1% compared to 2011 and figure 37 shows the general trends of indicators.

Figure 37: Petroleum derivatives production in the State of Qatar, during the period 2011 – 2016



- Petroleum derivatives consumption

The consumption of liquefied petroleum gas recorded the highest rate of growth among other petroleum products by 31.6% for the year 2016 compared to 2015. Gasoline recorded the lowest growth rate among other petroleum derivatives by 6.6% for the same comparison years (Table 30).

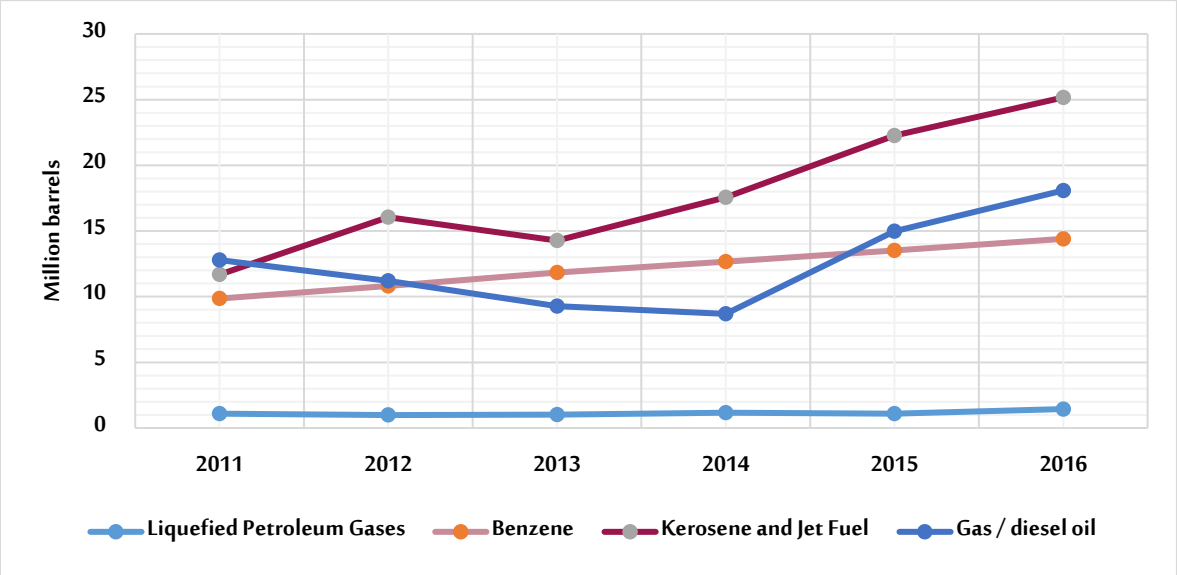
Table 30: Petroleum derivatives consumption in the State of Qatar, for the years 2015 – 2016

Main petroleum derivatives (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	1.0	1.4	31.6
Gasoline	13.5	14.4	6.6
Kerosene and jet fuel	22.2	25.1	13.0
Gas oil / Diesel	14.9	18.0	20.8

On the other hand, available data indicate that the consumption of gas oil increased by 41.5% in 2016 compared to 2011, kerosene and aviation fuel recorded an increase in the total consumption by 115.4% in 2016 compared to 2011. As for the consumption of liquefied petroleum gas, the data indicate a gradual increase from 2011 to 2016, reaching its highest levels in 2016 with a consumption of 1.4 million barrels. There

was a continuous growth in total consumption of gasoline to reach 14.4 million barrels in 2016 compared with 9.8 million barrels in 2011. Figure 38 shows the general trends of indicators.

Figure 38: Petroleum derivatives consumption in the State of Qatar, during the period 2011 – 2016



3.6 Energy statistics in the State of Kuwait

3.6.1 Crude oil in the State of Kuwait

The total of crude oil production in the State of Kuwait reached 1,078.2 million barrel in 2016 with daily production average reached 2.9 million barrel with an increase of 3.3% compared to 2015. The total of crude oil exports was 2.1 million barrel per day during 2016 with an increase reaching 8.3% compared to 2015, where total of exports was 1.9 million barrel per day, as well the percentage of liquefied natural gas production increased to 42.8% in 2016 compared to 2011 (Table 31).

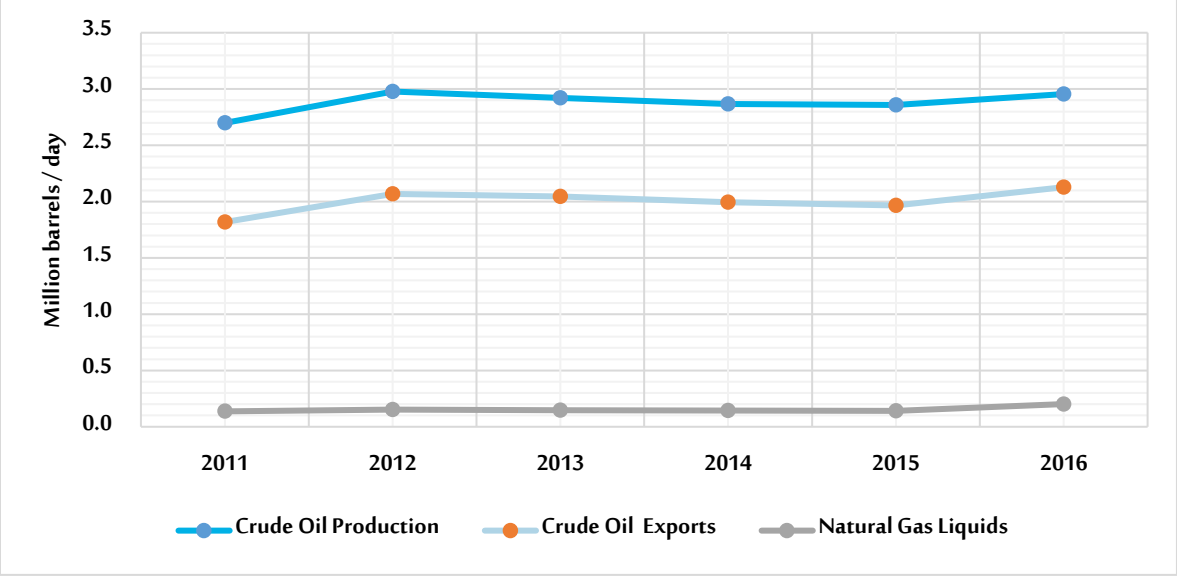
Table 31: Crude oil in the State of Kuwait, for the years 2015 – 2016

Variables (million barrels / day)	2015	2016	Growth rate (%)
Crude oil production	2.8	2.9	3.3
Crude oil exports	1.9	2.1	8.3
Liquefied natural gas *	0.14	0.20	42.8

* Data source: (OPEC)

On the other hand, total crude oil production increased from 2.6 million barrels per day in 2011 to 2.9 million barrels per day in 2016 with a growth rate of 9.5%. Crude oil exports grew by 17.1% in 2016 compared to 2011, and natural gas liquids increased by 47.3% for the same period (Figure 39).

Figure 39: Crude oil in the State of Kuwait, during the period 2011 – 2016



3.6.2 Natural gas in the State of Kuwait

The total quantity of natural gas production was 2.2% in 2016 compared to 2015, and the total marketed natural gas production increased by 2.3% for the same years of comparison as shown in the data in table 32.

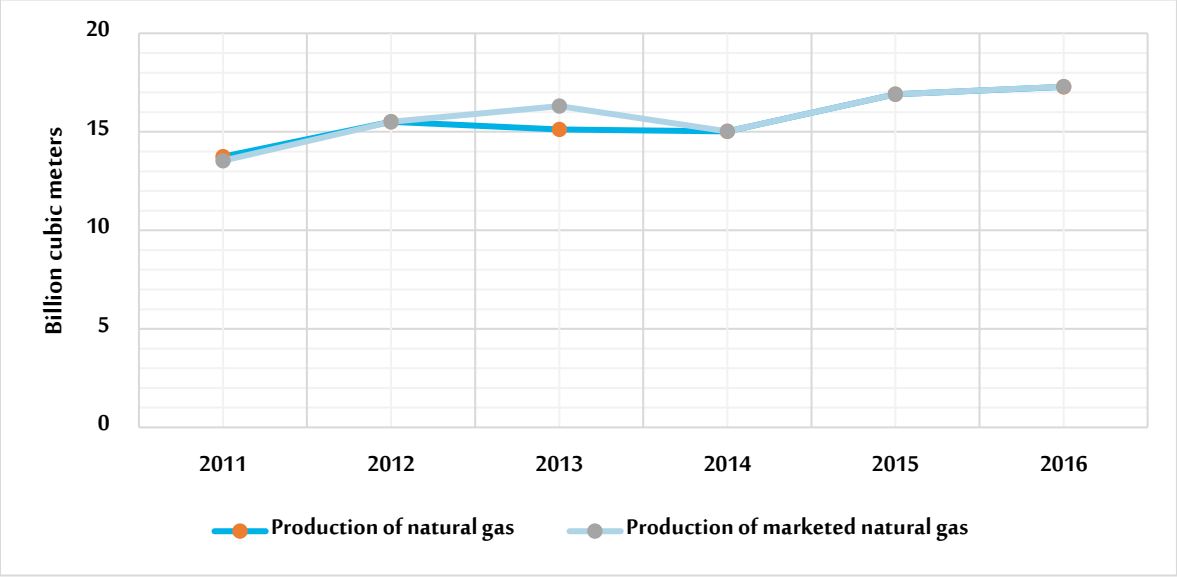
Table 32: Natural gas in the State of Kuwait, for the years 2015 – 2016

Variables (billion cubic meters)	2015	2016	Growth rate (%)
Natural gas production	16.91	17.28	2.2
Marketed natural gas production *	16.90	17.29	2.3

* Data source: (OPEC)

On the other hand, natural gas production increased from 13,739.8 million cubic meters in 2011 to reach 17,282.4 million cubic meters in 2016 with an increase of 25.8%. The production of natural gas marketed also increased by 27.8% during the same period, figure 40 shows the general trend of those indicators.

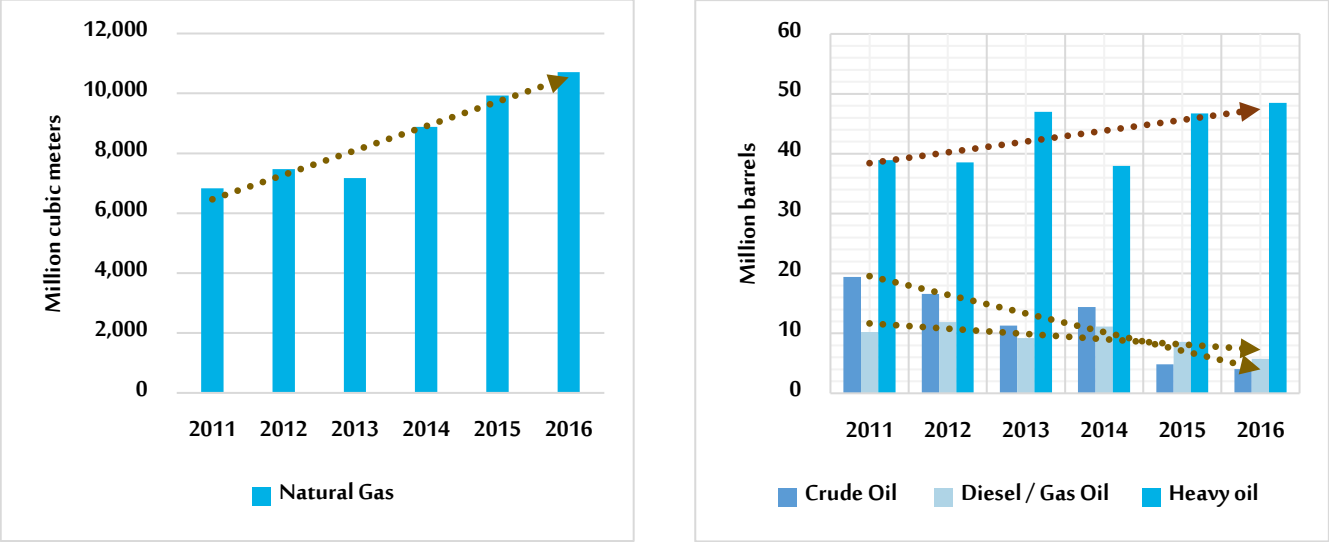
Figure 40: Natural gas in the State of Kuwait, during the period 2011 – 2016



3.6.3 Electricity in the State of Kuwait

Electricity is produced in the state of Kuwait by eight power plants. Where four types of fuel are consumption they are: crude oil, diesel oil, heavy oil and natural gas. Figure 41 represents the consumption of power plants for fuels during the period from 2011 to 2016, as it is clear that the use of crude oil recorded a decrease in 2016 compared to 2011 and by 79.1%, on the other hand, the use of natural gas fuel in the production of electricity increased significantly by 56.9% during the same period.

Figure 41: Oil consumption for electricity production in the state of Kuwait, during the period 2011 – 2016



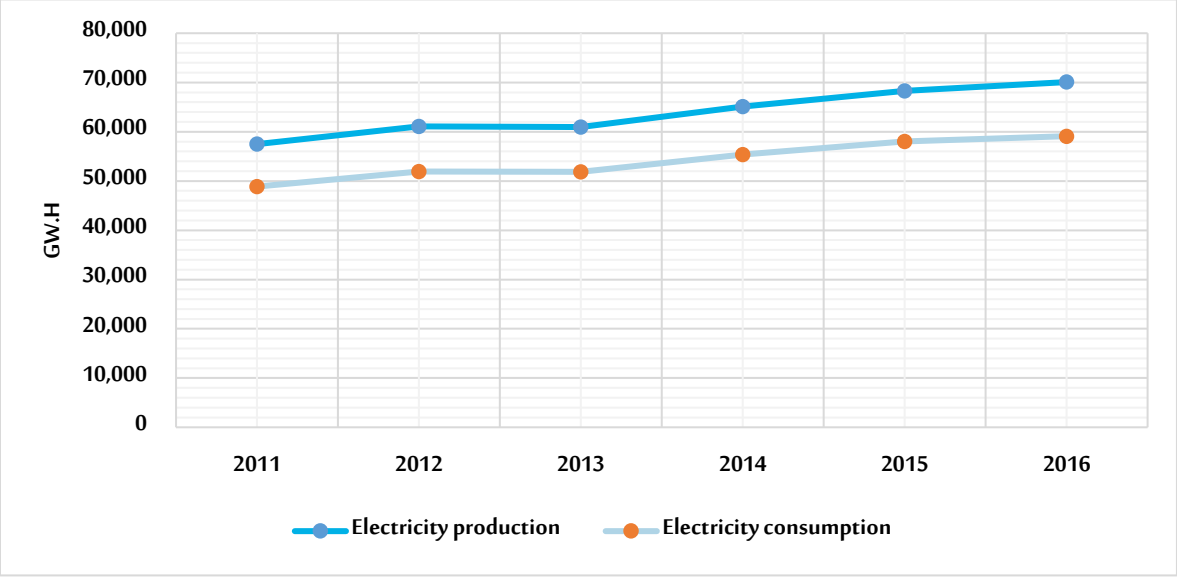
On the other hand, the rate of electricity production increased by 2.6% in 2016 compared to 2015, the total production in 2015 was about 68,288 GWh and increased to 70,085 GWh in 2016. The volume of electric power consumption was 59.101 GWh during the year 2016 compared to 58.045 GWh in 2015 and an increase of 1.8% (Table 33).

Table: 33: Electricity production and consumption in the State of Kuwait, for the years 2015 – 2016

Variables (GWh)	2015	2016	Growth rate (%)
Electricity production	68,288	70,085	2.6
Electricity consumption	58,045	59,101	1.8

In addition, available data showed that electricity production in Kuwait increased by 21.9% in 2016 compared to 2011, where production in 2011 was about 57,488 GWh in comparison to 70,085 GWh in 2016. Electricity consumption also witnessed an increase by 20.9% during the same period. This is attributed to many reasons, including the increase in the population in Kuwait, where the number of the population increased from 3,098,892 in 2011 to 4,082,704 in 2016 with an increase of 31.7% which led to an increase in the demand for electricity, Figure 42 shows the general trend of these indicators.

Figure 42: Electricity production and consumption in the State of Kuwait, during the period 2011 – 2016



3.5.4 Petroleum derivatives in the State of Kuwait

The design capacity of the refineries in Kuwait in 2016 was 936 thousand barrels per day, and pumping of 301,515.6 thousand barrels of crude oil and condensates to refineries in the same year.

- Petroleum derivatives production

Total gasoline production increased by 17.8% in 2016 compared to 2015, as it increased from 17.4 million barrels in 2015 to 20.5 million barrels in 2016. The liquefied petroleum gas recorded an increase of 8.6% in 2016 compared to the previous year. The remaining petroleum derivatives production witnessed a decrease distributed as follows, 15.9% naphtha, 14.0% kerosene and jet fuel, 10.7% fuel oil and 2.2% gas / diesel oil (Table 34).

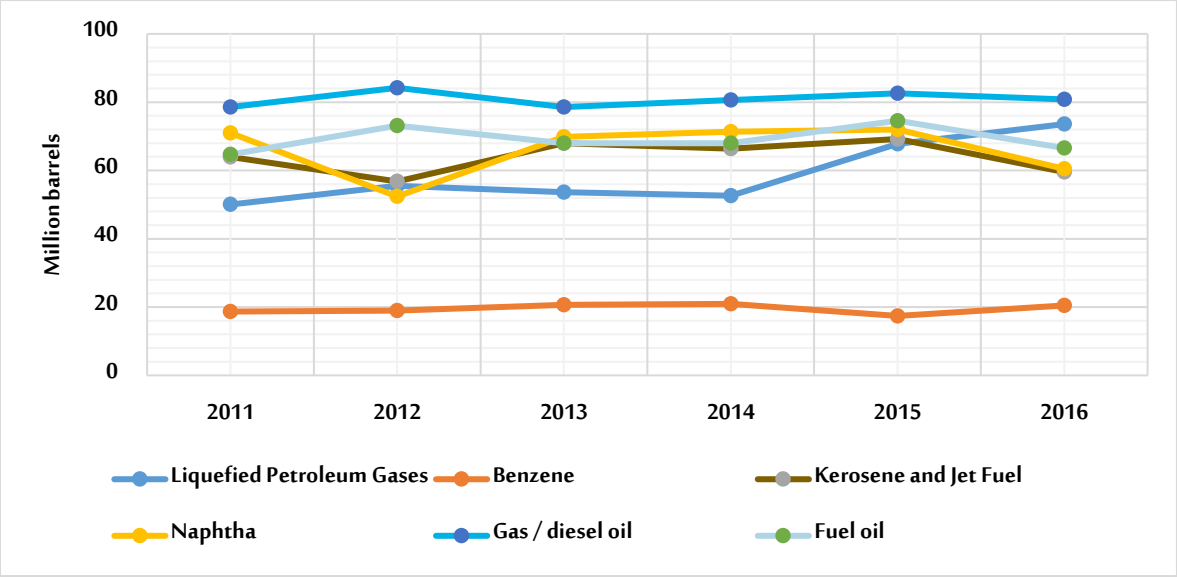
Table 34: Petroleum derivative production in the State of Kuwait, for the years 2015 – 2016

Variables (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	67.7	73.5	8.6
Gasoline	17.4	20.5	17.8
kerosene and jet fuel	69.2	59.5	-14.0
Naphtha	71.9	60.5	-15.9
Gas/ diesel oil	82.6	80.8	-2.2
Fuel oil	74.5	66.6	-10.7

Available statistics show that the production of liquefied petroleum gas recorded an increase by 47.1% in 2016 compared to 2011. Total naphtha production decreased by 14.8% in 2016 compared to 2011. The total production of gasoline reached its peak in 2014, by 20.9 million barrels after the fluctuation experienced during the period 2011-2016. While total fuel oil production increased from 64.6 million barrels in 2011 to 73.1 million barrels in 2012 with a growth rate of 13.1%.

The production of fuel oil increased in 2016 compared to 2011 and by 3.0%. The data also indicate the fluctuation of total gas oil during the period 2011-2016 where it reached its lowest levels of 64.6 million barrels in 2011 and the highest levels of 74.5 million barrels in 2015. Finally, the production of kerosene and aviation fuel decreased by 6.9% in 2016 compared to 2011 (Figure 43).

Figure 43: Petroleum derivatives production in the State of Kuwait, during the period 2011 – 2016



- Petroleum derivatives consumption

The consumption of liquefied petroleum gases increased by 14.6% in 2016 compared to 2015, as it increased from 1.6 million barrel in 2015 to reach to 1.9 million barrel in 2016. While the rest of the components decreased according to the following percentages, 15.1% gas / diesel oil, 0.9% kerosene and aviation fuel, 1.4% fuel oil, and finally gasoline at 1.0% (table 35).

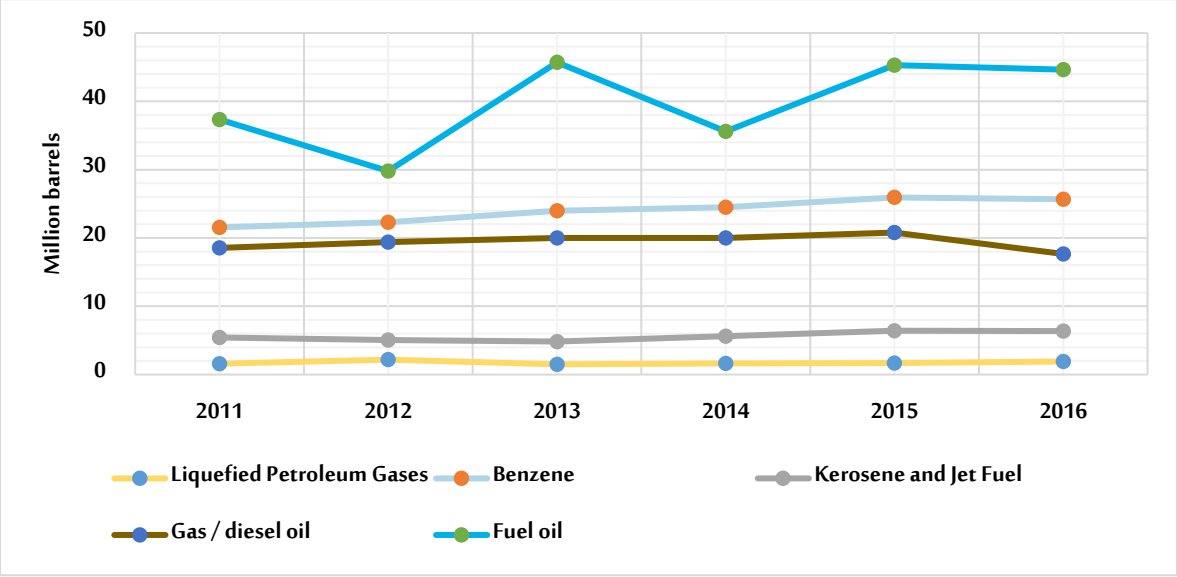
Table 35: Petroleum derivatives consumption in the State of Kuwait, for the years 2015 – 2016

Variables (million barrels)	2015	2016	Growth rate (%)
Liquefied petroleum gases	1.6	1.9	14.6
Gasoline	25.9	25.6	-1.0
Kerosene and aviation fuel	6.4	6.3	-0.9
Gas / diesel oil	20.7	17.6	-15.1
Fuel oil	45.2	44.6	-1.4

On the other hand the consumption of petroleum gases increased from 1.6 million barrel in 2011 to 2.1 million barrel in 2012, then it decreased in 2013and it continued to grow till 2016. Data show an increase in the total of gasoline consumption from 2011 to 2015 but it recorded a decrease in 2016 and it reached 1.0% from previous year.

Data show a fluctuation in the total consumption of the level of increase of fuel oi, where it reached its highest levels in 2013 a quantity amounted 45.7 million barrel, while it reached its lowest levels in 2012 by 29.7 million barrel. Kerosene and aviation fuel witnessed an increase during 2016 by 17.2% compared with 2011. And gas oil / Diesel decreased by 4.7% during the same period as shown in Figure 44.

Figure 44: Petroleum derivatives consumption in the State of Kuwait, during the period 2011 – 2016



Chapter Four

GCC countries Energy statistics Comparison

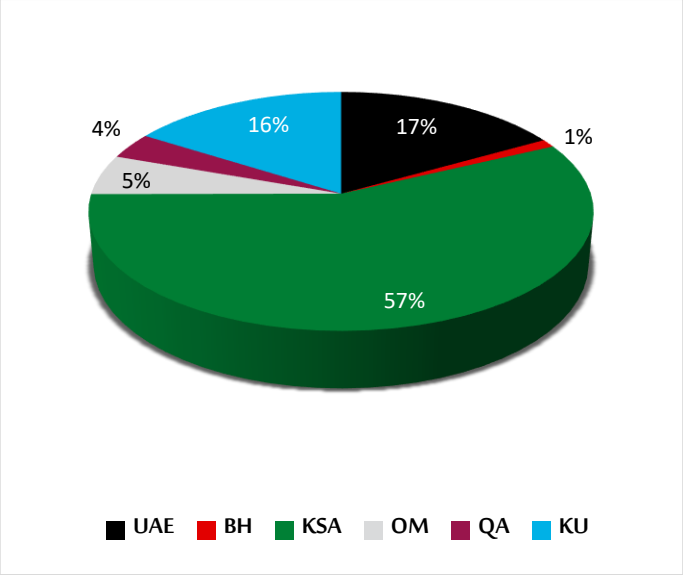
Main indicators comparison among member countries:

This section includes a comparison of main indicators distribution at the level of member countries in order to identifying the proportional distribution and levels of common indicators concentration among member countries.

4.1 The production of crude oil

Figure 45 represents the proportional distribution of crude oil production for GCC countries in 2016, the Kingdom of Saudi Arabia formed the highest percentage in crude oil production by 57%, followed by United Arab Emirates by 17%, Kuwait by 16%, Sultanate of Oman by 5%, Qatar by 4% and Bahrain by 1%.

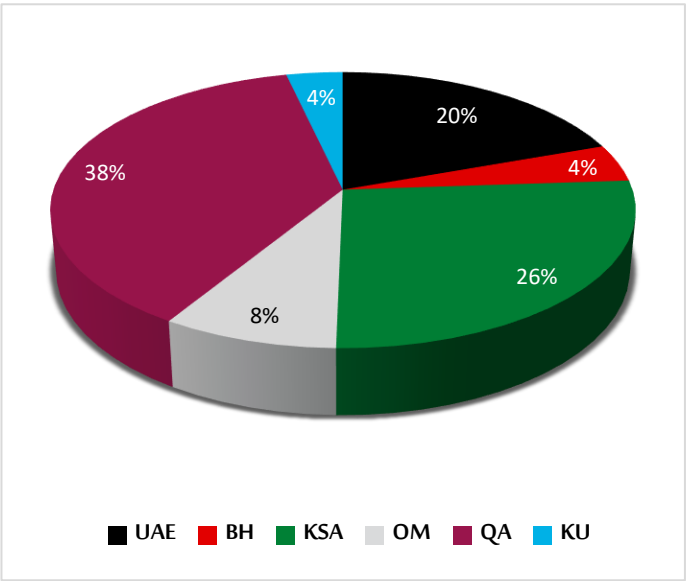
Figure 45: The percentage of crude oil production in GCC countries from the total production for the year 2016



4.2 Natural gas production

The State of Qatar recorded the highest percentage in natural gas production in 2016 among GCC countries as shown in figure 46, where the state of Qatar recorded 38%, followed by Saudi Arabia by 26%, United Arab Emirates by 20%, Sultanate of Oman by 8%, while Bahrain and Kuwait recorded 4% for each.

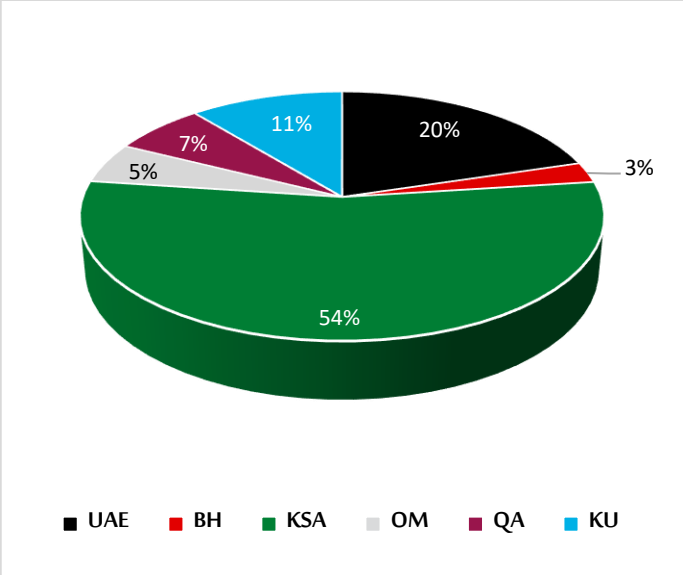
Figure 46: The percentage of natural gas production in GCC countries from the total production for the year 2016



4.3: Electricity production

The Kingdom of Saudi Arabia recorded the highest electricity production by 54% from the total production of electricity in GCC countries in 2016, followed by United Arab Emirates by 20%, State of Kuwait by 11%, State of Qatar by 7%, while the rest of the percentages were distributed between Sultanate of Oman and the Kingdom of Bahrain by 5% and 3%, respectively (Figure 47).

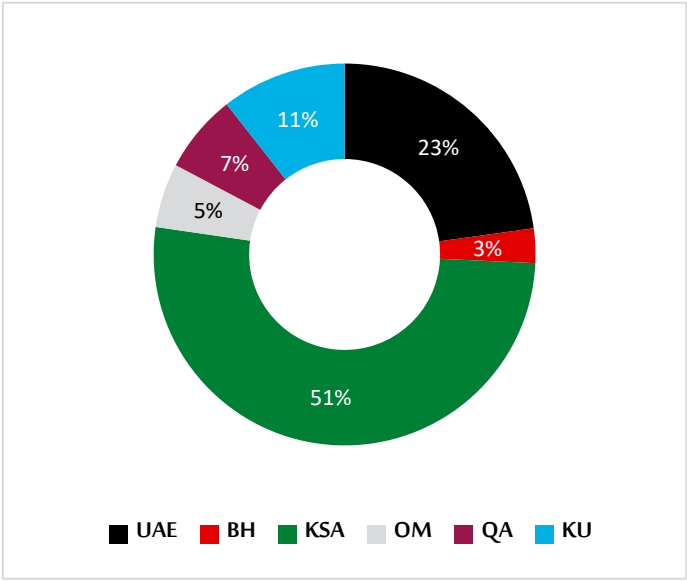
Figure 47: The percentage of electricity production in GCC countries from the total production for the year 2016



4.4 Electricity consumption

The Kingdom of Saudi Arabia formed the highest percentage in electricity consumption in GCC countries in 2016 by 51%, while the United Arab Emirates recorded 23%, followed by Kuwait by 11%, Qatar by 7%, and finally Sultanate of Oman and the Kingdom of Bahrain by 5%, 3% respectively (Figure 48).

Figure 48: The percentage of electricity consumption in GCC countries from the total consumption for the year 2016



Statistical Tables

Crude oil indicators in GCC countries

Variables (Thousand barrels/day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	16,382.1	17,245.6	17,219.8	17,228.3	17,879.0	18,400.3	12.3	2.9
Crude oil export	12,956.9	13,656.2	13,771.6	13,255.1	13,113.2	13,544.2	4.5	3.3
Refineries capacity	4,505.0	4,490.0	4,922.0	5,307.0	5,724.0	5,870.0	30.3	2.6
Reserves of crude oil (Billion barrel / year)	495.8	496.1	495.7	496.6	463.5	496.1	0.1	7.0
Natural gas liquids	2,917.1	3,094.5	3,137.3	3,001.0	3,205.5	3,447.8	18.2	7.6

Natural gas indicators in GCC countries

Variables (Million cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	401,376.4	429,938.5	460,617.9	464,689.5	477,222.3	483,778.3	20.5	1.4
Marketed natural gas production	342,713.6	367,325.2	395,292.7	391,011.0	406,439.0	407,820.5	19.0	0.3
Reserves of natural gas (Billion cubic meters)	41,954.3	42,404.7	42,085.2	42,092.9	41,925.0	41,669.0	-0.7	-0.6

Electricity indicators in GCC countries

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	472,613	512,356	530,067	576,768	624,745	637,738	34.9	2.1
Electricity consumption	422,568	457,480	480,091	512,782	552,506	557,761	32.0	1.0

Petroleum derivatives production indicators in GCC countries

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	78,903.4	81,762.5	85,671.2	87,519.4	104,225.8	106,259.3	34.7	2.0
Gasoline	236,566.5	241,223.5	229,255.5	258,185.1	287,097.5	256,394.8	8.4	10.7-
Kerosene and aviation fuel	241,791.5	242,988.3	252,316.3	260,608.9	294,945.9	308,565.5	27.6	4.6
Naphtha	211,666.4	197,117.0	210,669.2	228,161.6	247,886.6	254,209.2	20.1	2.6
Gas oil / Diesel	414,029.0	420,176.5	400,833.5	466,050.8	567,795.6	609,330.6	47.2	7.3
Fuel oil	251,375.2	275,660.0	273,690.8	282,006.8	274,449.8	263,175.8	4.7	4.1-

Petroleum derivatives consumption indicators in GCC countries

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	27,422.0	26,422.5	25,274.7	25,877.5	27,521.2	30,748.1	12.1	11.7
Gasoline	258,814.0	280,371.2	303,504.6	317,148.3	361,757.4	369,072.2	42.6	2.0
Kerosene and aviation fuel	75,135.8	84,592.8	100,836.1	97,566.9	126,804.1	132,558.8	76.4	4.5
Naphtha	5,789.0	4,751.1	3,154.8	4,003.9	4,328.4	4,094.6	-29.3	-5.4
Gas oil / Diesel	333,798.7	355,695.4	341,322.5	349,834.0	358,615.6	332,818.9	-0.3	-7.2
Fuel oil	143,336.9	139,996.2	172,221.9	191,092.2	207,220.5	217,538.2	51.8	5.0

Crude oil indicators in the United Arab Emirates

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	2,564.0	2,653.0	2,797.0	2,794.0	2,989.0	3,096.5	20.8	3.6
Crude oil export	2,457.0	2,539.9	2,579.0	2,557.0	2,501.0	2,414.6	-1.7	-3.5
Natural gas liquids	759.4	773.2	813.5	704.7	828.0	851.2	12.1	2.8
Refinery capacity	690.0	675.0	707.0	707.0	1,124.0	1,124.0	62.9	0.0
Quantities of oil entered into refineries (1000 barrels)	231,775.0	232,870.0	237,250.0	234,695.0	400,770.0	393,134.9	69.6	-1.9

Natural gas indicators in the United Arab Emirates

Variables (Billion cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	82,753.0	85,406.0	87,227.0	92,536.0	92,942.0	94,100.0	13.7	1.2
Marketed natural gas production	52,308.0	54,300.0	54,600.0	54,244.6	60,181.0	61,083.7	16.8	1.5

Electricity indicators in the United Arab Emirates

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	99,137	106,222	109,979	116,528	127,366	129,596	30.7	1.8
Electricity consumption	95,508	101,453	105,363	111,685	126,582	127,205	33.2	0.5

Electricity consumption indicators by sectors in the United Arab Emirates

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Industrial	11,254	12,928	13,564	11,196	12,973		15.3	15.9
Commercial	31,417	33,476	35,245	39,319	55,621		77.0	41.5
Residential	33,502	32,601	33,292	35,121	38,008		13.4	8.2
other	19,335	22,448	23,262	26,049	19,980		3.3	-23.3

Petroleum derivatives production indicators in the United Arab Emirates

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	9,052.1	6,885.2	10,554.9	10,601.5	11,661.7	9,250.1	2.2	-20.7
Gasoline	30,047.5	31,875.0	33,252.0	30,685.0	41,913.5	49,837.3	65.9	18.9
Kerosene and aviation fuel	61,336.4	65,353.5	69,300.6	64,203.5	91,173.2	98,400.7	60.4	7.9
Naphtha	59,296.0	59,712.5	62,687.5	65,764.5	88,672.0	100,147.6	68.9	12.9
Gas oil / Diesel	44,862.2	39,605.9	43,589.7	45,158.6	66,472.6	78,556.1	75.1	18.2
Fuel oil	13,484.9	12,809.7	18,489.7	19,118.6	17,238.5	8,659.0	-35.8	-49.8

Petroleum derivatives consumption indicators in the United Arab Emirates

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	4,727.7	4,914.2	5,289.2	5,447.7	6,002.3	6,484.6	37.2	8.0
Gasoline	43,360.1	46,801.1	57,914.1	61,180.5	57,331.4	63,539.2	46.5	10.8
Kerosene and aviation fuel	30,779.3	34,926.8	52,649.5	43,561.1	62,536.0	64,257.6	108.8	2.8
Fuel oil	30,519.7	29,307.4	28,859.0	27,959.0	20,123.7	23,429.1	-23.2	16.4

Crude oil indicators in the Kingdom of Bahrain

Variables (Thousand barrels/ day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	191.0	173.0	197.6	202.4	201.5	202.0	5.8	0.3
Crude oil export	150.0	133.0	143.0	154.0	149.0	154.0	2.7	3.4
Natural gas liquids	10.8	10.5	9.6	10.2	10.0	10.0	-7.5	0.0
Quantities of oil entered into refineries (1000 barrels)	94,530.6	96,147.5	96,297.7	93,912.6	96,956.4	94,342.0	-0.2	-2.7

Natural gas indicators in the Kingdom of Bahrain

Variables (Billion cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	15,659.1	16,781.2	19,271.1	20,659.4	21,317.2	21,095.6	34.7	-1.0
Marketed natural gas production	13,295.0	13,776.0	14,675.0	15,404.0	15,352.0	15,226.0	14.5	-0.8

Electricity indicators in the Kingdom of Bahrain

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	13,826	14,104	14,760	16,257	17,183	17,046	23.3	-0.8
Electricity consumption	12,263	12,644	13,350	15,186	16,552	16,270	32.7	-1.7

Electricity consumption indicators by sectors in the Kingdom of Bahrain

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Industrial	1,821	1,739	2,017	2,632	2,728	2,587	42.1	-5.2
Commercial	4,523	4,551	4,855	5,521	6,141	5,979	32.2	-2.6
Residential	5,871	6,309	6,426	6,985	7,626	7,643	30.2	0.2
Agricultural	48	45	52	48	58	61	26.8	4.1

Petroleum derivatives production indicators in the Kingdom of Bahrain

Variables (Thousand barrel)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	574.0	612.0	654.0	685.0	735.0	768.0	33.8	4.5
Gasoline	6,248.0	5,642.0	5,064.0	6,398.0	6,981.0	6,662.0	6.6	-4.6
Kerosene and aviation fuel	24,213.0	24,675.4	26,604.0	23,254.0	25,821.0	24,670.0	1.9	-4.5
Naphtha	14,656.0	15,871.0	16,338.0	16,721.0	14,322.0	13,679.0	-6.7	-4.5
Gas oil / Diesel	28,390.0	30,529.0	28,504.0	29,517.0	30,436.0	28,897.0	1.8	-5.1
Fuel oil	16,275.0	16,175.0	16,676.0	14,287.0	14,436.0	16,447.0	1.1	13.9

Petroleum derivatives consumption indicators in the Kingdom of Bahrain

Variables (Thousand barrel)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	569.0	605.0	642.6	678.0	717.3	755.0	32.7	5.3
Gasoline	5,103.0	5,686.7	5,981.2	6,359.6	6,611.2	6,628.0	29.9	0.3
Kerosene and aviation fuel	380.0	421.2	570.0	511.0	478.0	409.0	7.6	-14.4
Gas oil / Diesel	2,404.7	2,606.4	2,277.5	2,214.0	2,405.0	2,586.0	7.5	7.5

Crude oil indicators in the Kingdom of Saudi Arabia

Variables (Thousand barrels/day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	9,310.9	9,790.1	9,637.3	9,712.7	10,192.6	10,488.8	12.7	2.9
Crude oil export	7,206.0	7,561.0	7,570.7	7,153.5	7,163.0	7,463.0	3.6	4.2
Natural gas liquids	1,009.0	1,093.0	1,093.0	1,100.0	1,155.0	1,186.0	17.5	2.7
Refinery capacity	2,107.0	2,107.0	2,507.0	2,899.0	2,899.0	2,899.0	37.6	0.0
Quantities of oil entered into refineries (1000 barrels)	721,146.0	747,359.0	712,231.0	847,232.0	952,815.0	1,026,842.0	42.4	7.8

Natural gas indicators in the Kingdom of Saudi Arabia

Variables (Million cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	102,430.0	111,220.0	114,120.0	116,720.0	119,830.0	127,180.0	24.2	6.1
Marketed natural gas production	92,260.0	99,330.0	100,030.0	102,380.0	104,450.0	110,860.0	20.2	6.1

Electricity indicators in the Kingdom of Saudi Arabia

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	250,077	271,679	284,017	311,807	338,327	345,104	38.0	2.0
Electricity consumption	219,661	240,288	256,688	271,586	286,038	287,692	31.0	0.6

Electricity consumption indicators by sectors in the Kingdom of Saudi Arabia

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Industrial	42,129	41,711	51,080	51,499	45,134	46,499	10.4	3.0
Commercial	56,928	65,898	66,884	71,953	80,876	86,399	51.8	6.8
Residential	109,261	120,246	125,678	133,904	144,041	143,213	31.1	-0.6
Agricultural	3,786	4,191	4,290	4,577	5,168	-	-	-
other	7,557	8,242	8,756	9,653	10,819	11,581	53.2	7.0

Petroleum derivatives production indicators in the Kingdom of Saudi Arabia

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	11,970.0	11,249.0	13,862.0	16,171.0	16,758.0	15,608.0	30.4	-6.9
Gasoline	142,584.0	145,889.0	134,692.0	160,938.0	179,901.0	137,080.0	-3.9	-23.8
Kerosene and aviation fuel	60,738.0	63,802.0	59,455.0	77,315.0	76,954.0	89,498.0	47.4	16.3
Naphtha	62,122.0	64,180.0	58,654.0	70,272.0	68,770.0	75,771.0	22.0	10.2
Gas oil / Diesel	229,397.0	234,122.0	219,768.0	274,842.0	351,471.0	384,619.0	67.7	9.4
Fuel oil	152,172.0	168,383.0	166,197.0	175,676.0	163,156.0	168,314.0	10.6	3.2

Petroleum derivatives consumption indicators in the Kingdom of Saudi Arabia

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	18,294.0	16,400.0	15,259.0	15,188.0	16,127.0	17,977.0	-1.7	11.5
Gasoline	162,462.0	176,401.0	184,139.0	191,228.0	235,730.0	237,706.0	46.3	0.8
Kerosene and aviation fuel	23,897.0	24,829.0	25,561.0	27,283.0	31,366.0	32,054.0	34.1	2.2
Gas oil / Diesel	257,792.0	279,741.0	266,323.0	274,939.0	284,116.0	256,562.0	-0.5	-9.7
Fuel oil	94,360.0	96,664.0	112,309.0	138,524.0	145,625.0	172,195.0	82.5	18.2

Crude oil indicators in the Sultanate of Oman

Variables (Thousand barrels/day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	884.9	918.5	941.9	943.5	981.1	1,004.3	13.5	2.4
Crude oil export	738.1	764.5	833.4	800.4	844.1	879.6	19.2	4.2
Quantities of oil entered into refineries (1000 barrels)	74,193.8	72,451.7	69,258.4	66,510.5	69,954.0	65,118.3	-12.2	-6.9

Natural gas indicator in the Sultanate of Oman

Variables (Million cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	34,767.1	35,990.0	39,166.0	37,718.1	39,860.3	40,904.3	17.7	2.6
Marketed natural gas production	26,046.2	27,354.6	32,074.5	29,896.9	31,075.0	31,721.8	21.8	2.1

Electricity indicators in the Sultanate of Oman

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	21,354	24,444	25,661	28,343	32,082	33,600	57.3	4.7
Electricity consumption	18,512	20,959	22,791	25,172	28,912	30,359	64.0	5.0

Electricity consumption indicators by sectors in the Sultanate of Oman

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Industrial	2,583	3,436	3,686	4,189	4,723	5,153	99.5	9.1
Commercial	6,380	6,929	7,708	8,291	9,637	10,375	62.6	7.7
Residential	9,060	10,039	10,787	11,959	13,757	13,995	54.5	1.7
Agricultural	231	266	299	339	380	393	70.3	3.5
other	258	289	310	394	415	442	71.3	6.6

Petroleum derivatives production indicators in the Sultanate of Oman

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	4,352.3	3,888.3	3,348.8	3,796.4	3,744.6	3,223.2	-25.9	-13.9
Gasoline	23,265.0	23,475.5	21,736.5	25,356.1	26,106.5	25,742.5	10.6	-1.4
Kerosene and aviation fuel	4,925.1	5,543.9	4,393.7	4,806.4	5,170.2	5,201.8	5.6	0.6
Naphtha	4,604.4	4,974.5	3,112.7	4,066.1	4,123.6	4,094.6	-11.1	-0.7
Gas oil / Diesel	16,013.8	15,472.1	14,107.8	19,642.2	22,101.5	21,800.0	36.1	-1.4
Fuel oil	3,314.3	3,342.3	2,083.6	2,666.7	2,563.3	1,837.8	-44.5	-28.3

Petroleum derivatives consumption indicators in the Sultanate of Oman

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	1,133.3	1,331.8	1,568.9	1,760.8	1,914.6	2,182.5	92.6	14.0
Gasoline	16,478.9	18,402.4	19,661.3	21,223.7	22,648.8	21,129.0	28.2	-6.7
Kerosene and aviation fuel	2,973.5	3,290.8	2,949.1	3,041.3	3,739.1	4,316.2	45.2	15.4
Naphtha	5,789.0	4,751.1	3,154.8	4,003.9	4,328.4	4,094.6	-29.3	-5.4
Gas oil / Diesel	11,775.3	13,467.1	14,608.0	16,051.0	16,218.9	14,501.8	23.2	-10.6
Fuel oil	11,169.0	13,140.0	13,943.0	16,023.5	16,023.5	-	43.5	-

Crude oil indicators in the State of Qatar

Variables (Thousand barrels/day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	733.5	733.6	723.9	709.2	656.0	654.0	-10.8	-0.3
Crude oil export	587.9	588.3	598.7	595.5	490.7	505.0	-14.1	2.9
Natural gas liquids	1,001.0	1,066.0	1,070.6	1,038.5	1,068.5	1,196.0	19.5	11.9
Quantities of oil entered into refineries (1000 barrels)	53,167.7	53,044.7	45,706.4	41,497.6	60,334.5	54,385.0	2.3	-9.9

Natural gas indicators in the State of Qatar

Variables (Million cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	150,016.4	163,025.3	183,698.0	180,024.1	184,344.6	181,200.0	20.8	-1.7
Marketed natural gas production	145,271.4	157,049.6	177,602.0	174,056.7	178,472.0	171,638.0	18.1	-3.8

Electricity indicators in the State of Qatar

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	30,731	34,788	34,668	38,693	41,499	42,307	37.7	1.9
Electricity consumption	27,759	30,185	30,065	33,784	36,377	37,134	33.8	2.1

Electricity consumption indicators by sectors in the State of Qatar

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Industrial	9,089	9,798	9,944	11,568	11,887	12,026	32.3	1.2
Residential	18,670	20,387	20,121	22,216	24,491	25,108	34.5	2.5

Petroleum derivatives production indicators in the State of Qatar

Variables (Thousand barrel)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	2,920.0	3,650.0	3,613.5	3,613.5	3,540.5	3,827.0	31.1	8.1
Gasoline	15,695.0	15,330.0	13,870.0	13,870.0	14,782.5	16,560.0	5.5	12.0
Kerosene and aviation fuel	26,645.0	26,827.5	24,601.0	24,601.0	26,608.5	31,282.0	17.4	17.6
Gas oil / Diesel	16,790.0	16,242.5	16,279.0	16,279.0	14,709.5	14,636.5	-12.8	-0.5
Fuel oil	1,460.0	1,825.0	2,299.5	2,299.5	2,482.0	1,303.0	-10.8	-47.5

Petroleum derivatives consumption indicators in the State of Qatar

Variables (Thousand barrel)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	1,095.0	985.5	1,022.0	1,168.0	1,095.0	1,441.0	31.6	31.6
Gasoline	9,855.0	10,804.0	11,826.0	12,665.5	13,505.0	14,400.0	46.1	6.6
Kerosene and aviation fuel	11,680.0	16,060.0	14,271.5	17,556.5	22,265.0	25,161.0	115.4	13.0
Gas oil / Diesel	12,775.0	11,205.5	9,271.0	8,687.0	14,965.0	18,082.0	41.5	20.8

Crude oil indicators in the State of Kuwait

Variables (Thousand barrels/day)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Crude oil production	2,698.5	2,977.4	2,922.1	2,866.6	2,858.8	2,954.1	9.5	3.3
Crude oil export	1,818.0	2,069.5	2,046.8	1,994.8	1,965.4	2,128.0	17.1	8.3
Natural gas liquids	136.9	151.8	146.8	144.2	141.2	201.6	47.3	42.8

Natural gas indicators in the State of Kuwait

Variables (Million cubic meters)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Natural gas production	13,739.8	15,504.0	15,122.8	15,017.9	16,913.3	17,282.4	25.8	2.2
Marketed natural gas production	13,533.0	15,515.0	16,311.2	15,028.8	16,909.0	17,291.0	27.8	2.3

Electricity indicators in the State of Kuwait

Variables (GWh)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Electricity production	57,488	61,119	60,982	65,140	68,288	70,085	21.9	2.6
Electricity consumption	48,865	51,951	51,835	55,369	58,045	59,101	20.9	1.8

Petroleum derivatives production indicators in the State of Kuwait

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	50,035.0	55,478.0	53,638.0	52,652.0	67,786.0	73,583.0	47.1	8.6
Gasoline	18,727.0	19,012.0	20,641.0	20,938.0	17,413.0	20,513.0	9.5	17.8
Kerosene and aviation fuel	63,934.0	56,786.0	67,962.0	66,429.0	69,219.0	59,513.0	-6.9	-14.0
Naphtha	70,988.0	52,379.0	69,877.0	71,338.0	71,999.0	60,517.0	-14.8	-15.9
Gas oil / Diesel	78,576.0	84,205.0	78,585.0	80,612.0	82,605.0	80,822.0	2.9	-2.2
Fuel oil	64,669.0	73,125.0	67,945.0	67,959.0	74,574.0	66,615.0	3.0	-10.7

Petroleum derivatives consumption indicators in the State of Kuwait

Variables (Thousand barrels)	2011	2012	2013	2014	2015	2016	Rate of change% (2011-2016)	Rate of change% (2015-2016)
Liquefied petroleum gases	1,603.0	2,186.0	1,493.0	1,635.0	1,665.0	1,908.0	19.0	14.6
Gasoline	21,555.0	22,276.0	23,983.0	24,491.0	25,931.0	25,670.0	19.1	-1.0
Kerosene and aviation fuel	5,426.0	5,065.0	4,835.0	5,614.0	6,420.0	6,361.0	17.2	-0.9
Gas oil / Diesel	18,532.0	19,368.0	19,984.0	19,984.0	20,787.0	17,658.0	-4.7	-15.1
Fuel oil	37,327.0	29,794.0	45,707.0	35,609.0	45,297.0	44,656.0	19.6	-1.4

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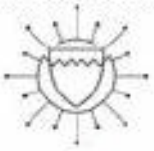

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