

KEY TRENDS IMPACTING THE MIDDLE EAST AND AFRICA OIL & GAS INDUSTRY

DHL White Paper
October 2020



DHL Global Forwarding - Excellence. Simply Delivered.



Contents

Global Oil & Gas Industry Overview.....	3
MEA Oil & Gas Industry Overview.....	8
Key Trends Impacting Oil & Gas Industry in MEA.....	16
Conclusion.....	21

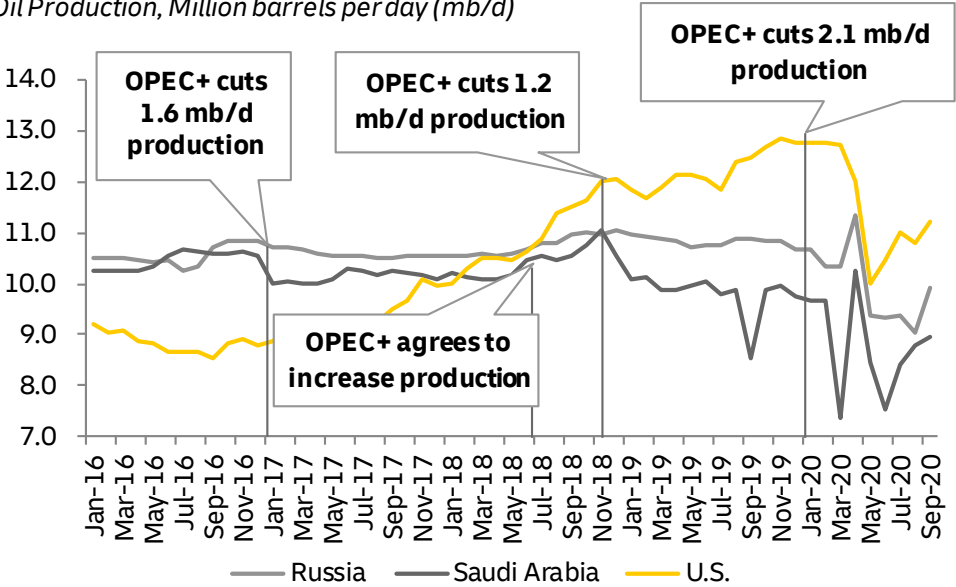


GLOBAL OIL & GAS INDUSTRY OVERVIEW

Global Oil & Gas Industry Overview

OPEC and its allies (OPEC+) have played an instrumental role since last 3 years in keeping the oil prices afloat

Oil Production, Million barrels per day (mb/d)



Since the last three years OPEC+, led by Saudi Arabia, co-ordinated oil production cuts while the U.S. continued to increase its oil production by 30% i.e. from 9.3mb/d to 12.3mb/d.



Around the second half of 2018, the U.S. even surpassed Saudi Arabia and Russia to become the largest oil producer in the global market; thanks to sustained high oil prices on account of OPEC+ production cuts.



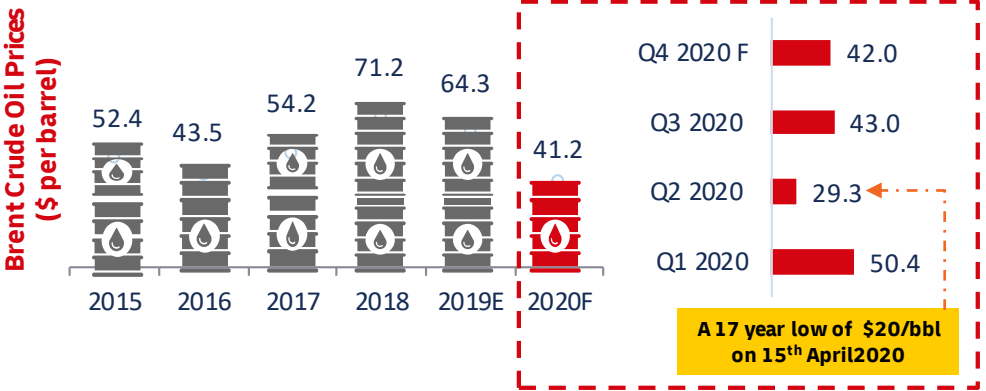
With the U.S. leading the market, the oil prices were found to be more or less immune to Middle East geo-political events as sustained negative impacts were not seen during the attack on Saudi oil fields in September 2019



Source: EIA, OPEC and Frost & Sullivan Analysis
Image Source: Thinkstock

Global Oil & Gas Industry Overview

2020 average brent crude oil prices to slide to around \$41



The fall of the oil price since the start of 2020 is a clear result of classic twin effect – high supply and low demand.

Supply

On 12th April 2020, OPEC+ along with the U.S. agreed for around 10 mb/d production cut in an attempt to stabilize the oil markets. But this deal is not expected to support the oil price increase as the production cut falls far short of what is required to match the current subdued demand.

Demand

The slowdown in global oil demand growth was already evident from 2017. To add to this, Covid-19 outbreak has put 2.6 billion people under some kind of lockdown or quarantine; severely impacting oil demand. It is estimated that the overall oil demand has dropped by around 25 – 30 mb/d as compared to pre-Covid levels

Moreover, Covid-19 outbreak has added more uncertainty to oil demand recovery timeline pushing the prices further down. It is estimated 2020 oil prices to average out at \$41.2/barrel with improving demand conditions in 2H2020. China particularly is making most of the low priced crude oil by increasing imports to record levels to stock up at almost double the rate as compared to last year i.e. at 1.98 mb/d in Q1 2020 vs 1.07 mb/d

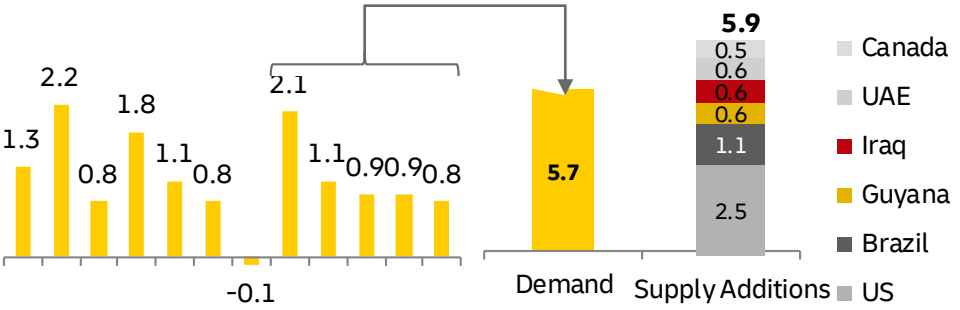
Source: IEA, EIA, Reuters and Frost & Sullivan Analysis

Global Oil & Gas Industry Overview

Total supply additions expected in next 5 years comfortably surpasses cumulative demand growth

Global oil demand growth, 2017-2025, mb/d

Global oil demand growth vs supply capacity additions, 2019-2025, mb/d



'14'15'16'17'18'19'20'21'22'23'24'25



The global oil demand in 2020 is expected to contract for the first time since 2009 recession mainly due to Covid-19 induced demand destruction. After some recovery in 2021, the growth in oil demand is expected to remain subdued as penetration of disruptive forces (discussed later) increases every following year; led by renewable energy and electric vehicles. However, the global peak oil demand is expected after 2030.



The slowdown in oil demand also offers key opportunities, especially for MEA producers that have made timely investments into key downstream projects that are advantaged by cheap feedstock making them competitive in global specialty chemicals markets. Refineries can also find value in manufacturing de-sulphurised fuel for marine (IMO 2020 requirement) and aviation.



At the end of 2019, out of 1,734 thousand million barrels of global oil reserves, MEA region accounts for majority share of around 55%. With current low oil price levels, only select countries within MEA region that have low average oil production cost are expected to play key role in the global market. Saudi Arabia enjoys world's lowest average cost of crude oil production of USD 2.8 per barrel of oil equivalent (2018)

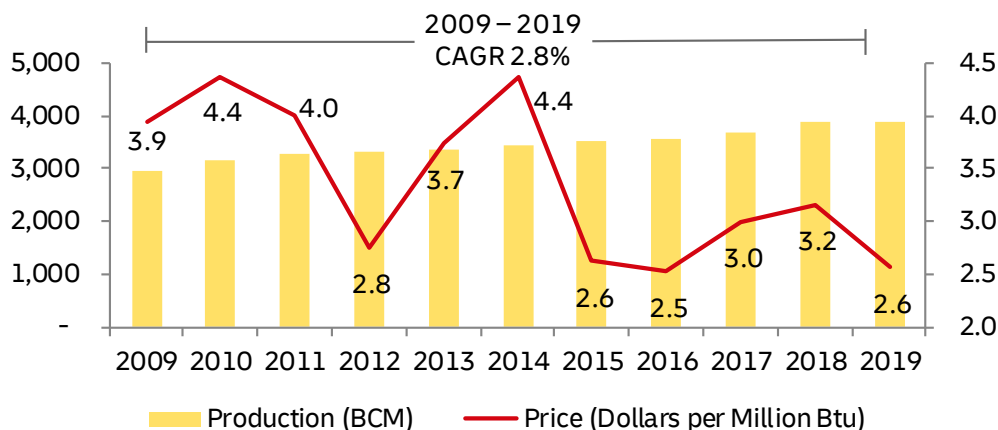


Source: EIA, OPEC and Frost & Sullivan Analysis
Image Source: Thinkstock

Covid 19 Impact on Key Regions & Countries

Unlike crude oil, the global natural gas market is expected to have a better demand recovery prospects since it is currently less exposed to the transportation sector and long term commitments from key markets as they shift to cleaner fuels

Natural Gas Production, Billion Cubic Meters (BCM)



Oversupply Condition

Global natural gas market is also suffering from over-supply conditions putting downward pressure on prices. Average US Henry Hub prices for Q1 2020 was recorded at the lowest since 1999. Storage inventories have also spiked across key consumption markets in 2019; USA – 77% and Europe – 40%. China is also expanding its storage facilities which currently stands at 4% of its annual consumption vis-à-vis international average of 12 – 15%

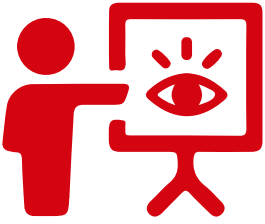


Demand Slowdown

Even before Covid-19 induced lockdown, natural gas demand had started to slow down on account unusual mild winter seasons across key consumption markets such as the USA and in Europe. According to IEA, global natural gas demand is expected to drop by 5% in 2020; first since 2009.



Note: Natural gas price refer to Henry Hub Natural Gas Spot Price
 Source: IEA (2020), "Oil 2020", IEA, Paris <https://www.iea.org/reports/oil-2020> and Frost & Sullivan Analysis
 Image Source: Thinkstock



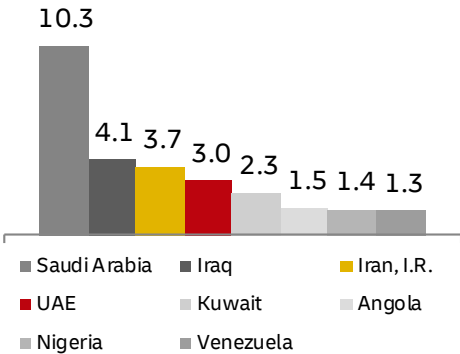
MEA OIL & GAS INDUSTRY OVERVIEW

MEA Oil & Gas Industry Overview

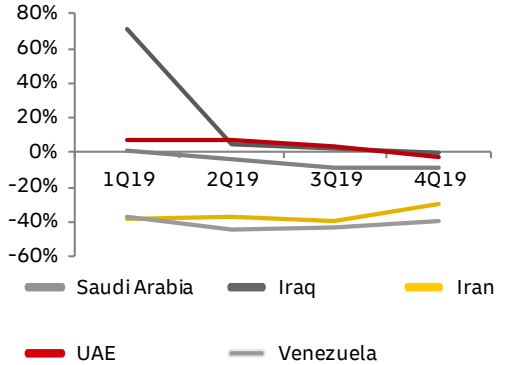
OPEC which caters around 30% of the global oil supply along with its allies managed to cut oil production by 2.7 mb/d in 2019

Oil Production, Million barrels per day (mb/d)

2018



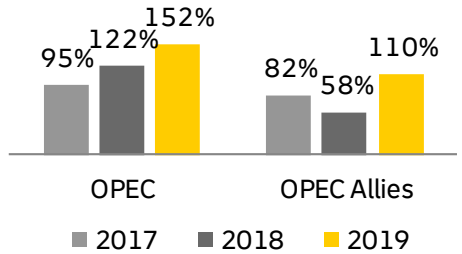
Quarterly Growth in Oil Production in 2019 (%)



Apart from Iran and Venezuela which are under the U.S. sanctions, all other OPEC members maintained their oil production levels for most part of 2019. OPEC collectively reduced oil production by around 2.7 mb/d in 2019 which is 7.7% down as compared to 2018.

The co-ordination within OPEC members, led by Saudi Arabia, has significantly improved in the last three years. It is evident from the improvement in the compliance rate trend (committed Vs. actual production cuts) among OPEC members. The same has seen ups and downs in case of OPEC allies (Russia and others that supported OPEC members in production cuts).

Compliance Rate Trend



Other regional (non-OPEC) oil producers such as Qatar, Oman, and Bahrain also kept oil production steady for the most part of 2019.



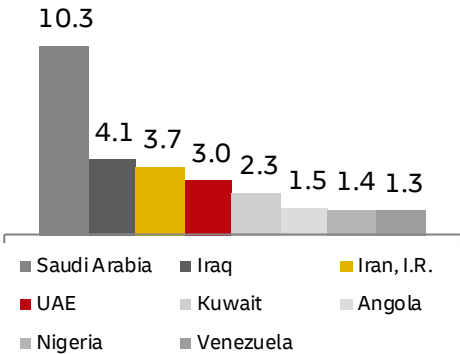
Source: OPEC, IEA, Worldbank and Frost & Sullivan Analysis. 1Q19 refers to first quarter of 2019. Venezuela is part of OPEC hence it is featuring in the above chart
Image Source: Thinkstock

MEA Oil & Gas Industry Overview

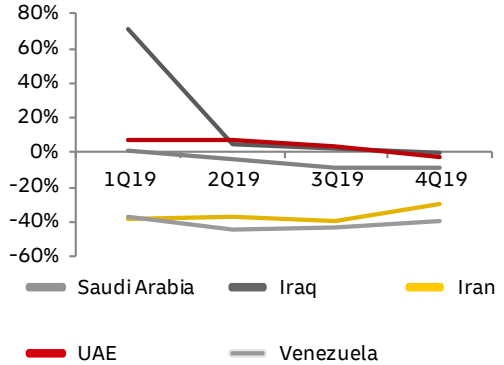
Rising demand from power, desalination and industrial sector is driving the natural gas market in the region

Natural Gas Production, Billion Cubic Meters (BCM)

2018



Quarterly Growth in Natural Gas Production in 2019 (%)



Natural gas outlook for the region remains upbeat mainly due to growing export opportunities supported by healthy domestic demand. Recent gas discovery of over 2,200 billion cubic meters in UAE highlights the importance of gas in the region's energy mix.

Factors supporting growth:



Cost Competitive

One of the lowest breakeven prices of \$2.5 – 3/MMBtu. Expected to further reduce in coming years



Environment Friendly Fuel

Key demand markets pushing for cleaner fuel. E.g. China and India



Growing Liquefaction Capacity

Rising capacity in the region supports the security of supply of natural gas to global markets



Rising Domestic Demand

The region is actively pursuing switch from oil to natural gas across key industries; power, de-salination and industrial

Source: MMBTu=Million British Thermal Units. Joint Organizations Data Initiative (JODI), BP Statistical Review of World Energy 2019 and Frost & Sullivan Analysis. 2019 production numbers were available only for Egypt, Bahrain and Kuwait

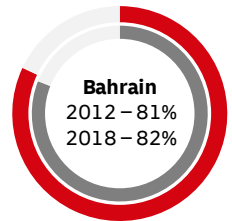
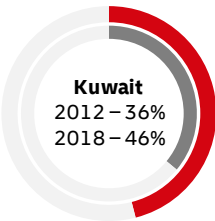
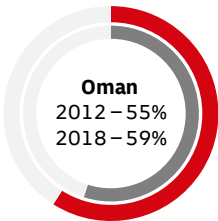
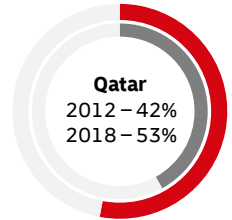
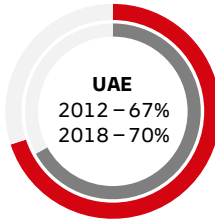
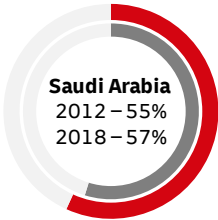
MEA Oil & Gas Industry Overview

Economic diversification has been the focus in the region but not all countries have managed to diversify enough to avoid the negative impact of oil price volatility

Non-oil sector, % of GDP

2018

2012



Key strategies adopted

Strategic Investments

The region has committed around \$225 Bn across various petrochemical projects for the period 2019-23. Other key focus sectors include renewable energy and financial technology



Public spending rationalization

Moving away from inefficient public spending to investments that will support growth in the long term. Subsidy cuts, public wage reduction have been instrumental in the rationalization process



Diversify revenue sources

Developing and diversifying non-oil revenues through the implementation of taxes. Saudi Arabia registered \$54.1 Bn tax revenue in 2019, at 20% annual growth. After UAE and Saudi Arabia, VAT is soon expected to be implemented in other GCC states.



Structural reforms

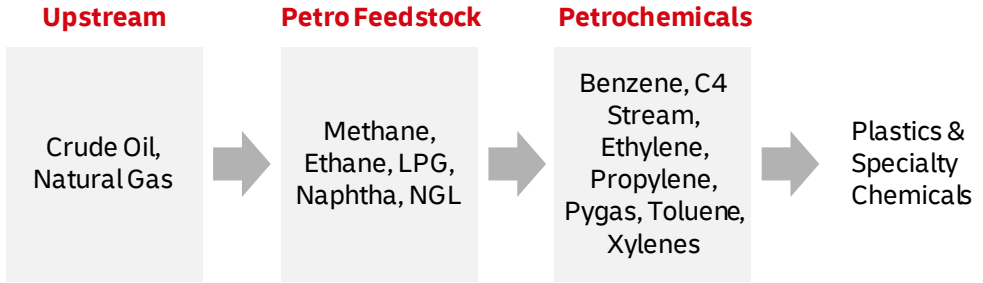
Improving 'Ease of Doing Business' rating. Opening up sectors for foreign investments. Qatar recently ratified a new law that allows 100% foreign ownership in certain areas of real estate






Source: IEA, APICORP, US-Saudi Business Council and Frost & Sullivan Analysis

MEA Oil & Gas Industry Overview

Focus is shifting from 'Oil Money' to 'Petro Money'. The region is investing in downstream projects to derive more value per barrel of oil through production of value added specialty chemicals and plastics



Key trends supporting shift towards 'Petro Money'

 <p>Rising Petrochemicals Demand</p>	 <p>More Complex Refineries</p>	 <p>Securing Partnerships</p>
<p>Over 50% of the global oil demand growth by 2025 is expected to come from the petrochemical industry. The region is well placed to take advantage of its cost competitiveness to derive greater value through production of high-grade plastics and chemicals</p>	<p>Key demand markets such as India are upgrading to more sophisticated refineries to produce more value-added products from a wide variety of crude oils thereby reducing dependency on one particular supplier. E.g. Nelson Complexity Index (NCI) for Reliance's Jamnagar refinery in India was increased from 12.7 to 21.1 making it one of the most sophisticated refineries in the world</p>	<p>In order to secure oil supply, national oil companies of the region are partnering with key players across key demand markets. E.g. Aug 2019, Saudi Aramco's non-binding deal for 20% stake in Reliance's crude oil-to-chemical (COTC) operations</p>

Source: IEA and Frost & Sullivan analysis. The Nelson Complexity Index (NCI) is a measure of the sophistication of an oil refinery, where more complex refineries are able to produce lighter, more heavily refined and valuable products from a barrel of oil

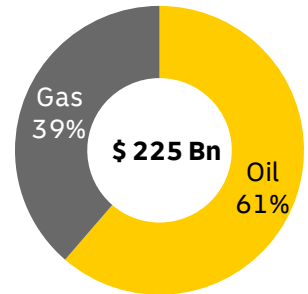
MEA Oil & Gas Industry Overview

\$ 225 Bn worth of oil & gas investments are committed in MENA region during 2019-2023

Committed MENA O&G Investments by Country, 2019-23 (\$ Bn)

Country	Oil (\$ Bn)	Gas (\$ Bn)	Total (\$ Bn)
Iraq	39	18	57
Iran	11	18	29
UAE	22.5	4	27
Oman	7.5	15	22
Egypt	6.5	12.5	19
Saudi Arabia	7.5	11.5	19
Qatar	6.5	0	10
Bahrain	9.5	0	9.5
Others	28	4.5	33

Committed MENA O&G Investments by Sector, 2019-23 (\$Bn)



Committed investments include projects that are currently under execution and the contracts have been signed. Hence, the probability of terminating any project is highly unlikely. Although with current low oil price levels and the covid-19 outbreak the execution of O&G projects might get delayed by around 6 to 8 months or even higher in case of exploration and drilling projects.

Around 60% of total committed investment is expected in non-GCC markets led by Iraq which is currently rebuilding its energy infrastructure is expected to see its O&G projects through completions in order to ramp up its production capacity. GCC contribution is on the lower side mainly due to the recent completion of many big-ticket O&G projects.



Source: OPEC, IEA, Worldbank and Frost & Sullivan Analysis. 1Q19 refers to first quarter of 2019. Venezuela is part of OPEC hence it is featuring in the above chart
Image Source: Thinkstock

MEA Oil & Gas Industry Overview

Top 10 On-going Middle East O&G projects

Sr. No.	Country	Project	Investment (\$ Bn)	Remarks	Estimated Completion
1	UAE	Upper Zakum - Production Capacity Enhancement	21.8	250,000 b/d capacity expansion	2020
2	Saudi Arabia	Yanbu - Crude Oil-To-Chemicals complex	20	20 MTPA crude oil to 9 MTPA of chemicals	2028
3	UAE	Ruwais Refinery Complex- Third Grassroot Refinery	20	600,000 b/d capacity expansion	2026
4	Iraq	Zubair Oil Field- Rehabilitation Phase and Enhanced Re-Development Phase	18	525,000 b/d capacity expansion	2022
5	Qatar	Ras Laffan - Qatargas - NFE	18	48 MTPA LNG capacity expansion	2027
6	Iraq	Basra Gas Gathering Project	17.2	950 million cubic feet capacity expansion	2025
7	Kuwait	Al Zour Refinery	16	100,000 b/d of low-sulphur fuel oil	June 2020
8	UAE	Abu Dhabi North West Development - Hail and Ghasha Sour Gas	15	1.5 billion cubic feet per day of sour gas production	2024
9	Iraq	Rumaila Oil Field	15	700,000 b/d capacity expansion	2027
10	Saudi Arabia	Marjan Oil Field Expansion	15	1 million b/d capacity expansion along with 750 million cubic feet of gas per day capacity	2023

In current situation, execution of many complex O&G projects are expected to be under stress for at least next 12 to 18 months. Partnering with credible logistic service providers is now more important than ever in order to ensure smooth completion of key projects. DHL offers safe and compliant quality logistic solutions that can help O&G companies digitalize their supply chains, increase productivity and reduce cost.

Source: Fircroft

MEA Oil & Gas Industry Overview

Key Refinery Projects in Africa

Sr. No.	Country	Project	Investment (\$ Bn)	Remarks	Estimated Completion
1	Nigeria	Dangote Oil Refinery Project	15	650,000 b/d	2022
2	Angola	Lobito Oil Refinery Project	10	200,000 b/d	2025
3	Nigeria	Condensate Oil Refinery Project	NA	200,000 b/d	NA
4	Sudan	Red Sea Coast Oil Refinery Project	5	200,000 b/d	NA
5	Ghana	Ghana Oil Refinery Project	NA	150,000 b/d	NA
6	Ghana	Takoradi Oil Refinery Project	NA	150,000 b/d	NA
7	Algeria	Hassi Messaoud Oil Refinery Project	NA	100,000 b/d	2021-22
8	Algeria	Tiaret Oil Refinery Project	NA	100,000 b/d	2021-22
9	Angola	Soyo Oil Refinery Project	NA	100,000 b/d	2024
10	Morocco	Morocco Oil Refinery Project	2	100,000 b/d	NA
11	Uganda	Albert Graben Oil Refinery Project	NA	60,000 b/d	2023
12	Angola	Cabinda Oil Refinery Project	NA	60,000 b/d	2021
13	Guinea	Kamsar Oil Refinery Project	NA	12,000 b/d	NA
14	Equatorial Guinea	Punta Europa Oil Refinery Project	Na	10,000 b/d	NA
15	Equatorial Guinea	Cogo Oil Refinery Project	NA	10,000 b/d	NA
16	South Sudan	Unity state Oil Refinery Project	NA	8,000 b/d	2020
17	Nigeria	Waltersmith Oil Refinery Project	NA	5,000 b/d	2020

Source: Fircroft

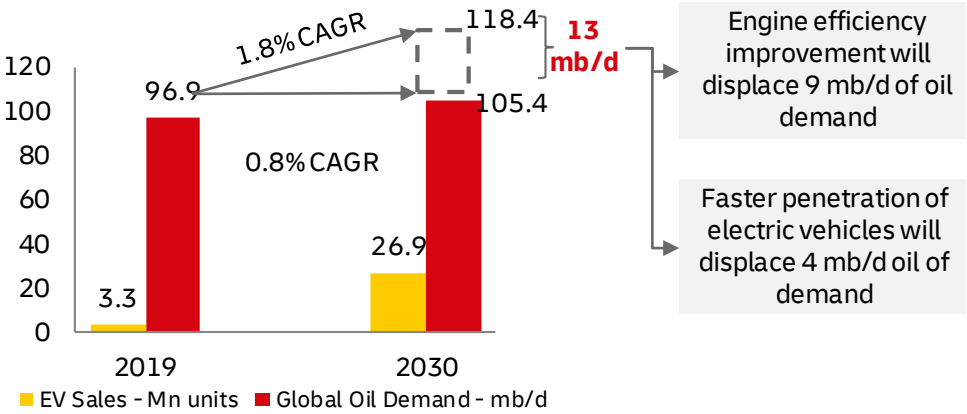


KEY GLOBAL TRENDS IMPACTING O&G INDUSTRY IN MEA

Key Global Trends Impacting O&G Industry in MEA

Improving engine efficiency and faster adoption of electric vehicles is expected to slowdown the global oil demand growth from 1.8% to 0.8% CAGR during 2019 to 2030.

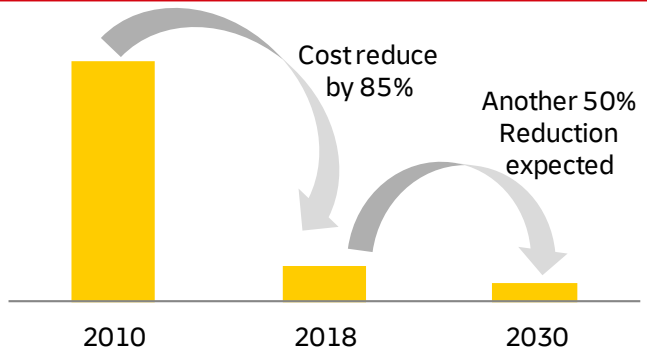
Impact of EV penetration on global oil demand



Apart from European markets where EV ecosystem is quite mature, developing countries such as India (fourth-largest oil-consuming country) is also actively promoting Electric Vehicles. Policy support for creating demand (heavy subsidies & tax rebate) and supply (FAME policy) and necessary infrastructural support (policy support for charging infrastructure, de-subsidizing diesel) is expected to boost EV demand.

Lithium battery average per kWh price trend

Moreover, lithium-ion battery prices have drastically dropped over the past few years and are expected to further drop, supporting accelerated penetration of EVs across global markets



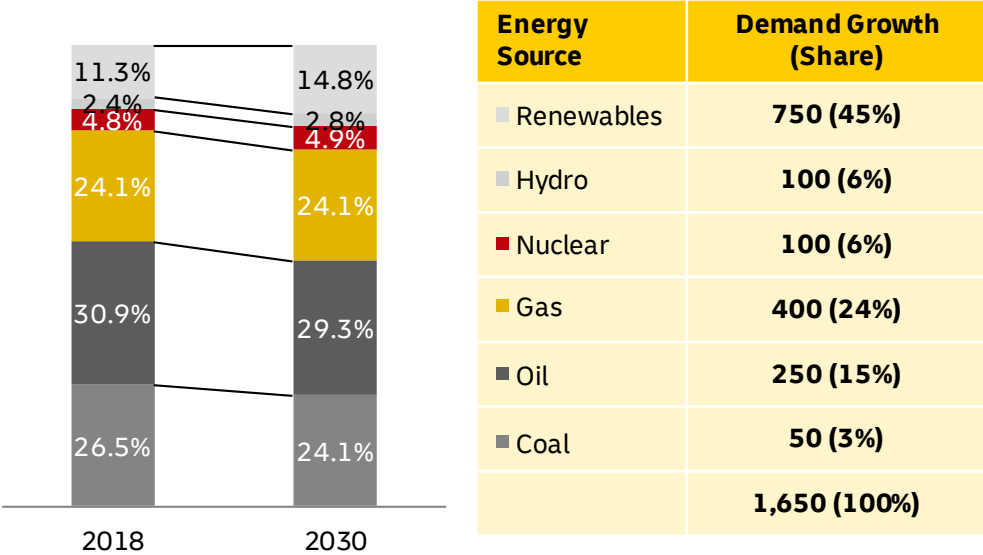
Apart from road transportation vehicles, ships (IMO 2020 standards) and airplanes are also transitioning towards more efficient engines and hence will require lesser petroleum per mile in coming years. Also, demand from chemical industry is expected to plateau out around 2030 due to slowdown in plastic demand growth and rise in plastic recycling

Source: Frost & Sullivan Analysis. FAME=Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles policy. Oil demand trend is shown in million barrel/ day i.e. mb/d

Key Trends Impacting O&G Industry in MEA

45% of the global energy demand growth between 2018 to 2030 will be sourced from renewable energy

Global Energy Mix, 2018 vs 2030, MToe



In 2019, 72% of all new electricity generation globally came from renewable projects such as Solar and Wind energy. The transition towards a green economy is clearly evident and is expected in broadly two phases.:

Phase 1 – Supply “Push”

Ability of renewable projects to setup in shorter duration as compared to a conventional power plant allows the revenue stream to begin much sooner. Also, low electricity production cost and assured power purchase agreements instill investor confidence. The availability of better energy storage technologies further improves project ROI and support the speedy deployment of renewable energy projects.

Phase 2 – Demand “Pull”

Most of the global markets are currently in the first phase but markets such as Germany are already witnessing the demand ‘Pull’ from environment-conscious consumers. With rising pollution levels and growing awareness, consumers are expected to proactively seek electricity supply sourced from renewable energy.

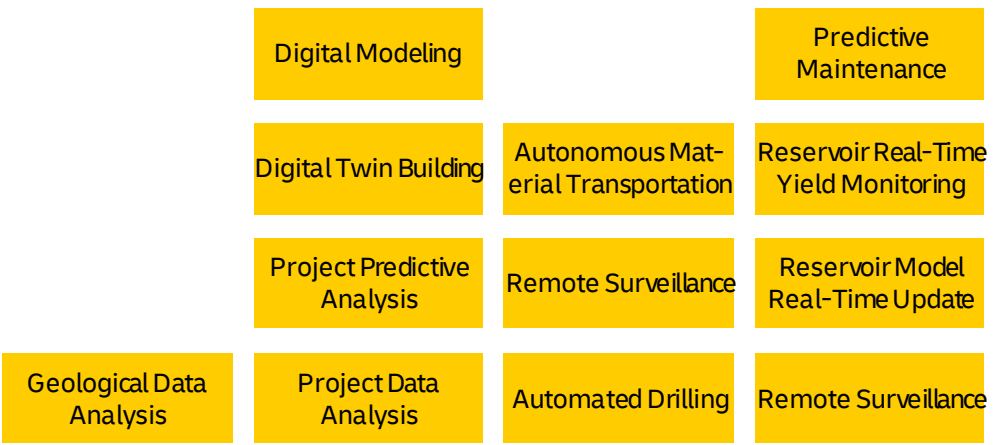
Source: IEA, World Energy Outlook, 2019 and Frost & Sullivan Analysis
 Note: MTOE is Millions of tonnes of oil equivalent which is a unit of energy used to describe the energy content of all fuels.

Key Trends Impacting O&G Industry in MEA

It is estimated that digitalization across global O&G industry can potentially unlock \$1.6 to \$2.6 trillion value by 2025

O&G industry is undergoing many challenges and most prominent among them is the low oil prices and cut-throat competition. Hence, at least for the upstream sector, the only way to improve margin is to improve efficiency and reduce operational costs. Digitalization is a playing key role in achieving better margins for many O&G companies, improve workforce safety, reduce emissions and water consumption

Digitalization Opportunities Across O&G Upstream Value Chain



Cost-saving potential through digitalization is significant and it can move O&G companies towards a healthy growth path and deliver exceptional shareholder value.

Example: Drones and autonomous robots can potentially reduce cost by

- 20%** In drilling & completion cost (in case of deepwater areas)
- 25%** In inspection & maintenance of assets
- 20%** In employee cost



Source: Infosys – The disruption in O&G upstream business by industry 4.0, World Economic Forum – Digital Transformation: Initiative O&G Industry and Frost & Sullivan Analysis
Image Source: Thinkstock

Key Trends Impacting O&G Industry in MEA

As the global economy moves towards low carbon energy, O&G companies will move from product to solution base offerings thereby transforming from volume to value business model

Global O&G companies are increasingly facing opposition from general public that are now more concerned about environmental impact of fossil fuels. Policy makers globally are also shifting gears towards decarbonizing the economy. To stay relevant, global O&G companies have to adapt and embrace new business models which will allow them not only to participate but also to lead the global transition towards green energy.

Value Business Models – Key Trends



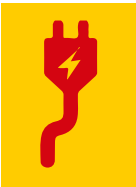
Strategic Investments

NOCs and IOCs are investing in key infrastructure projects across demand markets to lock in future demand for oil and (or) gas. Example – Saudi Aramco investment into Petronas-RAPID refinery in Malaysia.



Renewable Energy

Apart from Solar PV, O&G majors are also focusing on offshore wind farms and leveraging their offshore rig experience. Total, a French O&G major, plans to achieve 20% of its revenue from low-carbon businesses by 2040. BP aims to become a net-zero carbon emitter by 2050.



Retail Electricity

O&G companies are also offering end-to-end energy solution to the general public; right from petrol/gas to electricity along with EV charging solutions. Examples – Total announced its plan to acquire Direct Energie which is into residential power markets. Royal Dutch Shell, UK acquired First Utility to enter the retail electricity market.



Venture Capital

BP, Shell, Equinor, and Total have set up their respective venture capitals to back innovational startups in the energy and other industries. Their key focus remains on low carbon technologies, renewable energy, and mobility.



CONCLUSION

Conclusion

- Covid-19 induced market shock is expected to weigh heavily on global oil demand outlook; at least for the first half of 2020. The demand is expected to pick up in the second half but will not reach pre-Covid-19 levels before end of 2020. This is mainly due to the “memory effect” of the lockdown period that is expected to permanently change the travel patterns as more companies embrace digital workspace thereby resulting in less air travel and road transportation.
- With a sizeable drop in demand, the oversupply situation in the global O&G industry is expected to worsen and continue to put downward pressure on prices and may even reach ‘teen’ levels. In the case of oil, MEA producers will continue to be impacted by the global supply-demand dynamics but in case of natural gas the MEA region is well placed to take advantage of its cost competitiveness and take up incremental share of the global export markets.
- O&G companies in MEA region need to take bold decisions in order to mitigate Covid-19 induced impact and to quickly reposition themselves in the market by:



Reallocating Capital – to high return businesses, derive more value products per barrel of oil



Value Investing – into advantaged assets across the globe to secure better margins



Revisit Cost Structure – by implementing radical cost optimization strategies



Redefine Partnerships – across the supply value chain, build resilience



Go Digital – across the board and invest in technologies that improve efficiency

Contact

Andreas Wunsch

Global Customer Manager

Energy Sector

DHL Customer Solutions & Innovation

Mobile: +971 56 655 6753

Email: Andreas.Wunsch@dhl.com