

The background is a composite illustration. The upper portion shows a large offshore oil platform with multiple legs and a derrick, situated on a dark, choppy sea under a cloudy sky at dusk or dawn. A vertical line representing a riser pipe extends from the platform down to a yellow subsea wellhead located on the seabed. The seabed is depicted with a grid pattern and some geological features.

Middle East

Oil & GAS OUTLOOK 2020

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Country Manager Middle East

Oddmar Johannesen, Director
Middle East



Agenda

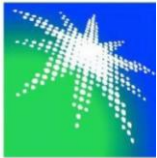
- UAE update
- Qatar update
- Oman update
- Kuwait update
- Saudi Arabia update



National Operators (NOC) in Middel East (Saudi Arabia, UAE, Oman, Kuwait and Qatar)

Saudi Arabia

أرامكو السعودية
Saudi Aramco



UAE



Qatar

قطر للبترول
Qatar Petroleum



Oman



Kuwait



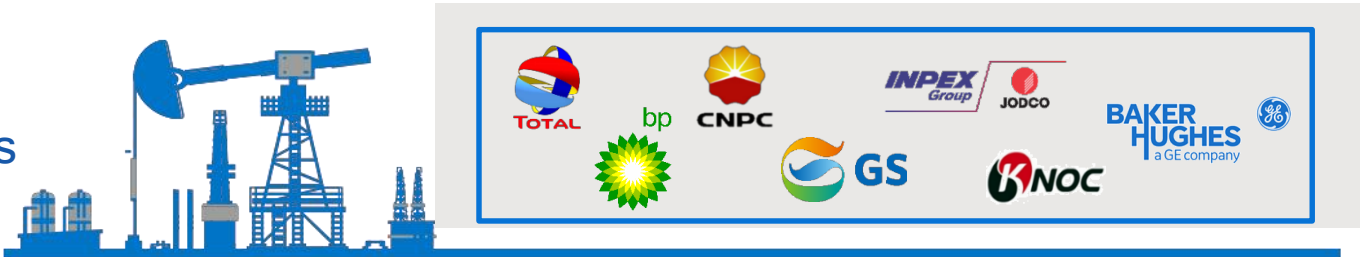
إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation

UAE – ADNOC



4.1 million b/day in April. Will reduce to 3.3 million b/d

Onshore Partnerships



Creating world-class partnership opportunities to create and drive greater value

Offshore Partnerships



Leveraging Abu Dhabi's world class asset base and investor friendly and stable environment

Downstream Partnerships



Securing access to value-adding technology, key markets and new centres of demand



Improving integration across the ADNOC value chain

Strategic partnerships are at the heart of ADNOC's strategy and span the group's entire value chain

ADNOC ONSHORE



ADNOC CONCESSIONS

- TOTAL PARTNER :
 - 10% ADNOC ONSHORE
 - 20% UMM SHAIF & NASR
 - 5% LOWER ZAKUM
- ▨ TOTAL ASSET LEADER
- TOTAL OPERATOR



ADNOC Drilling (NDC)

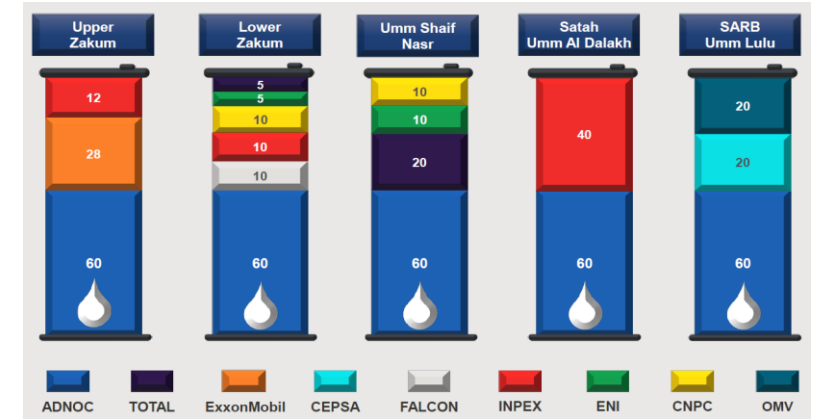
- ❑ Operates 60 land rigs in 11 oil and gas fields,
- ❑ **Producing 2 million b / day**
- ❑ Baker Hughes acquired 5% stake in ADNOC Drilling (NDC) – NDC is valued at \$11 billion
- ❑ 4 new land rigs manufactured in the UAE by NOV)
- ❑ Técnicas Reunidas of Spain was awarded a 1.4 Billion USD contract to expand Bu Hasa, the UAE largest onshore field.

ADNOC OFFSHORE



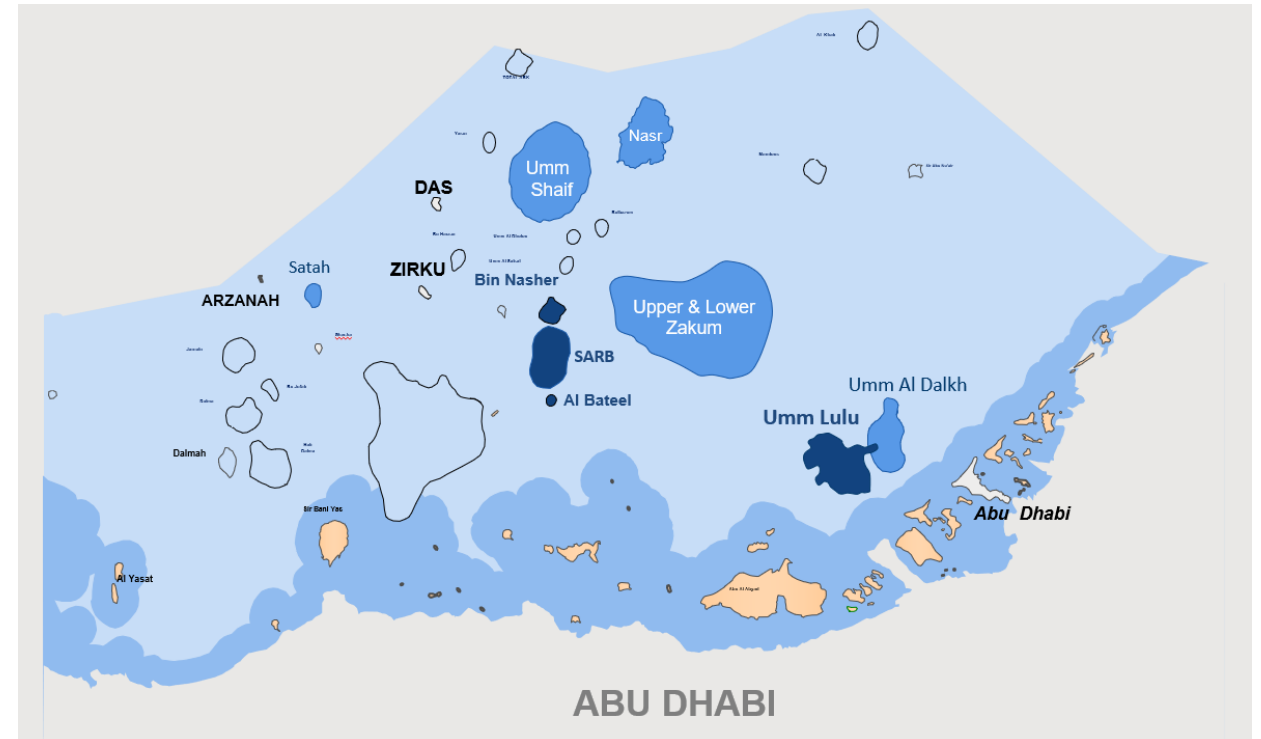
Operating FIVE concessions

- I. Lower Zakum
- II. Upper Zakum
- III. Umm Shaif/ Nasr
- IV. Satah / Umm al Dalakh
- V. SARB/Umm Lulu



20 jackup rigs, and 11 island rigs.

Some drilling activities in the islands are postponed



ADNOC holds a majority share of 60%, INPEX JODCO, Exxon Mobil, CEPSA, ENI, TOTAL , OMV, CNPC, Falcon and ONGC Videsh-led are the partners in Offshore concessions. Employing over 7,500

ADNOC Upcoming Greenfield projects circa \$50bn

- **Offshore Field**

- Umm Al Dalkh (UAD) field development
- Upper Zakum (1000K) development
- Lower Zakum development
- Mubarraz Oil field Expansion
- Umm Shaif LTDP 1
- Umm Shaif LTDP 2
- Bu Dana field development
- Mandous field development

- **Onshore Field**

- Bab Sour Gas Project
- Haliba Field development – Phase II
- Shah – Sour Gas Plant Expansion
- Fourth Expansion of Borouge Complex
- Dhafra & Mushash Field development
- Asab field development stage 2 & 3

ADNOC Upcoming Brownfield Projects worth \$9bn

- **Offshore Projects**

- EPC works for Replacement of 24 x Crane Pedestal.
- ENQ19-051 - Replacement of Deformed structure, gratings and Piping.
- Rehabilitation of Secondary Support Structure Phase II (Boat Landing)
- Additional Deck for Life boat at Umm Lulu accommodation platform.
- ADNOC Offshore – Operations and Maintenance Services
- EPC for Rig refurbishment, Jack up rig B-152.
- EP03 – 40 Rig Storage tanks with Accessories.
- EPC of De-sharing wells (136 wells) in ASAB field.

- **Onshore Projects**

- Long Term Shutdown Services for ADNOC Gas Processing sites
- Maintenance Services for Electrical, Instrument and Mechanical Assets at Taweelah Gas Plant
- ADNOC IGD Expansion – Fabrication of 22xPAU Modules and 61xPAR Modules.
- ADNOC Zirku facility upgrades – Fabrication of 4xOnshore process modules.
- EPC works for installation of Ammonia Converter.
- EPC works for Crude Oil Storage tank, Inlet Piping replacement Project in DAS Island.
- EPC works for design and supply of 50xBBL mixing tanks.
- EPC Works for Crude oil Storage Tank, Inlet Piping replacement project in Das Island.
- Ruwais Capacity enhancement for Train 1, 2, 3 & 4.
- Supply, install and commissioning complete H₂S and Combustible Gas Detection system for 4 onshore rigs.
- Installation of additional lean solvent Storage tank.
- Bu-Hasa De-Bottlenecking and associated pipelines.

UAE: NORWEP Priority Projects



Project	Operator	Dev. solution	Phase	FID estimate	Start-up estimate	Comments
Dalma (sour gas)	 أدنوك للغاز الحامض ADNOC Sour Gas	Fixed	FEED	2019	2023	<ul style="list-style-type: none"> Ultra-sour gas field, 10 meters water depth Artificial islands and offshore platforms TecnhipFMC awarded FEED Tendering ongoing, FID expected H2 2019 Delma EPC contract of US\$1.65billion awarded to Petrofac and Sapura Energy has been postponed and will be awarded in 6 months.
Hail and Ghasha (sour gas)	 أدنوك للغاز الحامض ADNOC Sour Gas	Fixed	FEED	2019	2024	<ul style="list-style-type: none"> Five times larger than Dalma resources Bechtel awarded FEED contract 10 BUSD investments, several offshore and onshore packages expected The tendering processing has been delayed by almost six months. The future timeline depends on the COVID-19 situation, and the current oil price downcycle recovers in the near term. It is estimated that the FID on this project in late 2021.
Lower Zakum LTDP-1	 أدنوك ADNOC	Fixed	FEED	2021	2024	<ul style="list-style-type: none"> New concessions, Inpex being asset leader Plans to increase prod. cap. by 100 kbbld Will involve extended reach drilling Another phase, LTDP-2 exp. FID 2023 5 to 6 of the island rigs will be postponed
Umm Shaif LTDP-1 and 2	 أدنوك ADNOC	Fixed	FEED	2020	2024	<ul style="list-style-type: none"> Alongside gas cap project, LTDP-1 and 2 plans to increase oil production capacity. Tender process LTDP-1 issued pre-FEED coming up for LTDP-2
Upper Zakum Expansion 2	 أدنوك ADNOC	Fixed	FEED	2022	2025	<ul style="list-style-type: none"> Second largest oil field in the Gulf UZ750 project finalized in 2017 Another expansion (#2) aims to increase production to 1 mmbld Tecnica awarded the FEED contract 5 to 6 of the island rigs will be postponed

Alternative Energy UAE

Nuclear: The Barakah Nuclear Energy Plant, 4 nuclear reactors of value 20 billion USD design will supply up to **6% of the UAE’s electricity** needs once fully operational. The first one is completed.

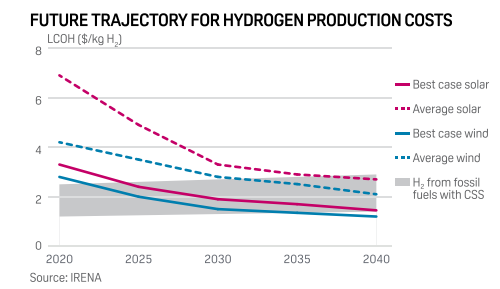
Gas Dubai / Abu Dhabi: Discovery of 80 trillion cubic feet of gas resources in Dubai-Abu Dhabi, world’s 4th largest.

ADNOC and ADPower will develop the **first high voltage Subsea transmission in the ME** connecting ADNOC offshore production to Onshore electricity grid.

Solar: Mohammed bin Rashid Al Maktoum Solar Park currently has **1,013 MW** of operational capacity and a further 1,850 MW under construction, including both PV and concentrated solar power (CSP) partitions. The whole complex is expected to reach **5,000 MW** by 2030.

CCS/CCUS, ADNOC began its carbon capture programme in 2009. In the next decade, ADNOC aims to scale-up CCUS deployment six-fold, capturing five million tonnes of CO2 by 2030.

Hydrogen UAE, First Middle Eastern solar water electrolysis facility started in Dubai. The first hydrogen filling station in the Middle East was opened in Dubai in October 2017. The first green hydrogen electrolyzer in the MENA region.



Qatar – Qatar Petroleum / Gas



Qatar will increase LNG export capacity from 77,8 to 126 million mt/ year by 2028 / 2029

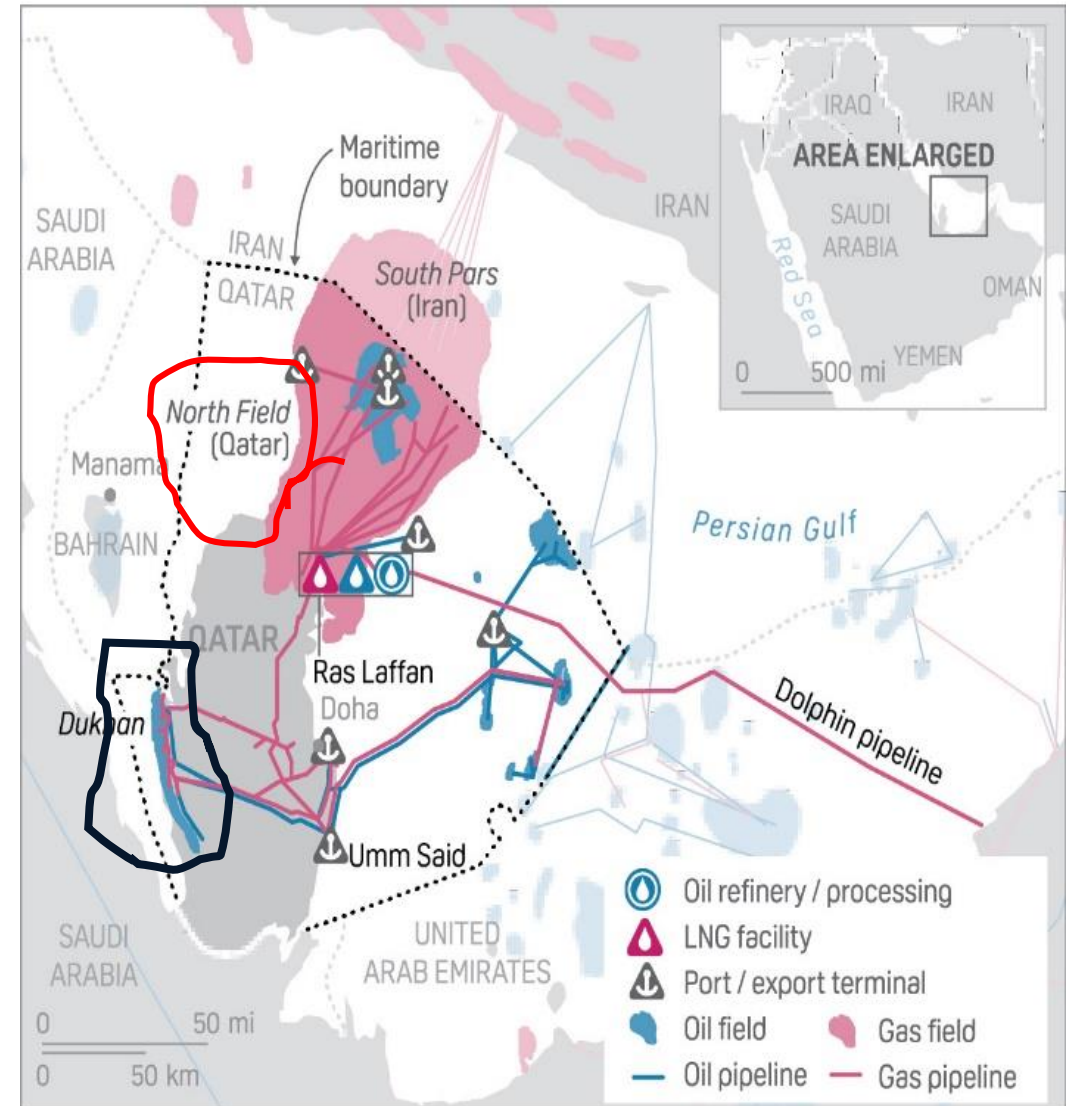
With an investments of more than \$50 billion. Adding 6 new LNG trains

Qatar currently produces,

- ❑ 630,000 b oil / day.
- ❑ Half of production comes from Dukhan, onshore and the rest offshore.
- ❑ Currently produces 77.8 million mt/year of LNG

QP signed on June 1st the largest LNG shipbuilding program in history with South Korea's "Big 3" shipyards to secure more than 100 ships costing more than \$19.23 billion.

QATAR OIL AND GAS INFRASTRUCTURE



Sources: S&P Global Platts Analytics, EIA, IHS EDIN, CIA, NOAA

Qatar – Qatar Petroleum / Gas



ExxonMobil



TOTAL

ConocoPhillips



❑ ExxonMobil has production in all three RasGas LNG joint ventures, as well as Qatargas 1, Qatargas 2, and the Al Khaleej and Barzan gas projects.

❑ Shell has interests in the Qatargas 4 and Pearl GTL projects.

❑ Total has interests in three gas export projects (Qatargas 1, Qatargas 2 and Dolphin) and two oil developments (Al Shaheen, Al Khalij).




❑ ConocoPhillips is involved in LNG (Qatargas 3).

❑ Occidental has interests in Dolphin, Idd El Shargi North Dome and South Dome.

❑ The UAE's Mubadala has a majority interest in the Dolphin gas project and export pipeline to Abu Dhabi.

Qatar: NORWEP Priority Projects



Project	Operator	Dev. solution	Phase	FID estimate	Start-up estimate	Comments
Al Shaheen Expansion (Gallaf)		Fixed	Under dev.	2018	2021	<ul style="list-style-type: none"> Qatar’s largest offshore oil field JV between Total and Qatar Petroleum Three phases, 8 platforms Phase 1 awarded, Phase 2 curr. Tendering
Bul Hanine Redevelopment Phase 2		Fixed	Concept	2021	2024	<ul style="list-style-type: none"> Redev to increase lifetime by 25 years Phase 1 A and B under construction Phase 2, involves new offshore facilities Pre-FEED awarded Wood
North Field Expansion Project		Fixed	FEED	2019	2024	<ul style="list-style-type: none"> Qatar to increase LNG export to 126 Bcm Four additional LNG trains planned 8 WHPs planned, FEED McDermott Onshore FEED Chiyoda. Qatar is pushing back the start-up of the first phase of its North Field LNG Expansion Project by up to six months so that it will now enter production in 2025. Qatar has short-listed energy majors to be awarded a collective 30% share of the first phase, including Chevron, Eni, Shell and Total.

Decrease in rigs from January to May

Offshore gas rigs	Onshore gas	Offshore oil	Onshore oil
45 to 20	15 to 6	5 to 4	5 to 4

Oman – PDO

970,000 b/day in April. Reduce to 770,000 from May 1st for 2 months.



Onshore Partnerships



- Petroleum Development Oman, (PDO) around 670,000 b/ day, PDO is responsible for more than 70% of the country's crude oil production. The Omani government has a 60% ownership stake in PDO, Shell (34%), Total (4%), and Thai's PTTEP (2%) also own stakes.

Offshore Partnerships



- OXY is the second biggest producer with 150,000 b/ day.
- Oman Oil and a few other smaller operators stand for the rest of the production i.e. 150,000 b/ day.
- ENI and Total have signed offshore exploration contracts.
- Lime Petroleum have drilled offshore wells and are in negotiations with the government to develop the field.

Downstream Partnerships



- Development of Mabrouk Field tight gas by Shell as the sole operator.





Upstream



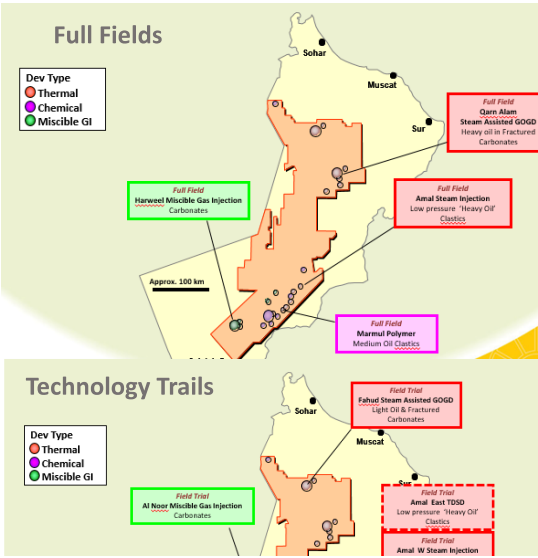
Full Fields



Upstream

- 1. Blocks 6 Liberation – Unconventional Resources
- 2. Future of Tight Gas Development

- Very large reserve , Oman net gas exporter for the next 30 years.
- New Technology for fracking optimization
 - Chemical fracking proppant.
 - Modified Surface chemistry.
 - Electrical pumping capability
 - High temperature / High pressure CT downhole real monitoring.



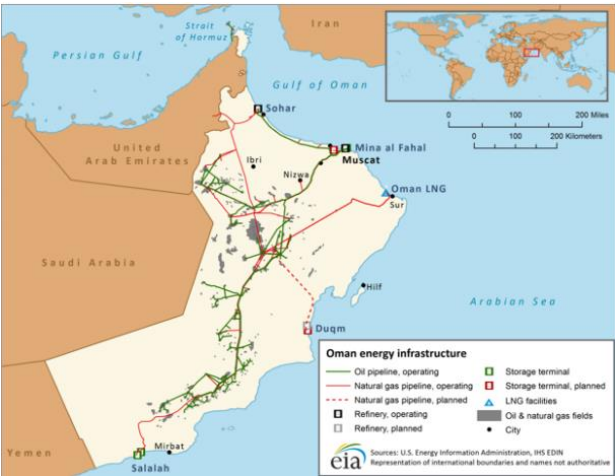
1. Blocks 6 Liberation – Unconventional Resources

- Pushing down EOR Cost
- New Technology to generate cheaper water treatment. Salinity > 100,000 ppm, high Ca2+, Mg2+.
- New Technology to generate cheaper steam cost
 - Independent from gas fuel input due to other gas utilization (\$6.5/ MM BTU)
 - Cheaper maintenance due to high scale tendency and corrosion.
- Digitization monitoring of flow assurance.



Downstream

- 1. Integrity Management to extend life asset:
 - a. Pipeline Inspection and repairs
 - b. Corrosion monitoring tools
- 2. Material Selection:
 - a. Coating
 - b. Weld-overlay



Integrity Management

Challenge:
Assets reaching their end of operating life design and replacement option is costly and not feasible during current oil prices

- Technology:**
- 1. Apply latest NDT pipeline/assets inspection and repair techniques
 - 2. Incorporate advanced assets management and Fitness-for-service software assessment



Kuwait – KPC

2.81 million b/d, reduced to 2.16 million b/d
Will increase to 2.29mn b/d in 2nd half of 2020



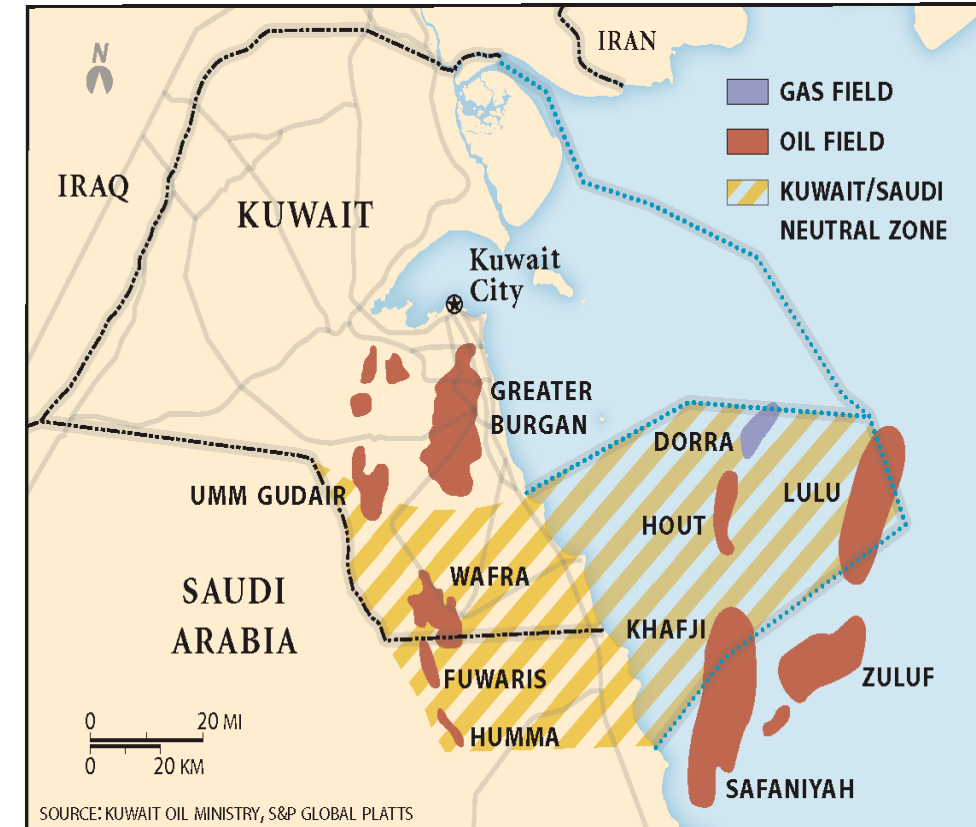
مؤسسة البترول الكويتية
Kuwait Petroleum Corporation



إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation



- Kuwait Petroleum Corporation (KPC) is a state-owned entity in charge of Kuwait's energy activities.
- KOC under KPC's umbrella are in charge of exploration, drilling and production of oil and gas.
- KOC is also involved in the storage of crude oil and delivery to tankers for export.
- KOC has 120 oil and 53 gas rigs in operations.
- Due to COVID 19, the number of rigs onshore has gone from around 173 to 126 due to Covid-19.
- KOS is drilling offshore for the first time.
 - Halliburton, Baker Hughes and Schlumberger have awarded contracts for offshore drilling for six high-pressure/high-temperature (HP/HT) exploration wells on two jackup rigs.



Saudi Arabia – Saudi Aramco

أرامكو السعودية
Saudi Aramco



Onshore Partnerships



Offshore Partnerships



Downstream Partnerships



Saudi Arabia is the world's largest offshore producer.

The kingdom has initiated a large investment plan which involves more than USD 300 billion over the next decade in order to maintain its spare capacity and double the gas resources.

Offshore production in Saudi Arabia is expected to reach 4.7 mmboe/d in 2019, thus constituting about 1/3 of the country's total production.

This makes the country the world's largest offshore producer of oil and gas and the third largest when also including onshore production, (United States and Russia)



Aramco Overseas Company



سابك
SABIC

طاقة
TAQA





Focus and Priorities

Tactical – cost /bbl

- Reduce exploration work and drill more in mature fields where number of services can be reduced.
- Plan to reduce unconventional work, focus more on drill infill wells & multilaterals
- Focus on EOR and secondary reservoirs (high demand on Formation testing and sampling)
- Well integrity, corrosion, water shut off and plugs, all on increasing demand

Technology

- Data management, AI & Machine Learning to enable lowering cost/bbl and minimize human interference

Contracting Models

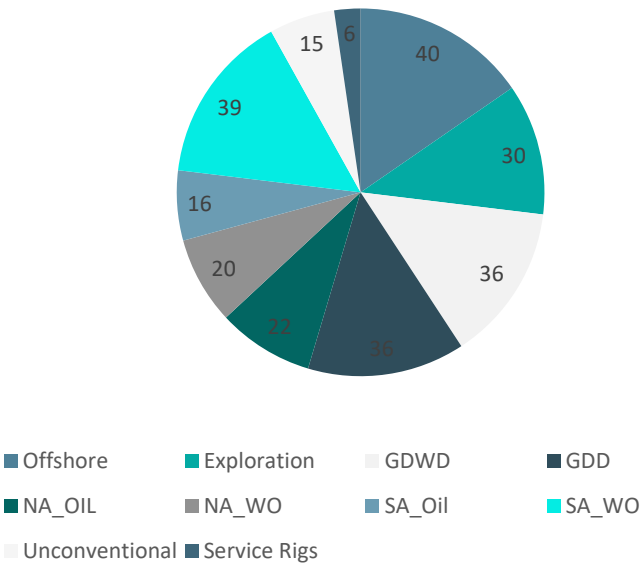
- Tendency to package work & give a Lump Sum Turn Key contract



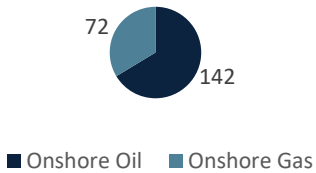


Current activities and Business opportunities

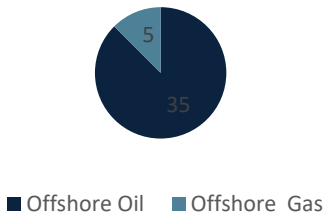
Total Rigs (Total 260)



Onshore Rigs (Total 214)



Offshore Rigs (Total 40)

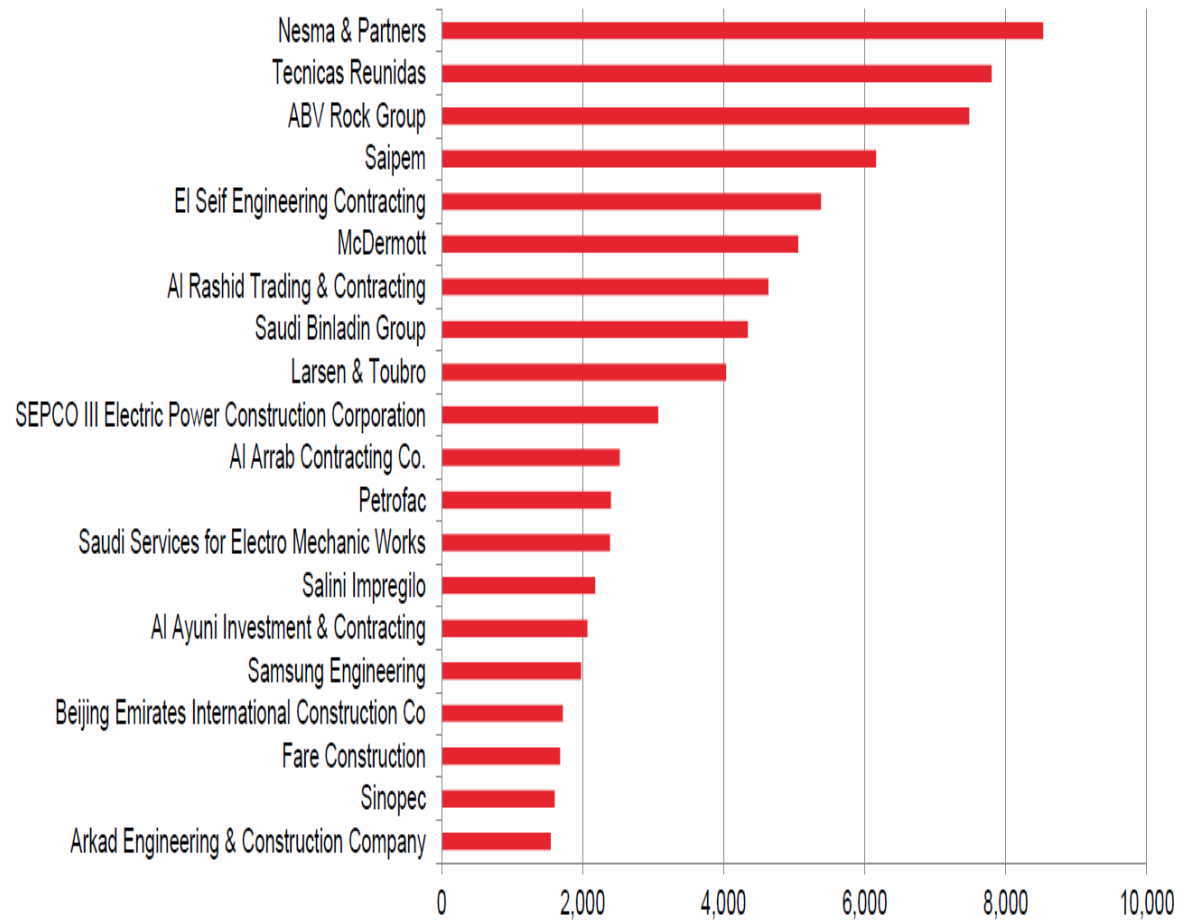


Department	ARAMC O Rigs	LSTK Rigs	Total
Southern Area Oil & Gas Drilling Department (SAO&GDD)	24	1	25
Exploration Drilling Department (EDD)	12	12	24
Offshore Drilling Department (ODD)	40	0	40
Northern Area Oil Drilling Department (NAODD)	21	7	28
Gas Drilling & Workover Department (GDWD)	37	0	37
Gas Drilling Department (GDD)	21	11	32
Northern Area Workover Department (NAWD)	22	0	22
Southern Area Workover Department (SAWD)	26	11	37
Unconventional Gas Drilling (UGD)	15	0	15
Total	218	42	260



Top contractors in Saudi Arabia

by value of work undertaken(\$m)



Long Term Agreements

McDermott
Saipem
Subsea 7
NPCC
Dynamic Industries

Engineering Services

Woods
Warley & KBR
SLEF

EPC's

Petrofrac
Fluor
Tecnica Reunidas
JGC

Business families

Services

BHA
ADC
Schlumberger
Halliburton
ARO
Nabors



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egoryId=23](http://www.sauditenders.com/CategoyResult.asp?CategoryId=23)

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-  Military & Defence
-  Municipal Services
-  Office Equipment & Supplies
-  Oilfields & Refineries
-  Power & Alternative Energy
-  Prestige Buildings
-  Public Transportation Projects

Oilfields & Refineries

Name : Jackets Installation Project - Abu Safah Field (CRPO 59)

Description : Engineering, procurement, construction and installation (EPCI) of 3 offshore jac....

Country Name : Saudi Arabia

Reference No : 513376

Last Updated : June 1, 2020

Status : New Tender

[View Details](#)

Name : Production Platform Refurbishment & Positioning Project - Juaymah (CRPO 60)

Description : Engineering, procurement, construction and installation (EPCI) contract for the

Country Name : Saudi Arabia

Reference No : 521710

Last Updated : May 31, 2020

Status : New Tender

[View Details](#)

Name : Production Deck Module Installation & Pipeline Laying Project - Marjan (CRPO 61)

Description : Engineering, procurement, construction and installation (EPCI) contract for the

Country Name : Saudi Arabia

Reference No : 521711

Last Updated : May 31, 2020

Status : New Tender

[View Details](#)

Name : Yanbu - North Jeddah Oil Products Pipeline Project

Description : Engineering, Procurement and Construction (EPC) contract to build a pipeline for....

Country Name : Saudi Arabia

Reference No : 294648

Last Updated : May 21, 2020

Status : Current Project

[View Details](#)

Saudi Arabia plans separate wind power tender



Saudi Arabia plans to develop a second wind Independent Power Producer (IPP) project in Yanbu (West) with capacity of 850MW.

Riyadh forms Renewable Energy body Target includes 58.7 GW by 2030





Saudi Arabia invites bids for round Three of the National Renewable Energy Program

<https://www.powersaudiarabia.com.sa/web/index.html>

**Companies Pre-Qualified to Bid in Round Three
of the Saudi Arabia National Renewable Energy Program
for a Combined Capacity of 1200 MW**



Questions?

Oddmar Johannesen, Director Middle East

Nasrollah Gharesifard, Country Manager
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