MEED
Middle East business intelligence

GCC Oil and Gas Megaprojects

Current and future trends, challenges and opportunities

13 December 2022, MEED Webinar
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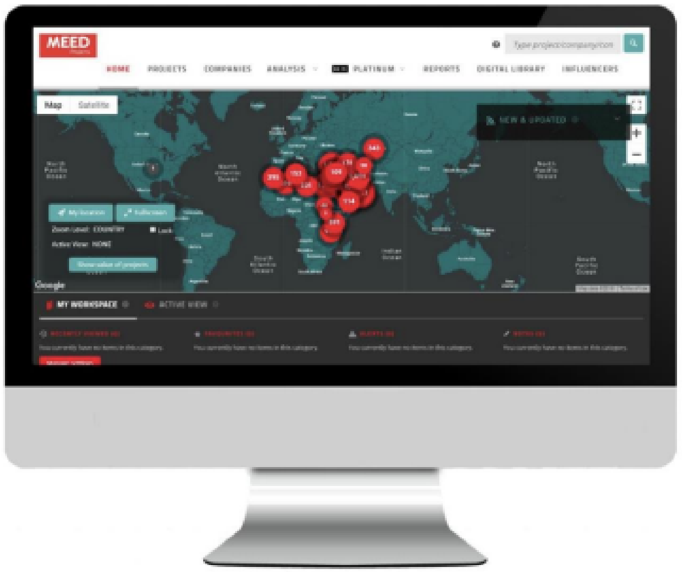

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GCC Oil and Gas Megaprojects 2023

Report's pre-launch ~~$4,000~~ $3,500

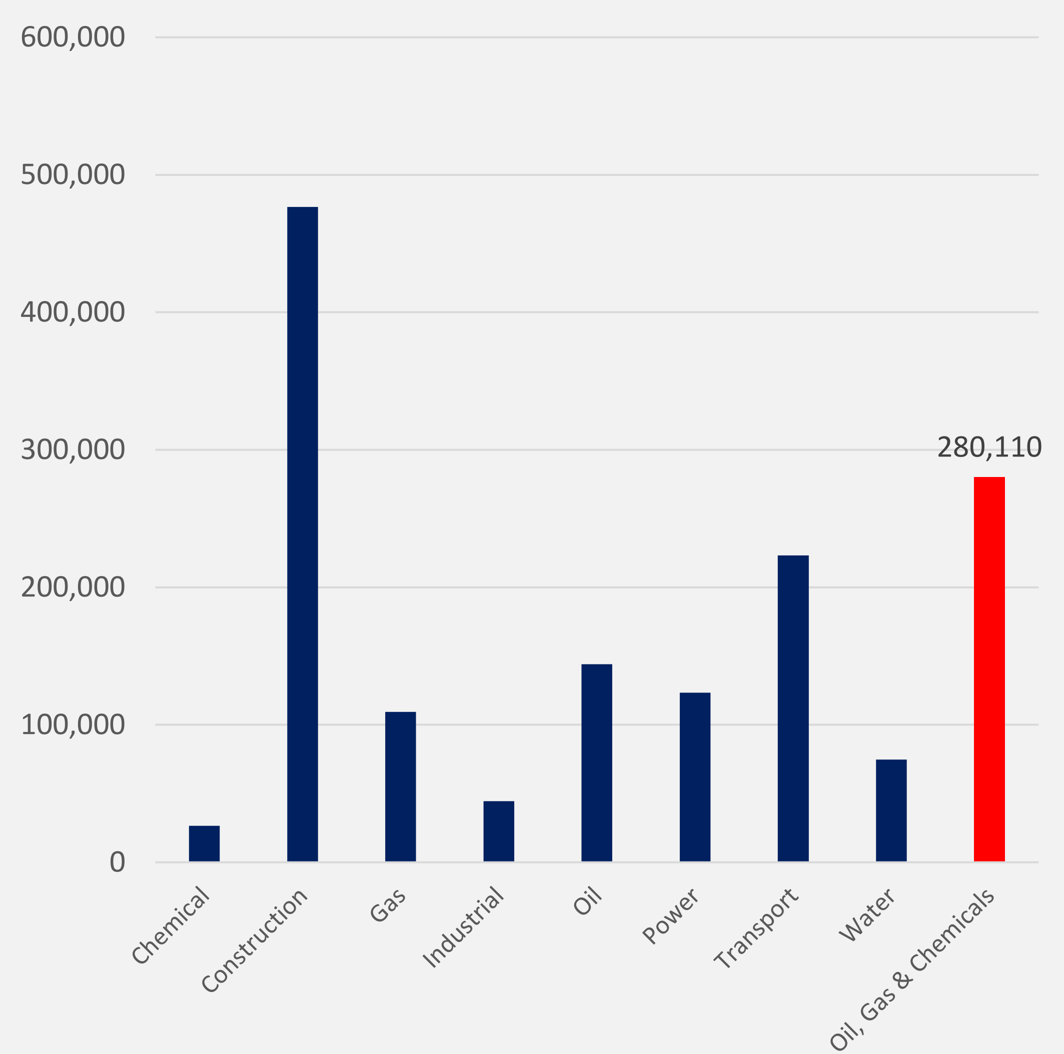
Buy **GCC Oil and Gas Megaprojects 2023** report to:

- Understand each of 40-plus GCC Oil, Gas and Petrochemical megaprojects
- Identify new project opportunities with client and procurement details
- Understand risks, set strategy, and minimise risk
- Recognise challenges in the market
- Ensure you don't miss any opportunity by being prepared for market developments

Historical Performance

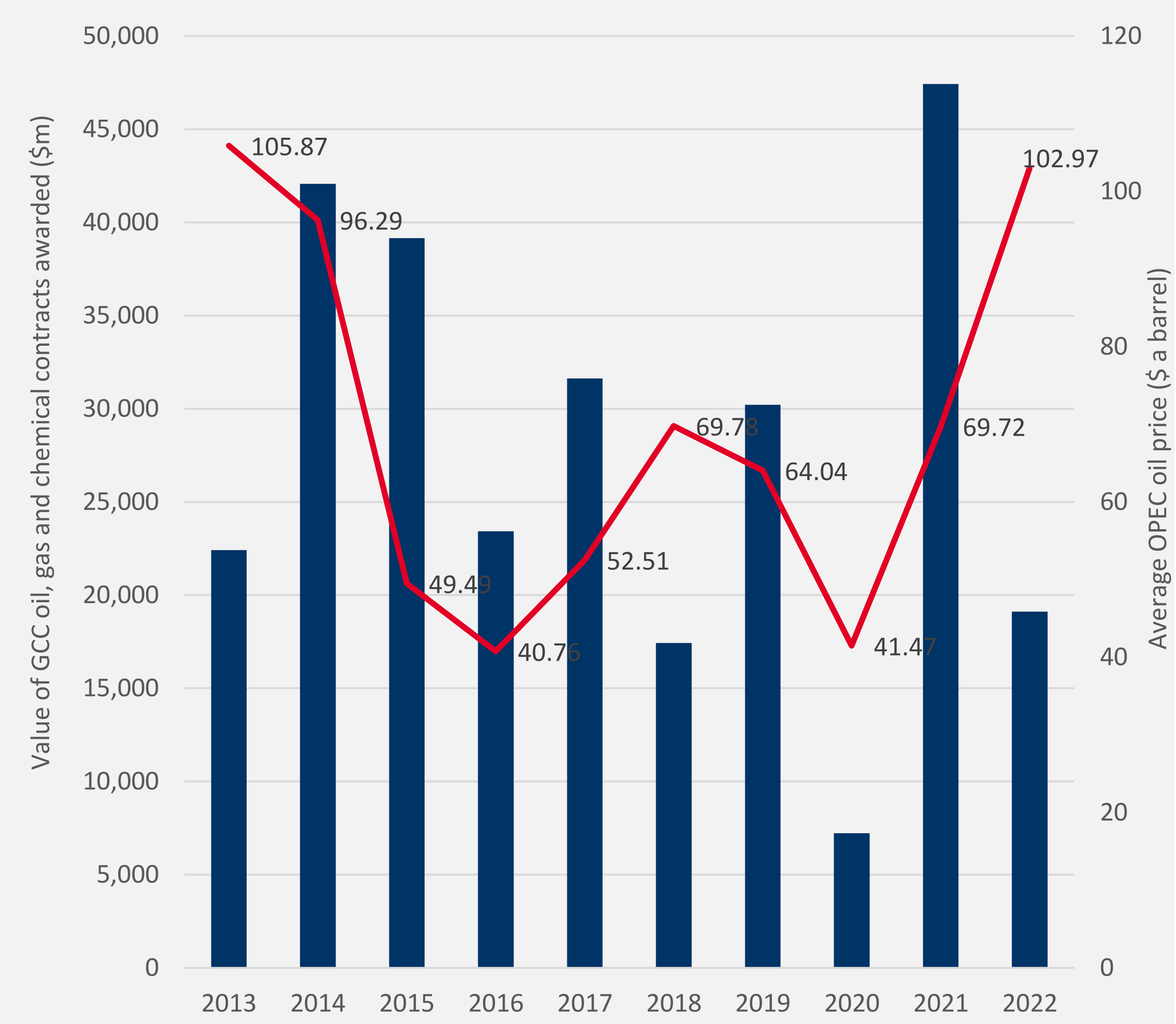
When combined, the oil, gas and petrochemicals market is the second largest sector historically in the GCC. In the past decade there have been more than $280bn worth of contracts awarded in the region, hitting a peak of $47bn in 2021. On an annual basis, the market is highly cyclical. For example, the 2021 record year followed a record low in 2020. Market is not necessarily correlated with the oil price

Value of GCC contracts awarded by sector, 2013-22 ($m)



Source: MEED Projects

Value of GCC oil, gas and petrochemical contracts awarded vs oil price, 2013-22 ($m)



Source: MEED Projects

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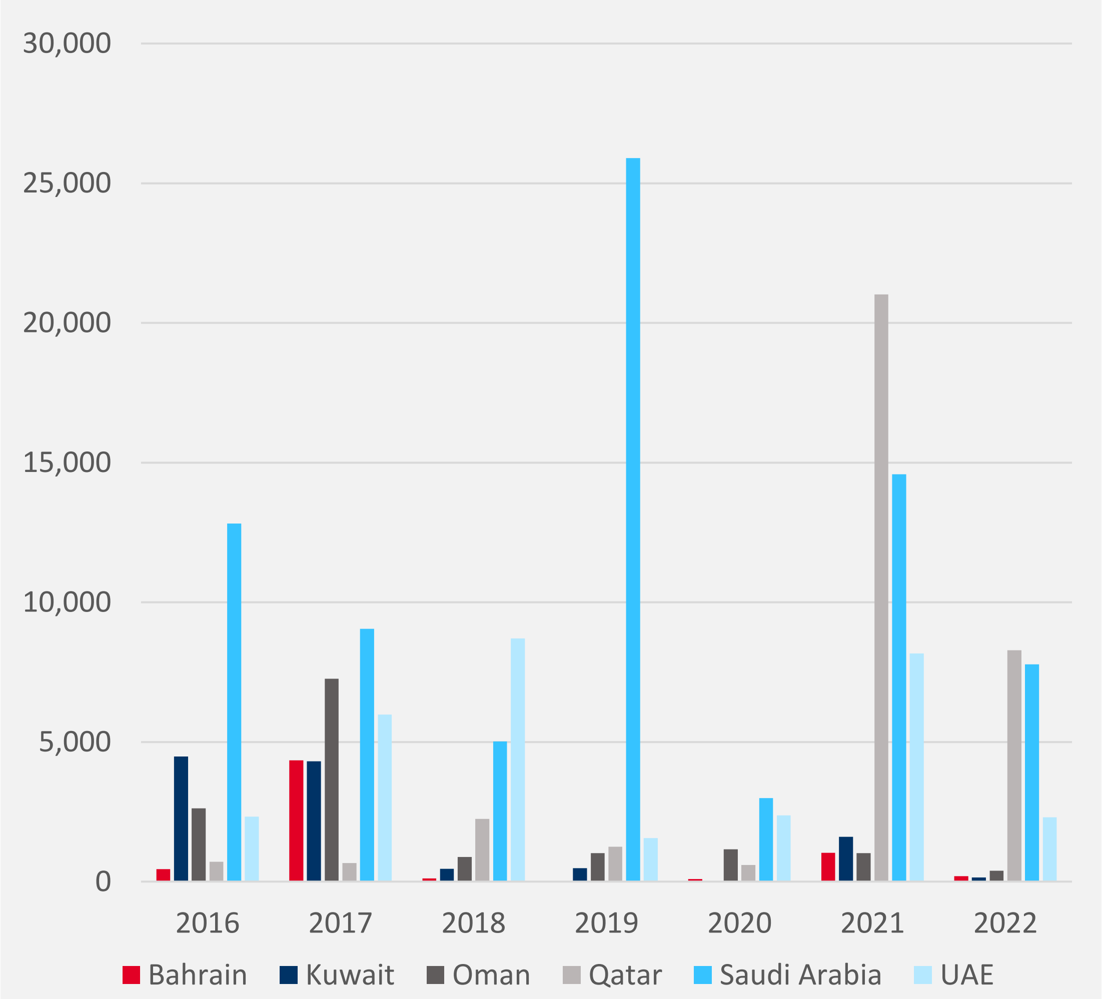
Historical Performance

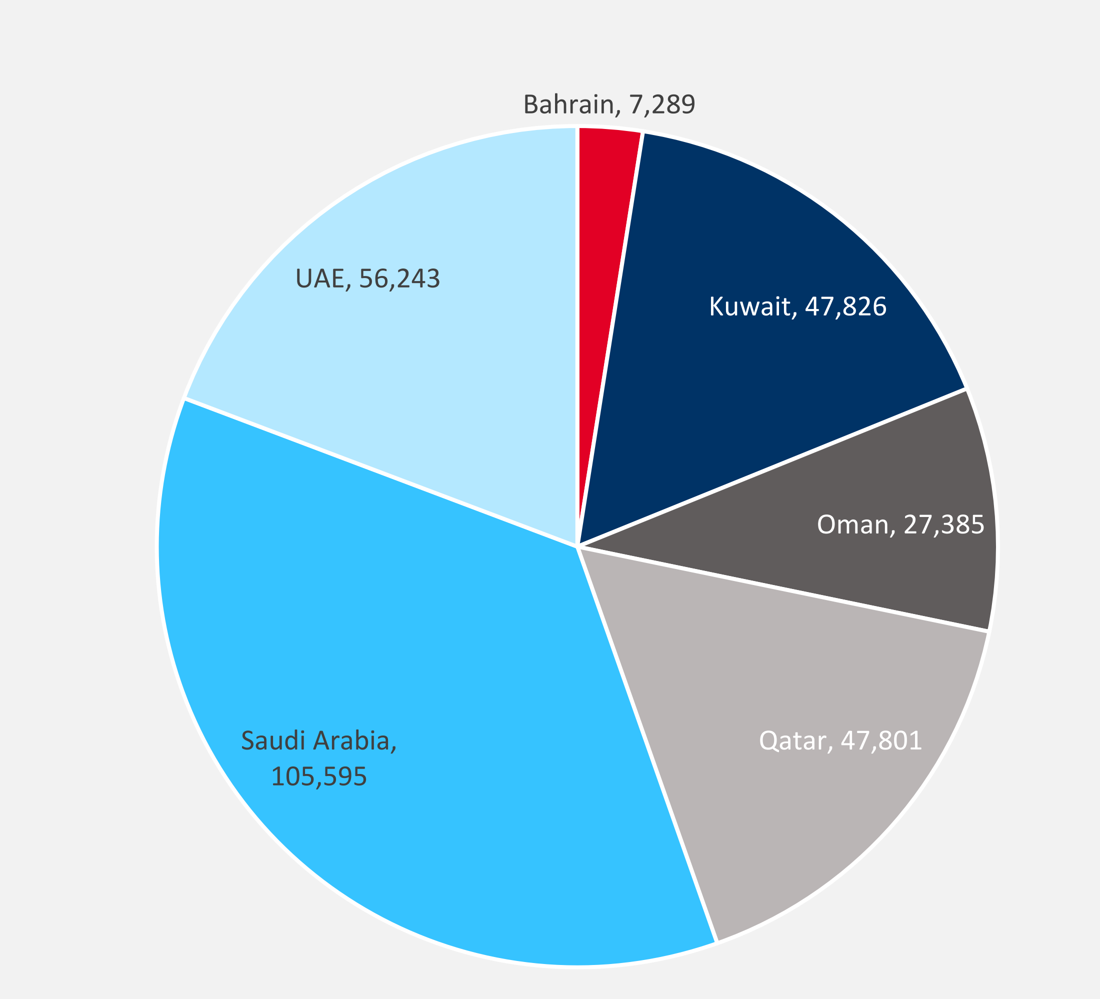
In the past 5 years, spending has been dominated by Saudi Arabia, the UAE and Qatar, although spending in each is highly cyclical. Kuwait invested more than $40bn in 2013 and 2014 but has spent very little since, while Bahrain and Oman much smaller markets in comparison

Value of GCC oil, gas and petrochemical contracts awarded by year, 2016-22 ($m)



Source: MEED Projects

Value of GCC oil, gas and petrochemical contracts awarded by country, 2013-22 ($m)

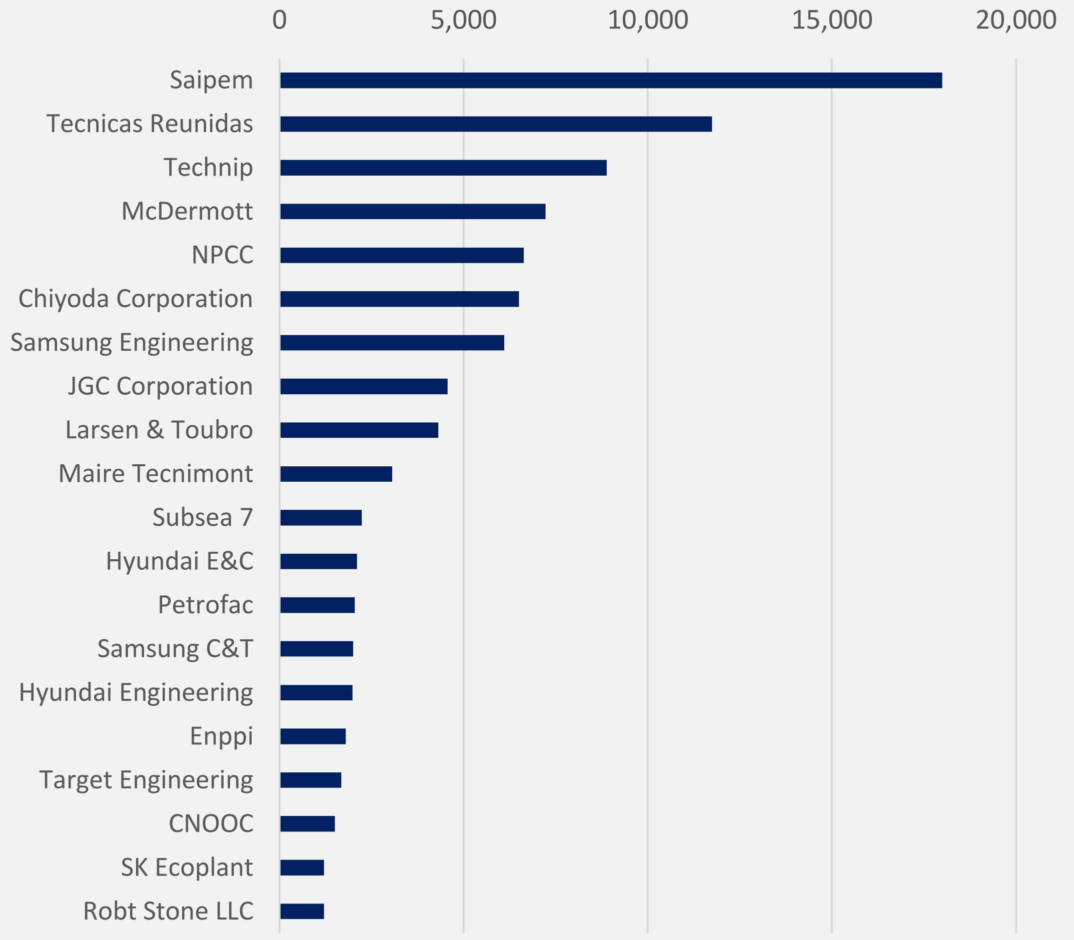


Source: MEED Projects

Top Contractors and Clients

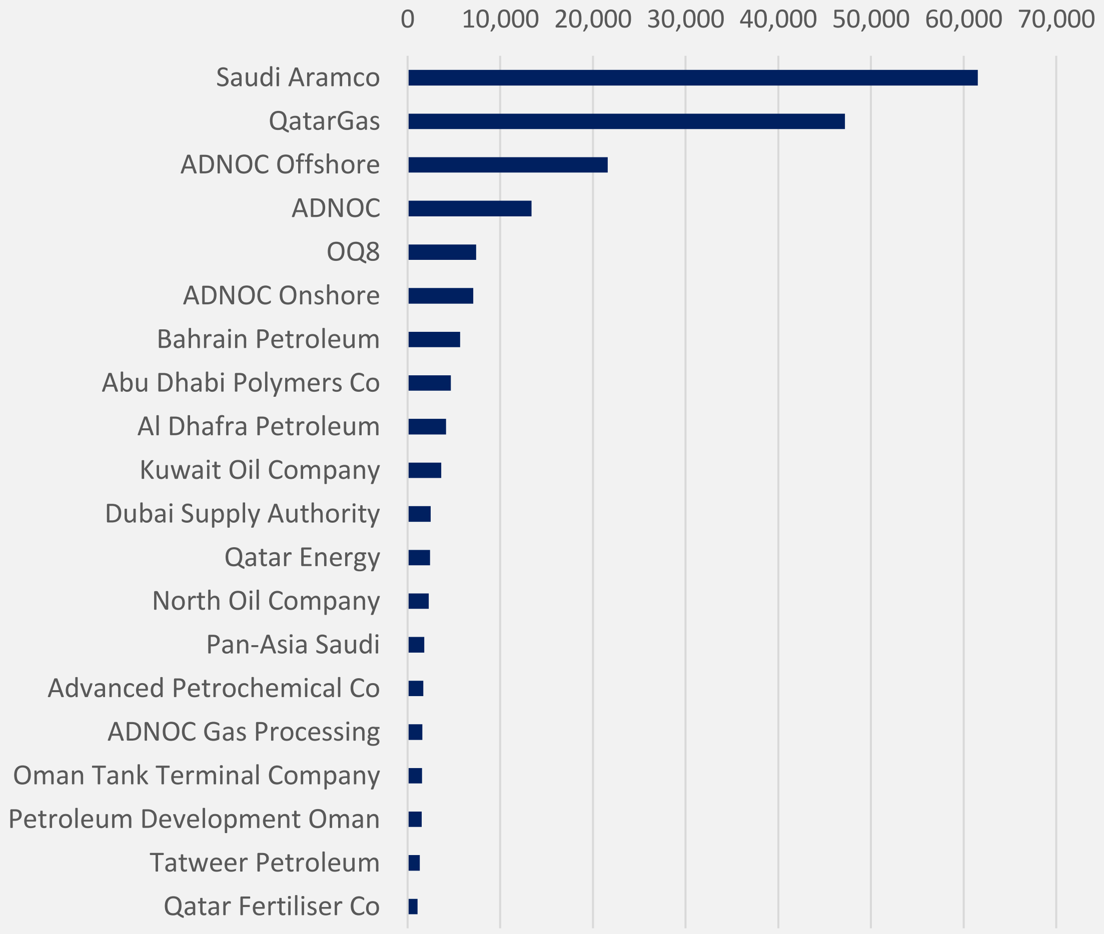
Top 10 contractors dominated by international EPCs with exception of NPCC, which is becoming a regional powerhouse. Only one Korean contractor after years of domination. Top clients led by NOCs with Aramco unsurprisingly ranked in first position. Qatargas and its LNG program in second place followed by ADNOC and its subsidiaries

Top GCC oil, gas and chemical contractors by value of work under execution ($m)



Source: MEED Projects

Top GCC oil, gas and chemical clients by value of work under execution ($m)



Source: MEED Projects

Megaprojects

Megaprojects

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Megaproject defined as project with a total capex of more than $1bn. More than 40 oil, gas and petrochemical megaprojects in the GCC either in early stages of execution or in planning.

Selected active GCC oil, gas and petrochemical megaprojects

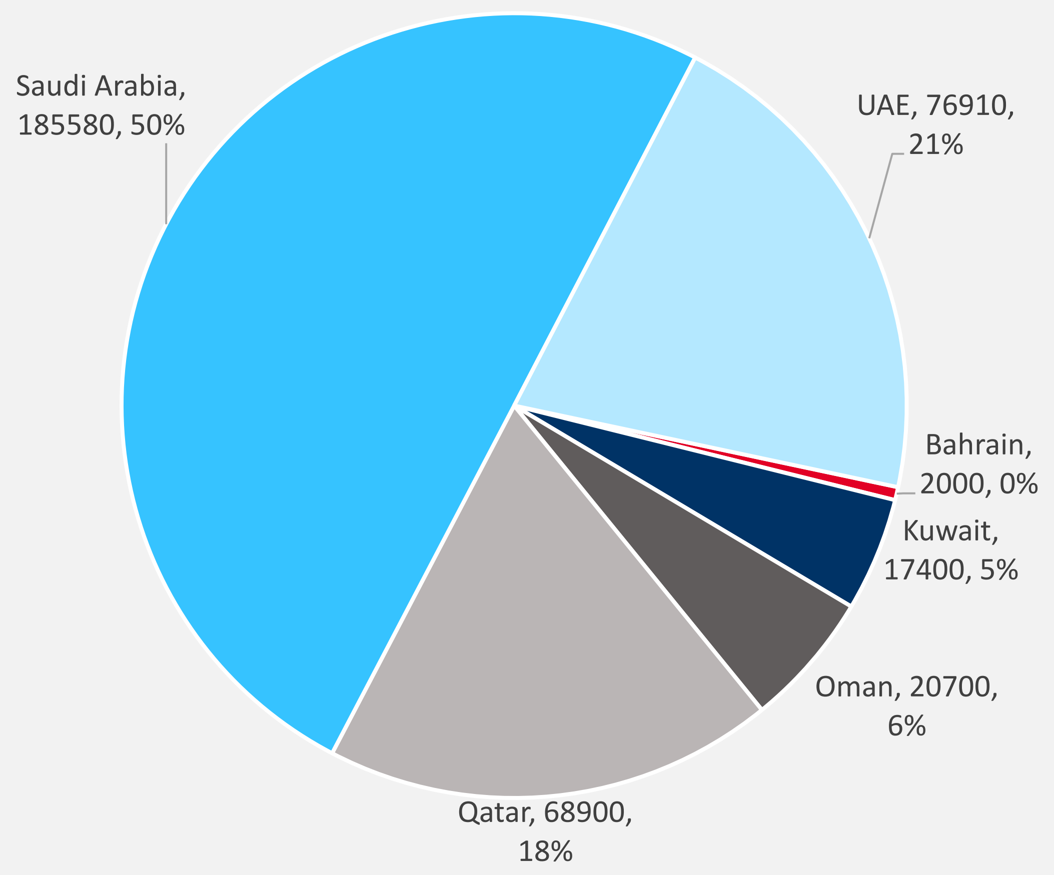
Project	Country	Status	Status	Value ($m)
KOC - Crude Oil Gathering Centers 33-35	Kuwait	Oil	FEED	2,000
KIPIC – Al Zour Petrochemical Complex	Kuwait	Chemical	Main Contract PQ	10,000
Marsa LNG - Marsa LNG Terminal and Block 10 field development	Oman	Oil	FEED	1,000
OQ - Bisat Oil Field Development	Oman	Oil	Execution	1,600
OQ8 - Duqm Refinery & Petrochemical Complex	Oman	Oil	FEED	16,500
OTTCO - Ras Markaz Crude Oil Park	Oman	Oil	Main Contract PQ	1,600
Qatar Energy - Idd El Shargi South Dome Expansion	Qatar	Oil	Study	6,000
Qatar Energy - Idd El Shargi North Dome	Qatar	Oil	Execution	3,000
Qatargas - North Field LNG Expansion	Qatar	Gas	Execution	1,000
Qatargas - North Field Production Sustainability	Qatar	Gas	Execution	43,000
Chevron Phillips Chemical/Qatar Energy - Ras Laffan Petrochemical Complex	Qatar	Chemical	Execution	11,000
Saudi Aramco - Hawiyah Unayzah Gas Reservoir Storage Project	Saudi Arabia	Gas	Execution	9,000
Saudi Aramco - Berri Field Development Project	Saudi Arabia	Oil	Execution	6,000
Saudi Aramco - Commercialisation of Unconventional Resources: Jafurah	Saudi Arabia	Gas	Execution	8,000
Saudi Aramco - Hawiyah Gas Plant Expansion & Haradh Gas Compression Plants	Saudi Arabia	Gas	Execution	6,600
Saudi Aramco - Marjan Offshore Oil Field Expansion	Saudi Arabia	Oil	Execution	2,300
Saudi Aramco - Safaniya Field Increment	Saudi Arabia	Oil	Bid Evaluation	21,000
Saudi Aramco - Shedgum and Uthmaniya Gas Compression Program	Saudi Arabia	Oil	Execution	3,000
SATORP - Amiral Complex	Saudi Arabia	Chemical	Bid Evaluation	4,500
Saudi Aramco/Sabic - Yanbu Crude Oil To Chemicals (COTC)	Saudi Arabia	Chemical	Study	25,000
ADNOC/Total/PetroChina/ENI - Umm Shaif Gas Cap Condensate Development: Phase 1	UAE	Gas	Bid Evaluation	1,800

Source: MEED Projects

Megaprojects by Value and Volume

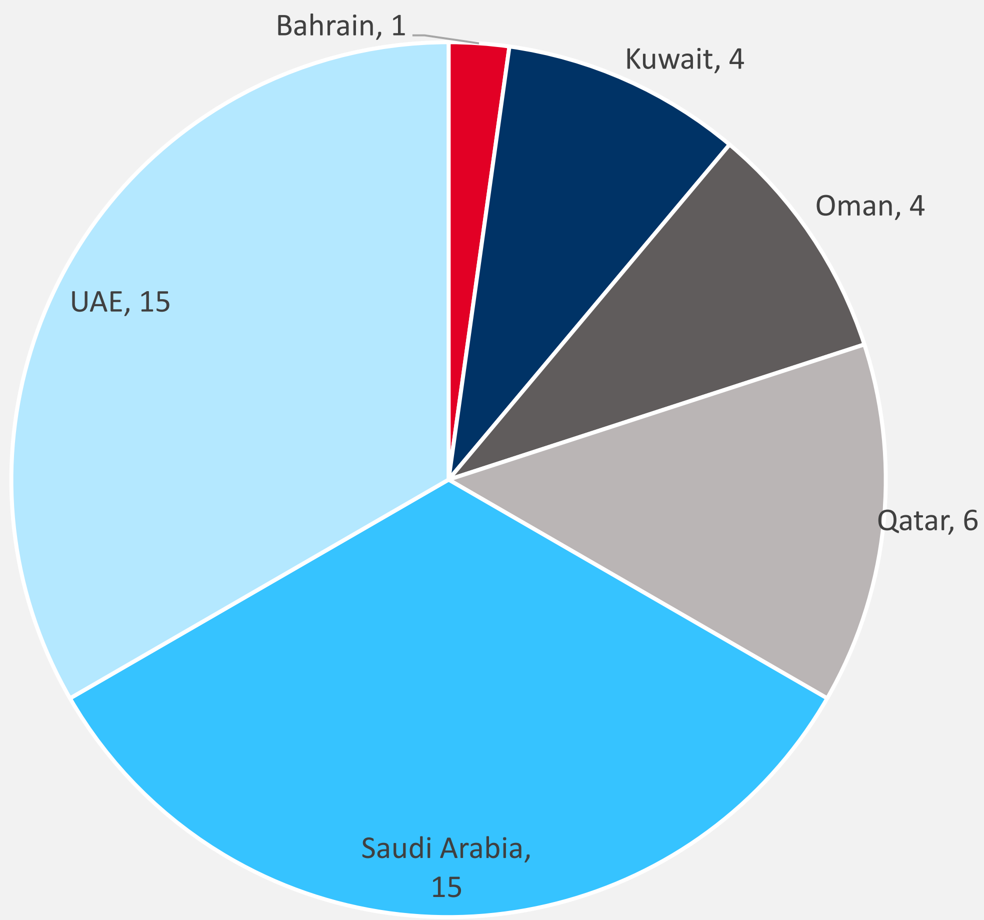
Saudi Arabia has half the value of all active oil, gas and chemical megaprojects, followed by Qatar and the UAE. However, the latter has the largest number of megaprojects alongside Saudi Arabia

Value of active GCC oil, gas and chemical megaprojects by country ($m)



Source: MEED Projects

Number of Active GCC oil, gas and chemical megaprojects by country ($m)

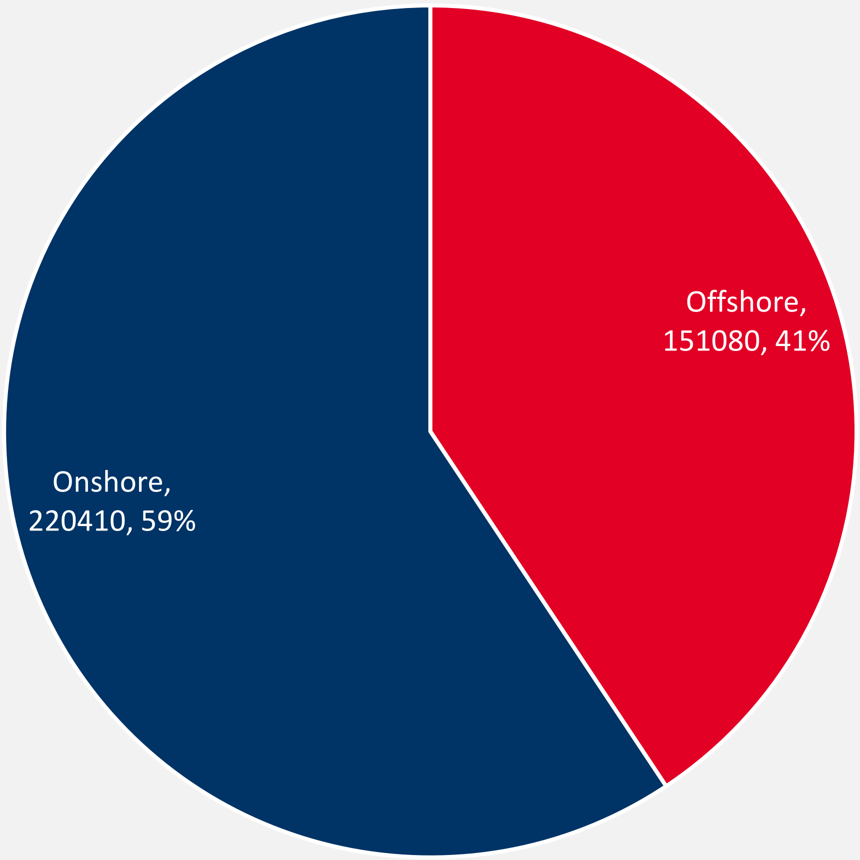


Source: MEED

Megaproject Area and Output

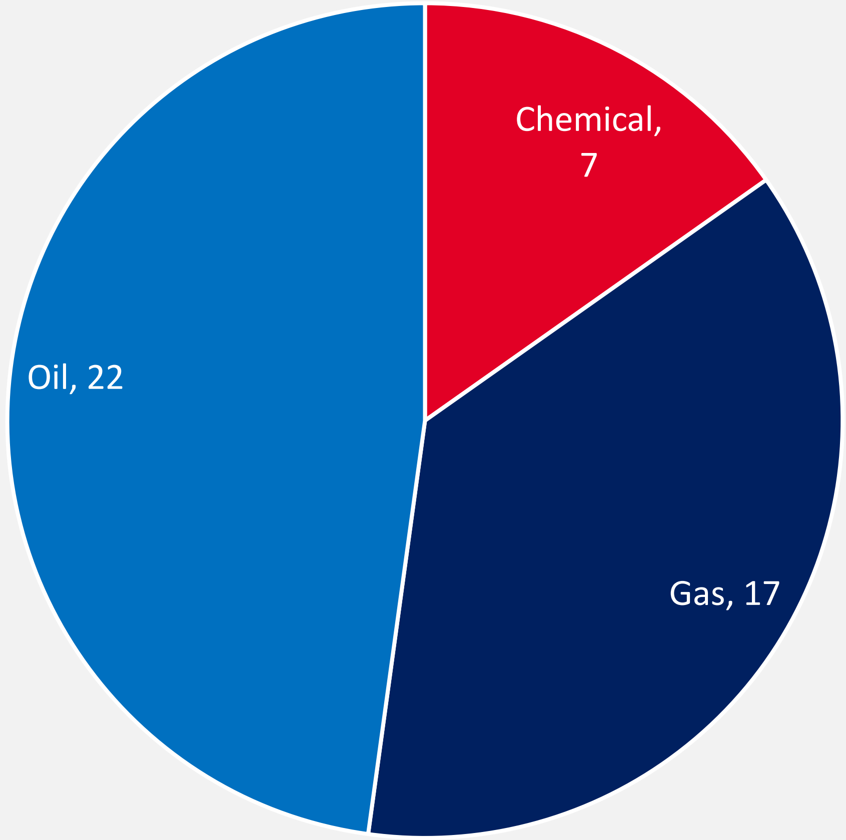
There are slightly more onshore megaprojects than offshore ones, although the offshore sector has grown considerably in recent years as NOCs have attempted to raise output from more expensive offshore fields. Likewise, there is not a lot difference between the numbers of oil and gas megaprojects, with petrochemical schemes lagging behind

Value of active GCC oil, gas and chemical megaprojects by location ($m)



Source: MEED Projects

Active GCC oil, gas and chemical megaprojects by output ($m)

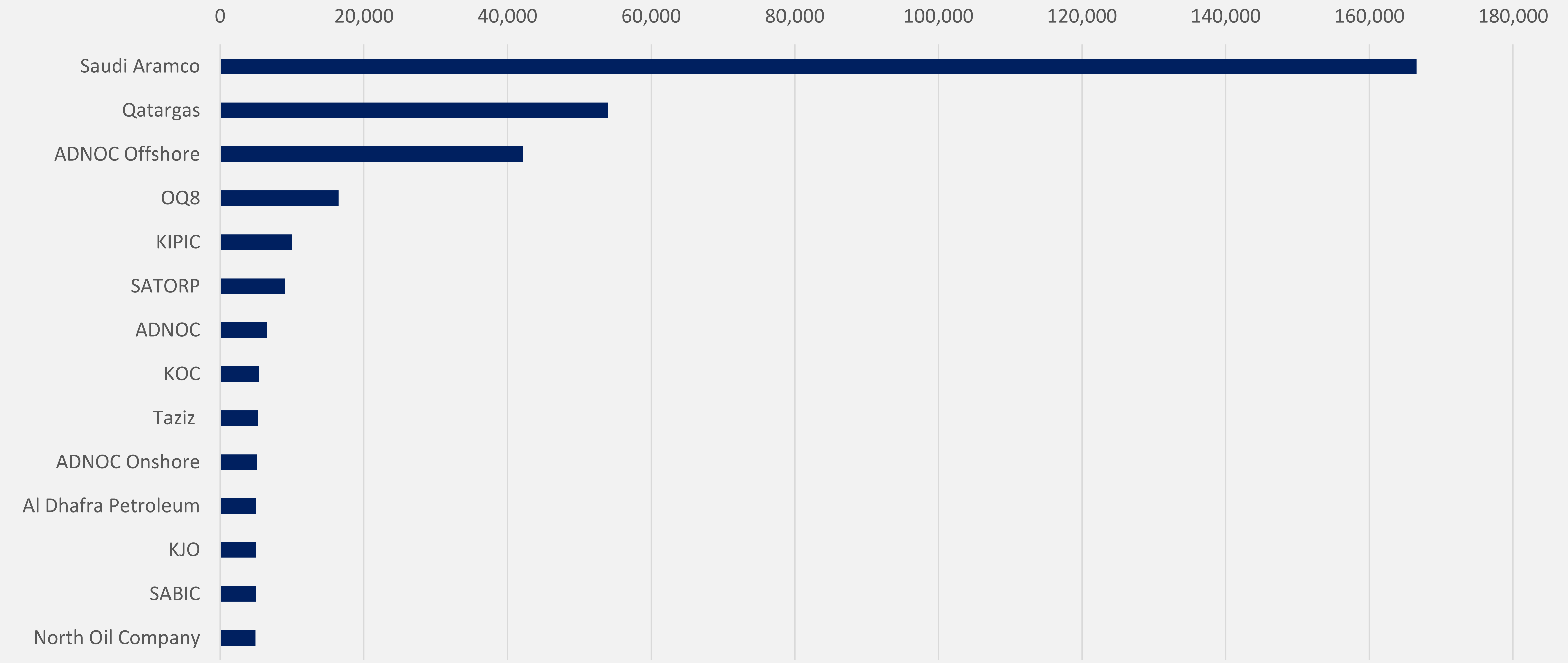


Source: MEED

Top Megaproject Clients

As with all sizes of oil and gas projects, the ranking of the top clients on megaprojects remains Saudi Aramco followed by Qatargas and ADNOC Offshore.

Top clients by active GCC oil, gas and chemical megaprojects ($m)



Source: MEED Projects

Source: MEED

Targets

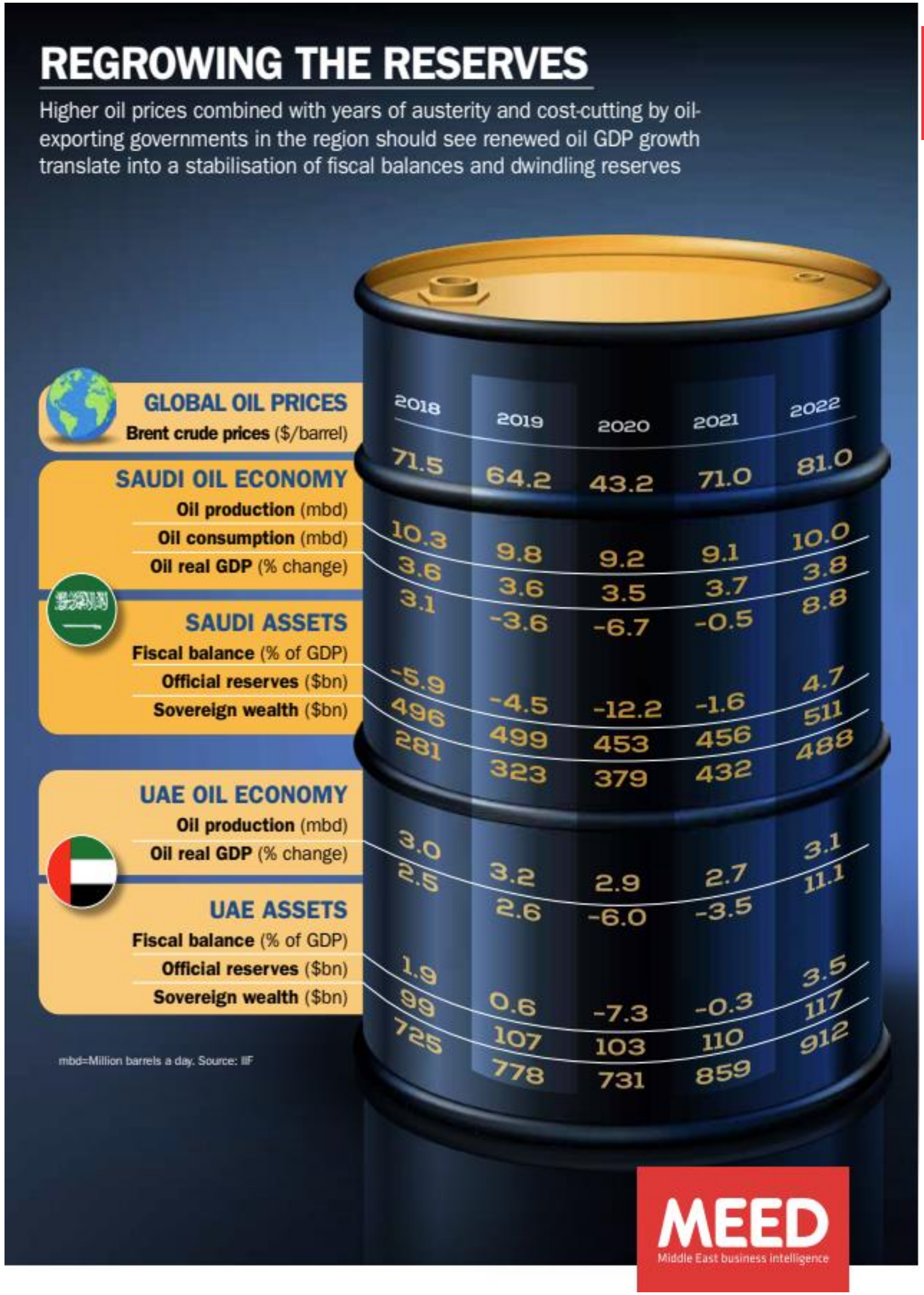
Most GCC states have set themselves production increase targets to meet growing global demand. In some cases, there are estimated to be the maximum each country could sustain as they seek to maintain supply leadership and pricing influence.

In monetary terms, meeting these targets will require total expenditure of well over $300bn, although it is important to note that this make included already committed expenditure on existing projects as well as opex and other costs.

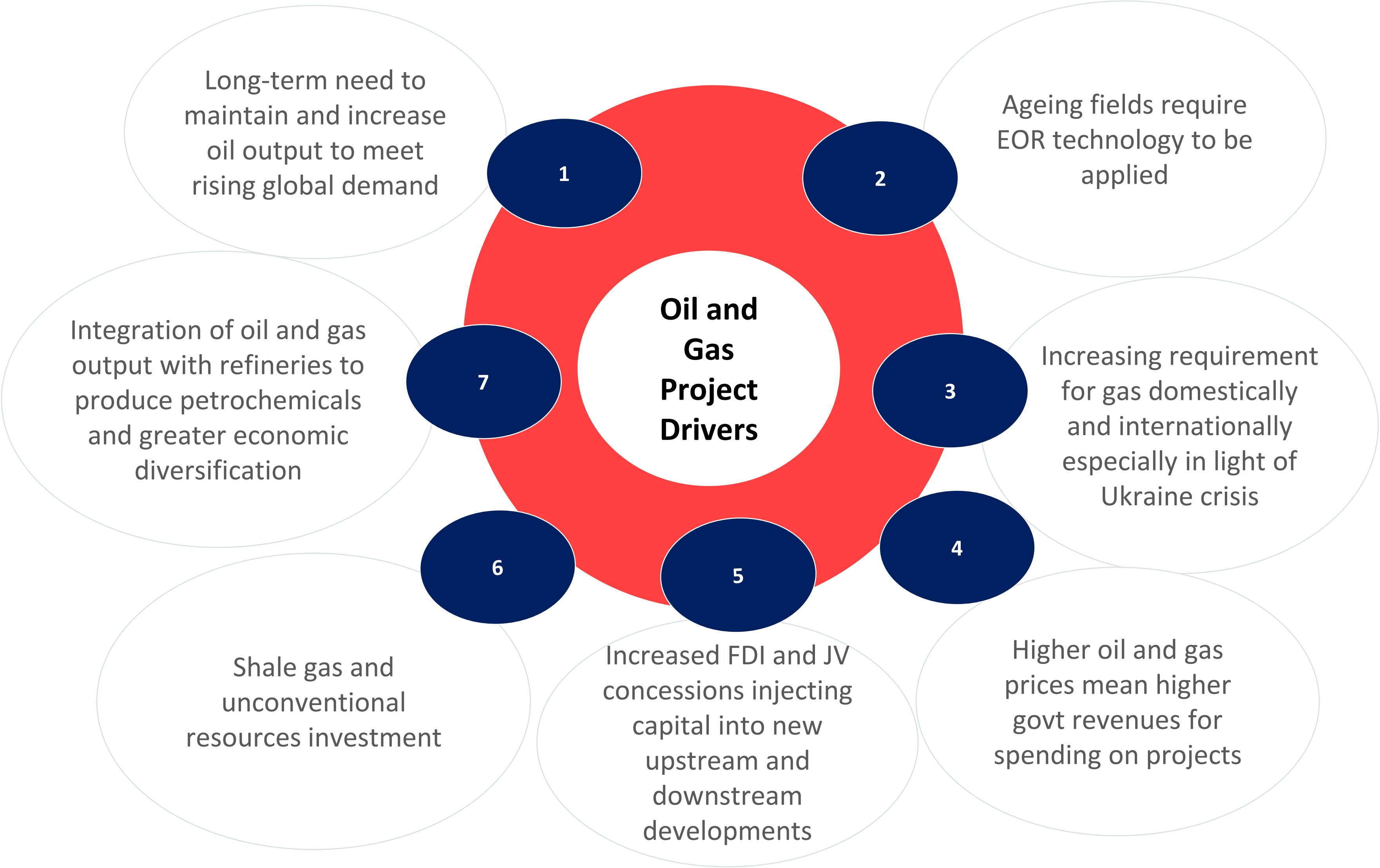
With oil prices at more than $80 a barrel, the region is enjoying budget surpluses to enable the required spending to reach these targets.

Country	Target Capacity	Current Capacity	Planned Spend
UAE	5 million b/d by 2025	4 milion b/d	$150bn (2022-27)
Saudi Arabia	13 million b/d by 2027	12 million b/d	$40bn-$50bn a year
Kuwait	4.75 million b/d by 2040	2.8 million b/d	$44bn to 2025
Qatar	126 million t/y of LNG by 2030	77 million t/y of LNG	$83bn to 2025

Source: MEED



Market Drivers



Saudi Aramco - Marjan Field Development

The Marjan offshore oil field expansion scheme is an integrated project for oil, associated gas, non-associated gas, and cap gas and intends to increase production from the Marjan offshore oil and gas field.

The entire programme is estimated to be worth over $21bn and consists of about 32 main EPC packages. The project is situated in Khafji of Arabian Gulf, Eastern Province, Saudi Arabia.

The Marjan field, which was discovered in 1967, is estimated to contain 2.31 billion barrels of recoverable crude oil. The first gas-oil separation plant (GOSP-1) was installed in 1973 and has a production capacity of 100,000 b/d of oil and 175 Mscfd of gas. The GOSP-2 and GOSP-3 were put into operation in 1994, increasing the offshore field's overall production capacity to 600,000 b/d of oil and 675Mscfd of gas. The GOSPs' oil and gas output is routed onshore to Tanajib for additional processing.

The expansion plan includes provision of a new offshore GOSP and 24 offshore oil, gas, and water injection platforms. The offshore component aims to increase the field production by 300,000 b/d of Arabian Medium Crude Oil, process 2.5 Bcf/d of gas, and produce an additional 360,000 b/d of ethane (C2H6)+NGL. After the expansion, the Marjan field's production capacity is expected to increase to 800,000 b/d.

From the downstream perspective, the whole expansion project is expected to add 110,000 b/d of propane and 100,000 b/d of butane to enter the grid for export. The additional volumes will be exported through the Juaymah NGL fractionation plant, situated along the Gulf coast in Saudi Arabia's Eastern Province.

Aramco must expand the propane (C3) and butane (C4) export capacities of this terminal. Consequently, the company intends to build extra refrigeration and storage units at the terminal that will increase its storage capacity for propane by 50,000 b/d, and for butane by 100,000 b/d.

The project's onshore component involves Aramco expanding its Tanajib onshore oil facilities and construct a new gas plant, to include gas treatment and processing, natural gas liquids (NGL) recovery and fractionation, and gas compression facilities. A cogeneration facility will be developed, in addition to a water desalination facility and new transfer pipelines.

Aramco awarded the main EPC contracts for the project in 2019 worth a total of $18bn, and works are today well under way.

There are 4 packages forming Phase 3 aimed at drilling new wells to maintain output. Bids for packages were submitted in early December and currently under evaluation.

The entire project is expected to be completed by December 2025.

Key project facts

Project name	Marjan Field Development
Country	Saudi Arabia
Location	Khafji, Eastern Province
Client/Project Company	Saudi Aramco
Estimated cost (Budget)	$21bn
Scope	To increase Marjan field production by 300,000 b/d of Arabian Medium Crude Oil, process 2.5 Bcf/d of gas, and produce an additional 360,000 b/d of ethane (C2H6)+NGL
Project sponsors	Saudi Aramco
FEED and Project Management Consultants (PMC)	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers
Start date	2019
Full completion	2025

Source: MEED Insight, Saudi Aramco and other secondary sources

Saudi Aramco - Marjan Field Development

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Marjan offshore oil field expansion

- **Phase 1** (completed in 1973)
- **Phase 2**
  - Onshore
    - Package 5: Water injection ($320m, Execution)
    - Package 6: Onshore oil facilities ($1,480m, Execution)
    - Package 9: Inlet, storage and compression ($1,500m, Execution)
    - Package 10: Gas treatment and Sulphur recovery ($300m, Execution)
    - Package 11: Onshore NGL Recovery and Fractionation ($1,500m, Execution)
    - Package 12: Utilities, flare and pipe rack ($1,250m, Execution)
    - Package 14: Sulphur Handling Facilities ($80m, Execution)
    - Package 16: Tanajib area pipelines ($120m, Execution)
    - Package 17: Ras Tanura Area Pipelines ($80m, Execution)
    - Package 18: Jubail Area Pipelines ($120m, Execution)
  - Offshore
    - Package 1: GOSP4 Development ($3,000m, Execution)
    - Package 2: Offshore oil facilities ($1,010m, Execution)
    - Package 3: Water injection ($1,200m, Execution)
    - Package 4: Offshore gas facilities ($1,500m, Execution)
    - New Tie-in platform ($240m, Execution)
    - Offshore installation of jackets ($110m, Complete)
  - Others
    - Package 7: Onshore water supply facilities ($160m, Execution)
    - Package 13: Industrial security and support facilities ($85m, Execution)
    - Co-generation ISPP ($800m, Execution)
    - 380kV Marjan ISPP ($80m, Execution)
    - Temporary Construction Facilities ($120m, Execution)
    - Onshore: Site Preparation package ($56m, Complete)
- **Phase 3**
  - Offshore
    - CRPO 117 ($500m, Bid evaluation)
    - CRPO 118 ($500m, Bid evaluation)
    - CRPO 119 ($300m, Bid evaluation)
    - Installation of 8 jackets ($250m, FEED)

Source: MEED Projects

Saudi Aramco - Marjan Field Development

Overview

- Project worth an estimated $21bn and consisting of 32 sub-projects
- Situated in Khafji, Eastern provonce
- Increase oil production by 300,000 b/d
- Process 2.5 Bcf/d of gas
- Produce an additional 360,000 b/d of ethane
- Provision of a new offshore GOSP
- 24 offshore oil, gas, and water injection platforms

Stakeholders

- Saudi Aramco

Status

- Most of the packages were awarded in 2019.
- Of the total 32 packages, 22 packages are under execution and 7 projects are in pre-execution
- A gas-lift package is in bid evaluation stage
- Full completion and commission of the project is expected in December 2025.

2015	2018	2018 – 2025	2025
Announcement	ITB & RFP	Execution	Completion and full commission in December

Google pin is only indicative of location; Source: MEED Insight, Saudi Aramco and other secondary sources

MFD – Packages Under Execution

Project	Estimated Contract Value ($m)	FEED and Project Management Consultants (PMC)	Bidders	Completion Date	Main Contractor	Scope
Offshore GOSP4 Development: Package 1	3,000	Worley, Wood Group	CNOOC, McDermott, Sapura Energy Berhad, Saipem, L&T, Subsea 7, HHI, NPCC	Q4 2025	CNOOC, McDermott	Construction of six platforms and jackets, 12 bridges, oil and gas manifolds, 70km of 36" pipelines, 90km of 230kV subsea cables, and other facilities to link to a new gas facility in Tanajib on the Gulf coast
TGP: Onshore: Inlet, Storage & Compression: Package 9	1,500	Wood Group, Worley	Petrofac, Samsung Engineering, Hyundai E&C, TR, Saipem, L&T, SNC Lavalin, Technip, JGC Holdings	Q4 2025	TR	Construction and installation of gas compression, inlet facilities, and storage units, more specifically, for storage of propane and butane
Offshore Gas Facilities: Package 4	1,500	Worley	CNOOC, McDermott, Sapura Energy Berhad, Saipem, L&T, Subsea 7, HHI, NPCC	Q4 2025	McDermott	Installation of three tie-in platforms and seven wellhead platforms, gas cap production unit with a capacity of 1,261 MMSCFD, and construction of non-associated gas (NAG) production unit with a capacity of 250 MMSCFD, and 540km of pipeline (26" to 36")
TGP: Onshore NGL Recovery and Fractionation: Package 11	1,500	Wood Group	SNC Lavalin, Samsung Engineering, Petrofac, Hyundai E&C, TR, Technip, Saipem, JGC Holdings, L&T	Q4 2025	TR	Construction and installation of T72 NGL gas treatment and recovery units, depropanizer, debutaniser, refrigeration, and compressors
Tanajib Onshore Oil Facilities: Package 6	1,480	Wood Group	Saipem, Hyundai E&C	Q4 2025	Hyundai E&C	Construct and install new crude oil processing capacity of 300,000 b/d, gas compression, and dehydration trains at the existing GOSP at Tanajib to process the additional volume from the offshore expansion project
TGP: Onshore Utilities, Flare and Pipe Rack: Package 12	1,250	Wood Group, Worley	Petrofac, Samsung Engineering, Hyundai E&C, Saipem, L&T, SK Ecoplant, Hyundai Engineering, SNC Lavalin, Technip, JGC Holdings	Q4 2025	Hyundai E&C, Hyundai Engineering	Construction and installation of power and water supply infrastructure for the Tanajib gas processing plant, 230kV substation, 13.8kV electricity distribution system, control centers, and storage units
Offshore: Water Injection: Package 3	1,200	Worley, Wood Group	Dynamic Industries, McDermott, Saipem, L&T, Subsea 7, NPCC, EMAS	Q4 2025	Saipem	Construction and set up of three water injection units, three jackets, three decks, hook-ups, pipelines, and other associated facilities
Offshore Oil Facilities: Package 2	1,010	Worley	CNOOC, McDermott, Sapura Energy Berhad, Saipem, L&T, Subsea 7, HHI, NPCC	Q4 2024	L&T, Subsea 7	Construction and installation of four tie-in platforms, one tie-in platform module, nine decks, 217km subsea pipelines and 145km subsea cables, dehydration facilities, flare stacks, and other associated facilities
Co-generation Independent Steam Power Project (ISPP)	800	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers	NA	Q1 2024	Samsung C&T	Construction of a 940MW power plant, steam generation facility of 1,084 t/hr, and water generation capacity of 5.25m gallons/day, installation of substations, switchyards, seawater intake and a 20,000 m3/day desalination plant, gas and steam turbines, and three 1,152-3,054kpph heat recovery steam generator (HRSG)
Onshore: Water Injection: Package 5	320	Wood Group	Saipem, CAT Group, Sinopec, Tekfen Construction, Nesma & Partners, Arkad Engineering & Construction Company, Yuksel Construction	Q4 2024	Saipem	Construction of pumps, and 74km pipeline to transport water from wells situated in the vicinity of the Tanajib GOSP to the offshore oil field

CNOOC=China National Offshore Oil Corporation; TR=Tecnicas Reunidas; L&T=Larsen & Toubro; HHI=Hyundai Heavy Industries; NPCC=National Petroleum Construction Company; CPP=China Petroleum Pipeline Engineering; CCE=Contracting & Construction Enterprises; CGGC=China Gezhouba Group Corporation; Source: MEED Insight

MFD – Packages Under Execution

Project	Estimated Contract Value ($m)	FEED and Project Management Consultants (PMC)	Bidders	Completion Date	Main Contractor	Scope
TGP: Onshore Gas Treatment and Sulfur Recovery: Package 10	300	Wood Group	SNC Lavalin, Saipem, Petrofac, Hyundai E&C, Samsung Engineering, L&T, JGC Holdings, Technip	Q4 2025	Saipem	Construction of T 75 sulfur recovery and tail gas treatment units, T 71 acid gas removal units, and other associated facilities
New Tie-In Platform	240	Worley	Saipem	Q4 2024	Saipem	Construction of four new tie-in platforms, gathering centres, pipelines and cables, and related facilities
Onshore Water Supply Facilities Package 7	160	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers	NA	Q4 2024	Nesma & Partners	Installation of a 72.3km, 36" water injection transportation pipeline to Tanajib oil plant, Construction of excavation and water extraction facilities at the Jaladi field, HV and MV substations and other works
Jubail Area Pipelines: Package 18	120	Worley	CPP, TR, A.Hak International, Saipem, L&T, CAT Group, Sinopec, Nasser S Al Hajri Corporation, Tekfen Construction, Arkad Engineering & Construction Company, Punj Lloyd	Q4 2023	CAT Group	Installing 627km of pipelines of diameter 6" to 48" from the Tanajib gas plant to the Jubail area for transportation of Ethane, Propane, and Butane
Tanajib Area Pipelines: Package 16	120	Worley	CPP, TR, A.Hak International, Saipem, L&T, CAT Group, Sinopec, Nasser S Al Hajri Corporation, Tekfen Construction, Arkad Engineering & Construction Company, Punj Lloyd	Q4 2025	Sinopec	Installation of 211km pipelines (diameter of 6" to 36") for transport of crudes and condensates from the GOSP to the gas plant at Tanajib and from Tanajib Gas Plant to Beach Valve station.
Tanajib Gas Plant - Temporary Construction Facilities	120	NA	CCE, Alkifah Contracting	Q4 2025	Alkifah Contracting	Construction of temporary facilities of accommodation for employees and staff, water treatment plant, clinic, recreation building and other facilities
Tanajib Industrial and Security Support Facilities: Package 13	85	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers	Abdullah A M Al Khodari & Sons, Shapoorji Pallonji, Al-Rashid Trading & Contracting, Abdel Hadi Abdullah Al Qahtani & Sons Co, Al Bawani, Orascom Construction, Alkifah Contracting, Nesma & Partners, Al Yamama Company, Thabat Construction Company, CGGE	Q1 2025	Al-Rashid Trading & Contracting	Construction of administration building, accommodation facilities for staff, mosque, clinic, fire station, installation of gas station and other related facilities
Sulphur Handling Facilities: Package 14	80	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers	Petrofac, Samsung Engineering, Hyundai E&C, Saipem, Imad Company for Trading & Contracting, Technip	Q2 2024	Saipem	Construction of two Sulphur storage tanks and six loading arms, vapour recovery unit, Propane handling and loading facilities, and sewage lift station
Ras Tanura Area Pipelines: Package 17	80	NA	CPP, HRSA, A.Hak International, Saipem, L&T, CAT Group, Sinopec, Nasser S Al Hajri Corporation, Tekfen Construction, Arkad Engineering & Construction Company, Punj Lloyd	Q4 2024	Sinopec	Installation of pipelines for transport of materials from Tanajib GOSP to Juaymah Terminal (200km) , and from Tanajib Gas Plant to Ras Tanura Refinery (225km)
380kV Substation for Marjan ISPP	80	Worley, Wood Group, KBR, Abdulhadi & Al Moaibed Consulting & Design Engineers	NA	Q1 2024	Linxon	Construction of a 380kV substation, control centre, installation of transformers, cables, line reactors, substation automation system (SAS) and communication system and other facilities

Source: MEED Insight

Phase 3 Expansion

Project	Estimated Value ($m)	Status	FEED and Project Management Consultants (PMC)	Bidders	Award Date	Completion Date	Scope
Production Deck Module and Pipeline (CRPO 117)	500	Bid Evaluation	Worley	LTA Contractors	Q1 2023	Q4 2025	Construction of one tie-in platform, three production deck modules, two offshore trunk lines (21.5km), installation of infield pipelines and associated subsea cables, and other related works
Production Deck Module and Pipeline (CRPO 118)	500	Bid Evaluation	Worley	LTA Contractors	Q1 2023	Q4 2025	Installation of three deck modules, three pipelines (23.9km), subsea cables, and other facilities
Production Deck Module and Pipeline (CRPO 119)	300	Bid Evaluation	Worley	LTA Contractors	Q1 2023	Q4 2025	Installation of four deck modules, pipelines, subsea cables, and other facilities
Offshore: Installation of 8 Jackets	250	FEED	Worley	NA	Q2 2023	Q4 2024	Construction of tie-in platforms, installation of eight jackets, pipelines, power cables, and other associated works

LTA Contractors=Saipem, McDermott International, L&T, Subsea 7, Dynamic Industries, NPCC, Lamprell, Royal Boskalis Westminster, Sapura Energy, TechnipFMC, Malaysia Marine and Heavy Engineering, China Offshore Oil Engineering Company, HHI; Source: MEED Insight

Vendor Registration Process

Go to Saudi Aramco's website [click here] → Click "Partnering with us" → Select "Become a supplier" under "Suppliers" menu → Fill required fields to register as supplier → Invitation via e-mail for account activation → In case of error in registration, contact help-desk: SupplierHelpDesk@aramco.com

Saudi Aramco's IKTVA Programme for suppliers

Saudi Aramco has put its In-Kingdom Total Value Add (IKTVA) scheme at the centre of its contract awards and procurement spending strategy.

The Saudi Oil major now tenders a great deal of work through its General Engineering Services-plus and Long-Term Agreement pools of offshore and onshore contractors, which it vets based on IKTVA. The IKTVA programme supports sectors such as oilfield equipment & services, offshore equipment & services, industrial, chemicals, among others.

Launched in December 2015, The objective of IKTVA programme is to ensure that the capital expenditure that Aramco continues to make on projects and expansion plans feeds back into the national economy. It also aims to create growth opportunities for associated industries and increase employment.

Since then, the local content generation has been structured and swift. Localisation levels reached 35 per cent in 2015, 37 per cent in 2016, 45 per cent in 2017, 52 per cent in 2018 and 59 per cent in 2021.

The bulk of the deals signed focused on boosting the sourcing of local content and making arrangements for local manufacturing of products and services for the Saudi oil and gas industry – this has obvious socio-economic benefits.

With its IKTVA programme, Aramco seeks to develop the local manufacturing industry, boost the Kingdom's future prosperity, and become more globally competitive by fostering a diverse economic environment.

Participation in IKTVA is essentially a two-step procedure:

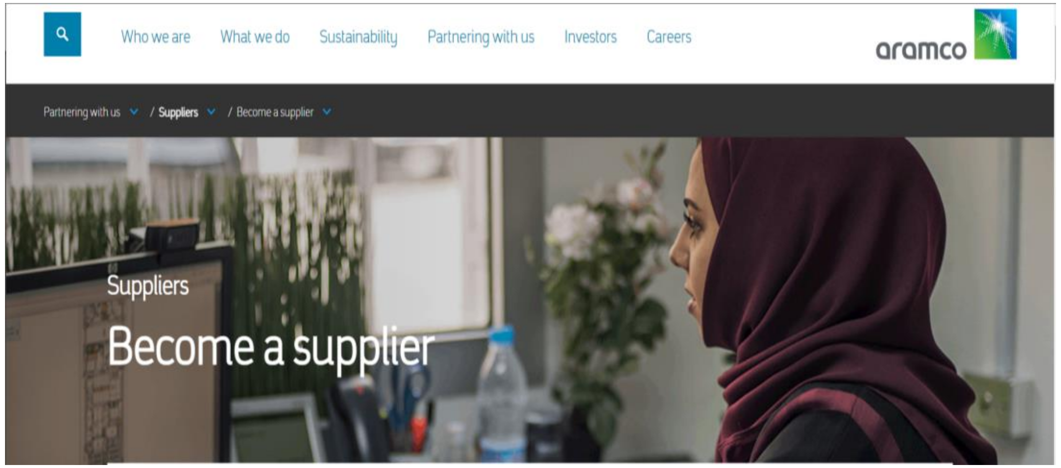
- Baseline - Using the IKTVA survey, Aramco measures and identify prospective company's IKTVA score.
- Action plan – Using the IKTVA score and developing a 5-year action plan

To participate in IKTVA process, potential vendors/suppliers need to follow the below listed steps:

- Download the IKTVA package and completion of the IKTVA survey
- Obtaining survey certification by one of the approved audit companies
- Submission of certified survey documents for review
- Developing an action plan

Please visit https://iktva.sa/ and click on IKTVA portal tab to register.

Saudi Aramco has a detailed manual for vendor registration



Source: Saudi Aramco

Taziz - Petrochemical Derivative Complex in Ruwais

Taziz is a 60:40 joint venture of Adnoc and Abu Dhabi's industrial holding company ADQ. It is the umbrella client on a world-scale industrial chemicals derivatives complex in Ruwais utilizing feedstock from the adjacent Ruwais refining and petrochemical complex. Each of the anchor projects will be implemented in partnership with a foreign investor.

Utilities in the Ruwais complex, including power, steam, cooling, demineralized and wastewater services will be shared. An industrial ecosystem will be created by Adnoc and ADQ, including a new port, utilities, infrastructure, feedstock supply and shared services at a total cost of well over $2bn. The anchor projects are:

Anchor project	End-use	Agreements
Chlor-Alkali	Water treatment, metallurgy, textiles	JV with India's Reliance and Abu Dhabi's Shaheen Chem Holdings Investment – worth over $2bn
Ethylene Dichloride (EDC)	Housing, infrastructure, consumer goods	
Elastomers	Automobiles, adhesives, food production and storage	
Maleic Anhydride	Piping, construction, heavy transport	
Methanol	Energy, consumer goods, pharmaceuticals	Switzerland's Proman >1.8 million t/y
Ammonia	Agriculture, apparel, energy	Fertiglobe, a JV of Adnoc and OCI; Japan's Mitsui; and South Korea's GS Energy
Isopropyl Alcohol	Healthcare, cosmetics	
Elastomers	Automobiles, adhesives, food production and storage	
Project Volta/ Cogeneration plant	Steam and power facility to supply electricity to the different plants	Will be implemented on PPP basis with PPA and feedstock supply agrement
Project Landing	Port and logistics	Netherlands-headquartered VTTI, ADNOC Logistics, AD Ports

Phase 1 will have an Industrial Chemicals Zone which will supply feedstock to the Light Industrial Zone and the Industrial Services Zone will provide electricity to the different plants. The Industrial Chemical Zone will produce 7 chemicals for usage in various industries.

Phase 2 will more than double the number of chemicals produced at the industrial hub. The low-carbon footprint steam cracker to supply feedstocks for various downstream units will bring new value chains to the UAE. Phase 2 is in a feasibility study and FEED is expected to commence in 2023.

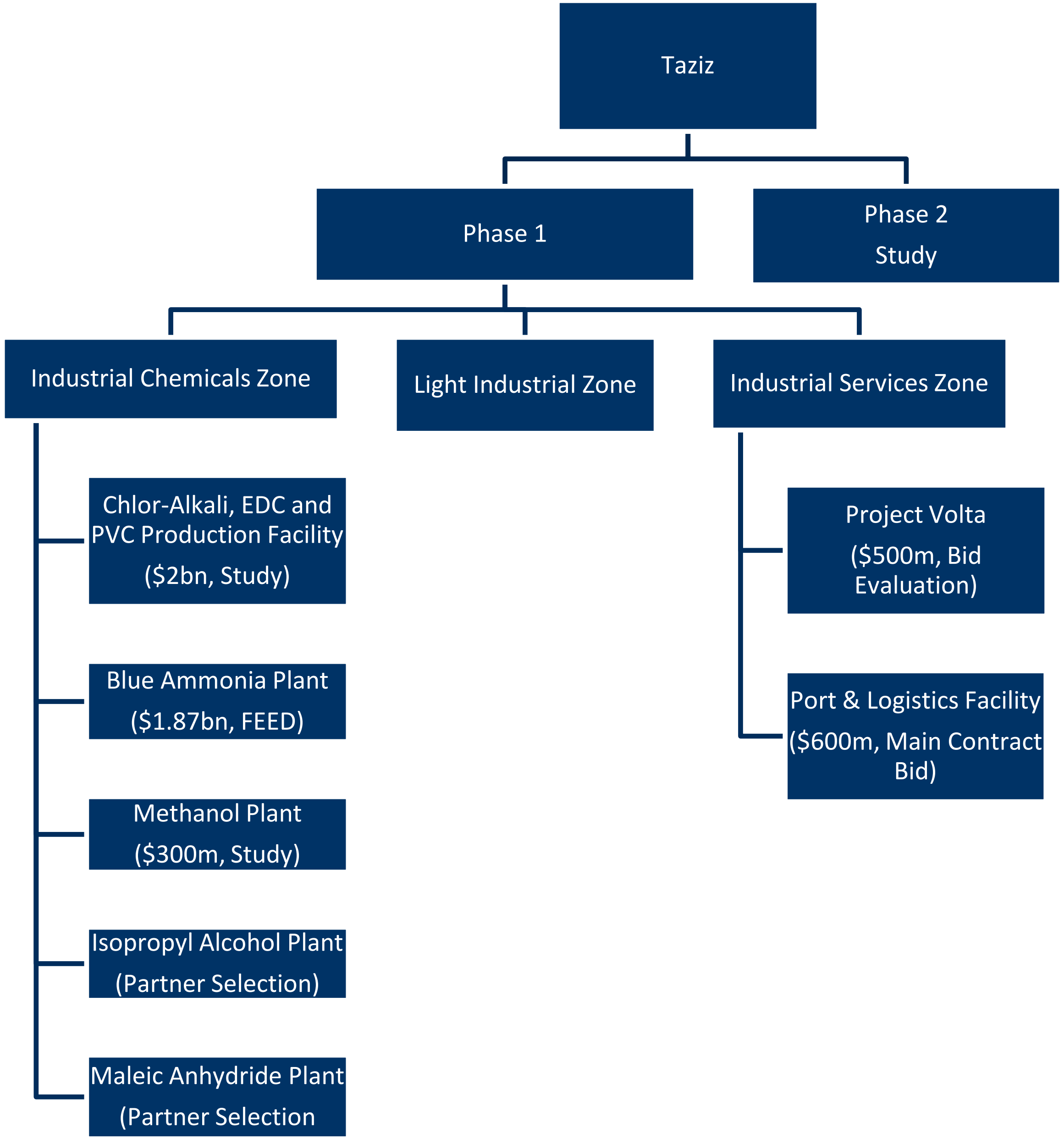
Key project facts

Project name	Ruwais Derivatives Park
Country	UAE
Location	Ruwais, Abu Dhabi
Client/Project Company	Taziz
Estimated cost (Budget)	$5bn for Phase 1
Scope	Construct production plants to manufacture a number of chemicals at a global scale, with opportunities for additional investors and partners to participate.
Project sponsors	TAZIZ [60:40 JV of Adnoc and ADQ]
FEED and Project Management Consultants (PMC)	Wood Group, WorleyParsons, SNC Lavalin, Fichtner
Start date	2022
Full completion	2028

Source: MEED Insight, and secondary sources


Ruwais City
Borouge Distribution Center
Conversion Park
BEAAT & NORM
Borouge 4
Refinery West
New Refinery
Refinery East
Derivatives Park
Borouge
Industrial Gases
Gas Processing
Crude Flexibility Project
PR5
Fertil
GUP
Al Manaief
GAS Processing Sulphur Handling terminal-2
Carbon Black Delayed Coker
Waste Heast Recovery Project
ADNOC Onshore
Gas Processing Sulphur Handling Terminal-1

Taziz - Petrochemical Derivative Complex



Taziz - Petrochemical Derivative Complex in Ruwais

Overview

The project is worth an estimated $5bn for Phase 1 and consists of 3 zones as part of the development of an industrial hub that brings together the feedstock, infrastructure, and complementing industrial activities in one modern industrial ecosystem.

Located within the 85 sq km Ruwais Industrial Complex in Abu Dhabi, Taziz comprises of three industrial zones: the Industrial Chemicals Zone, the Light Industrial Zone, and the Industrial Services Zone.

Chemicals is a priority sector for Operation 300bn, the UAE's industrial growth strategy.

Stakeholders

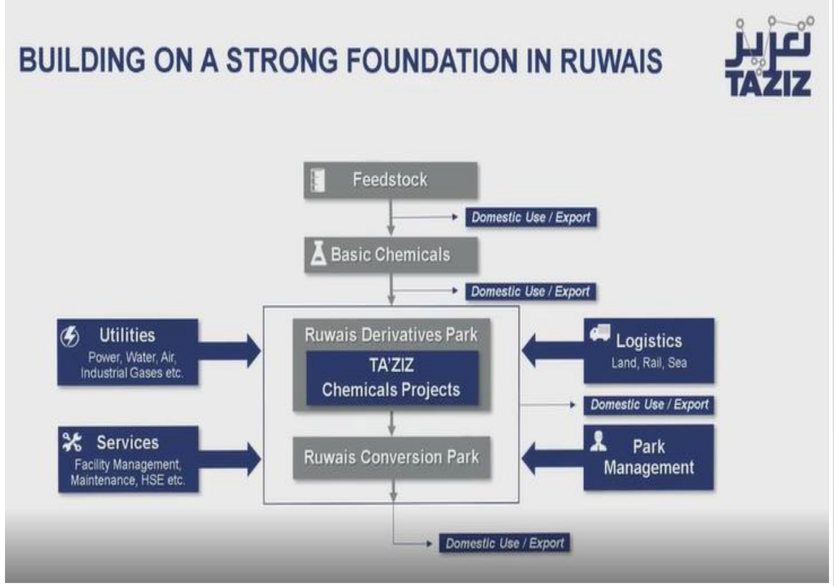
Taziz is a 60:40 joint venture of Adnoc and Abu Dhabi's industrial holding company ADQ. It is an industrial services and logistics ecosystem that drives, supports, and enables the growth of the Ruwais Industrial Complex and Abu Dhabi's chemicals, advanced manufacturing and industrial sectors.

Status

The first phase of Taziz growth continues to progress to advance the development of world-scale facilities for the production of EDC and chlor-alkali, PVC.

Site preparation at Taziz is underway and final investment decisions on the first phase of projects are expected before year end.

The EPC contract for the utility facilities and the EPC contract for the logistics facilities marine works have both been tendered, with EPC awards expected shortly



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Taziz Plants Breakdown

Project	Estimated Value ($m)	Status	FEED and Project Management Consultants (PMC)	Bidders	Award Date	Completion Date	Scope
Project Volta	500	Bid Evaluation	Fichtner Consulting Engineers	Alghanim International, Harbin, L&T Power, Orascom Contruction/ Elsewedy/ Metito	Q4 2022	2025	Estimated capacity of the cogeneration plant is 200MW. Adnoc signed agreements to develop a utilities facility with Abu Dhabi's Taqa
Chlor-Alkali, EDC and PVC Production Facility	2,000	Study	PMC: SNC Lavalin FEED Bidders: Worley, Technip, ThyssenKrupp	NA	Q4 2023	Q4 2027	Chlor-alkali production plant with a capacity of 940,000 t/y. EDC production plant with a capacity of 1.1 million t/y. PVC production plant with a capacity of 360,000 t/y. JV with India's Reliance and Abu Dhabi's Shaheen Chem Holdings Investment.
Blue Ammonia	1,870	FEED	Wood Group	NA	Q4 2023	Q4 2025	1 million t/y The final investment decision (FID) will be made by early 2023.
Project Landing/ Liquids Terminal	600	Main contract bid	WorleyParsons	PQ: NMDC, DEME, Van Oord, Jan De Nul, Boskalis	Q2 2023	Q4 2026	Agreement with Adnoc Logistics & Services and AD Ports Group. Netherlands-headquartered VTTI B V has joined the team building the logistics facility as an international partner.
Methanol Plant	TBC	Study	NA	NA	TBC	TBC	Construct a natural gas-to-methanol facility > 1.8 million t/y Agreement signed with Switzerland's Proman

KIPIC – Al Zour Petrochemical Complex

Kuwait Integrated Petrochemical Industries Company (KIPIC), a subsidiary of Kuwait Petroleum Corporation, is planning to develop Al Zour Petrochemical Complex, also known as PRIZe. The facility will be integrated with the adjacent Al-Zour refinery and will add a gasoline block, an aromatics block, the OCT unit, polypropylene units, and associated utility and offsite facilities to the existing site to produce nearly 2.7 million t/y of aromatics and polypropylene when commissioned.

The project will convert butane to isobutane and produce clean-fuels blending components, including methyl tert-butyl ether. Other outputs include 940,000 t/y of polypropylene, 1.4 million t/y of paraxylene, 420,000 t/y of gasoline, and 208,900 t/y of fuel annually using propane and naphtha from Al-Zour Refinery.

In November 2022, the revised and updated feasibility study for the project was completed by Edinburgh-based Wood Mackenzie.

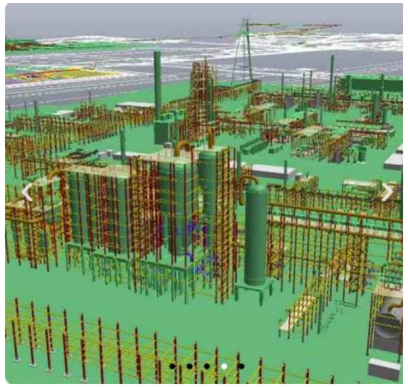
In June 2020, MEED reported that Wood Group had completed the FEED for the proposed $10bn Al-Zour project. Completion of the FEED work was delayed due to changes to the scope requested by the client. KIPIC made modifications to the project's FEED to make it commercially more feasible and yield greater value, according to industry sources.

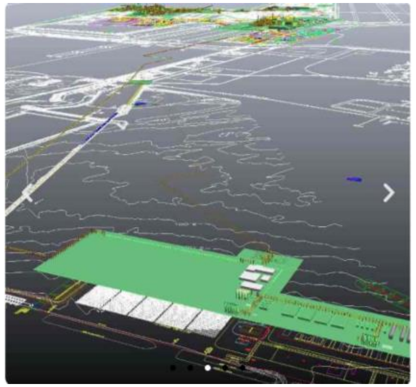
In April 2019, KIPIC awarded US-based McDermott a technology contract for the integrated low-pressure recovery (LPR) and olefins conversion technology (OCT) unit at the petrochemicals complex.

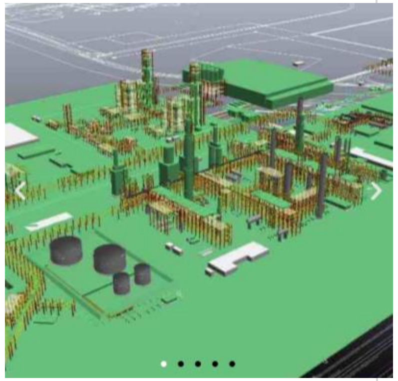
Prequalification of contractors for each of the three main EPC packages was competed in April 2021. Tender issue has been consistently delayed but it is hoped will be issued sometime in 20203 now that the revised feasibility has been done.

Key project facts

Project name	Al Zour Petrochemical Complex
Country	Kuwait
Location	Al-Ahmadi Governorate
Client/Project Company	KIPIC
Estimated cost (Budget)	$10bn
Scope	To integrate the proposed petrochemical complex with the Al-Zour refinery, using the products from the refinery as a feedstock and creating products such as polyethylene, polypropylene and ethylene glycol.
Project sponsors	KIPIC
FEED and Project Management Consultants (PMC)	Wood Group, Rendel, and Wood Mackenzie
Start date	2023
Full completion	2027







Source: MEED Insight, KIPIC and other secondary sources

KIPIC – Al Zour Petrochemical Complex

- **Al Zour Petrochemical Complex**
  - **Main EPC Works**
    - Al Zour Petrochemical Complex: Package 1
      Gasoline unit
      ($4,000m, Main contract PQ)
    - Al Zour Petrochemical Complex: Package 2
      Aromatics and olefins units
      ($4,000m, Main contract PQ)
    - Al Zour Petrochemical Complex: Package 3
      Export Utilities
      ($2,000m, Main contract PQ)
  - **Others**
    - Fire Station and Training Centre
      ($50m, Design)

Source: MEED Insight

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Q&A

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