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IRAN

OIL & GAS REPORT

INCLUDES 10-YEAR FORECASTS TO 2026

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Iran Oil & Gas Report Q3 2017

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BMI Industry View

BMI View: *Crude and condensate exports will begin to struggle from Q217 as more production is used in the domestic refining sector. Iran will be self-sufficient in all fuel types from 2017, with growing export capability. Over the longer term, the finalisation of the IPC will be essential to boosting foreign investment.*

Table: Headline Forecasts (Iran 2015-2021)

	2015	2016e	2017f	2018f	2019f	2020f	2021f
Crude, NGPL & other liquids prod, 000b/d	3,300.8	3,650.4	3,912.8	3,934.6	3,952.7	4,009.1	4,050.7
Refined products production, 000b/d	1,676.0	1,613.0	1,713.5	1,824.3	1,890.7	1,904.0	1,917.3
Refined products consumption & ethanol, 000b/d	1,544.4	1,501.3	1,550.2	1,610.2	1,647.6	1,682.2	1,707.5
Dry natural gas production, bcm	192.5	205.1	219.0	229.9	231.1	232.2	233.4
Dry natural gas consumption, bcm	191.2	195.4	208.5	212.9	214.0	215.0	216.6
Brent, USD/bbl	53.60	45.13	57.00	60.00	64.00	67.00	70.00

e/f = BMI estimate/forecast. Source: BMI, EIA, OPEC, JODI

Latest Updates And Key Forecasts

- Iranian crude and condensate production averaged 3.796mn b/d in Q117, complying with the OPEC targets but 667,000b/d higher than Q116.
- Crude and condensate exports averaged 2.350mn b/d in Q117, though planned loadings are expected to be lower in April and May as more condensate is used in domestic refining.
- Phase I of the Persian Gulf Star refinery began operations in April 2017, supporting Euro-IV standard gasoline, diesel and jet fuel.
- A new gasoline unit was launched at the Bandar Abbas refinery, boosting gasoline output by 25,000b/d.
- **Sinopec** is due to undertake a major upgrade at the Arak refinery to improve efficiency and refining depth.
- With the inauguration of South Pars phases 17-21 Iran now has 219bcm of natural gas production capacity, which is due to rise to 230bcm by Q218.
- Gas exports to Iraq are expected to rise via a pipeline in to the Diyala region from as early as May 2017.
- Gas imports from Turkmenistan have been halted since January 1 2017 due to payment issues.
- The status and terms of the IPC, a critical piece of attracting foreign investment, are still yet to be published.
- **Total** and **CNPC** remain stringing interested in South Pars phase 11, though have yet to finalise the deal.

- Refined fuels consumption remains muted as Euro-IV standard fuels are increasingly being rolled out across major cities - improving fuel efficiency.

SWOT

Oil & Gas SWOT

SWOT Analysis	
Strengths	▪ Iran has the world's fourth largest proven oil reserves (after Saudi Arabia, Venezuela and Canada) and second-largest proven gas reserves (behind Russia). ▪ Lifting costs are low, particularly at the onshore oil fields. ▪ Located in strategic geographical position for oil, gas and refined products exports, lying between Asia and Europe. ▪ Capable local companies to develop conventional onshore and offshore resources.
Weaknesses	▪ US sanctions related to human rights and terrorism prevents foreign companies from working with a number of local firms. ▪ The US banking system remains closed off to Iran preventing USD transactions. ▪ Low recovery rates from onshore fields ~ 20-30%. ▪ Given the underinvestment while under sanctions, the oil and gas industry is in need of substantial capital to improve its reliability and efficiency. ▪ Domestic oil and gas service and equipment companies lack advanced technological knowhow in areas such as EOR and LNG.
Opportunities	▪ Iran has outlined 50 oil and gas projects under the IPC for international investment, with substantial production potential for both oil and gas. ▪ Widespread deployment of enhanced oil recovery techniques could significantly boost output. ▪ The LNG and petrochemical sectors, offer tremendous potential given the gas and condensates production potential of the South Pars field. ▪ Improving refining quality and efficiency could support higher value add exports.

SWOT Analysis - Continued

Threats

- Uncertainty surrounding US foreign policy towards Iran and potential implications for new sanctions.
- Hardliners continue to maintain substantial influence over the oil and gas sector, which may limit the attractiveness or extent of new contracts.
- International companies will be reluctant to commit to the post-sanctions Iranian market, given many lost billions when sanctions were implemented.
- Low oil prices are substantially curbing the budgets of mid-sized international companies sought for smaller field developments.
- Challenges in finding new export markets for Iranian gas.
- The risks of internal political instability or war within the broader region are ever-present.

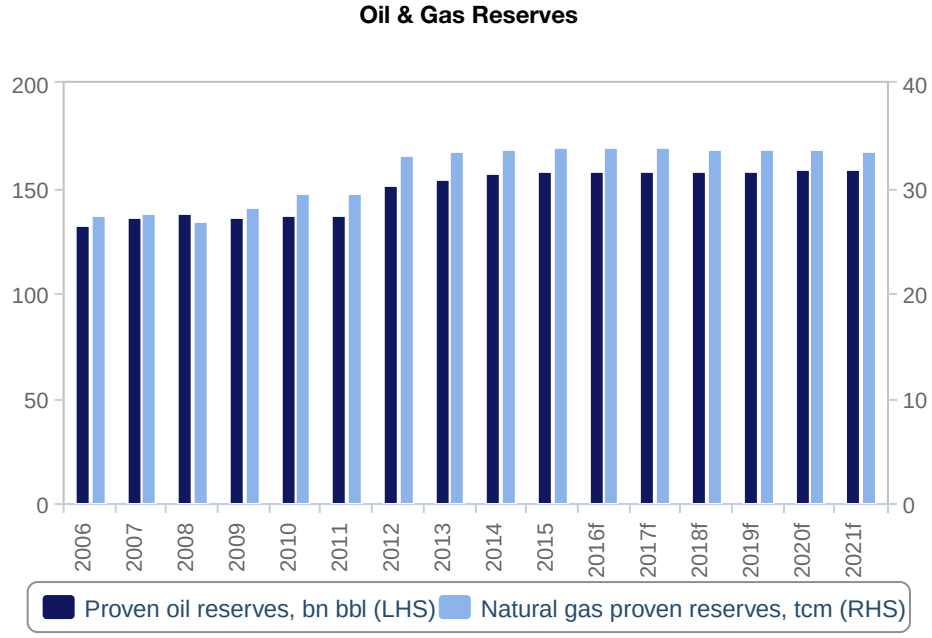
Industry Forecast

Upstream Exploration

BMI View: *Exploration in Iran will remain limited given the extensive amount of proven unproduced resource. The main focus will be on improving the understanding of existing fields.*

- Since the nuclear related international sanctions on Iran were lifted in January 2016, 18 agreements have been made with foreign and domestic companies for oil and gas field developments.
- The vast majority of the agreement are Memorandums of Understanding (MoUs) and are not legally binding.
- 14 of the agreements are for field evaluations.
- The only deals to have been signed under the Iranian Petroleum Contract were with local firm Persia Oil & Gas
- NIOC is due to resume exploration activities at the Moghan oil field.

Substantial Undeveloped Oil & Gas Reserves



f = BMI forecast. Source: EIA, BMI

Structural Trends

In the post-sanctions period, Iran has aggressively embarked on signing memorandums with international oil companies to conduct studies on major oil fields. Since nuclear sanctions were lifted in January 2016, Iran has signed 14 memorandums with major companies including Shell, Total, Schlumberger and Petronas. Studies for the same field have been awarded to multiple companies, such as the Azadegan field for which both Shell and Petronas have been offered studies. The Changuleh field has also been opened to study by DNO, PTTEP and Gazprom Neft.

The MoUs signed for field studies are not legally binding and there are no commitments to move projects into the development phase. The attractiveness of the IPC, which remains to be officially launched, will be essential in further progress.

Table: Post-Sanctions Agreements Signed In Iran

Company	Field	Date	Type
Lukoil	Ab Teymour/Mansouri	Jan 24 2016	MoU for Study
Total	South Azadegan	Mar 24 2016	MoU for Study
Wintershall	4 fields	Apr 12 2016	MoU for Study
OMV	Zagros area	May 4 2016	MoU for Study
Zarubezhneft	Aban/Paydar Gharb	Jul 13 2016	MoU for Study
Persia O&G	North Yaran Ph2	Oct 4 2016	IPC
Persia O&G	Koupal EOR	Oct 4 2016	IPC
Persia O&G	Maran EOR	Oct 4 2016	IPC
Tatneft	Dehloran	Oct 8 2016	MoU for Study
PGNiG	Sumar	Nov 6 2016	MoU for Study
Total (50.1), CNPC (30), Petropars (19.9)	South Pars Ph 11	Nov 8 2016	HoA
DNO	Changuleh	Nov 16 2016	MoU for Study
Pergas	Shadegan/ Rag-e Sefid	Nov 23 2016	MoU for Study
Schlumberger	Shadegan/ Rag-e Sefid/ Parsi	Nov 27 2016	MoU for Study
PTTEP	Changuleh/ Balal/ Dalamperi	Dec 6 2016	MoU for Study
Shell	South Azadegan/ Yadavaran/ Kish	Dec 7 2016	MoU for Study
Gazprom Neft	Changuleh/ Cheshmeh	Dec 13 2016	MoU for Study
Ghadir Investment Company	Kisha, Sepehr, Jofeir and phase III of Darkhowin	April 19 2017	MoU for Study

Source: BMI

Oil

Iranian oil and gas resources are well known, just underdeveloped, hence the large number of MoUs agreed to more extensively study the resource and production potential. Iran holds the fourth-largest oil reserves in the world, behind only Venezuela, Saudi Arabia and Canada. Onshore fields comprise more than 70% of total reserves and over 80% of onshore reserves are located in the Khuzestan basin, in south-western Iran, near the border with Iraq.

According to the EIA, more than 50% of Iran's onshore oil reserves are confined within just five giant fields, of which the Marun field - estimated to hold 22bn bbl - the Ahwaz field (18bn bbl) and the Aghajari field (17bn bbl) are the largest. Most of the remaining undeveloped proven oil resources are located in the offshore Persian Gulf, and amount to around 100mn bbl. The focus of oil exploration and development will be on these areas, once the Iran Petroleum Contract (IPC) is approved by the government and released.

The Iranian section of the Caspian Sea is thought to be highly prospective. In 2012, Iran announced an oil discovery in its portion of the Caspian Sea. Fars news reported the discovery could have more than 10bn bbl of potential crude. A significant find (about 2bn bbl of recoverable oil) made by **ConocoPhillips** in the Kazakh portion of the Caspian Sea, in addition to producing fields between Azerbaijan and Turkmenistan have proven the potential of the area. Nevertheless, the cost of offshore exploration and the ongoing maritime border disputes between Iran, Azerbaijan and Turkmenistan will prevent development projects until resolved.

Despite large oil reserves, we note that producing Iranian oil fields are very mature. While reserves are high, years of international sanctions, crude export restrictions and the lack of access to capital and technology to develop more challenging fields, has prevented Iran from maximising production at its largest fields. Approximately 60% of Iran's crude oil production comes from oil fields that were discovered before the nationalisation of the oil industry over 60 years ago. As a result, new foreign investment into Iran will also result in greater investment into exploring the geology of existing fields to better understand the full resource potential and optimise production plans. This will offer substantial upside to reserves estimates.

Under the IPC, there are 29 oil fields on offer of which 21 are offshore and eight onshore. A further 17 have already been developed and will tender for improved recovery, while the remaining 12 are known, but undeveloped.

Gas

Similar to oil, the vast majority of Iran's gas resources are also well known. Iran holds the second-largest gas reserves in the world, estimated at 33.6trn cubic metres (tcm). Reserves are predominantly from offshore non-associated fields (62% of total reserves). The giant South Pars/North Field gas structure, spread across Iran and Qatar, accounts for about two thirds of Iran's total proven reserves. Onshore gas reserves are found in both associated (19%) and non-associated (19%) fields. Other large natural gas fields include the Kish, North Pars, Tabnak, Forouz, Kangan and Ferdowsi fields.

There is still substantial potential in existing gas resources, negating the need for major exploration programmes. Similarly to the oil sector, international sanctions have limited Iran's ability to access sufficient capital and technology to develop its enormous reserves, and to push with further exploration. Weak oil prices are also straining government revenues and the budget towards oil and gas exploration and development. This is also the case for producing fields with insufficient investment towards field maintenance.

Under the IPC 21 natural gas projects are due to be offered. 8 will be offshore, while 13 will be onshore. The offshore projects are all existing but undeveloped gas fields, while the onshore fields are also largely undeveloped.

Upstream Projects

Table: New Projects Expected To Be Offered Post-Sanctions

	Border Oil Fields		Border Gas Fields		Other Oil Fields		Other Gas Fields
1	S. Azadegan Ph 1	15	S. Pars Ph 11	23	Mansuri Ph 2	37	Dey
2	N. Azadegan Ph 2	16	Salman Ph 1	24	Band-e-Karkheh	38	Sefidzakhor-Halegan
3	Yadavaran Ph 2	17	Salman Ph 2	25	Jofayr	39	Sefidbaghoun
4	Reshadat	18	Farzad A	26	Somar	40	Aghar Ph 2
5	Foroozan	19	Farzad B	27	Danan Ph 2	41	Farashband: Refining Facilities
6	S. Pars Oil Layer Ph 1	20	Reshadat	28	Darquain Ph 3	42	Varavi: Boosting Gas Pressure Stations
7	Arvand	21	Dalan Kangan At Balal	29	Susangerd	43	Kangan: Boosting Gas Pressure Stations
8	Dehloran PhÊ 2	22	Arash	30	Sepehr	44	Nar: Boosting Gas Pressure Stations
9	Peydar Gharb			31	Cheshmeh Khosh	45	Homa: Boosting Gas Pressure Stations
10	Aban Ph 2			32	Resalat	46	Behregansar Gas Layer
11	Sohrab			33	Abuzar	47	Tangebijar Ph 2
12	Changouleh			34	Doroud	48	Kish Ph 3 3D Seismic
13	Esfandiar Ph 1			35	Norouz	49	Kish Ph 1
14	Arash			36	Zagheh		

Source: Iran Oil Ministry

Upstream Production - Oil

BMI View: *Crude oil and condensate production averaged 3.796mn b/d in Q117, an increase of around 670,000b/d y-o-y. We do not anticipate production much growth beyond Q117 levels, with long-term upside dependent on the success of the new IPC.*

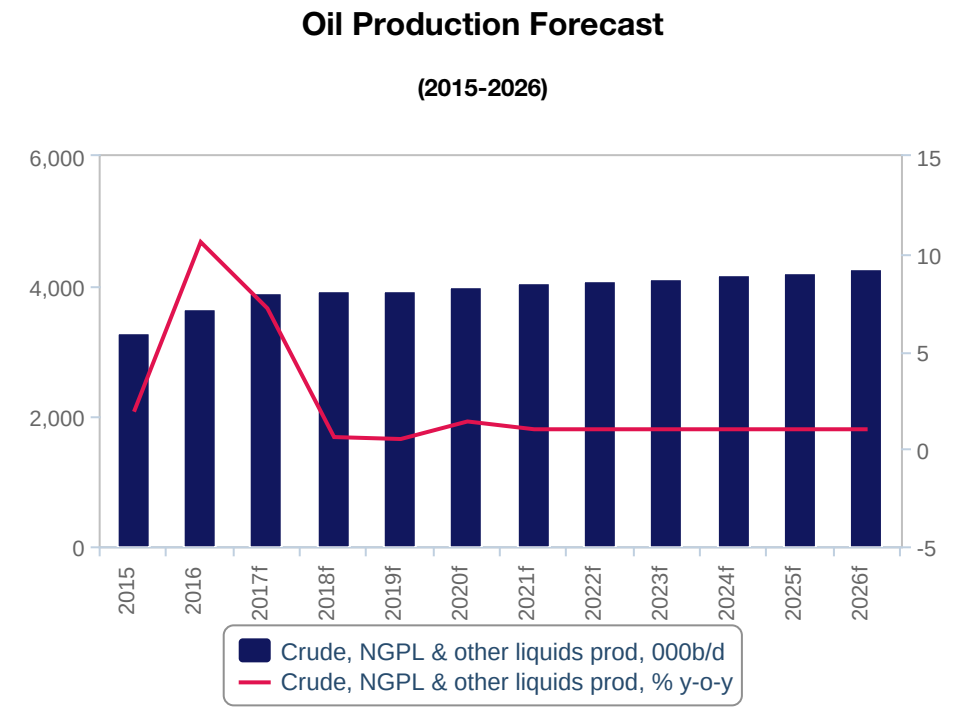
Latest Updates

- Iranian crude production averaged 3.796mn b/d in Q117, complying with the OPEC targets but 667,000b/d higher than Q116.
- Shipping data indicate that April and May exports are due to be lower than the 2.2mn b/d Q117 average.
- Production from the South Pars oil layer began in April at a rate of 35,000b/d.
- 12,000b/d increase is being planned for the offshore Forouzan oil field by September.
- A 45,000b/d increase is planned for the Salman field.
- The IPC has yet to be officially released.

Structural Trends

Iranian oil production comes from 34 fields, of which 22 are onshore and 12 offshore. The country's largest producing field is the onshore Ahwaz-Asmari field, located in the Khuzestan province, with a production capacity of about 750,000b/d. This is followed by the Amrun and Gachsaran fields. The three fields are located in the Khuzestan province.

In Q117, production averaged 3.796mn b/d, a 21.3% year on year increase and well above the 2016 average of 3.5mn b/d. We forecast average crude and condensate production in 2017 of 3.77mn b/d, indicating production will stagnate over the remainder of 2017.



f = BMI forecast. Source: OPEC, JODI, National Sources, BMI

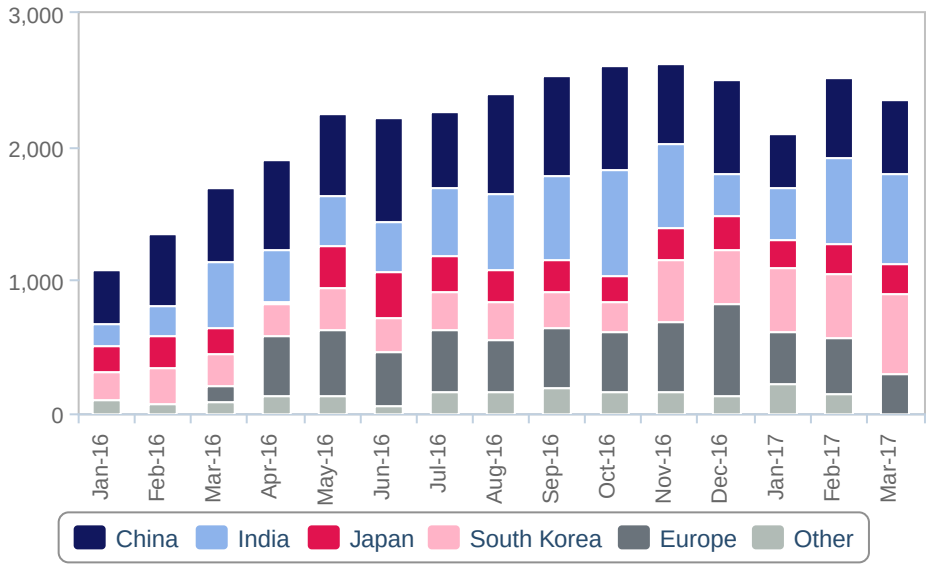
Oil Production Tapering Off

After adding a cumulative 660,000b/d from December 2015 to December 2016, Iranian oil production is stabilising in the 3.7-3.8mn b/d region. While this fits with the prescribed level of production set by OPEC in the November 2016 agreement, in our view it also meets the upper limit of Iran's current production capability. On a year-on-year basis, we expect an average annual increase of 260,000b/d of oil and condensate in 2017, with production rising to 3.76mn b/d. With the expected rollover of OPEC market intervention in Q217, output will stabilise near the OPEC agreed production quota of 3.797mn b/d.

Gas for oil substitution in the domestic power sector has been key to freeing up more oil, while new oil production capacity - from the Yadavaran (85,000b/d) and North Azedegan (75,000b/d) fields, as well as condensate volumes from new phases of South Pars (~60,000b/d) has added around 220,000b/d of capacity to increase output further.

Europe Key To Maintain Exports

Iran Crude Exports By Destination (000b/d)



Source: Customs Data, Shipping Data, BMI

We remain conservative with our long-term forecasts for Iran given unknowns regarding the state of existing fields and infrastructure under sanction. Following the initial gains, production will stagnate under our current scenario, with new NIOC-led developments and increased levels of gas reinjection sufficient to manage natural declines.

We also remain cautious on investor interest in new oil contracts, which remain to be officially launched. While the IPC structures are rumoured to be more attractive than the previous buy-back contracts, it may not be sufficient to counter the costs of doing business in Iran. Iran is still restricted from the US banking system, preventing USD transactions. This will increase the difficulties in bring investment into Iran and repatriating profits. In addition, targeted sanctions on Iranian individuals and companies - related to human rights and terrorism issues -remain, preventing foreign companies from working with sanctioned players in the Iranian oil sector.

As such, we expect predominantly national oil companies from Russia and Asia, and smaller European companies as those willing to take higher risk and invest in Iran. 29 companies have pre-qualified for the IPC tenders including European majors **Shell**, **Eni** and **Total**.

We have factored in some increases in oil production from potential new contracts post 2020, though note the nature of this is highly speculative given the uncertainties with contracts and development timeframes. Iran is targeting 5.7mn b/d of production capacity by March 2021, which, while we believe is possible given the below-ground potential, will not be achieved. We note a considerable upside risk to our long-term outlook for Iranian oil production (post-2020).

Still Awaiting IPC

The Iranian Petroleum Contract has the potential to transform Iranian production, though delays to its official release are cause for concern. The contract was initially planned for November 2015 and has been repeatedly delayed, largely by hardliner oppositions to relinquishing too much control over the oil sector. The long-term outlook will therefore depend on oil price, political stability, the uptake of new contracts and related negotiation, the ease of doing business and efficient banking. We see upside risk from the following areas:

- **New Wells, IOR, EOR - Boosting Production At Existing Fields:** Iran's producing oil fields are mature, with over 60% of oil production coming from oil fields first developed over 60 years ago. Decades of underinvestment, lack of access to key technology and restrictions to finance, have resulted in particularly low recovery rates at existing fields of between 20-30%. New wells at existing fields and the increased application of improved oil recovery (IOR) and enhanced oil recovery (EOR) methods will be a priority for the government as a way to boost production from the field developments offered to foreign investors. This provides upside risk to our oil production and export forecast from 2018 onwards.
- **New Field Developments - Upside Risk From 2020:** New fields will need to be developed for the country to significantly boost its production capacity beyond pre-sanction levels. Iran is targeting 5.7mn b/d of production capacity by 2021. This provides substantial upside risks to our production forecast from around 2020, given a three to four year negotiation, engineering and development timeframe. While it is impossible to pin-point quantities, Iran's large oil reserves could in theory allow additional upside production risk of 1-3mn b/d by 2025. A number of fields could provide a large increase to Iran's long-term crude oil production capacity, with border field developments looking to take priority (*see below*). These could attract the most interest given joint development with neighbouring countries decreases the risk working purely with Iran.

Table: New Oil Projects On Offer

Border Oil Fields	Other Oil Fields & Expansion Projects
S. Azadegan Ph 1	Mansuri Ph 2
N. Azadegan Ph 2	Band-e-Karkheh
Yadavaran Ph 2	Jofayr
Reshadat	Somar
Foroozan	Danan Ph 2
S. Pars Oil Layer Ph 1	Darquain Ph 3
Arvand	Susangerd
Dehloran PhÊ 2	Sepehr
Peydar Gharb	Cheshmeh Khosh
Aban Ph 2	Resalat
Sohrab	Abuzar
Changouleh	Doroud
Esfandiar Ph 1	Norouz
Arash	Zagheh

Source: Iran Oil Ministry

Upside Risk Depends On Contract Terms

We note that the interest by international oil companies (IOCs) will depend on the attractiveness of the new oil contracts. New contract structures have been proposed, which will be more favourable than the previous buy-back model. While the full extent of the contract scope is unclear and hardliner pressure may have diluted some of the terms, the following is expected:

- Agreements will remain risk service contracts.
- They will allow for full cost recovery.
- Fee-per-barrel will be linked to the oil price and complexity of each project.
- There will be one contract for both oil and gas developments.
- The contract term will be extended up to 25 years, inclusive of exploration and production periods.

Table: Oil Production (Iran 2015-2020)

	2015	2016	2017f	2018f	2019f	2020f
Crude, NGPL & other liquids prod, 000b/d	3,300.8	3,650.4	3,912.8	3,934.6	3,952.7	4,009.1
Crude, NGPL & other liquids prod, % y-o-y	1.9	10.6	7.2	0.6	0.5	1.4

f = BMI forecast. Source: OPEC, JODI, National Sources, BMI

Table: Oil Production (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Crude, NGPL & other liquids prod, 000b/d	4,050.7	4,092.8	4,135.3	4,178.3	4,221.8	4,265.7
Crude, NGPL & other liquids prod, % y-o-y	1.0	1.0	1.0	1.0	1.0	1.0

f = BMI forecast. Source: OPEC, JODI, National Sources, BMI

Upstream Production - Gas

BMI View: *Gas production will rise in 2017 from the start up of phases 17, 18, 19, 20 and 21 of South Pars gas field. Long-term upside depends on the interest of foreign investment in gas projects and the creation of new sources of demand and export infrastructure.*

Latest Updates

- South Pars phases 17, 18, 19, 20 and 21 were all inaugurated in April 2017, bringing over 60bcm of new production capacity.
- Gas processing capacity has reached 220bcm and will reach 230bcm by Q218, according to **National Iranian Gas Company**.
- More than 20 gas projects are due to be offered for foreign investment: Indian companies have shown interest in the Farzad B project; while Total, Russian and Chinese companies are interested in South Pars phase 11.
- Majors have indicated more interest in Iran's gas potential rather than oil.

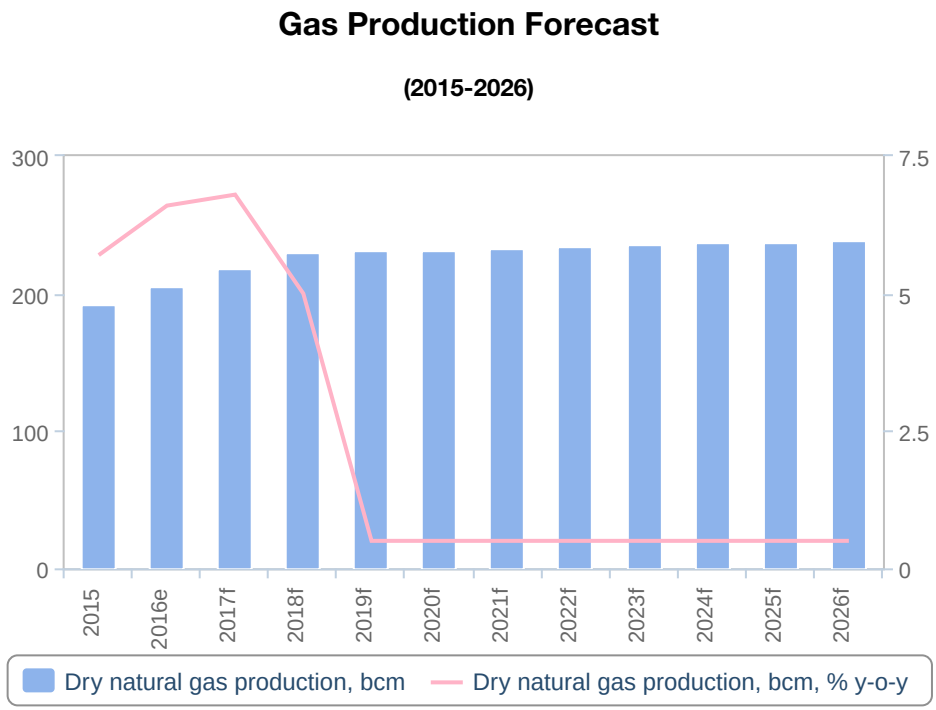
Structural Trends

Gas production capacity in Iran has hit 600 million cubic metres per day (Mcm/d), approximately 219bcm per year, and is due to increase to 630mcm/d by Q218 (230bcm). Over March and April 2017, phases 17, 18, 19, 20 and 21 of the South Pars gas field were all inaugurated and are ramping up production. Combined the five new phases have a production capacity of 168mcm/d (61bcm) of gas and 235,000b/d of condensate; however none of the phases are currently producing at maximum capacity.

Gas production reached 192bn cubic metres (bcm) in 2015 and we see this rising to 205bcm in 2016 and 219bcm in 2017. From 2017 our forecast takes into account the start of phases 17, 18, 19, 20 and 21 of South Pars, which are all operational but are producing below full capacity. Combined, phases 17-21 added over 60bcm of new gas production capacity in 2017.

Beyond these major project completions we remain cautious, but see strong upside risk to gas production, depending on:

- The speed and scope of the return of international oil companies (IOCs) to the Iranian energy sector.
- The potential development of South Pars Phases 11, 13, 14, 22, 23 and 24.
- New gas field developments under the IPC such as Farzad and Kish.
- The construction of the required gas export infrastructure.



f = BMI forecast; Source: BMI, EIA, IEA, OPEC

Substantial Upside Risk To Post-2020 Production

Considering Iran has the second largest gas reserves in the world, the country has the potential to become one of the largest gas producers globally. The removal of sanctions will open more than 20 natural gas projects up to international investment. We have not yet included these in our forecast given uncertainty in international interest, but see strong upside to production post 2020 depending on the level of uptake. A number of phases of South Pars are yet to be developed and could add considerable production capacity over the forecast.

- **South Pars Phases:** Phases 11, 13, 14 and 22-24 have not yet been taken into account in our forecasts. The timing of these phases remains uncertain and could depend on foreign interest. South Pars Phase 11 is on the list of gas projects expected to be offered by the Oil Ministry. Together, the ramp-up to full capacity of remaining phases could add a cumulative 102bcm of additional gas production capacity.

Table: South Pars Project Phases

Phase	Natural Gas Production Rate (mcm/d)	Condensates Production Rate (b/d)	Start-Up
1	28	40,000	2004
2 + 3	56	80,000	2002
4 + 5	56	80,000	2004
6 + 7 + 8	109	156,000	2009
9 + 10	56	80,000	2011
11	56	80,000	na
12	84	120,000	2015
13	56	80,000	na
14	56	77,000	na
15 + 16	56	80,000	2016
17 + 18	56	80,000	2016/17
19	56	77,000	2017
20 + 21	56	75,000	2017
22 + 23 + 24	56	77,000	na

na = not available. Source: EIA, Pars Oil and Gas Company, Industry Research

- **Other Fields:** Apart from South Pars, Iran has several mega-fields waiting to be developed, of which Kish (2tcm of recoverable reserves), North Pars (1.4tcm), Golshan (1.1tcm), Lavan (1.8tcm), Forouz B (700bcm), Ferdowsi (308bcm) and Khayyam (204bcm) pose immense upside risk to Iran's gas production forecast, with additional upside risk of several hundred bcm. Kish, Farzad A and B are all on the list of proposed new fields developments under the IPC.

Table: Gas Projects Proposed Under The IPC

Border Gas Fields	Gas Fields
S. Pars Ph 11	Dey
Salman Ph 1	Sefidzakhor-Halegan
Salman Ph 2	Sefidbaghoun
Farzad A	Aghar Ph 2
Farzad B	Farashband: Refining Facilities
Reshadat	Varavi: Boosting Gas Pressure Stations
Dalan Kangan At Balal	Kangan: Boosting Gas Pressure Stations
Arash	Nar: Boosting Gas Pressure Stations

Gas Projects Proposed Under The IPC - Continued

Border Gas Fields	Gas Fields
	Homa: Boosting Gas Pressure Stations
	Behregansar Gas Layer
	Tangebijar Ph 2
	Kish Ph 3 3D Seismic
	Kish Ph 1

Source: Iranian Ministry of Oil

We are not including these fields within our gas production forecast at the time of writing because:

- The IPC, which will need to be finalised to push these projects forward, remains elusive.
- Developing these fields will take significant capital and time. It is still too early to determine which projects will be pushed forward and when.
- IOCs interest in developing these fields is remains uncertain. As with oil, foreign companies' interest in developing these fields will depend on the attractiveness of the contracts and willingness to commit substantial capital expenditure in a high risk environment.
- The build-up of the necessary processing, transport and export infrastructure for the gas will also prohibit developments. Much of the gas to be produced from these new fields will be geared towards exports, requiring substantial investment and a long-term commitment to Iran. A build up of trust and guarantee of long-term political stability will be essential.

In a best-case scenario, one or two of these fields could come online in the early 2020s. A large production ramp-up from most new fields will however most likely materialise outside of our 10-year forecast period.

Table: Gas Production (Iran 2015-2020)

	2015	2016e	2017f	2018f	2019f	2020f
Dry natural gas production, bcm	192.5	205.1	219.0	229.9	231.1	232.2
Dry natural gas production, bcm, % y-o-y	5.7	6.6	6.8	5.0	0.5	0.5
Dry natural gas production, % of domestic consumption	100.6	105.0	105.0	108.0	108.0	108.0

e/f = BMI estimate/forecast. Source: BMI, EIA, IEA, DOE, National Sources

Table: Gas Production (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Dry natural gas production, bcm	233.4	234.6	235.7	236.9	238.1	239.3
Dry natural gas production, bcm, % y-o-y	0.5	0.5	0.5	0.5	0.5	0.5
Dry natural gas production, % of domestic consumption	107.8	107.5	107.0	106.6	106.1	105.6

f = BMI forecast. Source: National sources, BMI

Refining

BMI View: *The phased completion of the Persian Gulf Star refinery will reduce Iran's fuels import needs from March, with Iran switching to a net gasoline exporter. Refinery developments will focus on upgrades over greenfield projects.*

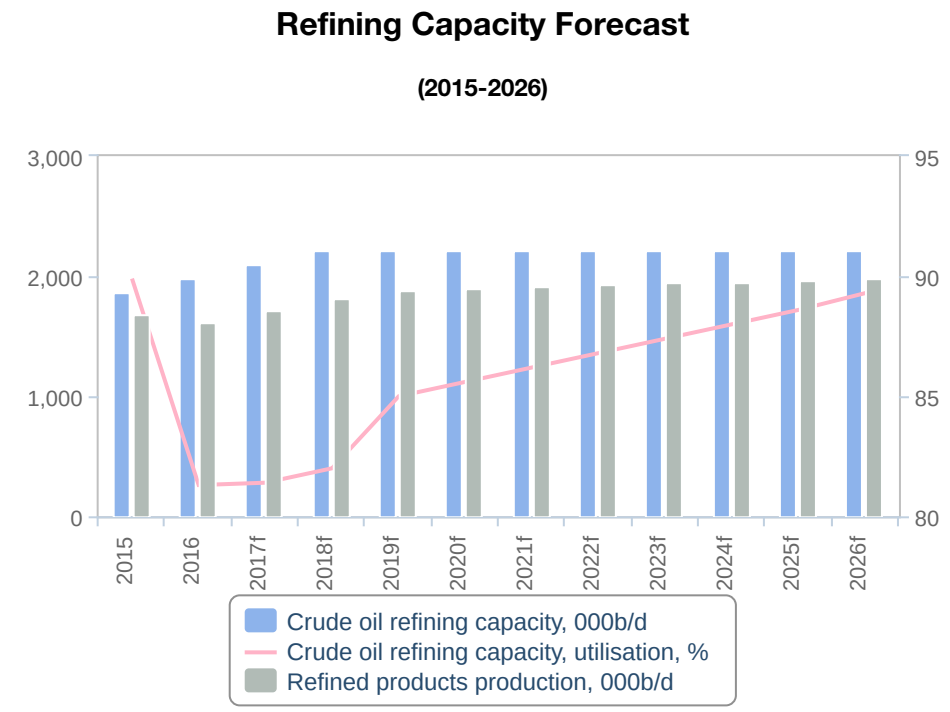
Latest Updates

- The first phase of the Persian Gulf Star refinery began commercial operations in April, increasing domestic consumption of condensate but boosting gasoline output.
- The subsequent two 120,000b/d phases of the Persian Gulf Star refinery are due to come on four and eight months after phase 1. Products will be to Euro-IV standard.
- A new Euro-IV standard gasoline unit was launched at the Bandar Abbas refinery, increasing production capacity at the refinery by 25,000b/d.
- USD14bn has been allocated by the government to support the upgrade of the refining sector, and in particular the larger refineries at Isfahan, Tehran and Tabriz.

Structural Trends

With the start up of the Persian Gulf Star refinery, Iran now has seven refineries with more than 100,000b/d capacity. In addition, Iran has three smaller refining facilities of significance, all with less than 60,000b/d each. While refining capacity estimates vary wildly due to the lack of reliable data, we estimate combined capacity, stands at 1.984mn b/d in Q217. All refineries are operated by the **National Iranian Oil Refining and Distribution Company** (NIORDC), a **National Iranian Oil Company** (NIOC) subsidiary.

Refinery output in 2016 saw a 3.8% reduction, mainly due to weaker distillate demand and modernisation work at gasoline units. While products prices remain cheap on the global market, Iran continues to progress its modernisation programmes, specifically in regards to gasoline output. The government has outlined USD14bn to support the development of the sector in addition to the new unit installed at the Bandar Abbas refinery in Q117. The commissioning of the first phase of the Persian Gulf Star facility in April 2017, will support a substantial increase in gasoline output over the remainder of 2017. Subsequent phases of the Persian Gulf Star facility as well as efficiency improvements across the Iranian refining sector, will increase capacity and improve product output.



f = BMI forecast. Source: EIA, JODI, BMI

Table: Major Iranian Refineries

Refinery	Crude distillation capacity (000 b/d)
Abadan	400
Isfahan	375
Bandar Abbas	330
Arak	260
Tehran	250
Persian Gulf Star Ph 1	120
Tabriz	110
Lavan Island	60
Shiraz	58
Kermanshah	21
	1,984

Source: NIORDC

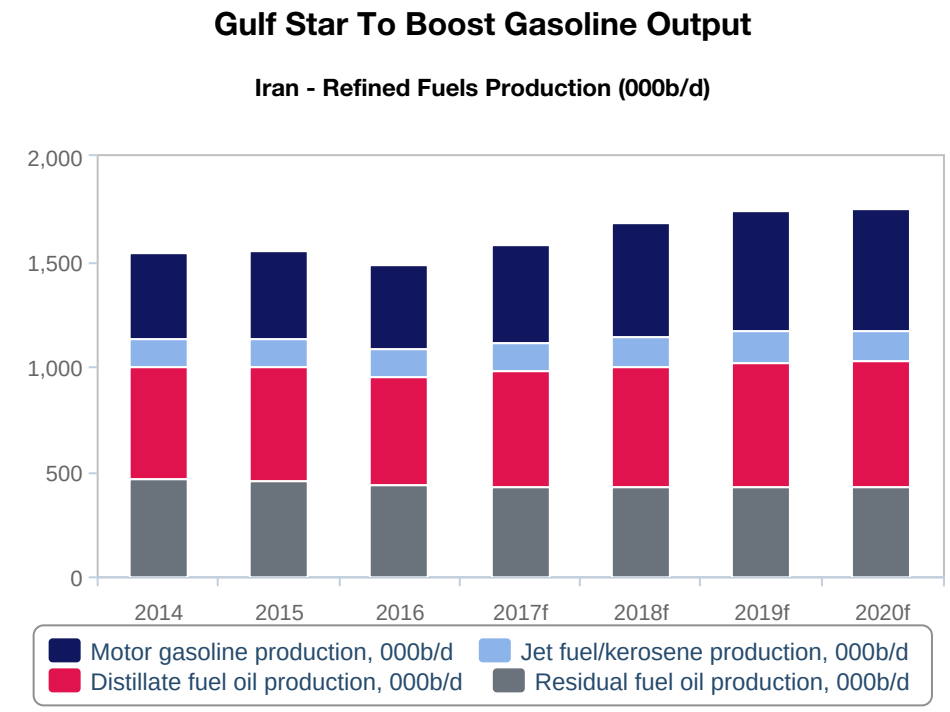
Gasoline Boost From Persian Gulf Star

Iran has traditionally been a net refined fuel exporter, though the country has generally been a net importer of gasoline. Given the constraints of sanctions on the Iranian budget, since 2012 the country has focused on maximising gasoline production to become self-sufficient.

We expect this to be realised in 2017 with commercial operations at the Persian Gulf Star refinery beginning in April 2017. The refinery will have a 360,000b/d capacity, though is being constructed in three 120,000b/d phases. The subsequent two phases of the facility are planned to follow four and eight months after phase one respectively, hence our forecast for capacity growth in 2017 and 2018.

The facility has been specifically designed to process natural gas condensate - which will be derived from the new South Pars phases inaugurated over 2016 and 2017 - into fuels. Gasoline and high octane gasoline will be the target product with 62% of capacity (226,000b/d), 24% (88,000b/d) will be diesel and 12% (45,000b/d) jet fuel and LPG.

The Gulf Star refinery will see Iran's refining capacity increase to 2.2mn b/d by 2018. More importantly, once fully operational, the facility will make Iran more than self-sufficient in gasoline production.



f = BMI forecast. Source: JODI, BMI

Modernisation Over New Capacity

There are several other proposals for new refinery expansions and greenfield refineries, though other than the Persian Gulf Star, none are included in our forecast. Given the Gulf Star is forecast to make Iran self-sufficient in refined fuels, and the international fuels market outlook indicates healthy supply, we do not expect investment into new greenfield oil refining capacity.

Iran's existing facilities will, however, target foreign investment to improve efficiencies and upgrade fuels standards to Euro-4 and above. Saipem has reportedly signed an MoU to upgrade the Pars Shiraz and Tabriz refineries, Korean companies are reportedly interested in upgrading the Isfahan refinery, while a Japanese consortium is looking at modernising Bandar Abbas. The government has allocated as much as USD14bn to support these projects. NIOC is also finalising a USD1.2bn contract with Sinopec to upgrade the Abadan refinery to produce Euro-V standard gasoline and diesel, while reducing fuel oil output. We expect this trend to result in more efficient fuels production and the production of cleaner burning fuels.

Table: Modernisation Projects

Refinery	Capacity b/d	Plan	Companies Linked
Pars Shiraz	120,000	Upgrade	MoU with Saipem
Tabriz	110,000	Upgrade	MoU with Saipem, JX Nippon Oil & Energy
Lavan	60,000	Boost Gasoline Production	s
Isfahan	375,000	Residue FCC upgrade	Korean Consortium
Bandar Abbas	330,000	Modernisation Feasibility	Chiyoda, Mitsui
Abadan	400,000	Modernisation	NIORDC

Source: BMI, news reports

Table: Refining Capacity And Refined Products Production (Iran 2015-2020)

	2015	2016	2017f	2018f	2019f	2020f
Crude oil refining capacity, 000b/d	1,864.0	1,984.0	2,104.0	2,224.0	2,224.0	2,224.0
Crude oil refining capacity, % y-o-y	1.6	6.4	6.0	5.7	0.0	0.0
Crude oil refining capacity, utilisation, %	89.9	81.3	81.4	82.0	85.0	85.6
Refined products production, 000b/d	1,676.0	1,613.0	1,713.5	1,824.3	1,890.7	1,904.0
Refined products production, % y-o-y	0.5	-3.8	6.2	6.5	3.6	0.7
Refined products production & ethanol, 000b/d	1,676.0	1,613.0	1,713.5	1,824.3	1,890.7	1,904.0
Refined products production & ethanol, % y-o-y	0.5	-3.8	6.2	6.5	3.6	0.7

f = BMI forecast. Source: National sources, BMI

Table: Refining Capacity And Refined Products Production (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Crude oil refining capacity, 000b/d	2,224.0	2,224.0	2,224.0	2,224.0	2,224.0	2,224.0
Crude oil refining capacity, % y-o-y	0.0	0.0	0.0	0.0	0.0	0.0
Crude oil refining capacity, utilisation, %	86.2	86.8	87.4	88.0	88.6	89.3
Refined products production, 000b/d	1,917.3	1,930.7	1,944.2	1,957.9	1,971.6	1,985.4
Refined products production, % y-o-y	0.7	0.7	0.7	0.7	0.7	0.7
Refined products production & ethanol, 000b/d	1,917.3	1,930.7	1,944.2	1,957.9	1,971.6	1,985.4
Refined products production & ethanol, % y-o-y	0.7	0.7	0.7	0.7	0.7	0.7

f = BMI forecast. Source: BMI, NIORDC, JODI

Refined Fuels Consumption

BMI View: *Fuels consumption is expected to return to growth from in 2017 with improving industrial and consumer demand. A gradual improvement in economic growth will drive steady but consistent fuels demand growth over the next ten years.*

Latest Updates

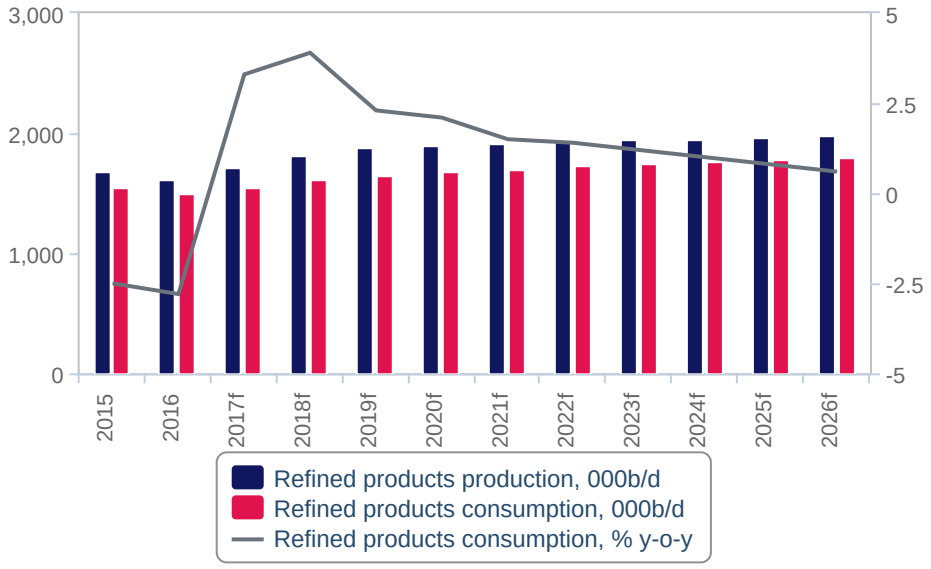
- Iranian refined fuels consumption averaged 1.501mn b/d in 2016, down 2.8% on 2015.
- Diesel consumption fell 9.5%, and gasoline consumption was 5.5% lower in 2016.
- Diesel consumption will increase as industrial activity and construction growth accelerate.
- Iran is increasing supply of Euro-IV standard fuels, particularly in the larger cities.
- Iran's Fuel Conservation Organization is planning to spend USD16bn on energy efficiency projects to reduce fuels consumption.

Structural Trends

The reorganisation of refined fuel subsidies since 2010, and its replacement with cash handouts, has substantially curbed refined fuels consumption over recent years. With 2017 being an election year, we do not expect any changes to either further reform the system or amend the handouts. Diesel, which remains in surplus in Iran, continues to be centrally priced below international markets, though gasoline prices in Iran are now closer to global market prices.

Refined Products Production And Consumption Forecast

(2015-2026)



e/f = BMI estimate/forecast. Source: BMI, EIA, JODI

Demand for gasoline and diesel will return to an uptrend, as the economy improves as it transition in the post-nuclear sanctions era. We expect a return to demand growth in 2017, with more capital inflows supporting an improved outlook for the Iranian economy and consumers. In particular we see growing demand for distillates from the construction and industrial sectors and gasoline from consumers.

Fuel Subsidy Changes

Sanctions on the energy sector stemmed Iranian government income, forcing a revision of the fuels subsidy programme and driving three rounds of subsidy cuts:

- **Phase 1:** Iran initiated the first phase of subsidy reform at the end of 2010, decreasing subsidies on energy prices.
- **Phase 2:** Was implemented at the end of April 2014, with fuel subsidy reductions on gasoline, diesel and compressed natural gas (CNG). The cost of gasoline has increased from IRR4,000 (USD0.16) per litre to IRR7,000 (USD0.27) per litre, an increase of 75%, while gasoline sold outside quotas rose to IRR10,000 (USD0.39) per litre.

- **Phase 3:** Iran proceeded with a third wave of subsidy cuts in May 2015, raising gasoline prices to IRR10,000 (USD0.35) per litre, up from IRR7,000.

Gasoline pump prices in Iran are currently around USD0.36/litre, while diesel prices remained more heavily discounted at USD0.09/litre.

Table: Approximate Gasoline & Diesel Costs

	Iranian Domestic Price	Approximate Global Market Price	Average Global Pump Price
Gasoline, USD/litre	0.36	0.40	1.03
Diesel, USD/litre	0.09	0.52	0.91

Note: Accurate as of May 2017. Source: Globalpetrolprices.com, Bloomberg

Fuel Price Changes Unlikely In Election Year

Lower oil prices have exacerbated fiscal challenges in Iran and will likely keep pressure on the government to maintain its direction of reform towards market pricing structures - a trend we are seeing accelerate in other Gulf States as petroleum revenues are low.

That said, inflation in Iran has been high, impacting consumer spending. With the May 2017 election approaching we do not expect further subsidy changes to be enacted. That said, we believe further reform to the subsidy system will still be critical in decreasing the budget deficit over the longer term. While the increase in oil exports forecast over 2017 will temper the negative cash handouts, lower oil prices will still strain the fiscal budget.

We expect fuels consumption growth to return from 2017 as the economic outlook improves. That said, higher prices and efficiency drives will moderate the pace of growth over the longer term. A recently launched initiative by the Fuel Conservation Organization is specifically targeting cost savings from reducing fuel consumption, which will work to curb consumption over the longer term. Up to USD16.3bn has been budgeted to:

- Improve boiler efficiency in buildings
- Replace large freight vehicles over 35 years old (~65,000)
- Replace diesel buses with new CNG vehicles (~17,000)
- Replace old taxis/vans with new CNG vehicles (~140,000)

- Boost rail transport

Given these factors, despite better economic growth, our forecasts do not see Iran consuming more fuel than in 2012 until 2026, with growth tapering thereafter.

Table: Refined Products Consumption (Iran 2015-2020)

	2015	2016	2017f	2018f	2019f	2020f
Refined products consumption, 000b/d	1,544.4	1,501.3	1,550.2	1,610.2	1,647.6	1,682.2
Refined products consumption, % y-o-y	-2.5	-2.8	3.3	3.9	2.3	2.1

e/f = BMI estimate/forecast. Source: BMI, EIA, JODI

Table: Refined Products Consumption (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Refined products consumption, 000b/d	1,707.5	1,731.4	1,752.2	1,769.7	1,783.8	1,794.5
Refined products consumption, % y-o-y	1.5	1.4	1.2	1.0	0.8	0.6

f = BMI forecast. Source: National sources, BMI

Gas Consumption

BMI View: *New South Pars phases are increasing the availability of natural gas, meeting pent-up demand and substituting oil products in power generation. Over the longer term, better economic growth and efforts to boost natural gas use over oil will support greater residential and industrial demand.*

Latest Updates

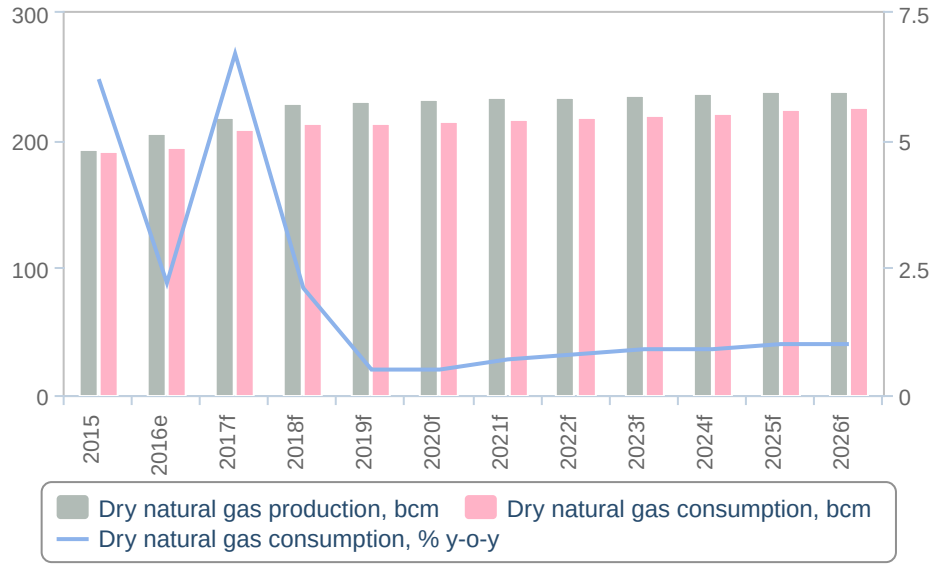
- Gas processing capacity has reached 219bcm according to National Iranian Gas Company.
- Phases 17-21 of South Pars have increased production capacity after being inaugurated in April 2017.
- Build out of pipeline infrastructure from IGAT 6, 9 & 11 will enable greater consumption of gas in undersupplied areas of Iran.

Structural Trends

As a result of gas subsidies and a switch in the domestic energy mix from oil to gas, domestic gas consumption in Iran has seen a rapid rise. In the ten years from 2006, domestic consumption has nearly doubled from 112bcm in 2006 to 195bcm in 2016. We estimate consumption will increase a further 6.7% in 2017 and 2.1% in 2018, as a result of greater gas availability and gas for oil products substitution in power generation.

Gas Production And Consumption Forecast

(2015-2026)



e/f = BMI estimate/forecast. Source: BMI, EIA, IEA, OPEC

We forecast gas consumption to continue growing in 2017 and 2018 as new phases of the South Pars field increase availability of gas for the domestic market. With approximately 230bcm of gas production capacity due to be operational by mid-2018, Iran has the flexibility to increased output by over 35bcm if needed.

The main uses of gas in Iran are:

- Reinjection, which will increase as Iran looks to step up oil exports and curb declines at mature fields over the coming years. Estimates calculate around 25-30bcm of gas is re-injected every year to maintain reservoir pressure at mature oil fields. This likely supported the increase in oil exports over 2016.
- Power Generation - since new gas availability in early 2016 oil products burnt at power stations have been substituted with gas, reducing direct crude burn and domestic fuel oil and diesel consumption. This switch also facilitated the ramp-up in Iranian crude exports.
- Residential and industrial use currently accounts for around 34% of total gas consumption, a figure expected to grow over the medium term as the Iranian economy recovers after years of sanctions. New pipelines (IGAT6, 9 &11) are being planned to increase supply to Tehran, the northeast and the northwest of the country.

We see substantial upside to consumption over the long term, particularly if Iran is able to effectively implement its plans build out midstream capacity and introduce more compressed natural gas vehicles.

Table: Gas Consumption (Iran 2015-2020)

	2015	2016e	2017f	2018f	2019f	2020f
Dry natural gas consumption, bcm	191.2	195.4	208.5	212.9	214.0	215.0
Dry natural gas consumption, % y-o-y	6.2	2.2	6.7	2.1	0.5	0.5

e/f = BMI estimate/forecast. Source: BMI, EIA, DOE

Table: Gas Consumption (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Dry natural gas consumption, bcm	216.6	218.3	220.2	222.2	224.5	226.7
Dry natural gas consumption, % y-o-y	0.7	0.8	0.9	0.9	1.0	1.0

f = BMI forecast. Source: BMI, EIA, DOE

Trade - Oil

BMI View: *In 2017, both crude oil and refined fuels exports will increase on an average annual basis. Iranian oil production will stabilise steadying exports, while new production capacity from the Persian Gulf Star refinery will boost fuels exports.*

Crude Oil Trade Forecast

Latest Updates

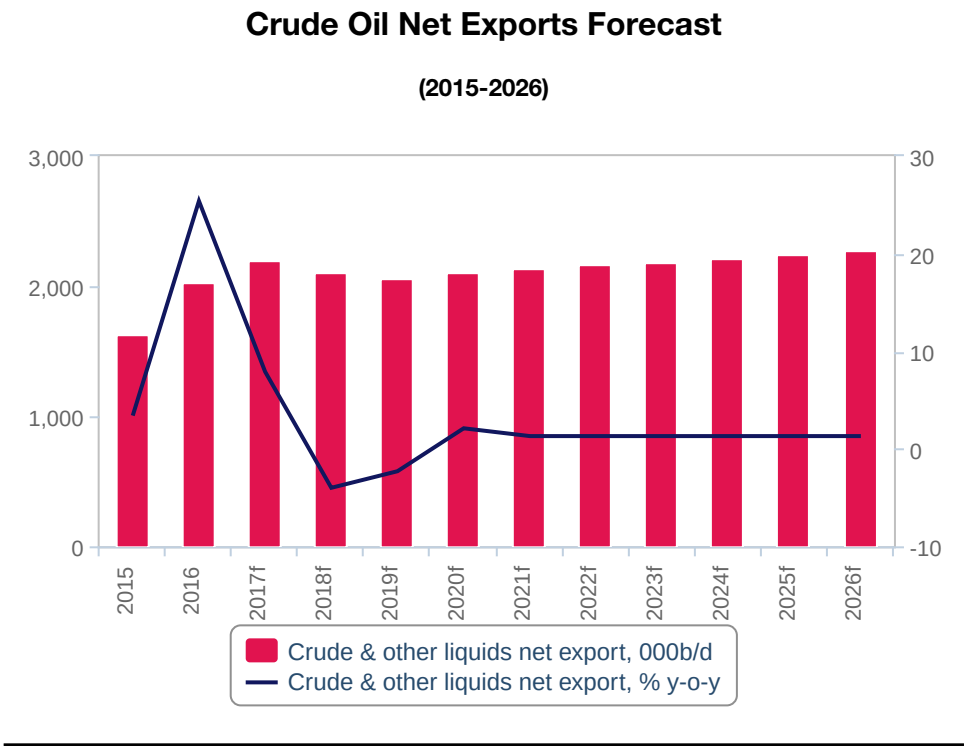
- According to data from importing countries, Iranian oil exports averaged 2.3mn b/d in Q117, an increase of 950,000b/d y-o-y.
- Provisional export data for April and May looks to be weaker, at around the 1.8mn b/d level.
- China, India and South Korea remain the major importers of Iranian crude, with Japan, Turkey and European countries importing large volumes.
- South Pars condensate production from newly inaugurated phases 17, 18, 19, 20 and 21 is boosting the volumes of condensate for export.

Structural Trends

Crude Export Outlook

We forecast crude and condensate production to rise by an average of 230,000b/d in 2017. We do not expect exports to consistently average much higher than 2.3mn b/d, with a draw down in floating storage having supported stronger than standard export levels in late 2016. In addition, new demand from the Persian Gulf Star refinery in 2017 and 2018 will draw condensate away from exports.

Long-term upside to exports will depend on the speed and scope of the return of international oil companies (IOCs) to the Iranian energy sector, and the funds the government is willing to allocate to upstream expansion.



f = BMI forecast; Source: BMI, EIA, OPEC

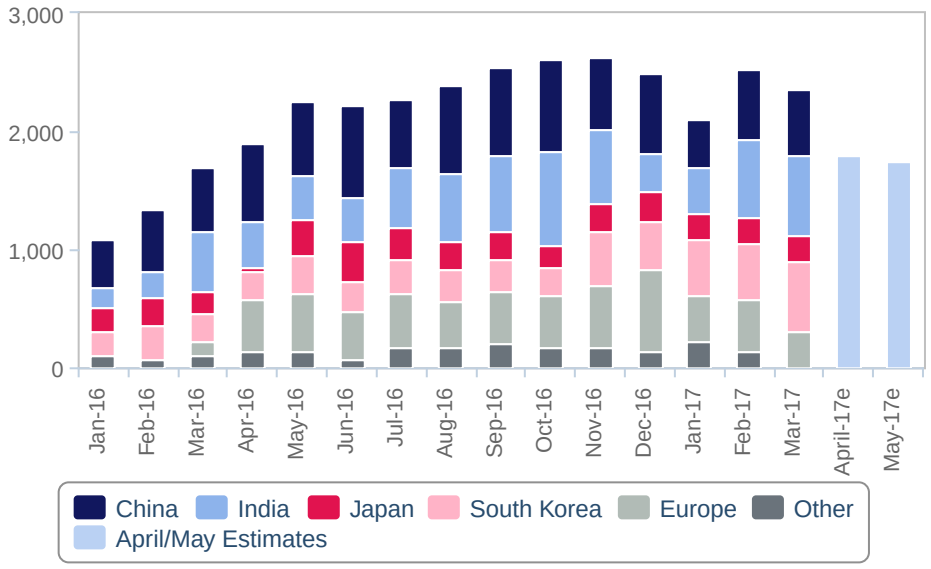
We assume all new crude oil production increases will be directed towards exports, with domestic refining consumption satisfied. New refining demand at the Persian Gulf Star will be met by South Pars condensate, though we see this pulling supply away from crude and condensate exports.

The start-up of South Pars phases 17, 18, 19, 20 and 21 over early 2017 adds as much as 75,000b/d to 80,000b/d of condensate per phase at maximum output. Much of this will provide feedstock for the Persian Gulf Star refinery, which will eat into this at a rate of 120,000b/d per phase. Since the start up of the first 120,000b/d phase in April 2017, Iranian exports are showing signs of weakening. More condensate will be pulled from exports later in 2017 and 2018 when phases II and III start up.

China, India, Japan and South Korea are Iran's current large volume crude buyers. Since May 2016, exports to Europe have substantially increased as Iran gradually re-establishes its pre-sanctions position.

Exports Fall As Refining Capacity Comes Online

Iran Crude Exports By Destination (000b/d)



f = BMI forecast. Source: Customs & Shipping Data

Table: Crude Oil Net Exports (Iran 2015-2020)

	2015	2016	2017f	2018f	2019f	2020f
Crude & other liquids net export, 000b/d	1,624.8	2,037.4	2,199.3	2,110.3	2,062.0	2,105.1
Crude & other liquids net export, % y-o-y	3.4	25.4	7.9	-4.0	-2.3	2.1
Crude & other liquids net export, USDbn	29.5	30.3	43.3	43.9	45.9	49.2

e/f = BMI estimate/forecast. Source: EIA, OPEC, JODI, BMI

Table: Crude Oil Net Exports (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Crude & other liquids net export, 000b/d	2,133.4	2,162.1	2,191.1	2,220.5	2,250.2	2,280.4
Crude & other liquids net export, % y-o-y	1.3	1.3	1.3	1.3	1.3	1.3
Crude & other liquids net export, USDbn	52.2	54.5	56.8	58.4	59.1	59.9

f = BMI forecast. Source: EIA, OPEC, JODI, BMI

Refined Products Trade Forecast

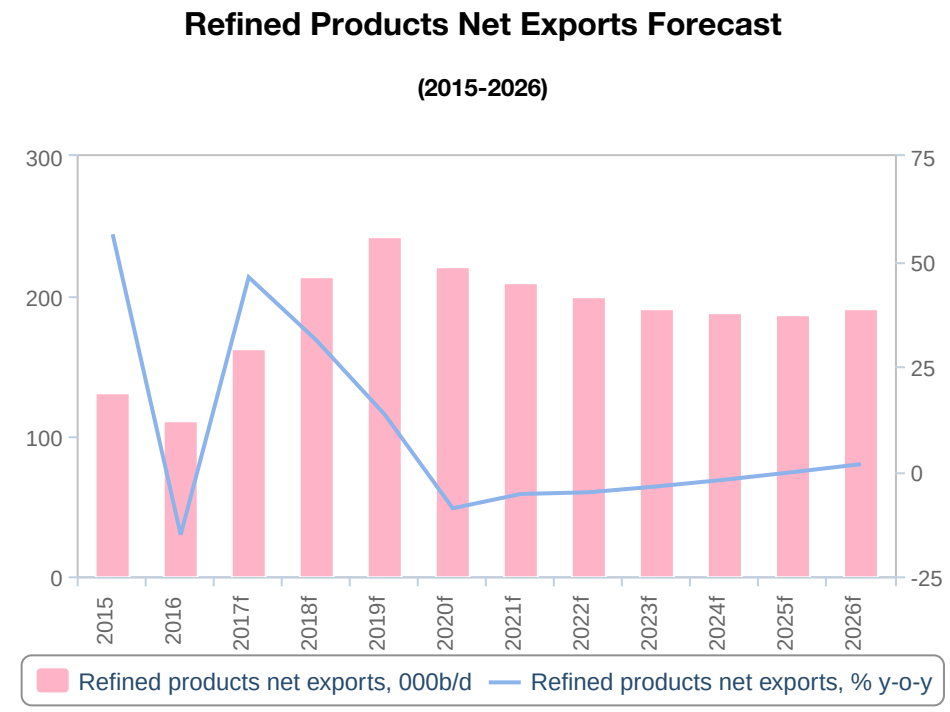
Latest Updates

- Iran will be self-sufficient in all refined fuels from mid-2017, though will still import specialised products.
- New capacity at the Persian Gulf Star refinery will make Iran a net exporter of gasoline for the first time in over 60 years.

Structural Trends

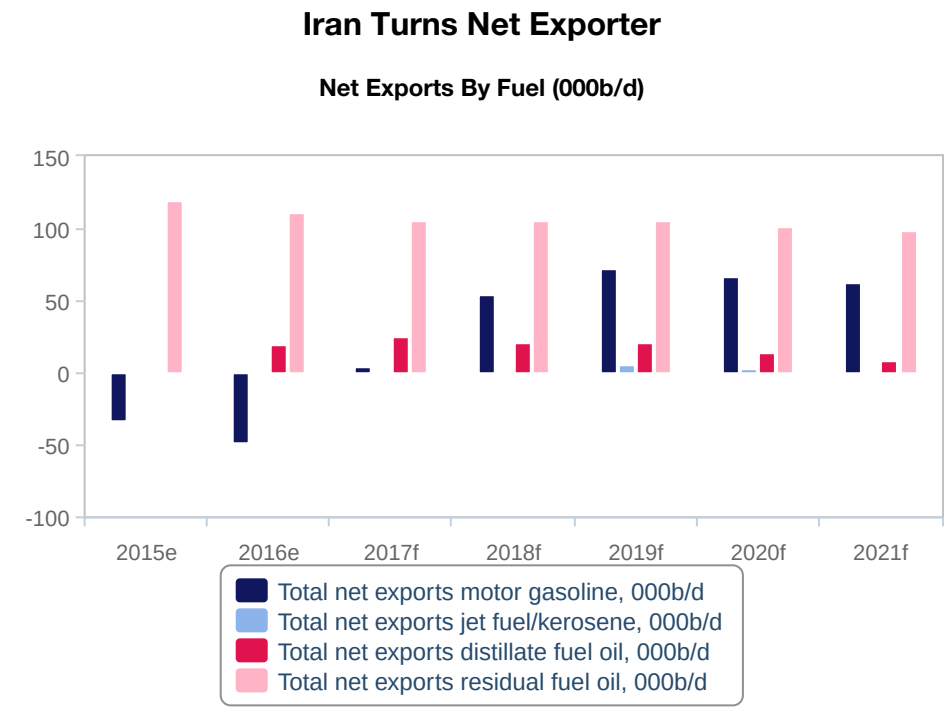
Refined Fuels Trade Outlook

Though falling fuels consumption as a result of sanctions induced recession and subsidy cuts, Iran became a net fuels exporter in 2014 according to data released to JODI. Refining sector expansions will help strengthen this trend over 2017 and 2018, with more efficient operations expected to increase output from upgrades at other facilities.



f = BMI forecast. Source: EIA, OPEC, JODI, BMI

We forecast Iran will be self-sufficient in all refined fuels in 2017, through the start up of the Persian Gulf Star refinery and a new gasoline unit at Bandar Abbas. Upgrade and modernisation programmes are increasingly adding processing depth, and will support more efficient operations and better quality fuels.



e/f = BMI estimate/forecast. Source: BMI, JODI

We expect the fuels trade surplus to increase in 2018 and 2019. Firstly, power generators are switching to natural gas use as new production from South Pars allow more gas and less oil use. Distillate and residual fuels will therefore be in greater availability to export. Secondly, phases II and III of the Persian Gulf Star refinery are due to start up later in 2017 and 2018. This will substantially increase domestic gasoline production, eradicating Iran's need for gasoline imports, possibly from as early as mid-2017. It will also increase diesel availability for export. The second and third phase of the refinery along with upgrades at existing facilities, will ensure refined products production meets domestic demand over the remainder of the forecast. Upgrades to improve the complexity across Iran's refining sector will also result in a greater volume of higher end-production, which are in greater demand. Over the longer term, a push for more natural gas vehicles may also free up more fuels for export.

Table: Refined Fuels Net Exports (Iran 2015-2020)

	2015	2016	2017f	2018f	2019f	2020f
Refined products net exports, 000b/d	131.6	111.7	163.3	214.1	243.1	221.7
Refined products net exports, % y-o-y	56.4	-15.1	46.2	31.1	13.5	-8.8
Refined products net exports, USDbn	2.1	1.6	3.3	4.8	5.6	5.1

e/f = BMI estimate/forecast. Source: JODI, BMI

Table: Refined Fuels Net Exports (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Refined products net exports, 000b/d	209.8	199.3	192.1	188.2	187.7	190.8
Refined products net exports, % y-o-y	-5.4	-5.0	-3.6	-2.0	-0.2	1.7
Refined products net exports, USDbn	5.1	4.9	4.7	4.6	4.6	4.7

f = BMI forecast. Source: JODI, BMI

Trade - Gas (Pipeline And LNG)

BMI View: *Iran will need to secure new gas export with neighbouring countries in order to maximise the use of new production capacity. LNG exports remain elusive for the time being, but could materialise if Total signs on for South Pars phase 11.*

Latest Updates

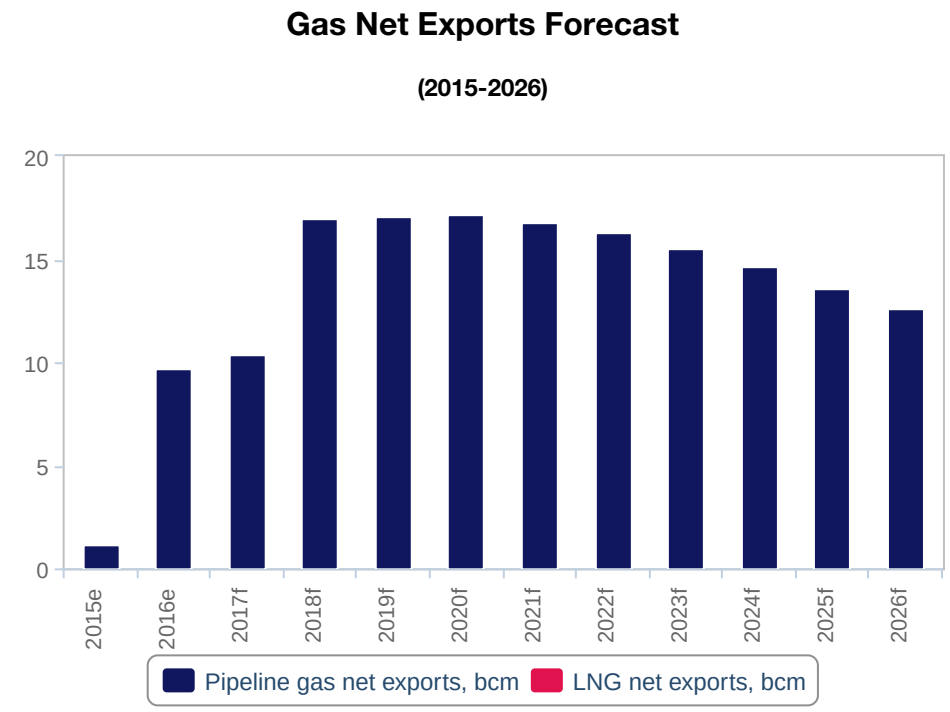
- Iranian gas production capacity has reached 219bcm and is due to top 230bcm by Q218.
- Natural gas deliveries to Iraq are due to restart in summer 2017.
- Progress is being made with the pre-front end engineering design (FEED) for a subsea pipeline to Oman, with **KOGAS** linked to its construction.
- Iran is urging Pakistan to complete its section of the pipeline into the country.

Structural Trends

Gas Trade Outlook

Iran trades small amounts of natural gas at the regional level by pipeline and is a net exporter of natural gas. The majority of gas imports into Iran arrive from Turkmenistan (~6bcm), though since January 1 2017, exports have been stopped due to a disagreement over payments. The country notably relies on gas imports during the winter months when residential demand peaks due to the cold weather, though this may no longer be necessary with new grid build out. The majority of Iran's exports are sent to Turkey (~9bcm), with smaller volumes going to Iraq and Caspian countries.

With the start-up of new South Pars phases over 2016, 2017 and 2018, Iran will eliminate the need for gas imports, enabling it to have greater export capacity. Iraq and Turkey are expected to be the main benefactors of this, with Turkmenistan losing out. However, pipeline build out to undersupplied areas of the country will be essential achieving this. In April, Iran reported it had begun injecting the pipeline planned to supply the Diyala region of Iraq and Baghdad, at volumes of around 4mn cubic metres per day, deliveries are expected over summer 2017.



e/f = BMI estimate/forecast; Source: BMI, EIA, OPEC

Gas Export Capacity Over Coming Next Years

We have adjusted our Iranian gas production outlook to take into account production from new phases of South Pars over 2016, 2017 and 2018. There will be capacity to increase Iran's gas net exports, as domestic demand is largely being met.

Our current forecast assumes a small amount of exports to Iraq on top of the 9bcm to Turkey, and a large reduction in imports from Turkmenistan. Depending on the stability in Iraq, its ability to pay, and the connection of a new pipeline in Basra, export to Iraq could grow substantially. Similarly, there is potential for gas exports to Pakistan and Oman to materialise in the next few years. In the long term, net exports will also be highly dependent on the level of investment that goes into the country's gas sector - particularly LNG - following the lifting of sanctions.

Strong Upside Risk To Exports Past 2020

We note strong upside risk to net gas exports past 2020, based on two conditions:

- **Notable Production Ramp-Up Past 2019:** Our gas production forecast currently takes into account the production capacity of South Pars phases 12, 15, 16, 17, 18, 19, 20 and 21 and the ability of these recently inaugurated fields to ramp-up. However, we do not yet include development of other South Pars phases or other field developments within our forecast. Given the size of the resources left undeveloped, production growth will hinge on the speed and scope of the return of the international oil companies (IOCs) to the Iranian energy sector and the pace of prospective gas developments.
- **Pipeline Infrastructure:** In addition to an increase in gas production, the build-up of the necessary gas export infrastructure to neighbouring countries will have to be concretised before Iran's gas net exports can rise substantially. Iran has pipeline gas export capacity of 13bcm to Turkey, of which about 9bcm is already in use, offering little spare pipeline capacity. Iran also has small export capacity to Armenia, Azerbaijan and Iraq. Completing the connection with Pakistan (on the Pakistan side), a subsea pipeline to Oman and building a new pipeline into Basra, could provide a substantial outlet for gas in the coming years.

Regional Gas Exports Within Our Forecast Period

We expect three pipeline projects can materialise over our forecast period, reinforcing our expectation that much of Iran's gas exports over the period will be to regional players.

- **Iraq:** The country is suffering from chronic power shortages despite having sufficient gas-fired power generation capacity. Securing adequate gas feedstock through imports is vital for Iraq's power sector, providing a good export market for Iranian gas. A 10-year gas agreement was signed between Iran and Iraq in July 2013, which stipulates Iran will deliver up to 9.1bcm of gas via pipeline Iraq. Pipeline construction is reportedly complete, with gas injection having begun. Exports however remain elusive given payment issues, though we expect start up in summer 2017. A second pipeline to the Basra region is also being laid, with similar volumes potentially exported.
- **Oman:** The pre-FEED for a subsea pipeline connecting Iran to Oman is well underway. The pipeline would make use of Oman's LNG export facility, freeing up gas produced in Oman for domestic use. If the full FEED process begins, a pipeline could be in place by 2019 at the earliest. **KOGAS** has been identified as a possible constructor of the subsea pipeline.
- **Pakistan:** Pakistan is facing chronic energy shortages that have disrupted industrial production and ignited popular discontent. Pakistan is hoping to begin gas imports from Iran via the Iran-Pakistan Pipeline (IP Pipeline). While Pakistan is facing financial difficulties building its side, we believe the lifting of sanctions on Iran may drive the completion of this project. Once completed, the pipeline will support gas inflows of 8bcm per year to Pakistan.

LNG Prospects

While we expect Iran could become a significant regional gas exporter over the second half of our forecast period, it will need to tap major gas consumption markets. In our view LNG will be crucial to achieving this and getting Iranian gas into Europe and Asia.

We do not believe a pipeline option to Europe makes sense. Iran would need to significantly upgrade and build new pipeline capacity for its gas to reach Europe. Furthermore, in order to develop such a project in a viable manner, it would likely need the entire capacity of any expansion of the Trans Anatolian Pipeline (TANAP) - proposed to increase from 16bcm to 31bcm by 2026. The TAP pipeline, which will enter Europe, has an option to expand by 10bcm; however, this is subject to EU third energy package rules allowing only 50% of pipeline capacity to one company.

In our view, Europe does not have a sufficient gas demand profile to support a project of sufficient volume to support exports, nor does it have the capacity to accept large volumes of gas. LNG would remain a more viable and flexible option to significantly increase Iranian gas exports.

According to **National Iranian Gas Export Company**, two LNG projects embarked upon prior to sanctions - Pars and Persian - are at 50% completion. We believe there will be strong IOC interest in LNG in Iran, given the low cost of gas production. That said, we do not expect IOCs to move quickly with such projects given reduced capex budgets, high up-front costs and the high risks involved in long-term projects in Iran. A floating LNG project is also under discussion to fast-track exports of associated gas from the Forouzan field.

Table: Gas Net Exports (Iran 2015-2020)

	2015e	2016e	2017f	2018f	2019f	2020f
Dry natural gas net exports, bcm	1.2	9.7	10.4	17.0	17.1	17.2
Dry natural gas net exports, % y-o-y	-39.3	686.3	8.0	62.9	0.5	0.5
Dry natural gas net exports, USDbn	0.3	2.0	2.8	4.8	5.2	5.5
Pipeline gas net exports, bcm	1.2	9.7	10.4	17.0	17.1	17.2
Pipeline gas net exports, % y-o-y	-39.3	686.3	8.0	62.9	0.5	0.5
Pipeline gas net exports, % of total	100.0	100.0	100.0	100.0	100.0	100.0
LNG net exports, bcm	0.0	0.0	0.0	0.0	0.0	0.0
LNG net exports, % of total gas exports	0.0	0.0	0.0	0.0	0.0	0.0

e/f = BMI estimate/forecast. Source: National sources, BMI

Table: Gas Net Exports (Iran 2021-2026)

	2021f	2022f	2023f	2024f	2025f	2026f
Dry natural gas net exports, bcm	16.8	16.3	15.5	14.7	13.6	12.6
Dry natural gas net exports, % y-o-y	-2.0	-3.4	-4.9	-5.2	-7.1	-7.7
Dry natural gas net exports, USDbn	5.6	5.6	5.5	5.3	4.9	4.5
Pipeline gas net exports, bcm	16.8	16.3	15.5	14.7	13.6	12.6
Pipeline gas net exports, % y-o-y	-2.0	-3.4	-4.9	-5.2	-7.1	-7.7
Pipeline gas net exports, % of total	100.0	100.0	100.0	100.0	100.0	100.0
LNG net exports, bcm	0.0	0.0	0.0	0.0	0.0	0.0
LNG net exports, % of total gas exports	0.0	0.0	0.0	0.0	0.0	0.0

f = BMI forecast. Source: EIA, OPEC, IEA, BMI

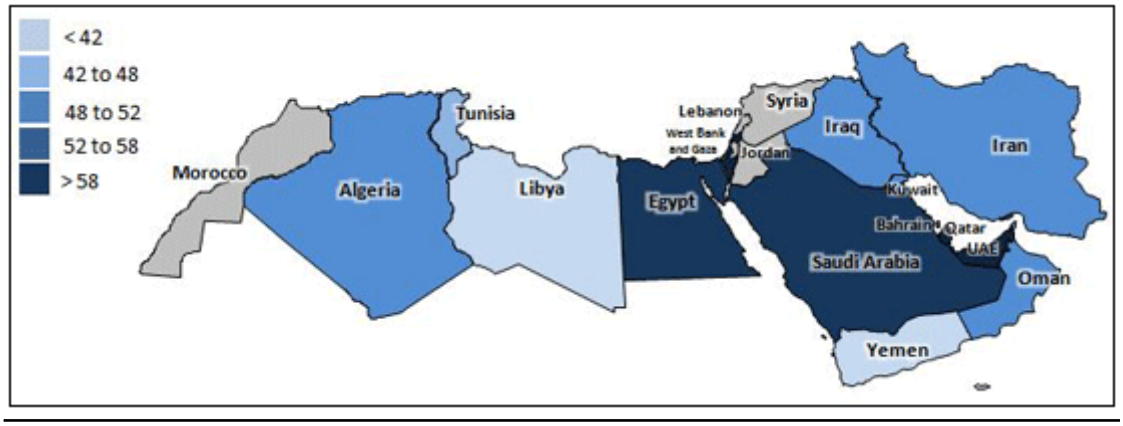
Industry Risk/Reward Index

Middle East & North Africa - Upstream Industry Risk/Reward Index

BMI View: *The dominance of NOCs in MENA's Upstream sector and the poor Competitive Landscape is the strongest determinant of the region's underperformance in our global Upstream RRI, with MENA ranking fifth out of six regions globally. Although MENA holds the largest hydrocarbon resource base in the world it is worst-in-class in terms of investment openness. As some of the largest producers in the region look to open up more to private and/or foreign participation in the sector its low score in our Upstream RRI highlights the scale of the challenge to attract private capital over the long term.*

A Large Resource Base Bolsters Final Scores

MENA Upstream O&G Risk/Reward Index



Scores Out Of 100. Higher Scores = Lower Risk. Source: BMI Risk/Reward Index

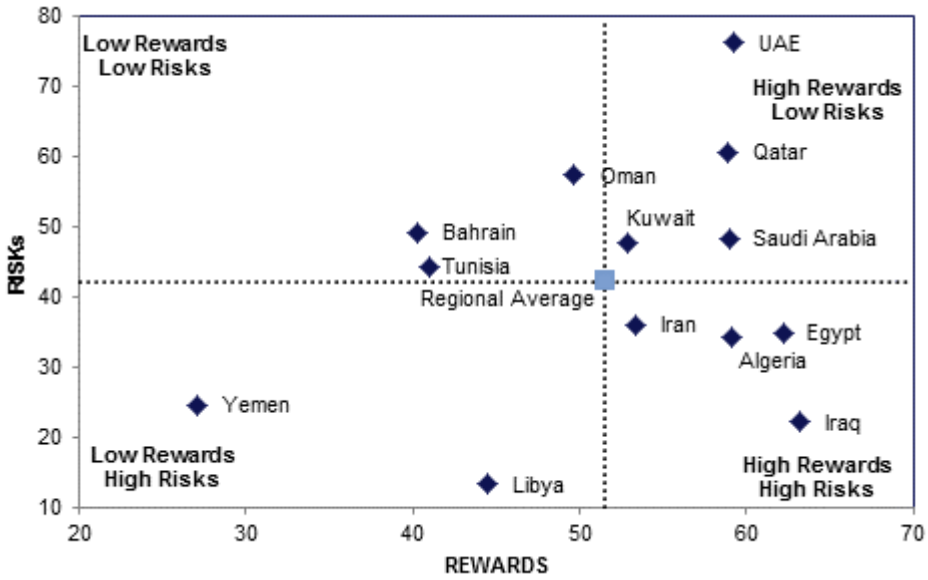
Main Regional Features & Latest Updates

- Despite the extensive resource base of the Middle East, as a region MENA scores second lowest in our Upstream RRI, ahead of only Sub-Saharan Africa.
- The region outperforms the global average only in our Industry Rewards category which registers oil and gas resource bases and production potential.
- MENA particularly underperforms in the competitive landscape category given the prominence of national oil companies, and in all areas of Risks due to a weak political and economic outlook.
- Within the region, outperformers are those countries with greater investor diversity and lower country risk factors. These tend to be more business friendly investment environments with a more stable political outlook such as the UAE and Qatar.

- Since most markets in the region have large resource bases, their scale is not a strong competitive advantage for any one country in particular, though countries with smaller reserves, such as Bahrain and Tunisia, underperform the region.
- Other underperformers are predominantly those with a less stable political environment or where internal conflict dissuades investment, such as Libya and Yemen.

Regional RRI Snapshot: UAE Leads The Way

MENA Upstream RRI



Scores Out Of 100. Higher Scores = Lower Risk. Source: BMI Risk/Reward Index

UAE And Qatar Top In MENA

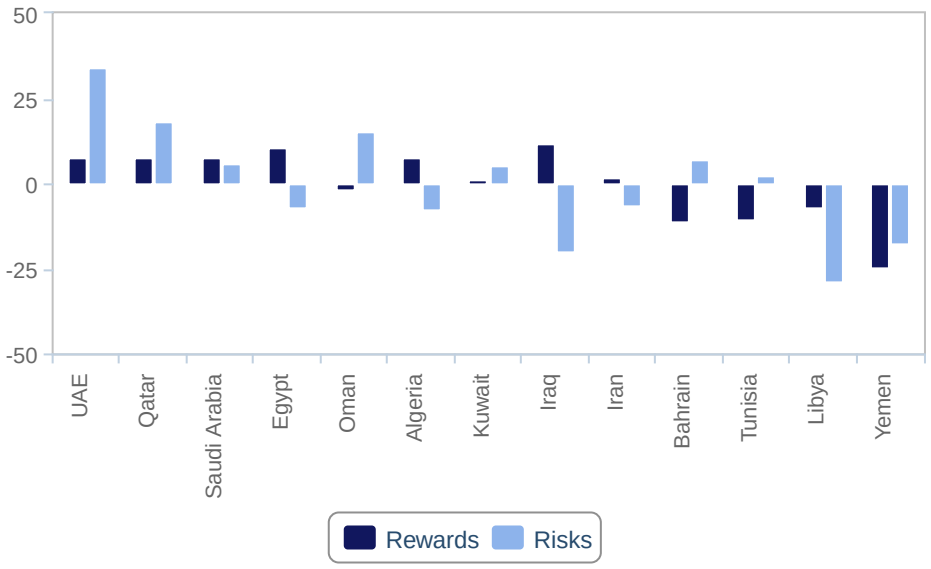
As with the bulk of major producers in the MENA region, both the UAE and Qatar have a substantial hydrocarbon resource base. What sets the two countries apart is the lower level of country risk, with among the most stable political systems and strongest economic outlooks in the region.

The UAE claims the top spot in our MENA upstream index due to its more attractive licensing structures, being one of the few countries in the region to offer concessions. Qatar ranks second in MENA, though on a global scale the two countries are less competitive, placed at seventh and 16th in our global rankings respectively.

Egypt and Oman have a comparative strong showing in the regional tables, despite having marginally smaller resource bases than many of their peers. Oman outperforms the region in the political and operational risk categories, ranking third in risk scores in the region. The Sultanate's position is also supported with one of the better bureaucratic and legal frameworks in the Middle East. Egypt scores relatively well due to the greater number of companies operating and a competitive fiscal regime, though underperforms in short-term risks and quality of infrastructure.

Highest Deviation Appears In Risk Scores

Deviation Of Risk & Reward Scores vs MENA Average Score



**Negative number = underperforms regional average. Possitive number = outperformes regional average. Source: BMI*

Kuwait And Iran Struggle

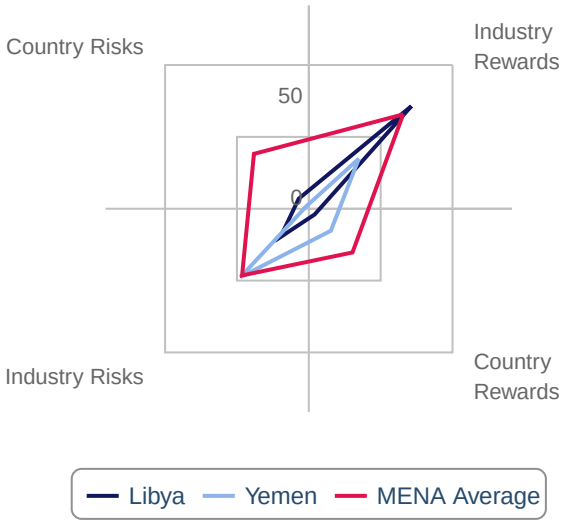
Kuwait underperforms in the index despite having extensive oil and gas reserves. Similar to Saudi Arabia, extensive state ownership of resources restricts foreign investors and poor licensing structures offers minimal incentive to invest, though Kuwait in particular is dragged down by greater bureaucratic inefficiencies.

Iran also somewhat disappoints given its considerable oil and gas production potential. The main reason behind this is the uncertainty around the fiscal environment as well as below average long-term political and economic scores. More stability in domestic and international politics could see this improve.

War And Low Resource Bases Hurt

High Risk And Weak Rewards

Libya & Yemen vs MENA Average



Source: BMI

The underperformers in our upstream RRI fall into two categories:

Firstly, the rare few countries in the Middle East that have a far smaller than average resource base, and secondly, the countries ravaged by conflict.

Tunisia and Bahrain underperform the region in terms of resource base and production growth potential. Both Yemen and Libya are in the midst of a civil war, which severely impacts the political, economic and operating risk scores. Damage to infrastructure also requires heavy levels of investment. Libya ranks 80th in our global upstream RRI, while Yemen ranks bottom of our 87 country index.

Risks vs Rewards

MENA Upstream Risk/Reward Index

RRI	Industry Rewards	Country Rewards	REWARDS	Industry Risks	Country Risks	RISKs	RRI	Regional Rank	Global Rank
UAE	70.5	42.3	59.2	79.9	72.7	76.3	64.3	1	7
Qatar	67.7	45.8	58.9	54.3	67.1	60.7	59.5	2	16
Saudi Arabia	75.5	34.1	59.0	41.7	54.9	48.3	55.8	3	26
Egypt	82.1	32.4	62.2	43.7	26.2	35.0	54.0	4	32
Oman	57.6	37.7	49.6	59.1	55.7	57.4	52.0	5	39
Algeria	81.5	25.5	59.1	36.1	32.8	34.4	51.7	6	41
Kuwait	70.7	26.2	52.9	37.4	58.2	47.8	51.4	7	43
Iraq	84.0	32.0	63.2	32.8	11.7	22.2	50.9	8	44
Iran	77.4	17.2	53.3	42.9	29.2	36.0	48.1	9	51
Bahrain	42.2	37.5	40.3	52.4	46.2	49.3	43.0	10	67
Tunisia	38.3	45.2	41.0	56.0	32.8	44.4	42.0	11	70
Libya	71.4	4.0	44.4	19.8	7.0	13.4	35.1	12	80
Yemen	34.8	15.3	27.0	47.6	1.7	24.7	26.3	13	87
Global Average	50.0	50.0	50.0	50.0	50.0	50.0	50.0	~	~
Regional Average	65.7	30.4	51.6	46.4	38.2	42.3	48.8	~	~

Scores out of 100, higher score = lower risk. Source: BMI Risk/Reward Index

Rewards

MENA Upstream Rewards Index

Rewards	Oil Reserves (bn bbl)	Gas Reserves (bcm)	Discoveries Rate - last 5 years	Hydrocarbon Production (boe)	Hydrocarbon Production Growth (boe, %)	Industry Rewards	State Asset Ownership (%)	Competitive Landscape	Infrastructure Integrity	Country Rewards	REWARDS	RRI	Regional Rank	Global Rank
UAE	93.1	93.1	25.9	90.8	49.4	**70.5**	26.4	4.6	96.0	**42.3**	**59.2**	**64.3**	1	7
Qatar	86.2	97.7	25.9	92.0	36.8	**67.7**	31.0	10.3	96.0	**45.8**	**58.9**	**59.5**	2	16
Saudi Arabia	98.9	95.4	25.9	97.7	59.8	**75.5**	4.0	2.3	96.0	**34.1**	**59.0**	**55.8**	3	26
Egypt	72.4	80.5	95.4	74.7	87.4	**82.1**	51.7	34.5	10.9	**32.4**	**62.2**	**54.0**	4	32
Oman	71.3	67.8	25.9	72.4	50.6	**57.6**	40.2	25.3	47.7	**37.7**	**49.6**	**52.0**	5	39
Algeria	82.8	88.5	85.6	87.4	63.2	**81.5**	17.2	11.5	47.7	**25.5**	**59.1**	**51.7**	6	41
Kuwait	94.3	77.0	25.9	88.5	67.8	**70.7**	4.0	1.1	73.6	**26.2**	**52.9**	**51.4**	7	43
Iraq	95.4	87.4	61.5	93.1	82.8	**84.0**	40.2	8.0	47.7	**32.0**	**63.2**	**50.9**	8	44
Iran	96.6	98.9	25.9	96.6	69.0	**77.4**	4.0	0.0	47.7	**17.2**	**53.3**	**48.1**	9	51
Bahrain	24.1	35.6	25.9	55.2	70.1	**42.2**	4.0	60.9	47.7	**37.5**	**40.3**	**43.0**	10	67
Tunisia	46.0	33.3	56.9	26.4	28.7	**38.3**	40.2	57.5	37.9	**45.2**	**41.0**	**42.0**	11	70
Libya	90.8	75.9	25.9	67.8	96.6	**71.4**	4.0	6.9	1.1	**4.0**	**44.4**	**35.1**	12	80
Yemen	67.8	59.8	25.9	6.9	13.8	**34.8**	26.4	18.4	1.1	**15.3**	**27.0**	**26.3**	13	87
Global Average	50.0	50.0	50.0	50.0	50.0	**50.0**	50.0	50.0	50.0	**50.0**	**50.0**	**50.0**	~	~
Regional Average	78.4	76.2	40.9	73.0	59.7	**65.7**	22.6	18.6	50.1	**30.4**	**51.6**	**48.8**	~	~

Scores out of 100, higher score = lower risk. Source: BMI Risk/Reward Index

Risks

MENA Upstream Risk Index

Risks	Royalties	Income Tax	License Type	Bureaucratic Environment	Legal Environment Risk	Industry Risks	Long Term Economic Risk Index	Short Term Economic Risk Index	Long Term Political Risk Index	Short Term Political Risk Index	Operational Risk Index	Country Risks	RISKs	RRI	Regional Rank	Global Rank
UAE	84.5	100.0	70.1	60.9	83.9	**79.9**	59.8	55.7	63.2	89.7	83.9	**72.7**	**76.3**	**64.3**	1	7
Qatar	59.8	27.0	46.6	63.2	74.7	**54.3**	47.1	53.4	65.5	92.0	72.4	**67.1**	**60.7**	**59.5**	2	16
Saudi Arabia	59.8	0.0	2.9	82.8	63.2	**41.7**	66.7	46.0	33.3	61.5	60.9	**54.9**	**48.3**	**55.8**	3	26
Egypt	84.5	16.1	46.6	49.4	21.8	**43.7**	36.8	16.1	25.3	17.2	31.0	**26.2**	**35.0**	**54.0**	4	32
Oman	84.5	4.0	70.1	64.4	72.4	**59.1**	28.7	21.3	60.9	82.8	70.1	**55.7**	**57.4**	**52.0**	5	39
Algeria	59.8	22.4	14.4	54.0	29.9	**36.1**	37.9	28.7	39.1	33.3	28.7	**32.8**	**34.4**	**51.7**	6	41
Kuwait	16.1	93.1	2.9	18.4	56.3	**37.4**	51.7	50.6	57.5	83.9	52.9	**58.2**	**47.8**	**51.4**	7	43
Iraq	84.5	27.0	0.6	41.4	10.3	**32.8**	8.0	32.2	6.9	4.6	9.2	**11.7**	**22.2**	**50.9**	8	44
Iran	84.5	62.1	5.7	37.9	24.1	**42.9**	16.1	32.2	26.4	40.8	29.9	**29.2**	**36.0**	**48.1**	9	51
Bahrain	84.5	12.6	46.6	52.9	65.5	**52.4**	35.6	14.9	32.2	56.3	69.0	**46.2**	**49.3**	**43.0**	10	67
Tunisia	59.8	62.1	46.6	59.8	51.7	**56.0**	19.5	8.0	58.6	36.8	36.8	**32.8**	**44.4**	**42.0**	11	70
Libya	11.5	78.2	5.7	1.1	2.3	**19.8**	14.9	13.2	0.0	2.3	5.7	**7.0**	**13.4**	**35.1**	12	80
Yemen	84.5	96.6	14.4	35.6	6.9	**47.6**	1.1	0.0	3.4	1.1	2.3	**1.7**	**24.7**	**26.3**	13	87
Global Average	50.0	50.0	50.0	50.0	50.0	**50.0**	50.0	50.0	50.0	50.0	50.0	**50.0**	**50.0**	**50.0**	~	~
Regional Average	66.0	46.2	28.7	47.8	43.3	**46.4**	32.6	28.6	36.3	46.3	42.5	**38.2**	**42.3**	**48.8**	~	~

Scores out of 100, higher score = lower risk. Source: BMI Risk/Reward Index

New Upstream O&G Risk/Reward Index

We have overhauled our oil & gas Risk/Reward Index (RRI) methodology to more accurately capture the different elements that impact the overall investment attractiveness of a country's upstream sector. We have increased the number and variety of indicators that make up the final index's core and we have reassessed the weightings of the Reward and Risk indicators to ensure the Risk/Reward environment is accurately reflected through our matrix. The RRI uses a combination of our proprietary industry forecasts and analyst assessment of the regulatory climate. As regulations evolve and forecasts change, so the Index scores change, providing a highly dynamic and forward-looking result.

Middle East & North Africa - Downstream Industry Risk/Reward Index

BMI View: *Outperformers in the MENA Downstream RRI are identified by good access to feedstock, modern refining facilities and a stable economic and political outlook. Countries with low refining complexity high levels of political and economic instability hold the highest risk.*

High Rewards Boost GCC

MENA Downstream - Risk/Reward Index Heat Map

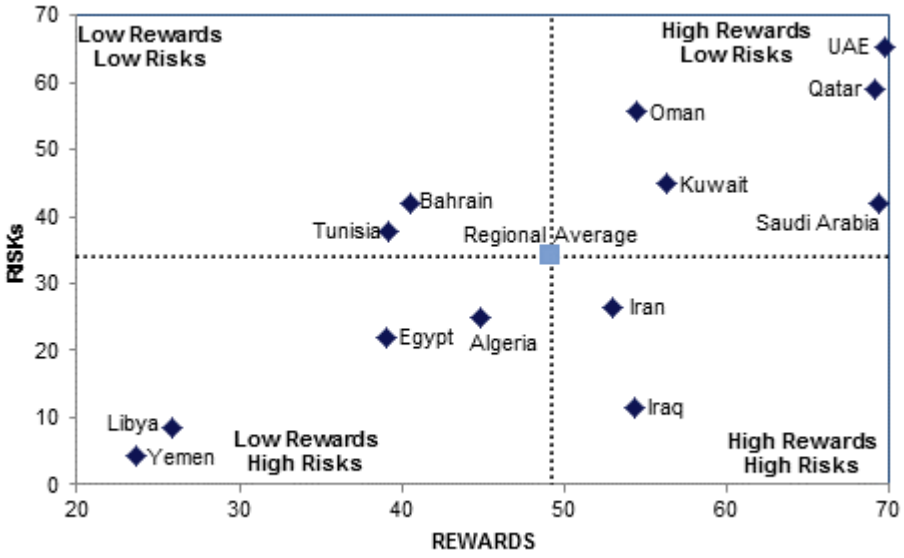
Scores out of 100, Higher Score = More Attractive Market. Source: BMI Risk/Reward Index

Main Regional Features & Latest Updates:

- The MENA region scores below the global average of 50, at just 43.2 in our Downstream Oil & Gas Risk/Reward Index (RRI).
- The region's underperformance largely derives from the high level of risk, with fuel subsidies deterring foreign investment and poor political and economic outlooks.
- MENA only achieves above average scores in the country rewards category, supported by a large refining capacity, strong fuels demand and excellent export opportunities.
- MENA's combined score is substantially dragged down by the poor state and low complexity of the refining sectors in Iraq, Egypt, Libya and Yemen.
- The UAE, Qatar and Saudi Arabia are the region's top performers, supported by both lower risk factors, more advanced refining sectors and substantial export capability.

Regional RRI Snapshot: UAE & Qatar Lead, Saudi Catching Up

MENA Downstream RRI



Scores out of 100, Higher Score = More Attractive Market. Source: BMI Risk/Reward Index

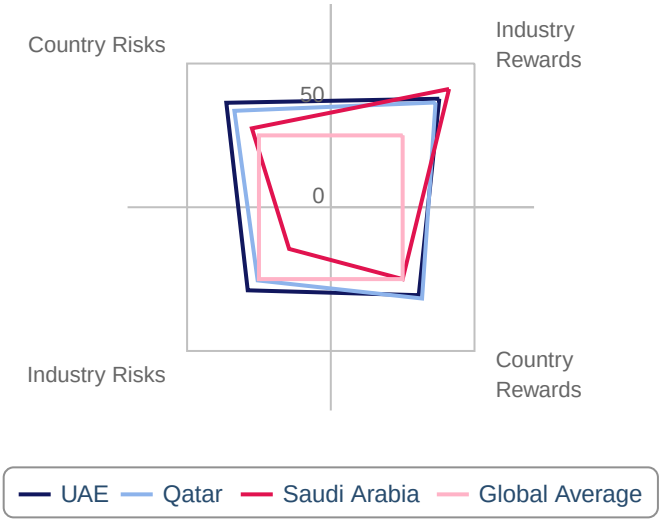
Feedstock Availability & Modern Facilities Support Best Scores

Similar to the Upstream RRI, MENA's Downstream RRI is supported by strong country rewards, including substantial feedstock availability, fuels export capacity and a strong domestic demand outlook. The top performers in the region - the UAE, Qatar and Saudi Arabia - are supported by modern and efficient refining facilities that surpass domestic demand needs. Excess fuels production capacity beyond local consumption needs is critical given fuel subsidies in domestic market limit margins.

This propels the top MENA markets above the global average score. Along with strong rewards showing, the UAE and Qatar are further supported by among the most stable economic and political environments in the region. Nonetheless, despite having the top two positions in the MENA Downstream RRI, the UAE and Qatar rank 14th and 20th in our universe of 87 global markets.

High Rewards See Top MENA Markets Outperform

UAE, Qatar, Saudi Arabia vs Global Average



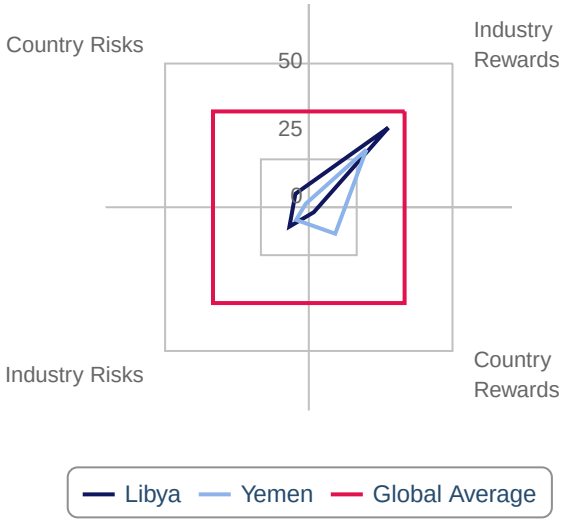
Source: BMI Downstream RRI

Civil War & Low Complexity Weigh On Rank

The MENA region as a whole is dragged down by the underperformance of Yemen and Libya that are currently mired in civil war. Not only are the facilities in the two countries low complexity, both have also faced operational inconsistency and damage after being targeted by militia and rebels. Libya ranks 84th and Yemen 87th of our global downstream index.

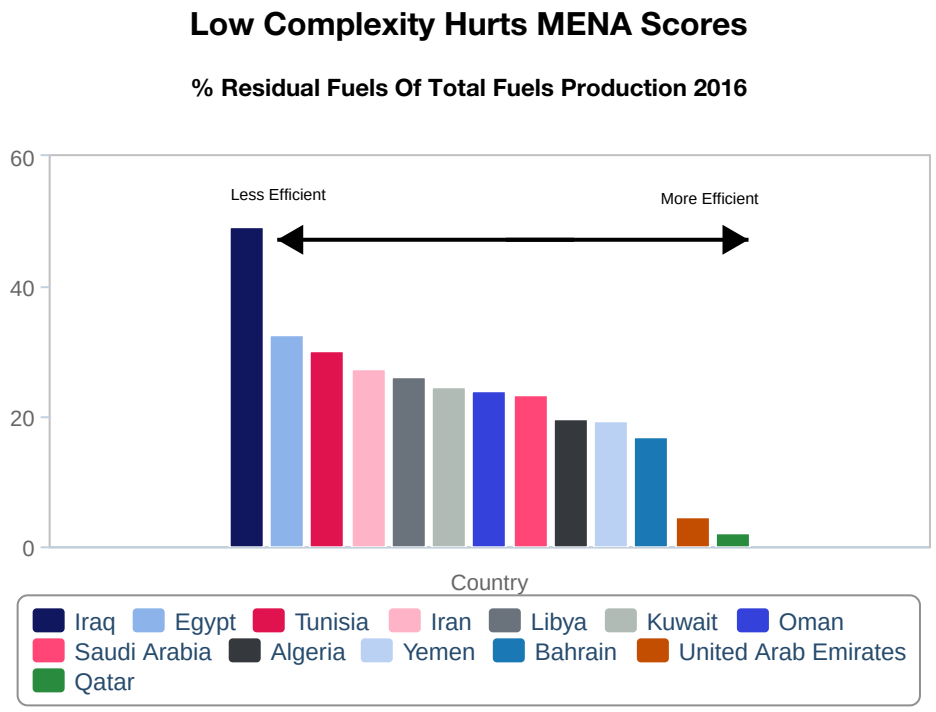
Extremely High Risk Markets

Yemen & Libya vs Global Average



Source: BMI Downstream RRI

Other weak scores in the region come from countries where refining sectors have suffered from chronic underinvestment. Low complexity facilities that produce large amounts of less profitable heavy ends combine with subsidies domestic markets and high risk political and economic landscapes. Iraq and Egypt fall into this category, despite having large domestic markets that hold substantial demand potential. Upgrades to facilities in Egypt and a new project at Karbala in Iraq, will support better scores in the coming quarters.


Low Complexity Hurts MENA Scores
% Residual Fuels Of Total Fuels Production 2016
60
40
20
0
Less Efficient
More Efficient
Country
Iraq
Egypt
Tunisia
Iran
Libya
Kuwait
Oman
Saudi Arabia
Algeria
Yemen
Bahrain
United Arab Emirates
Qatar

Source: BMI

Downstream Risks vs Rewards

MENA Downstream Risk/Reward Index

RRI	Industry Rewards	Country Rewards	REWARDS	Industry Risks	Country Risks	RISKs	RRI	Regional Rank	Global Rank
UAE	75.5	61.2	69.8	57.8	72.7	65.2	68.0	1	14
Qatar	72.9	63.5	69.1	50.9	67.1	59.0	65.1	2	20
Saudi Arabia	82.3	50.0	69.4	29.0	54.9	42.0	58.4	3	29
Oman	61.4	44.0	54.4	55.5	55.7	55.6	54.9	4	38
Kuwait	68.1	38.8	56.4	31.9	58.2	45.1	51.8	5	44
Iran	71.1	25.9	53.0	23.9	29.2	26.5	42.4	6	58
Bahrain	50.3	25.9	40.5	37.9	46.2	42.0	41.1	7	59
Tunisia	39.3	39.1	39.2	42.8	32.8	37.8	38.7	8	64
Iraq	61.2	44.0	54.3	11.2	11.7	11.4	37.2	9	66
Algeria	53.0	32.5	44.8	17.0	32.8	24.9	36.8	10	67
Egypt	44.2	31.3	39.0	17.8	26.2	22.0	32.2	11	73
Libya	41.5	2.6	25.9	10.1	7.0	8.5	19.0	12	84
Yemen	30.1	13.8	23.6	6.6	1.7	4.2	15.8	13	87
Global Average	50.0	50.0	50.0	50.0	50.0	50.0	50.0	~	~
Regional Average	57.8	36.3	49.2	30.2	38.2	34.2	43.2	~	~

Scores out of 100, Higher Score = More Attractive Market. Source: BMI Risk/Reward Index

Downstream Rewards

MENA Downstream Rewards Index

Rewards	Refining Capacity	Utilisation Rates	Domestic Fuel demand	Fuel demand Growth	Regional fuel demand	Life span of infrastructure	Theoretical net crude exports	Industry Rewards	State asset ownership	Infrastructure Integrity	Country Rewards	REWARDS	RRI	Regional Rank	Global Rank
UAE	77.0	54.0	71.3	65.5	69.5	96.0	95.4	**75.5**	26.4	96.0	**61.2**	**69.8**	**68.0**	1	14
Qatar	58.6	78.2	56.3	62.1	69.5	96.0	89.7	**72.9**	31.0	96.0	**63.5**	**69.1**	**65.1**	2	20
Saudi Arabia	94.3	86.2	96.6	33.3	69.5	96.0	100.0	**82.3**	4.0	96.0	**50.0**	**69.4**	**58.4**	3	29
Oman	55.2	67.8	44.8	64.4	69.5	47.7	80.5	**61.4**	40.2	47.7	**44.0**	**54.4**	**54.9**	4	38
Kuwait	73.6	44.8	63.2	57.5	69.5	73.6	94.3	**68.1**	4.0	73.6	**38.8**	**56.4**	**51.8**	5	44
Iran	89.7	57.5	86.2	54.0	69.5	47.7	93.1	**71.1**	4.0	47.7	**25.9**	**53.0**	**42.4**	6	58
Bahrain	46.0	88.5	18.4	59.2	69.5	47.7	23.0	**50.3**	4.0	47.7	**25.9**	**40.5**	**41.1**	7	59
Tunisia	16.1	51.7	31.0	69.0	10.9	37.9	58.6	**39.3**	40.2	37.9	**39.1**	**39.2**	**38.7**	8	64
Iraq	63.2	37.9	66.7	46.0	69.5	47.7	97.7	**61.2**	40.2	47.7	**44.0**	**54.3**	**37.2**	9	66
Algeria	62.1	25.3	59.8	80.5	10.9	47.7	85.1	**53.0**	17.2	47.7	**32.5**	**44.8**	**36.8**	10	67
Egypt	72.4	28.7	75.9	42.5	10.9	10.9	67.8	**44.2**	51.7	10.9	**31.3**	**39.0**	**32.2**	11	73
Libya	49.4	21.8	43.7	83.9	10.9	1.1	79.3	**41.5**	4.0	1.1	**2.6**	**25.9**	**19.0**	12	84
Yemen	31.0	13.8	29.9	28.7	69.5	1.1	36.8	**30.1**	26.4	1.1	**13.8**	**23.6**	**15.8**	13	87
Global Average	50.0	50.0	50.0	50.0	50.0	50.0	50.0	**50.0**	50.0	50.0	**50.0**	**50.0**	**50.0**	~	~
Regional Average	60.7	50.5	57.2	57.4	51.5	50.1	77.0	**57.8**	22.6	50.1	**36.3**	**49.2**	**43.2**	~	~

Scores out of 100, Higher Score = More Attractive Market. Source: BMI Risk/Reward Index

Downstream Risks

MENA Downstream Risks Index

Risks	Logistics Risk Rating	Fuel Subsidies	**Industry Risks**	Long Term Economic Risk Index	Short Term Economic Risk Index	Long Term Political Risk Index	Short Term Political Risk Index	Operational Risk Index	**Country Risks**	**RISKs**	**RRI**	Regional Rank	Global Rank
UAE	77.0	38.5	**57.8**	59.8	55.7	63.2	89.7	83.9	**72.7**	**65.2**	**68.0**	1	14
Qatar	63.2	38.5	**50.9**	47.1	53.4	65.5	92.0	72.4	**67.1**	**59.0**	**65.1**	2	20
Saudi Arabia	55.2	2.9	**29.0**	66.7	46.0	33.3	61.5	60.9	**54.9**	**42.0**	**58.4**	3	29
Oman	56.3	54.6	**55.5**	28.7	21.3	60.9	82.8	70.1	**55.7**	**55.6**	**54.9**	4	38
Kuwait	43.7	20.1	**31.9**	51.7	50.6	57.5	83.9	52.9	**58.2**	**45.1**	**51.8**	5	44
Iran	36.8	10.9	**23.9**	16.1	32.2	26.4	40.8	29.9	**29.2**	**26.5**	**42.4**	6	58
Bahrain	64.9	10.9	**37.9**	35.6	14.9	32.2	56.3	69.0	**46.2**	**42.0**	**41.1**	7	59
Tunisia	31.0	54.6	**42.8**	19.5	8.0	58.6	36.8	36.8	**32.8**	**37.8**	**38.7**	8	64
Iraq	11.5	10.9	**11.2**	8.0	32.2	6.9	4.6	9.2	**11.7**	**11.4**	**37.2**	9	66
Algeria	23.0	10.9	**17.0**	37.9	28.7	39.1	33.3	28.7	**32.8**	**24.9**	**36.8**	10	67
Egypt	34.5	1.1	**17.8**	36.8	16.1	25.3	17.2	31.0	**26.2**	**22.0**	**32.2**	11	73
Libya	9.2	10.9	**10.1**	14.9	13.2	0.0	2.3	5.7	**7.0**	**8.5**	**19.0**	12	84
Yemen	2.3	10.9	**6.6**	1.1	0.0	3.4	1.1	2.3	**1.7**	**4.2**	**15.8**	13	87
Global Average	50.0	50.0	**50.0**	50.0	50.0	50.0	50.0	50.0	**50.0**	**50.0**	**50.0**	~	~
Regional Average	39.1	21.2	**30.2**	32.6	28.6	36.3	46.3	42.5	**38.2**	**34.2**	**43.2**	~	~

Scores out of 100, Higher Score = More Attractive Market. Source: BMI Risk/Reward Index

Market Overview

Iran Energy Market Overview

Overview

Most of Iran's oil and gas production, processing and distribution are carried out by state-owned companies run directly by the Ministry of Petroleum. Foreign partners, particularly national oil companies, have a limited presence in the Iranian energy sector, with most foreign oil company (IOC) involvement currently from national oil companies.

The **National Iranian Oil Company** (NIOC) dominates all upstream and downstream oil and gas activities. Refining and distribution activities are carried out under the control of state-run **National Iranian Oil Refining & Distribution Company**, which was separated from NIOC in 1991. The company operates nine crude oil refineries, oil pipelines and more than 1,000 fuels retail outlets. Gas developments are carried out by the **National Iranian Gas Company** (NIGC), while petrochemicals production and distribution are the responsibility of the **National Iranian Petrochemical Company**.

Table: Key Upstream Operators - Iran Oil & Gas Sector

Company	Oil Production (000b/d)	Market Share (%)	Gas Production (bcm)	Market Share (%)
NIOC	Approx. 3,800	100	Approx. 219	100

Source: BMI

Table: Key Downstream Operators - Iran Energy Sector

Company	Refining Capacity ('000b/d)	Market Share (%)	Retail Outlets	Market Share (%)
NIORDC	1,530	100	1,060	100

Source: BMI

Fiscal Regime

Buy-Back Moves To IPC

The buy-back contract model used in pre-sanctions deals is a short-term service contract between the state-owned NIOC or one of its subsidiaries, and a foreign company. Under this type of contract, the IOC agrees to explore and/or develop a field and to fully fund the project but does not gain equity rights in the hydrocarbons produced or the physical assets of the development. Instead, it receives an annual repayment rate based on a pre-agreed rate of return. The field under development must be returned to NIOC after the IOC has been paid, usually within a period of seven to nine years.

These contracts are not attractive for IOCs, offering little flexibility and limited returns on investment. In addition, these types of contracts were of high risk to investors due to the fixed-cost approach: cost recovery was decided on the initial capital costs estimated before the development of the field. This approach meant that costs and projects going above budget could not be recovered, further eroding the profitability of a project.

Iran Petroleum Contract (IPC)

In order to increase the attractiveness of the petroleum sector to foreign investors, the oil ministry will issue a new type of contract model for IOCs willing to re-enter the Iranian oil & gas market. The contract has a clear outline but remains in draft format and has been revised on numerous occasions given hardliner pressure.

A draft of the new contract details was released to attending companies at the Tehran conference on 21-22 November 2015, and will be presented to companies officially once the contract is approved by the government. The new contract model will be substantially different to the buy-back model, though may not be as attractive as initially hoped for. We expect the following format:

- Agreements will be risk service contracts allowing for full cost recovery over the first five to seven years
- Fee-per-barrel remuneration will be linked to both the oil price and complexity of each project, and paid over the life of the project
- The contract term will be up to 25 years, with exploration, development and production under the same contract
- There will be a single contract for both oil and gas developments

Uncertainties that could dissuade some investment remain over the following:

- It remains unclear if and how oil and gas companies will be allowed to book reserves without breaking the Iranian constitution. The ability to book reserves will be a key parameter for foreign company interest and we believe hardliner influence will not allow for this to keep the ownership of oil with the Iranian state.
- Foreign investors will need to form joint ventures with Iranian companies at newly offered fields. It remains unclear what format this would take and may be challenging to implement given the presence of Iranian Revolutionary Guard affiliates operating in the oil sector and sanctions on the company.
- Disputes arising under an IPC would be subject to the exclusive jurisdiction of the Iranian Court, as opposed to an international arbitration which investors favour. This could make some investors wary of carrying out major projects in the country.
- Despite encouraging contractual changes, a lack of clarity surrounding the final contract format continues raise uncertainty. Hardliner influence has likely watered down the original drafts of the IPC, though the structure will be more attractive than buy-back contacts. According to Iran, the contract structures will allow for developments to be lucrative at USD40/bbl.

Oil And Gas Infrastructure

Oil Refineries

Currently, Iran has seven large refineries which produce more than 100,000b/d, with a number of smaller facilities of less than 60,000b/d each. We estimate that Iran has 10 operating facilities, with combined capacity of 1.984mn b/d. All refineries are operated by the **National Iranian Oil Refining and Distribution Company** (NIORDC), a **National Iranian Oil Company** (NIOC) subsidiary.

The first 120,000b/d phase of the Persian Gulf Star refinery began commercial operations in April 2017. Two subsequent 120,000b/d phases are due to follow in four-to-six-month intervals, though we anticipate delays given slower than expected progress at the first phase. Refinery upgrade projects are also being outlined for Isfahan, Bandar Abbas, Tehran, Abadan, Arak and Lavan refineries.

Table: Refineries In Iran

	Refining Capacity (b/d)	Feedstock
Abadan	400,000	Extra Heavy crude oil from Ahwaz Asmari, Heavy Crude Oil from Central Zone and Darkhuoin
Arak	260,000	Changing feedstock composition, from 100% Ahwaz crude to a blend of 55% Ahwaz crude + 45% heavy crude from other fields
Tehran	250,000	Light crude oil of Ahwaz Asmari, crude oil from Maroon, Shadegan and CIS countries
Isfahan	375,000	Crude oil from Maroon and Shadegan
Tabriz	110,000	na
Shiraz	58,000	Heavy crude oil from Gachsaran and condensate from Dala field
Kermanshah	21,000	Crude oil from Naftshahr, Afarineh and Ahwaz-Asmari
Lavan	60,000	Crude oil from Salman, Reshadat, Belat and Resalat Offshore resources
Bandar Abbas	330,000	Heavy crude oil, condensates
Persian Gulf Star*	360,000	South Pars Phases 12, 15, 16 17 & 18
Total Operating Capacity	1,984,000	

** 120,000b/d Ph1 in operation. Ph2 & 3 expected 2017/2018. Source: Oil & Gas Journal, NIORDC, EIA*

Service Stations

NIORDC is the only significant player in fuels retail in Iran, with around 1,100 fuels retail sites and an official market share of 100%.

Oil Storage Facilities

Iran has an oil storage capacity of around 60mn barrels (bbl). According to the EIA, a significant share of this capacity is located in its export terminals. Kharg Island, the country's main export terminal, has a storage capacity of 20.2mn bbl, while the Lavan Island export terminal has a capacity of 5mn bbl.

Iran has tended to supplement its onshore oil storage with the use of floating storage. In 2008, the Fars news agency reported that the country was storing around 28mn bbl of crude oil in tankers offshore. More recently around 25-40mn b/d of oil, condensate and product is thought to be in oil tankers offshore.

Oil Terminals/Ports

Iran has significant oil and oil products export capacity with around 10 terminals, most of which are located on the country's south coast. The two largest terminals are Kharg Island and Lavan Island. Other terminals include Abadan, Bandar-e Mahshah, Ras Bahregan, Sirri Island, Bandar-e Abbas and Kish Island.

Kharg Island

The Kharg Island terminal, located 483km to the west of the mouth of the Persian Gulf, is Iran's main oil export terminal. The facility, constructed in the 1960s, is linked to the shore by a 25km subsea pipeline that starts at a pumping station at Ganaveh. During the 1980s, the terminal was responsible for around 80% of the country's crude oil exports. The facility was bombed repeatedly in 1985-1986 during the Iraq-Iran war, and exports ceased. The terminal was rebuilt in the 1990s and according to the EIA now has an export capacity of up to 5mn b/d, making it one of the largest terminals in the region.

Lavan Island

The Lavan Island terminal is linked to the island's 30,000b/d refinery and is supplied with crude from the nearby Lavan Group of subsea oil and condensate fields. The terminal is one of Iran's largest, with a capacity of 200,000b/d according to the EIA. The largest field supplying the terminal is the Salman structure, which is linked to Lavan Island via a 140km subsea pipeline.

Bandar-e Mahshah

The Bandar-e Mahshah terminal was one of Iran's main terminals prior to the construction of the Kharg island facility. Following construction, Bandar-e Mahshah was primarily used for oil product exports from the Abadan refinery.

Oil Pipelines

According to the EIA, Iran's domestic oil pipeline network comprises five separate pipelines. Two oil pipelines link the country's largest refinery at Abadan with producing areas in Khuzestan, and then further north to the Arak refinery. One of the pipelines continues further north to Tehran, and then to the oil refinery at Tabriz in the north west. Another pipeline transports oil from Khuzestan to the Esfahan refinery, then south east to the Kerman refinery, and finally to the Bandar-e Abbas refinery and oil export terminal by the Straits of Hormuz. The Esfahan and Tehran refineries are also linked by pipeline.

Gas Pipelines

Iran has a large and well-developed network of both domestic and international gas pipelines, with several major pipeline projects on the cards. Gas import pipelines link Iran to Azerbaijan and Turkmenistan, and give the country import capacities of 10bcm and 20bcm respectively. Export pipelines link Iran to Turkey (10.2bcm) and Armenia (2.3bcm). Additional proposed export pipelines would increase Iran's gas export capacity to Turkey as well as enabling exports to Pakistan and India.

Table: Major Proposed Pipelines

Project Name	Size	Unit	Companies	Timeframe Start	Timeframe End	Status
Iran-Iraq-Syria Natural Gas Pipeline (Friendship Pipeline)	-	-	Iranian Gas Engineering Development Company [Operator] {Iran}	-	-	At planning stage
Iran - Oman Subsea Gas Pipeline Project	10.22	bcm/ year	Government of Oman [Sponsor] {Oman}, Government of Iran [Sponsor] {Iran}, Iranian Offshore Engineering and Construction Company (IOEC) [Sponsor]	-	-	At pre-FEED stage
Iran-Pakistan-India Pipeline (Peace Pipeline) Project	1,100	km	Government of India [Sponsor] {India}, Government of Pakistan [Sponsor] {Pakistan}, Government of Iran [Sponsor] {Iran}	-	2018	Delayed
Kuwait-Iran Pipeline	-	-	Kuwait Petroleum Corporation [Sponsor] {Kuwait}, National Iranian Gas Exports Company (NIGEC) [Sponsor] {Iran}	-	-	At planning stage
Iran (South Pars Gas Field) - Iraq (Basra) Gas Pipeline Project	-	-	Government of Iraq [Sponsor] {Iraq}, Government of Iran [Sponsor] {Iran}	2015	2016-	Gas injection underway

Source: BMI Infrastructure Key Projects

Gas Storage Facilities

Table: Operation, Under Construction & Planned Gas Storage

Facility	Status	Capacity (bcm)
Shourijeh	Operational	4.8
Serajeh	Operational	3.3
Nasrabad	Progressing	4.5
Yurtsha	Progressing	~
Qezeltappeh	Planned	~

Source: NIGC, various

Competitive Landscape

Currently the Iranian oil sector is heavily state-dominated in all sectors. The Oil Ministry remains in control of NIOC, which controls or has a major stake in nearly all oil companies in the country and the bulk of production. Due to the legacy impact of sanctions there are very few international oil companies operating in Iran. The Chinese companies of **CNPC** and **Sinopec** have been active, but have only progressed work on key field developments once the crude export restrictions were lifted in January 2016. Other national oil companies from Russia, India and South East Asia have also shown interest in entering the Iranian market.

The introduction of the IPC is expected to play a big role in increasing the number of foreign companies operating in the country, though the joint ventures formed under the contract will be 51% owned by the domestic subsidiary. A number of major European and Asian oil companies have shown interest in entering or returning to operations in Iran, once the new contacts have been finalised. NIOC is hoping to sign the first IPC contracts with foreign companies in 2017.

Company Profile
NIOC

Latest Updates

- A list of 29 prequalified companies able to partner NIOC Iranian upstream projects has been released, including Shell, Total, Eni, Gazprom.
- Crude and condensate production averaged 3.796mn b/d in Q117, with exports averaging around 2.325mn b/d.
- South pars phases 17, 18, 19, 20 and 21 were simultaneously inaugurated in April 2017, adding over 60bcm of production capacity.
- The first 120,000b/d phase of the Persian Gulf Star refinery has begun commercial operations.
- Iran is now self-sufficient in gasoline production following the completion of the Bandar Abbas gasoline unit.
- Iran will be a net exporter of refined fuels in 2017.

Strengths	▪ 158bn barrels of proven liquid resources - third largest globally by company
	▪ 34tcm of natural gas resources - the second largest globally by company
	▪ Low lifting costs for oil and gas
	▪ Competent and skilled workforce and engineering division
Weaknesses	▪ Limited technological knowhow in enhanced oil recovery techniques
	▪ No domestic LNG technological capability
	▪ Weak regional export opportunities
	▪ Need for substantial Investment in infrastructure and assets due to under investment under sanctions
Opportunities	▪ Considerable untapped gas export potential
	▪ Large short-term increase in oil exports
	▪ Joint ventures (JV) with international oil companies under new Iranian Petroleum Contract terms

- Growing domestic demand for refined products
- Low lifting costs will support market share growth in low price environment

Threats

- High influence of hardliners in the oil and gas sector
- Strong competition from other sectors for government financial resources
- Restricted access to international banking systems to process USD payments
- Breakdown in the nuclear agreement and re-imposition of sanctions
- JV compliance issues linked to sanctions on certain local companies.

Company Overview

State owned under the Iranian Ministry of Petroleum, National Iranian Oil Company (NIOC) is one of the world's largest oil companies by production and reserves. Through its subsidiaries the company controls around 158bn barrels of liquid, and 34trn cubic metres of gas resources.

Table: Major NIOC Subsidiaries

Production	Service	Management	Administrative	Organisational
National Iranian South Oil Company (NISOC)	Kalanaft Company	Arvandan Oil & Gas Company (AOGC)	Pars Special Economic Energy Zone (PSEEZ)	Iranian Fuel Conservation Organization (IFCO)
Karoon Oil & Gas Production Company (KOGPC)	Petroleum Engineering & Development Company (PEDEC)	Iranian Oil Terminals Company (IOTC)		Research Institute of Petroleum Ministry
Khazar Expl & Prod Co (KEPCO)	North Drilling Company (NDC)	Pars Oil & Gas Company (POGC)		Petroleum Industry Health Organization
South Zagros Oil & Gas Production Company	National Iranian Drilling Company (NIDC)	Naftiran Intertrade Company (NICO)		Pension, Saving & Welfare Funds
Maroun Oil & Gas Company	Manufacturing Support & Procurement Kala Naft Company	National Iranian Gas Export Company		
Iranian Offshore Oil Company (IOOC)	Iranian Drilling Services Company (IDSC)			
Masjedsoleyman Oil & Gas Company (MOGC)	Oil Transportation Services and Logistics Company (OTSLC)			

Major NIOC Subsidiaries - Continued

Production	Service	Management	Administrative	Organisational
Gachsaran Oil & Gas Production Company (GOGPC)	South Engineering Services & Turbine Industrial Equipment Company			
Aghajari Oil & Gas Production Company (AOGPC)				
West Oil & Gas Production Company				
East Oil & Gas Production Company (EOGPC)				
Iranian Central Oil Fields Company (ICOFC)				

Source: NIOC

NIOC will be central to Iran's future expansion, as many of its subsidiaries will form joint ventures under the proposed Iran Petroleum Contract (IPC). In order to attract foreign investment the new contract format will be far more competitive than the previous buy-back model, though it currently remains in draft format. Many of the targeted field will be those in border areas under joint development programmes with neighbouring countries, or more technically complex projects. Given hardliner influence in the IPC, a two-tier system will likely emerge, with buyback contracts remaining and the IPC being introduced for specific fields.

Table: Fields Proposed Under The New IPC

	Border Oil Fields		Border Gas Fields		Other Oil Fields		Other Gas Fields
1	S. Azadegan Ph 1	15	S. Pars Ph 11	23	Mansuri Ph 2	37	Dey
2	N. Azadegan Ph 2	16	Salman Ph 1	24	Band-e-Karkheh	38	Sefidzakhor-Halegan
3	Yadavaran Ph 2	17	Salman Ph 2	25	Jofayr	39	Sefidbaghoun
4	Reshadat	18	Farzad A	26	Somar	40	Aghar Ph 2
5	Foroozan	19	Farzad B	27	Danan Ph 2	41	Farashband: Refining Facilities
6	S. Pars Oil Layer Ph 1	20	Reshadat	28	Darquain Ph 3	42	Varavi: Boosting Gas Pressure Stations
7	Arvand	21	Dalan Kangan At Balal	29	Susangerd	43	Kangan: Boosting Gas Pressure Stations
8	Dehloran Ph 2	22	Arash	30	Sepehr	44	Nar: Boosting Gas Pressure Stations
9	Peydar Gharb			31	Cheshmeh Khosh	45	Homa: Boosting Gas Pressure Stations
10	Aban Ph 2			32	Resalat	46	Behregansar Gas Layer

Fields Proposed Under The New IPC - Continued

	Border Oil Fields	Border Gas Fields		Other Oil Fields		Other Gas Fields
11	Sohrab		33	Abuzar	47	Tangebijar Ph 2
12	Changouleh		34	Doroud	48	Kish Ph 3 3D Seismic
13	Esfandiar Ph 1		35	Norouz	49	Kish Ph 1
14	Arash		36	Zagheh		

Source: Iran Oil Ministry

NIOCs priorities are to develop border fields shared with Iraq, Qatar and other countries in the Persian Gulf. High potential greenfields are also a key target, as is improved recovery projects at major brownfield sites.

While under sanctions NIOC did not publish any financial or operational information. The most recent publically available data from 2012 indicates NIOC revenues were USD110bn. Total assets of the company were valued at around USD200bn.

Regional Overview

MENA Oil & Gas Regional Overview

BMI View: *Gas production in the MENA region is set for substantial growth over the next 10 years freeing up domestically consumed oil for export. Oil production will also increase despite short-term OPEC curtailments. Efforts to diversify economies will support new refining and petrochemicals projects adding value to exports.*

To highlight the key themes that inform **BMI**'s Middle East and North Africa (MENA) oil and gas forecasts, we have compared countries on the basis of the following key indicators:

- Oil production
- Oil consumption
- Refining capacity
- Gas production
- Gas consumption

Our MENA coverage includes Algeria, Bahrain, Egypt, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Tunisia, UAE and Yemen.

Oil Production: MENA Prepares For Tighter Market

Even with the production cut across OPEC and non-OPEC countries, we forecast oil production in the MENA region to grow 0.9mn b/d in 2017 to 34.0mn b/d. While we currently see a high likelihood of deal to roll over into H217, it will predominantly be the exempt MENA countries of Iran and Libya that will drive the y-o-y growth in production given the lower base of output in these countries in 2016. In addition, stronger demand in the MENA region over the summer months will see seasonal increases in production and result in compliance slippage.

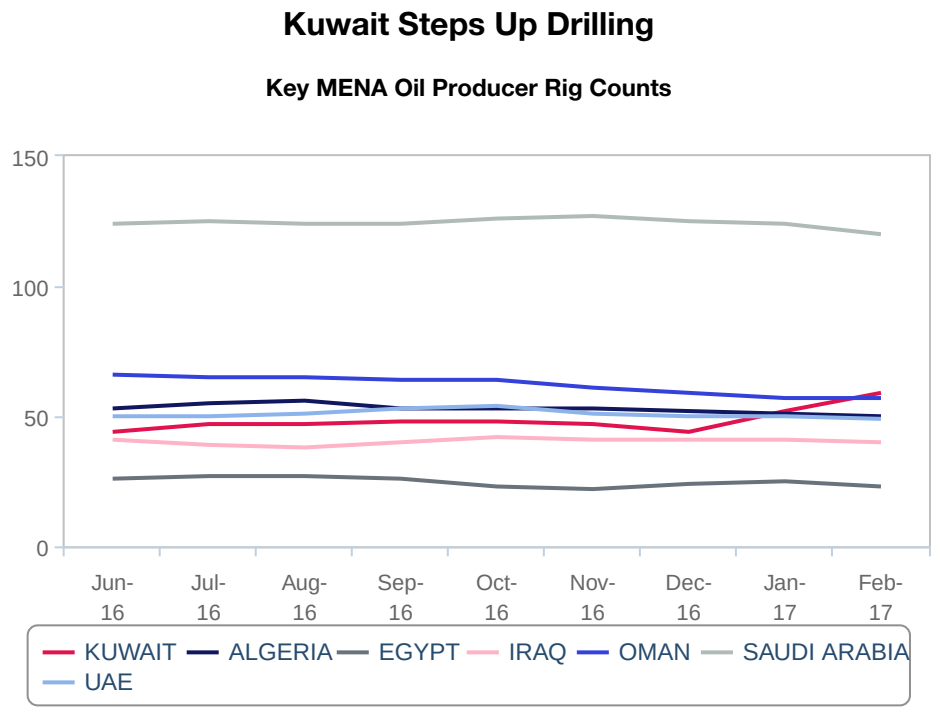
Table: Marginal Impact On 2017 Output From Cut (000b/d)

	2016 Crude And Condensate Production	2017 Crude And Condensate Production	Y-o-Y Change
Algeria	1,635.3	1,655.7	20.4
Egypt	662.8	691.5	28.7
Libya	416.7	751.4	334.7
Tunisia	52.5	52.1	-0.4
Bahrain	55.5	55.1	-0.4
Iran	3,660.6	3,923.2	262.6
Iraq	4,459.2	4,619.3	160.1
Kuwait	3,077.4	3,094.9	17.5
Oman	1,008.3	1,000.5	-7.8
Qatar	1,964.1	1,940.4	-23.7
Saudi Arabia	12,452.3	12,385.7	-66.6
United Arab Emirates	3,895.0	3,908.8	13.8
Yemen	12.5	12.3	-0.2

Source: BMI

Beyond 2017, countries in the MENA region with the capability to quickly bring back any spare production capacity created from limiting output will do so as the market tightens. A number of major projects, both gas and oil, remain under development and will drive production growth over the coming years:

- Saudi Arabia has vowed to maintain its 12.5mn b/d of crude production capacity adding 300,000b/d at the Khurais oil field, 900,000b/d at Manifa and up to 1mn b/d at Shaybah. Production from the neutral zone share with Kuwait is also offline and could return in 2017.
- Kuwait, which will also benefit from a potential neutral zone restart, is investing to reach its target crude and condensate production capacity of 3.165mn b/d in 2017 and 4.0mn b/d by 2020. There has been an aggressive increase in the number of operating rigs in Kuwait over late 2016 and early 2017.

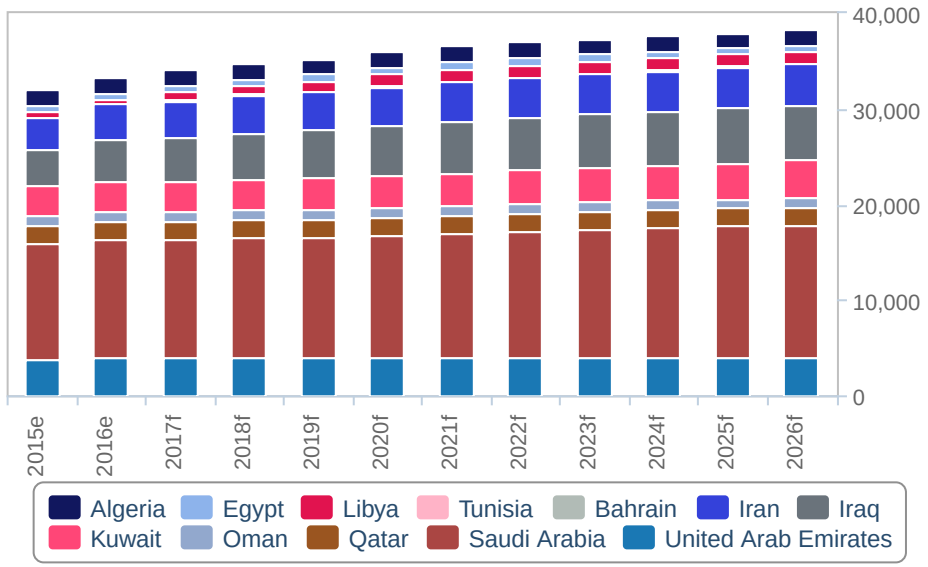


Source: Baker Hughes

- The UAE is aiming to increase crude oil output to 3.5mn b/d by the end of 2018 and sustain that output for 25 years. **ExxonMobil**'s Upper Zakum expansion and the addition of **Total, BP, CNPC** and **Inpex** to the onshore concession investors will support this.
- Iraq has an oil production target of 5.5mn b/d to 6.0mn b/d by 2020, supported by contracted production plateau levels at its largest oil fields. The combined plateau target output of the Rumaila, West Qurna-2, Majnoon, Zubair and Halfaya is 5.55mn b/d.

MENA Preparing For Tighter Crude Market

Oil Production In Major MENA Producers (000b/d)



Source: BMI, JODI, OPEC, National Sources

We forecast crude, condensate and oil liquids production to increase by more than 4mn b/d from 2017 to 2026, with the 13 countries we cover in the MENA region increasing output from 34.0mn b/d to 38.3mn b/d. This will be driven by Saudi Arabia, Iraq and Kuwait.

Refined Fuels Consumption: Growth Slowed By Subsidy Reform

Low oil prices are forcing fuel subsidy reform as government budgets need to be recalibrated due to lower revenues. All Gulf Cooperation Council (GCC) countries and Egypt have implemented changes to increase pump prices for gasoline, and in some cases diesel. Numbing powerful refined fuel demand growth will be essential to prevent countries from dropping net oil export levels and enact production cuts. All major MENA states have seen the price of fuel increase since mid-2015, and in most cases this has led to a weaker growth or even negative year-on-year demand.

Table: Average Gasoline Pump Price June 2015 & March 2017 (USD/Litre)

	June-15	March-17
Saudi Arabia	0.12	0.24
Kuwait	0.20	0.34
Qatar	0.26	0.47
Bahrain	0.27	0.42
Oman*	0.29	0.51
UAE*	0.47	0.52
Egypt	0.20	0.38

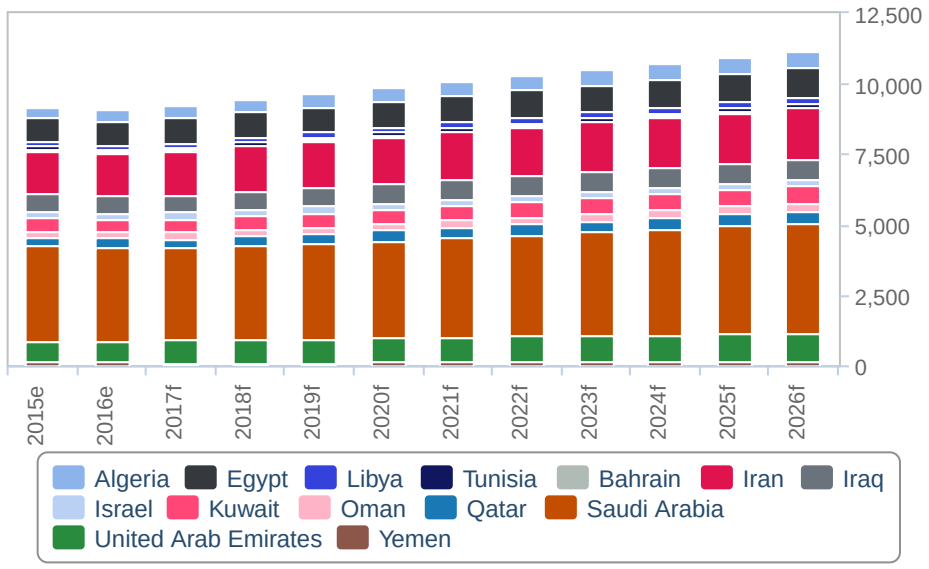
**Revised monthly in line with global market prices; accurate as of March 30 2017. Source: globalpetrolprices.com*

After falling in 2016, consumption patterns across MENA will stabilise 2017. A rise in fuel prices across countries with large consumer bases will stunt the level of demand growth going forward. We also anticipate a switch from higher quality fuels to lower grades, given the largest price increases have been made in the premium 98 and 95 octane fuels, while 91 and lower have seen less of an increase. Economic diversification efforts, particularly in expanding the refining and petrochemical sectors, will continue to drive demand for oil. The MENA region also has a young demographic and a decent vehicle sales outlook, pointing to stronger domestic demand. That said, weaker economic growth as governments are unable to invest into economies and the likelihood of further subsidy cuts, will curb the rate of consumption growth.

We forecast Middle East refined product consumption to increase from 9.9mn b/d in 2017 to 11.5mn b/d in 2026. The rise of 1.6mn b/d (16%) over the ten years to 2026, is a marked slowdown in growth compared to a 2.2mn b/d (29%) increase over the prior ten years from 2006.

Subsidy Reform Curbing Consumption Growth

MENA Refined Fuels Consumption (000b/d)



Source: BMI, JODI, National Sources

Refining Capacity: Mega Refineries To Support Economic Diversification

With an abundance of low-cost feedstock and widespread government support to diversify the economy away from crude oil exports, the MENAs refining capacity is forecast to grow strongly across our 10-year forecast period. However, with government budgets set to be limited by lower oil prices in the coming four to five years, capacity expansion beyond those currently in the pipeline will be limited. We forecast refining capacity in MENA to increase from 11.3mn b/d in 2017 to 13.1mn b/d in 2020. Beyond 2020

New investment will be spread across a number of greenfield and brownfield developments, but key contributors to growth include:

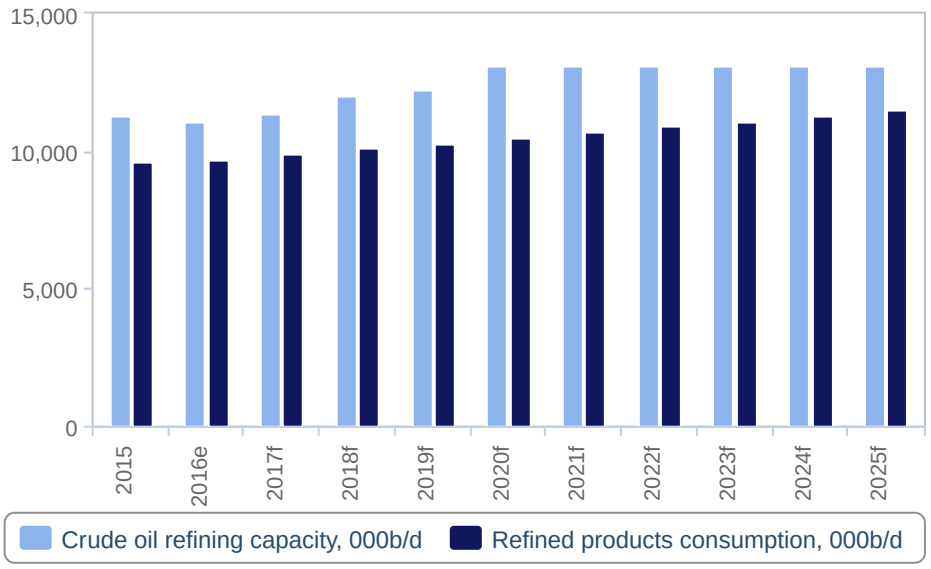
- Saudi Arabia's 400,000b/d Jizan facility is slated for start-up in 2018.
- Kuwait has awarded USD11.5bn in contracts for the 615,000b/d Al Zour refinery and is targeting operational start-up by 2020.
- Iraq let the contract for the 140,000b/d Karbala refinery in June 2015, which is due to be completed by 2020.

- Iran is due to bring on the first 120,000b/d phase of the Persian Gulf Star refinery by early 2017, with two subsequent 120,000b/d phases following. The country has also proposed an extensive upgrade programme to modernise existing facilities.
- Expansions at the Sohar in Oman (2017) and Sitra in Bahrain (2018) will boost crude distillation capacity.

Fuels import demand in the major consumption market of Europe is forecast to be flat to negative, forcing the Middle East to lean on Asia for fuels exports. China and India are also building up their own domestic refining centres, leaving an increasingly crowded global market. However, the new facilities being built in the Middle East benefit from access to low-cost feedstock, are efficient and leverage economies of scale, which all combine to offer an advantage in a competitive fuels market.

Diversifying Through Refined Product Exports

MENA Refining Capacity & Refined Product Consumption (000b/d)



Source: BMI

Gas Production: Gas Importance Grows To Support Oil Exports

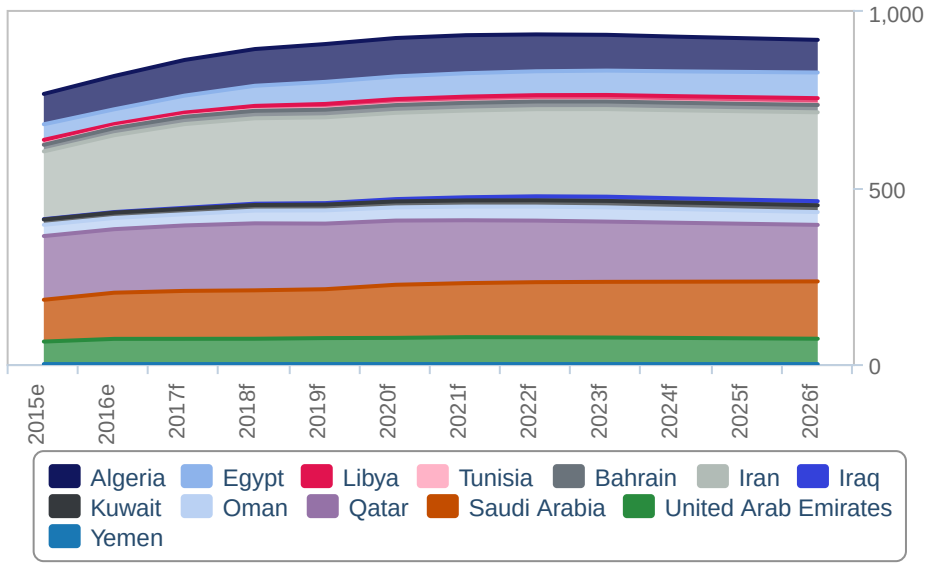
MENA gas production is set for strong growth as the region continues to substitute more costly and less efficient oil with gas in power generation. Increased gas output is intended to free up more crude for export, or prevent exports from declining as domestic oil demand rises. We forecast natural gas production in the

MENA region to increase 13% from 2017 to 2026, rising from 836bcm to 946bcm, with more potential upside from Iran depending on IPC uptake from foreign investors.

Much of the gas in the Middle East is associated in oilfields and few countries have developed sufficient infrastructure to collect and transport this resource to demand centres. A further disincentive to progress is that many countries do not have separate regulations governing associated gas production, creating a lack of clarity around the reward for monetising gas. As a result, large volumes of gas that could be monetised are flared - particularly in Iraq and Iran.

Gas Focus Grows

MENA Gas Production (bcm)



e/f = BMI estimate/forecast. Source: National sources, EIA, BMI

Non-associated gas will be the largest contributor to new gas output:

- Iran holds the most gas production upside through further phase development of the South Pars field, which could add over 60bcm of production capacity in the next five years. Foreign investment and export routes will be essential to realising this.
- Oman is progressing the Khazzan gas project, which will boost gas production by 15bcm from 2017
- In Saudi Arabia, the Wasit gas project has already reduced crude burn over 2016 - supporting oil exports - and the Fadhilli gas development (26bcm) will be major boost to gas growth in 2019.

- The Miran project (8bcm) in the Kurdistan Region of Iraq and Barzan phase 2 (10bcm) in Qatar will also be major additions over the next few years.

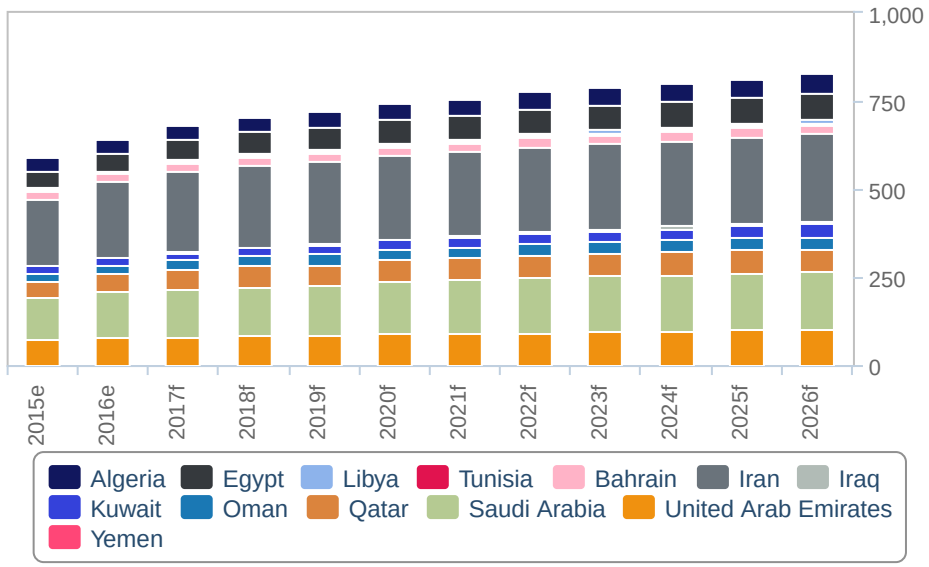
Gas Consumption: Industrial Growth And Power Strengthen Consumption

All countries in the MENA region will see gas consumption grow over the next 10 years and this will be at a faster rate than production growth. We forecast gas consumption to increase from 682bcm in 2017 to 828bcm in 2026, an increase of 21.4%.

Consumption will be driven by the region's burgeoning downstream sector - in particular petrochemicals - and a gradual reorientation of the power sector from oil to gas-fired generation. In many MENA countries, oil continues to be used in power plants due to insufficient gas availability, while some gas power facilities are idle or working at low capacity due to lack of supply. Gas reinjection is also increasing throughout the Middle East to maintain reservoir pressures at maturing oil fields.

Burgeoning Gas Demand

Selected Middle East Countries - Gas Consumption (bcm)



e/f = BMI estimate/forecast. Source: EIA, BMI

Glossary

Glossary of Terms

Table: Glossary of Terms

AOR	**additional oil recovery**	**KCTS**	**Kazakh Caspian Transport System**
APA	awards for predefined areas	**km**	kilometres
API	American Petroleum Institute	**LAB**	linear alkyl benzene
bbl	barrel	**LDPE**	low density polypropylene
bcm	billion cubic metres	**LNG**	liquefied natural gas
b/d	barrels per day	**LPG**	liquefied petroleum gas
bn	billion	**m**	metres
boe	barrels of oil equivalent	**mcm**	thousand cubic metres
BTC	Baku-Tbilisi-Ceyhan Pipeline	**Mcm**	mn cubic metres
BTU	British thermal unit	**MEA**	Middle East and Africa
Capex	capital expenditure	**mn**	million
CBM	coal bed methane	**MoU**	memorandum of understanding
CEE	Central and Eastern Europe	**mt**	metric tonne
CPC	Caspian Pipeline Consortium	**MW**	megawatts
CSG	coal seam gas	**na**	not available/ applicable
DoE	US Department of Energy	**NGL**	natural gas liquids
EBRD	European Bank for Reconstruction & Development	**NOC**	national oil company
EEZ	exclusive economic zone	**OECD**	Organisation for Economic Cooperation & Development
e/f	estimate/forecast	**OPEC**	Organization of the Petroleum Exporting Countries
EIA	US Energy Information Administration	**PE**	polyethylene
EM	emerging markets	**PP**	polypropylene
EOR	enhanced oil recovery	**PSA**	production sharing agreement
E&P	exploration and production	**PSC**	production sharing contract
EPSA	exploration and production sharing agreement	**q-o-q**	quarter-on-quarter
FID	final investment decision	**R&D**	research and development
FDI	foreign direct investment	**R/P**	reserves/production
FEED	front end engineering and design	**RPR**	reserves to production ratio
FPSO	floating production, storage and offloading	**SGI**	strategic gas initiative
FTA	free trade agreement	**SoI**	statement of intent

Glossary of Terms - Continued			
AOR	**additional oil recovery**	**KCTS**	**Kazakh Caspian Transport System**
FTZ	free trade zone	**SPA**	sale and purchase agreement
GDP	gross domestic product	**SPR**	strategic petroleum reserve
G&G	geological and geophysical	**t/d**	tonnes per day
GoM	Gulf of Mexico	**tcm**	trillion cubic metres
GS	geological survey	**toe**	tonnes of oil equivalent
GTL	gas-to-liquids conversion	**tpa**	tonnes per annum
GW	gigawatts	**TRIPS**	Trade-Related Aspects of Intellectual Property Rights
GWh	gigawatt hours	**trn**	trillion
HDPE	high density polyethylene	**T&T**	Trinidad & Tobago
HoA	heads of agreement	**TTPC**	Trans-Tunisian Pipeline Company
IEA	International Energy Agency	**TWh**	terawatt hours
IGCC	integrated gasification combined cycle	**UAE**	United Arab Emirates
IOC	international oil company	**USGS**	US Geological Survey
IPI	Iran-Pakistan-India Pipeline	**WAGP**	West African Gas Pipeline
IPO	initial public offering	**WIPO**	World Intellectual Property Organization
JOC	joint operating company	**WTI**	West Texas Intermediate
JPDA	joint petroleum development area	**WTO**	World Trade Organization

Source: BMI

Methodology

Industry Forecast Methodology

BMI's industry forecasts are generated using the best-practice techniques of time-series modelling and causal/econometric modelling. The precise form of model we use varies from industry to industry, in each case being determined, as per standard practice, by the prevailing features of the industry data being examined.

Common to our analysis of every industry is the use of vector autoregressions. Vector autoregressions allow us to forecast a variable using more than the variable's own history as explanatory information. For example, when forecasting oil prices, we can include information about oil consumption, supply and capacity.

When forecasting for some of our industry sub-component variables, however, using a variable's own history is often the most desirable method of analysis. Such single-variable analysis is called univariate modelling. We use the most common and versatile form of univariate models: the autoregressive moving average model (ARMA).

In some cases, ARMA techniques are inappropriate because there is insufficient historic data or data quality is poor. In such cases, we use either traditional decomposition methods or smoothing methods as a basis for analysis and forecasting.

BMI mainly uses OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, **BMI** uses a 'general-to-specific' method. **BMI** mainly uses a linear model, but simple non-linear models, such as the log-linear model, are used when necessary. During periods of 'industry shock', for example poor weather conditions impeding agricultural output, dummy variables are used to determine the level of impact.

Effective forecasting depends on appropriately selected regression models. **BMI** selects the best model according to various different criteria and tests, including but not exclusive to:

- R^2 tests explanatory power; adjusted R^2 takes degree of freedom into account;
- Testing the directional movement and magnitude of coefficients;
- Hypothesis testing to ensure coefficients are significant (normally t-test and/or P-value);
- All results are assessed to alleviate issues related to auto-correlation and multi-collinearity.

BMI uses the selected best model to perform forecasting.

Human intervention plays a necessary and desirable role in all of **BMI**'s industry forecasting. Experience, expertise and knowledge of industry data and trends ensure that analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not.

Sector-Specific Methodology

There are a number of principal criteria that drive our forecasts for each energy indicator.

Energy Supply

This covers the supply of crude oil, natural gas, refined oil products and electrical power, which is determined largely by investment levels, available capacity, plant utilisation rates and national policy. We therefore examine:

- National energy policy, stated output goals and investment levels;
- Company-specific capacity data, output targets and capital expenditures, using national, regional and multinational company sources;
- International quotas, guidelines and projections from organisations such as OPEC, the International Energy Agency (IEA), and the US Energy Information Administration (EIA).

Energy Consumption

A mixture of methods is used to generate demand forecasts, applied as appropriate to each individual country:

- Underlying economic (GDP) growth for individual countries/regions, sourced from **BMI** published estimates;
- Historic relationships between GDP growth and energy demand growth in an individual country are analysed and used as the basis for predicting levels of consumption;
- Government projections for oil, gas and electricity demand;
- Third-party agency projections for regional demand, from organisations such as the IEA, EIA and OPEC;

Extrapolation of capacity expansion forecasts based on company- or state-specific investment levels.

Cross Checks

Whenever possible, we compare government and/or third-party agency projections with the declared spending and capacity expansion plans of the companies operating in each individual country. Where there are discrepancies, we use company-specific data as physical spending patterns to determine capacity and supply capability. Similarly, we compare capacity expansion plans and demand projections to check the energy balance of each country. Where the data suggest imports or exports, we check that necessary capacity exists or that the required investment in infrastructure is taking place.

Source

Sources include those international bodies mentioned above, such as OPEC, IEA, and EIA, as well as local energy ministries, official company information, and international and national news, plus international and national news agencies.

Upstream Risk/Reward Methodology

Our Upstream Oil & Gas Risk/Reward Index (RRI) quantifies and ranks a country's attractiveness within the context of the oil industry, based on the balance between the **risks** and r**ewards** of entering and operating in different countries.

We combine industry-specific characteristics with broader economic, political and operational market characteristics. We weight these inputs in terms of their importance to investor decision making in a given industry. The result is a nuanced and accurate reflection of the realities facing investors in terms of: 1) the balance between opportunities and risk; and 2) between sector-specific and broader market traits. This enables users of the index to assess a market's attractiveness in a regional and global context.

The index combines our proprietary forecasts and analyst assessment of the regulatory regime. As regulations and forecasts change, so the index scores change providing a highly dynamic and forward-looking result.

The Upstream Oil & Gas Risk Reward Index comprises **87 countries**.

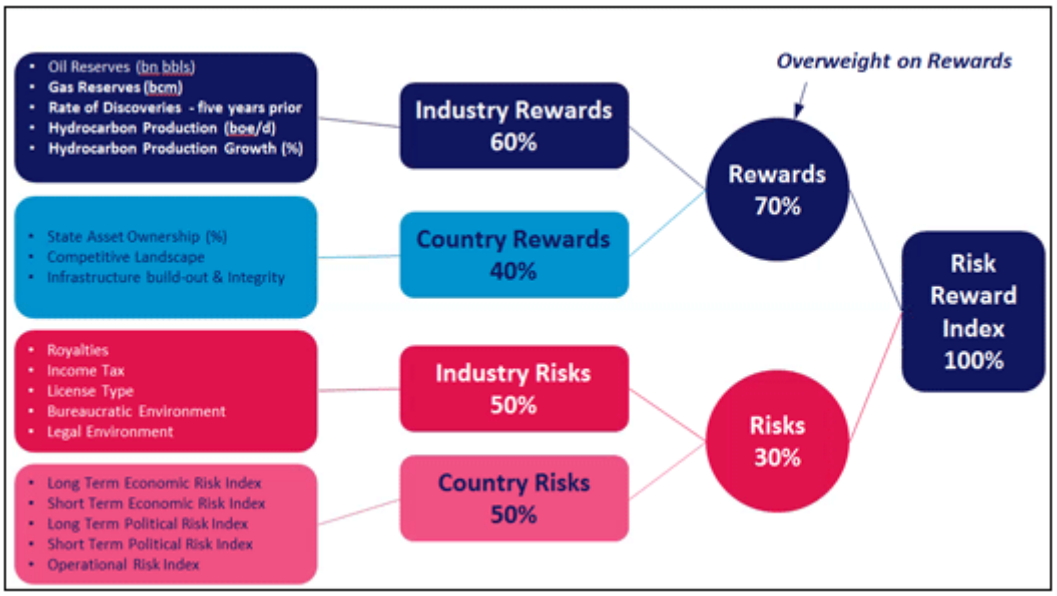
Benefits of using BMI's Upstream Oil & Gas RRI

- Global Rankings: A global table, ranking all the countries for upstream oil & gas from least (closest to zero) to most (closest to 100) attractive.

- Accessibility: Easily accessible, top down view of the global, regional or sub-regional Risk/Reward profiles.
- Comparability: Identical methodology across 87 countries for oil and gas allows users to build lists of countries they wish to compare, beyond the confines of a global or regional grouping.
- Scoring: Scores out of 100 with a wide distribution, provide nuanced investment comparisons. The higher the score, the more favourable the country profile.
- Quantifiable: Quantifies the rewards and risks of doing business in the upstream sector in different countries around the world and helps identify specific flashpoints in the overall business environment.
- Comprehensive: Comprehensive set of indicators, assessing industry-specific risks and rewards alongside political, economic and operating risks.
- Entry Point: A starting point to assess the outlook for the upstream oil & gas sector, from which users can access more granular forecasts and analysis to gain a deeper understanding of the market.
- Balanced: Multi-indicator structure prevents outliers and extremes from distorting final scores and rankings.
- Methodology is a combination of proprietary **BMI** forecasts, analyst insights and globally acceptable benchmark indicators (for example, World Bank's Doing Business Scores, Transparency International's Corruption Perceptions Index).

Weightings of Categories And Indicators

Upstream Risk Reward Index



Source: BMI

The upstream RRI matrix divides into two distinct categories:

Rewards:

Evaluation of an Industry's size and growth potential **(Industry Rewards)**, and also macro industry and/or country characteristics that directly impact the size of business opportunities in a specific sector **(Country Rewards)**.

Risks:

Evaluation of micro, industry-specific characteristics, crucial for an industry to develop to its potential **(Industry Risks)** and a quantifiable assessment of the country's political, economic and operational profile **(Country Risks)**.

Assessing our Weightings:

Our matrix is deliberately overweight on Rewards (70% of the final RRI score for upstream markets) and within that, the Industry Rewards segment (60% of final Rewards score). This is to reflect the fact that when it comes to long term investment potential, industry size and growth potential carry the most weight in indicating opportunities, with other structural factors (demand outlooks and infrastructure integrity) weighing in, but to a slightly lesser extent. In addition, our focus and expertise in Emerging and Frontier Markets has dictated this bias towards industry size and growth to ensure we are able to identify opportunities in countries where regulatory frameworks are not as developed and industry sizes not as big (in USD terms) as in developed markets, but where we know there is a strong desire to invest.

Table: Indicators - Explanation And Sources - Upstream RRI

Indicator	Source	Rationale
Rewards		
Industry Rewards		
Oil Reserves (bn bbl)	**BMI data**	Indicates size of the opportunity for oil developments
Gas Reserves (bcm)	**BMI data**	Indicates size of the opportunity for gas developments
Discoveries Rate - last FIVE years	**BMI Calculation**	Outlines the prospectivity and potential of the upstream
Hydrocarbon Production (boe)	**BMI forecast**	Five-year forward looking indication of production volumes
Hydrocarbon Production Growth (boe, %)	**BMI forecast**	Five-year forward looking indication of production growth
Country Rewards		
State Asset Ownership (%)	**BMI Calculation**	Demonstrates the potential access and restrictions to resources
Competitive Landscape	**BMI Calculation**	Divides resource base by the approximate number of companies operating to indicate the level of competition.
Infrastructure Integrity	**BMI Calculation**	Calculates the extent and quality of oil and gas infrastructure, indicating ease of access and level of maintenance investment needed.
Risks		
Industry Risks		
Licence Type	**BMI Calculation**	Outlines a country score based on whether oil and gas licenses are offered as concessions, production sharing agreements or service contracts.
Income Tax	**Government Source**	Outlines the relative tax rate incurred by oil and gas companies.
Royalties & Special Taxes	**Government Source**	Indicates further required payments (and supplementary taxes) beyond income tax.
Bureaucratic Environment	**BMI Operational Risk Score**	Outlines the ease of business processes, with a particular emphasis on mitigating the risk of delay to project timelines.
Legal Environment Risk	**BMI Operational Risk Score**	A second ease of business indicator, highlighting potential challenges with the transparency and effectiveness of rule of law.
Country Risks		
Long-Term Economic Risk Index	**BMI Country Risk Index**	The LT ERI takes into account the structural characteristics of economic growth, the labour market, price stability, exchange rate stability and the sustainability of the balance of payments, as well as fiscal and external debt outlooks for the coming decade.
Short-Term Economic Risk Index	**BMI Country Risk Index**	The ST ERI seeks to define current vulnerabilities and assess real GDP growth, inflation, unemployment, exchange rate fluctuation, balance of payments dynamics, as well as fiscal and external debt credentials over the coming two years

Indicators - Explanation And Sources - Upstream RRI - Continued

Indicator	Source	Rationale
Long-Term Political Risk Index	**BMI Country Risk Index**	The LT PRI assesses a country's structural political characteristics based on our assumption that liberal, democratic states with no sectarian tensions and broad-based income equality exhibit the strongest characteristics in favour of political stability, over a multiyear timeframe.
Short-term Political Risk Index	**BMI Country Risk Index**	The ST PRI assesses pertinent political risks to investment climate stability over a shorter time frame, up to 24 months forward.
Operational Risk Index	**BMI Operational Risk Index**	The ORI focuses on existing conditions relating to four main risk areas: Labour Market, Trade and Investment, Logistics, and Crime and Security.

Source: BMI

Downstream Risk/Reward Methodology

Our Downstream Oil & Gas Risk/Reward Index (RRI) quantifies and ranks a country's attractiveness within the context of the downstream industry, based on the balance between the **risks** and **rewards** of entering and operating in different countries.

We combine industry-specific characteristics with broader economic, political and operational market characteristics. We weight these inputs in terms of their importance to investor decision making in a given industry. The result is a nuanced and accurate reflection of the realities facing investors in terms of: 1) the balance between opportunities and risk; and 2) between sector-specific and broader market traits. This enables users of the index to assess a market's attractiveness in a regional and global context.

The index combines our proprietary forecasts and analyst assessment of the regulatory regime. As regulations and forecasts change, so the Index scores change providing a highly dynamic and forward-looking result.

The Downstream Oil & Gas Risk/Reward Index comprises **87 countries**.

Benefits of using BMI's Downstream Oil & Gas RRI

- Global Rankings: A global table, ranking all the countries for downstream from least (closest to zero) to most (closest to 100) attractive.

- Accessibility: Easily accessible, top down view of the global, regional or sub-regional Risk/Reward profiles.
- Comparability: Identical methodology across 87 countries for downstream oil allows users to build lists of countries they wish to compare, beyond the confines of a global or regional grouping.
- Scoring: Scores out of 100 with a wide distribution, provide nuanced investment comparisons. The higher the score, the more favourable the country profile.
- Quantifiable: Quantifies the rewards and risks of doing business in the downstream sector in different countries and helps identify specific flashpoints in the overall business environment.
- Comprehensive: Comprehensive set of indicators, assessing industry-specific risks and rewards alongside political, economic and operating risks.
- Entry Point: A starting point to assess the outlook for the downstream sector, from which users can access more granular forecasts and analysis to gain a deeper understanding of the market.
- Balanced: Multi-indicator structure prevents outliers and extremes from distorting final scores and rankings.
- Methodology is a combination of proprietary **BMI** forecasts, analyst insights and globally acceptable benchmark indicators (for example, World Bank's Doing Business Scores, Transparency International's Corruption Perceptions Index).

Weightings of Categories And Indicators

Downstream Risk Reward Index

Source: BMI

The downstream RRI matrix divides into two distinct categories:

Rewards:

Evaluation of an industry's size and growth potential **(Industry Rewards)**, and also macro industry and/or country characteristics that directly impact the size of business opportunities in a specific sector **(Country Rewards)**.

Risks:

Evaluation of micro, industry-specific characteristics, crucial for an industry to develop to its potential **(Industry Risks)** and a quantifiable assessment of the country's political, economic and operational profile **(Country Risks)**.

Assessing our Weightings:

Our matrix is deliberately overweight on Rewards (60% of the final RRI score for a market) and within that, the Industry Rewards segment (60% of final Rewards score). This is to reflect the fact that when it comes to long-term investment potential, industry size and growth potential carry the most weight in indicating opportunities, with other structural factors (demographic, labour statistics and infrastructure availability) weighing in, but to a slightly lesser extent. In addition, our focus and expertise in Emerging and Frontier Markets has dictated this bias towards industry size and growth to ensure we are able to identify opportunities in countries where regulatory frameworks are not as developed and industry sizes not as big (in USD terms) as in developed markets, but where we know there is a strong desire to invest.

Table: Indicators - Explanation And Sources - Downstream RRI

Indicator	Source	Rationale
Rewards		
Industry Rewards		
Refining Capacity ('000b/d) - five-year average	**BMI Forecast**	Quantifies the current size of the refining sector as a comparison to peer markets
Utilisation Rates (%) - five-year average	**BMI Calculation**	Outlines the efficiency of the existing facilities, identifying over or under capacity
Domestic Fuels demand ('000b/d) - five-year average	**BMI Forecast**	Shows the size of the domestic market demand as a comparison to peer markets
Fuel Demand (% Growth) - five-year average	**BMI Forecast**	Indentifies the domestic demand opportunity and trend in consumption patterns
Regional Fuel Demand - five-year average	**BMI Forecast**	Shows the regional export market size to represent the opportunity for exports
Life Span of Infrastructure	**BMI Calculation**	Approximate calculation of the life span of infrastructure to identify the need remaining operating life
Theoretical Net Crude Exports ('000b/d) - five year average	**BMI Calculation**	Identifies spare capacity of domestic oil supply as a potential feedstock
Country Rewards		
State asset ownership (%)	**BMI Calculation**	Indicates how much of the given market is open for private investment
Infrastructure Integrity	**BMI Calculation**	A metric used to identify the level of maintenance, upgrade and modernisation required in each market
Risks		
Industry Risks		
Logistics Risk Rating	**BMI Operational Risk Index**	Offers a comparative indicator on ease of transport for feedstock supply, fuels distribution and import/export flexibility.
Fuel Subsidies	**BMI Calculation**	Penalizes a market's score if fuels prices are sold at below market costs.
Country Risks		
Long-Term Economic Risk Index	**BMI Country Risk Index**	The LT ERI takes into account the structural characteristics of economic growth, the labour market, price stability, exchange rate stability and the sustainability of the balance of payments, as well as fiscal and external debt outlooks for the coming decade.
Short-Term Economic Risk Index	**BMI Country Risk Index**	The ST ERI seeks to define current vulnerabilities and assess real GDP growth, inflation, unemployment, exchange rate fluctuation, balance of payments dynamics, as well as fiscal and external debt credentials over the coming two years
Long-Term Political Risk Index	**BMI Country Risk Index**	The LT PRI assesses a country's structural political characteristics based on our assumption that liberal, democratic states with

Indicators - Explanation And Sources - Downstream RRI - Continued

Indicator	Source	Rationale
		no sectarian tensions and broad-based income equality exhibit the strongest characteristics in favour of political stability, over a multiyear timeframe.
Short-Term Political Risk Index	**BMI Country Risk Index**	The ST PRI assesses pertinent political risks to investment climate stability over a shorter time frame, up to 24 months forward.
Operational Risk Index	**BMI Operational Risk Index**	The ORI focuses on existing conditions relating to four main risk areas: Labour Market, Trade and Investment, Logistics, and Crime and Security.

Source: BMI