BMI Research
A FitchGroup Company

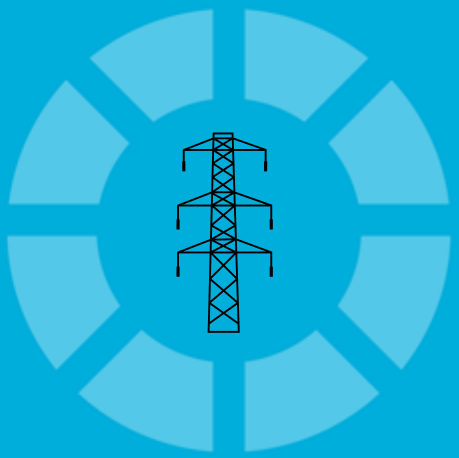
Q4 2016

www.bmiresearch.com

IRAN

INFRASTRUCTURE REPORT

INCLUDES 10-YEAR FORECASTS TO 2025



Published by:BMI Research

Iran Infrastructure Report Q4 2016

INCLUDES 10-YEAR FORECASTS TO 2025

Part of BMI's Industry Report & Forecasts Series

Published by: **BMI Research**

Copy deadline: August 2016

ISSN: 1752-542X

BMI Research
2 Broadgate Circle
London
EC2M 2QS
United Kingdom
Tel: +44 (0) 20 7248 0468
Fax: +44 (0) 20 7248 0467
Email: subs@bmiresearch.com
Web: http://www.bmiresearch.com

CONTENTS

BMI Industry View

***BMI View**: Iran's construction sector is poised for robust growth in the wake of sanctions removal, both throughout 2016 and over the first half of our forecast period, driven primarily by an influx of international investment and a post-sanctions financial windfall. We expect transport and energy in particular to attract the lion's share of investment, reflecting the high levels of structural demand in sectors long plagued by underinvestment.*

Latest Updates And Structural Trends

- We have raised our 2016 growth forecast for Iran's construction sector, from 4.5% to 7.9%. This growth pattern will persist over the entirety of our forecast period, and we expect Iran's construction sector to comprise a steadily growing share of the country's overall GDP, from 10% today to over 12% by 2025.
- Our optimistic growth outlook for Iran's power and transport subsectors is driven by a raft of high value investment pledges. Foremost among these is Turkish firm **UNIT International**'s USD4.2bn deal signed on June 1 with the Iranian energy ministry to build seven natural gas-fired power plants in Iran. In the transport space, Italy's state-owned highway management firm **Anas** signed a deal with the Iranian Ministry of Roads to build and manage a 1,200km road in the country. The EUR3.6bn (USD4bn) project involves bulding a road connecting the port of Bandar Imam Khomeini to Bazargah.
- Reflecting the lifting of sanctions in January 2016, Iran's Project Risk Index score on the cost subsection of the Finance pillar, which quantifies a country's access to development funding, registered a dramatic improvement, jumping from a previous score of 5 to a current score of 50.

Table: Construction And Infrastructure Industry Data (Iran 2015-2025)

	2015e	2016f	2017f	2018f	2019f	2020f	2021f	2022f	2023f	2024f	2025f
Construction industry value, IRRtn	1,155.3	1,350.1	1,574.2	1,837.5	2,128.5	2,410.1	2,790.5	3,218.5	3,585.0	4,138.2	4,612.7
Construction Industry Value, Real Growth, % y-o-y	2.79	7.86	7.60	5.72	5.84	4.23	5.79	5.34	5.39	5.43	5.47
Construction Industry Value, % of GDP	9.5	10.2	10.2	10.3	10.3	10.3	10.7	11.3	11.5	12.1	12.3

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

Risk/Reward Index

- The lifting of international sanctions continues to have a positive impact on Iran's overall Risk Reward Index (RRI) score. Iran scores 48.0 out of 100 on the RRI this quarter, an improvement from last quarter's 42.3 yet still trailing the regional average of 53.6.
- Iran registers its worst score in the Industry Risks pillar of the RRI with a score of 35.0, reflecting the high barriers to entry, opaque tendering process, and lack of competition in its infrastructure market. We expect Iran's competitive landscape to diversify considerably as the lifting of international sanctions allows foreign players to return and highlight this as an area in which Iran is likely to improve further.
- Iran receives an improved score of 46.2 for Country Risks, but still considerably below the regional average of 55. Despite the lifting of sanctions, structural problems with its political system remain - the country suffers from endemic levels of corruption, a weak institutional framework, and political interference in the judiciary is rife.

Table: Infrastructure Risk Reward Index (Iran)

Risk/Reward Index	Rewards	Industry Rewards	Country Rewards	Risks	Industry Risks	Country Risks
48.0	50.7	55.0	42.7	41.7	35.0	46.2

Source: BMI

SWOT

Infrastructure SWOT

SWOT Analysis	
Strengths	▪ The present government is relatively moderate and prizes engagement with the outside world to a greater degree than its predecessor, which provides upside risk for the infrastructure sector in general. ▪ The government has demonstrated a concerted commitment with regard to investing in infrastructure projects, particularly in the energy and transport sectors. ▪ The country possesses a relatively educated population when compared with the broader region.
Weaknesses	▪ The Iranian construction industry has been criticised for having poor building standards. Construction firms have had limited access to modern technology due to international sanctions, building codes are widely disregarded and municipal governments have failed to enforce them or undertake proper inspections. ▪ Widespread corruption impedes project development at every stage, from tendering to construction. ▪ Labour costs remain high, making it difficult to employ local workers for construction projects. ▪ A heavy reliance on hydrocarbon revenue causes the government to run deep fiscal deficits in times of low prices, which in turn reduces available funding for infrastructure projects.
Opportunities	▪ Lifting of sanctions provides large-scale opportunities in a range of construction and infrastructure sectors. ▪ Pent-up structural demand across the energy, transport and other construction sub-sectors after years of underinvestment will result in a wealth of tender opportunities.

SWOT Analysis - Continued

- We see further scope for Iran to build upon the existing Foreign Investment Promotion and Protection Act (FIPPA), which, despite the improvements it has wrought upon the investment landscape in Iran, doesn't meet regional or global standards in providing the necessary clarity and protection for investors.

Threats

- Weak oil prices are further limiting the capacity of the government to invest in infrastructure; we expect oil to continue to trade at a level far below its 2014 highs for the foreseeable future.
- Iran is in a high seismic activity zone and earthquakes have cost the country billions in reconstruction. For example, the long-term rebuilding costs of the quake-hit city of Bam are estimated at almost USD1bn.
- The agreement signed between Iran and the P5+1 countries could break or derail at any moment, particularly from 2017 onwards. Should the agreement unravel, international sanctions would be reinstated within 65 days.

Industry Forecast

Iran - Sanctions Removal To Unlock Funding For Infrastructure

Sanctions Removal To Unlock Funding For Infrastructure

BMI View: *Iran's construction sector will continue to benefit from accelerating inflows of international investment in the wake of the unwinding of sanctions as decades of underinvestment set the stage for a sustained expansion in sector value from a low base. The Power and Transport subsectors are anticipated to emerge as the main outperformers in Iran's broader construction industry, which will register considerable y-o-y growth gains in 2016. Our longer-term forecast is similarly optimistic, driven primarily by Iran's improving risk profile and by a decline in inflation from its 2013 highs.*

Latest Updates

- We have revised our construction sector forecast for 2016 up to 7.9% (from 4.5%) to reflect the impact of sanctions removal on Iran's construction sector. We note a number of European banks, including Belgium's **KBC Bank** and German-based **DZ Bank**, have begun handling transactions on behalf of clients wishing to do business in Iran, a trend we expect to continue. Accordingly, our five-year outlook for the construction industry is optimistic, with average annualized growth in construction industry value expected to be 6.2%.
- German companies are increasing their presence in Iran, with chemical company **BASF** planning to invest USD4bn in Iran to build several petrochemical plants in Assaluyeh, Bushehr Province. Munich-based **Linde** is also reportedly eyeing a multi-billion dollar investment in Iran's petrochemical industry.
- The unwinding of the majority of sanctions in early 2016 has catalyzed a significant improvement in the country's score in our Project Risk Index (PRI) - with its overall score jumping to 38 in 2016 (from 30 in 2015). Within the PRI, this improvement has been driven primarily by substantial increases in the Cost and Timeliness subsections of the respective Financing and Construction pillars, as Iran gains access to international financing and makes efforts to overhaul its bureaucratic framework in an attempt to attract additional investment.

Table: Construction And Infrastructure Industry Data (Iran 2015-2025)

	2015e	2016f	2017f	2018f	2019f	2020f	2021f	2022f	2023f	2024f	2025f
Construction industry value, IRRtn	1,155.3	1,350.1	1,574.2	1,837.5	2,128.5	2,410.1	2,790.5	3,218.5	3,585.0	4,138.2	4,612.7
Construction Industry Value, Real Growth, % y-o-y	2.79	7.86	7.60	5.72	5.84	4.23	5.79	5.34	5.39	5.43	5.47
Construction Industry Value, % of GDP	9.5	10.2	10.2	10.3	10.3	10.3	10.7	11.3	11.5	12.1	12.3

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

Structural Trends

2016-2025: Lifting of International Brighten Overall Growth Outlook

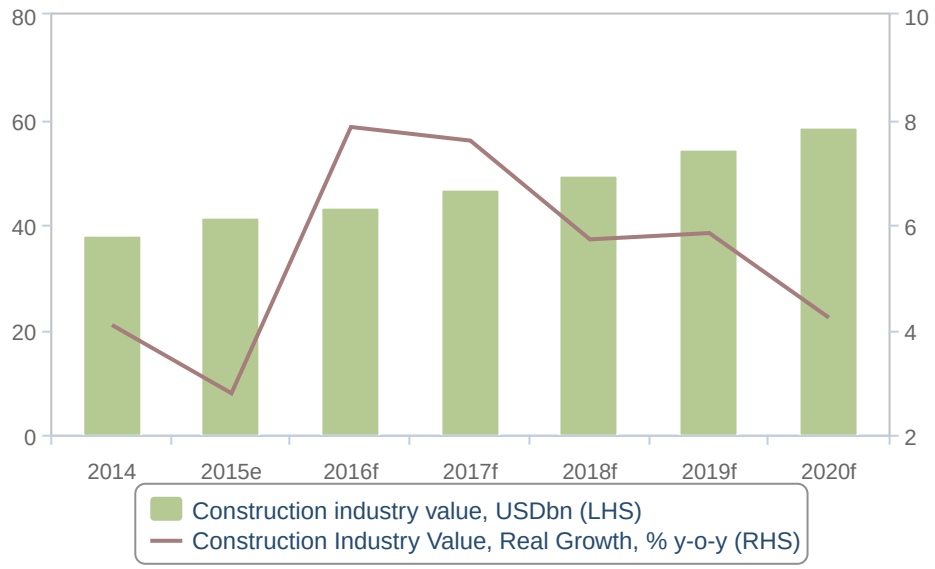
Our positive view with regard to the growth prospects for Iran's wider construction sector, which we forecast to grow in real terms by 7.9% in 2016 and by an annualized average growth rate of 6.2% over the next five years, is largely informed by the country's brightening macroeconomic outlook in the wake of the easing of international sanctions. Crucially, the removal of most - but not all - sanctions against Iran in January 2016 has allowed international banks to underwrite the business activities of multinational corporations in Iran and afforded the country access to an estimated USD50bn in frozen assets.

As such, we expect elevated levels of international investment and state-driven funding to generate a substantial uptick in economic growth in 2016 - we forecast growth in real GDP to jump to 3.8% in 2016 from 0.4% in 2015 on the back of increasing economic activity and a decline in inflation. Furthermore, expansion in fixed capital formation will expand in tandem with GDP growth, increasing from 3% in 2015 to 5% in 2016, before averaging 6% over the next three years.

Iran's construction and infrastructure sectors will mirror the country's macroeconomic fundamentals and emerge as key drivers of Iran's broader growth story in 2016 and beyond; in particular, we expect the energy & utility and transport subsectors to attract significant investment inflows, as the government actively courts international investors in sectors characterized by decades of underinvestment and pent-up demand. We have witnessed a sharp acceleration in investment pledges in Q2 of 2016, particularly from South Korean and Italian firms, a trend which underpins our optimistic growth outlook for the sector and one which we expect to continue over H216 and into 2017.

2016 Sanctions Easing To Galvanize Construction Growth

Construction Industry Value, Real Growth, USDbn & % y-o-y



e/f = BMI estimate/forecast. Source: BMI/National Sources

PRI Score Improving

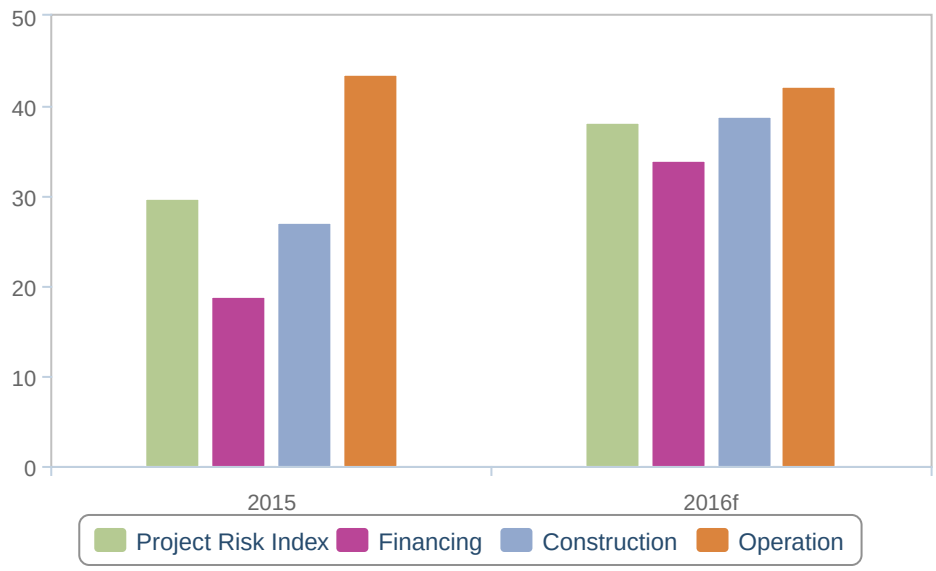
The increase in Iran's PRI score, which jumped from 29.8 in 2015 to 38.3 in 2016, aligns with our view that the easing of sanctions will gradually improve the country's overall risk profile, and by extension, the risks surrounding the realization of infrastructure projects. We expect Iran's PRI gains to extend into 2017, largely on the back of continued improvement in the following pillars:

- **Financing - Cost**: The Cost subsection of the Financing pillar, which measures a country's access to development funding and its real interest rate, registered the largest increase - from five in 2015 to 45 in 2016. The biggest factor behind the increased score was the removal of a majority of international sanctions, which lifted many of the restrictions preventing Iran from transacting with the international banking system and afforded the country access to tens of billions of US dollars in hitherto frozen assets. Decades of underinvestment in Iran's infrastructure sector have saddled the country with significant pent-up demand (average age of Iranian rail infrastructure is 85 years), and as such, we expect a significant portion of any post-sanctions financial windfall to be invested in infrastructure projects. While bank lending will likely remain subdued throughout 2016, we forecast nominal lending across all sectors to expand by 28% in 2017 in tandem with accelerating economic growth, which informs our expectation that Iran's Cost score is poised for further improvement (*see, 'Huge Impediments Will Continue To Restrain Growth,' July 2016*).

- **Construction - Timeliness**: Iran's overall PRI score in 2016 was also buoyed by a 35.4 point increase in the Timeliness subsection of the Construction pillar, which quantifies a nation's bureaucratic environment and construction permit framework. In anticipation of an uptick in investor interest in the wake of a relaxation of sanctions, the Islamic Republic has made a concerted effort to improve its notoriously poor business environment by cutting red tape. Key reforms introduced in 2015 that have driven the increase in Iran's 2016 Timeliness score include the streamlining of name reservation and company registration procedures when starting a company and eliminating the need for customers to obtain various permits when accessing the electric grid. Given Iran's yawning infrastructure deficit and appetite for private investment, we expect the government to continue to court international investors by introducing additional reforms, setting the stage for a further score increase in 2017.

In terms of regional ranking, Iran has gained two positions, and is now in 11th place out of 14 countries in the Middle East and North Africa (MENA). Globally, the country ranks 72nd out of 84 countries - a significant improvement from its previous 81st position.

Sanctions Removal Driving Improved Risk Profile



f = forecast. Source: BMI Project Risk Index

Key Risks Forestall A Boom

The lifting of sanctions will see the Iranian economy emerge from recession, but significant impediments to growth will remain in place. Our positive but cautious GDP forecast for 2016 takes into consideration the

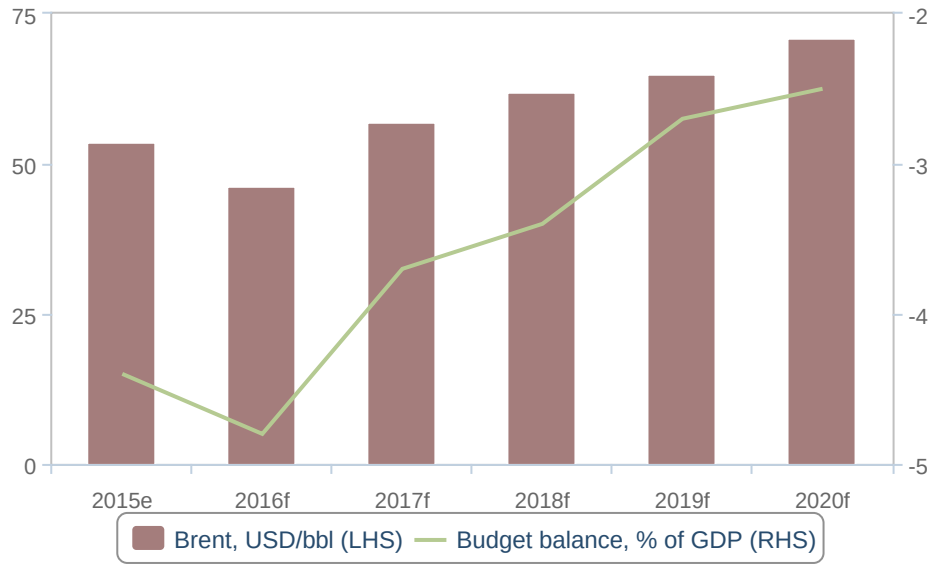
structural weaknesses of the Iranian economy, which will prevent consistent strong growth in the short-to-medium term.

There are major impediments facing the Iranian economy - not least rampant corruption and years of underinvestment across almost all sectors - which will prevent it from truly booming in the coming years. Even with the relaxation of most international sanctions, operational and political hurdles will continue to present obstacles to foreign investors. In the construction industry, companies that are considering taking part in long-term infrastructure projects will be stymied by a variety of factors including pervasive corruption, the fiscal weakness of the regime, heightened levels of political risk, an unfavourable labour market, and a weak, albeit improving, institutional framework.

Weak Fiscal Position: In spite of its anticipated financial windfall following the easing of sanctions, Iran's fiscal position will remain precarious in the coming years, posing a downside risk to our construction industry growth forecasts. We expect the country to run an average fiscal deficit of 3.4% of GDP over the next five years, which will, owing to the primacy of state funding in Iran's construction space, reduce the amount of financing available for long-term projects. A protracted period of low oil prices - we forecast Brent to average USD55 per barrel over the next three years - will be the primary driver of Iran's persistent fiscal weakness over this time period.

Low Oil Price Driving Fiscal Deficit

Budget Balance, % of GDP & Brent, USD/bbl



e/f = BMI estimate/forecast. Source: BMI/National Sources/BMI

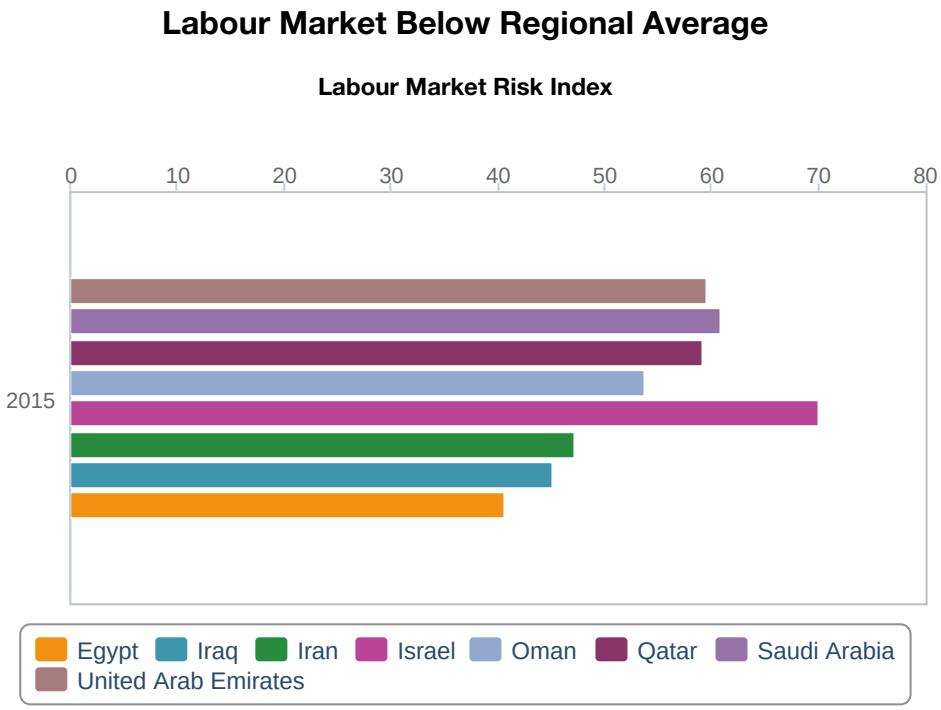
Political Risk: We highlight an uncertain security environment within Iran as a key downside risk. As a point of reference, the Sunni militant group Suqour al-Ahvaz attacked pipelines and other energy-related infrastructure in Khuzestan and the Johar as-Sabaa' district in July, which could deter potential investors into Iran's infrastructure sector. Such attacks are a primary reason for Iran's subpar performance on the Crime and Security Risk pillar of our broader Operational Risk Index, which assesses the vulnerability of countries to the threat of political violence and terrorism, among other metrics; in this respect, Iran's score of 32.9 is significantly below the global average of 50.

Institutional Framework: Despite recent, piecemeal improvements designed to accommodate a flood of expected investor interest, Iran's institutional framework remains opaque and ill-defined. This is particularly evident in the country's Public-Private Partnership (PPPs) model; although PPPs have been used in Iran for water and social infrastructure projects, the model needs to be adjusted and updated to accommodate more complex projects such as those in the transport sector. The Iranian government is reportedly preparing the legal and financial frameworks for these contracts and the timing of such an endeavour will be critical to securing investment on a PPP basis in a post-sanction scenario. As with most emerging markets,

implementing Iran's PPP framework will be a trial-and-error process and we expect that the development of the necessary institutional expertise to take time.

Sanctions: Although EU and a host of other international sanctions were unwound in January 2016, key US sanctions remain in place which cloud the investment landscape in Iran. In particular, international banks continue to act with caution when investing in Iran, lest they expose themselves to US fines for inadvertently funding or transacting with state-organs like the Revolutionary Guards, which are deeply embedded in the Iranian economy and designated by the US as sponsors of international terrorism. Although not our core view at this time, we also highlight the possibility that the nuclear accord of 2015 may unravel, which would trigger a 'snap-back' of a broader sanctions regime.

Labour Market: Iran ranks in the middle of the pack regionally within our Labour Market Risks Index *(see chart)*, with a score of 47.2 out of 100, placing it in 11th position out of 19 countries in the MENA region. A lack of competitiveness in Iran's labour market will provide significant headwinds to the growth prospects of Iran's infrastructure sector. Despite possessing a large pool of available labour, Iran's youthful population by and large lacks the necessary experience and vocational skills as the result of a decades-long brain drain, which will increase the training requirements and therefore the overall cost of a project. In addition, Iran's labour costs are high, due in large part to the stringent regulations governing the employability of Iranian citizens. Iran's minimum wage is one of the highest in the region and continues to rise, making the country a less attractive destination for investors in the construction industry, which is highly labour intensive. In addition, the Iranian labour tax is also high, further increasing the cost of infrastructure projects. A mitigating factor is Iran's low unionization rate, with protests and strikes not tolerated by the authorities.


Labour Market Below Regional Average
Labour Market Risk Index
0
10
20
30
40
50
60
70
80
2015
Egypt
Iraq
Iran
Israel
Oman
Qatar
Saudi Arabia
United Arab Emirates

Source: BMI

Transport Infrastructure – Outlook And Overview

BMI View*: We expect transport infrastructure to emerge as a bright spot in Iran's broader construction sector, as the country increasingly translates post-sanctions growth potential into tangible investment pledges. Iran's fiscally strapped government will continue to court international investors, who will be afforded a wealth of tender opportunities across an Iranian transport sector characterised by significant pent-up demand after decades of under-investment.*

Latest Updates

- Investment in rail infrastructure will dominate value creation in the transport sector, with private companies increasingly supplementing traditional state-driven financing. In July, Italy's state-owned railway company **Ferrovie dello Stato Italiane (FS)** announced it expects to sign a deal, worth about EUR1bn (USD1.1bn), to build the first section of a high-speed rail line in Iran during February 2017, according to CEO Renato Mazzoncini (AMEinfo).
- The Iranian road sector will also benefit from an uptick in international investment - Italy's state-owned highway management firm **Anas** signed a deal with the Iranian Ministry of Roads to build and manage a 1,200km road in the country. The EUR3.6bn (USD4bn) project involves construction of a road connecting the port of Bandar Imam Khomeini to Bazargah.
- An improving transport inflation outlook supports our optimistic view for real growth in transport sector value in 2016, with monthly data to May indicating an average inflation rate of 9% compared to an average 14.2% over 2015.

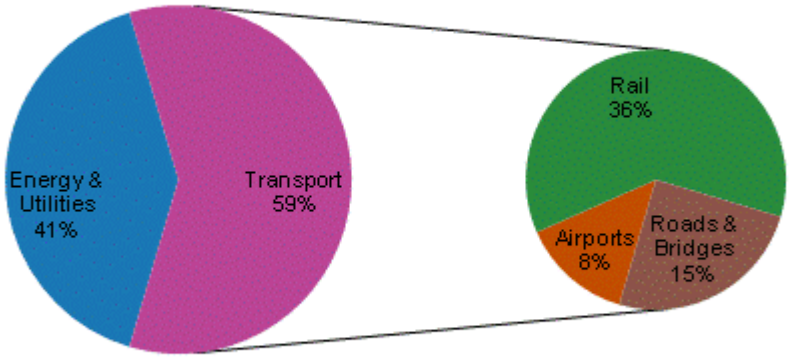
Structural Trends

2016-2020: Bridging The Transport Infrastructure Gap

Our optimistic view of the growth potential in Iran's transport sector is predicated on two distinct, yet related factors: Iran's significant transport infrastructure deficit and the removal of the most debilitating sanctions in 2015. A lack of investment in the preceding decades has led to substantial pent-up demand for modernization in the infrastructure space, which, with the easing of international sanctions, leaves the sector well placed to grow quickly from a relatively low base as it benefits from an influx of foreign money and expertise. We have seen this trend play out in the first part of 2016, particularly in the rail sector, with a variety of international firms announcing investment pledges in Iranian transport.

Investment Targets Rail Sector

Iran Key Infrastructure Projects By Subsector (USDbn)



Source: BMI Infrastructure Key Projects database

Airports

Iran has a total of 319 airports, of which 140 have paved runways. The country has yet to develop a significant tourism sector, with airports mainly used by business travellers. With Iran being the second-largest OPEC oil producer and sitting on the world's second largest gas reserves, its airports cater to the needs of business associated with these two areas. Airports also serve the country's freight sector, although air transport makes only a small portion of total freight transported.

There are plans to expand Iran's main airports, with **Iranian Airports Holding Company** looking to attract in excess of USD1bn in investment into the aviation sector. A significant expansion project is the Imam Khomeini Airport in Tehran, which is to be tripled in capacity to 20mn passengers a year, before hitting its peak capacity of 90mn passengers a year - a long-term target that appears more likely in a post-sanctions scenario.

Interest in investing in the country's airport sector is starting to appear after sanctions release. Most notably, in February 2016 Iran Airports Company (IAC) signed two memorandums of understanding (MoUs) with

VINCI Airports and Bouygues Group to develop three airports in Iran. The first MoU signed between the Iranian Ministry of Roads and Urban Development, VINCI and IAC is for the concession of the Mashhad and Isfahan airports in the country. The concession will involve the renovation, extension and operation of the two airports, to be undertaken later in 2016. The second MoU signed by the Aéroports de Paris, Bouygues' subsidiary Bouygues Bâtiment International and IAC opens a three-month period of exclusive negotiations for the development of the Imam Khomeini International Airport in Tehran. The Tehran airport project will involve renovating the existing terminal as well as the design, construction and operation of new terminals. The project is expected to increase the capacity of the airport to up to 34mn passengers by 2020, from 6.5mn passengers currently.

Most recently, Iran's **Airports and Air Transport Co** signed a memorandum of understanding (MoU) with the **Italian Milan Airport** to build a terminal at Mehrabad International Airport in the capital Tehran. A passenger terminal, covering 80,000sq m, will be built at the airport if the MoU culminates into a contract, according to the Iranian firm's CEO Rahmatollah Mahabadi. The project, estimated to entail an investment of EUR250mn (USD281.75mn), will also include parking for 6,000 cars.

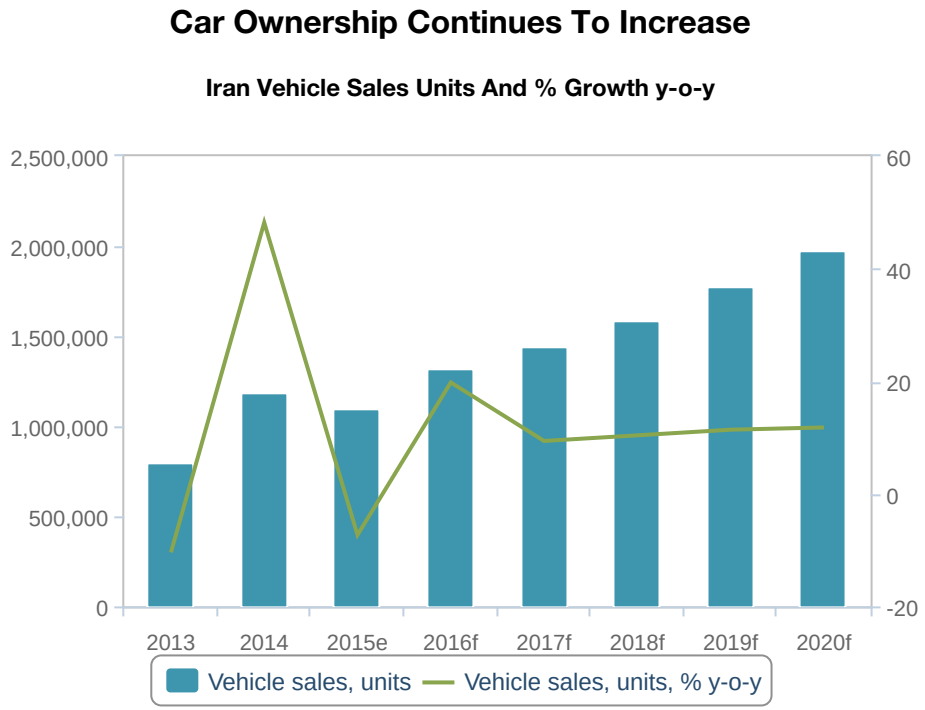
Roads

Our Autos team forecasts the number of cars on Iranian roads to grow in the long term. Rapidly increasing car sales will place a growing strain on the country's road infrastructure, withroads needing to be repaired more often as they support greater loads and traffic. This trend will intensify as the autos sector - Iran's biggest non-oil industry - will benefit greatly from the lifting of international sanctions. Our Autos team forecasts a 20% growth in car sales in calendar year 2016 after a contraction of 7% in 2015, partly as a result increased imports. In addition, the country's roads must take the brunt of most of the freight transported within its borders; roads made up 70% of freight transported in 2014 and this is set to grow to 74% in 2018.

Iran has a total of 198,866km of roads, of which 160,366km are paved, and the country boasts 1,948km of expressways. Iran's road network links it with its neighbours: the 2,500km A1 highway runs from Bargazan on the Turkish border, across Iran, to the Afghan border in the east. The A2 links the Iraqi border in the west to Mirjaveh on the Pakistani frontier.

Among the key road projects, the construction of the Tabriz-Bazargan Highway was awarded to Turkish Bergiz Insaat in January 2015. The first phase of this USD1.8bn contract involves a subway connecting

Tabriz Airport to the Southern Ring Road and it is worth USD850mn. The second phase includes the construction of a 255km highway between Tabriz and Bazargan, estimated to cost USD1bn.



e/f = BMI estimate/forecast. Source: BMI, Statistical Centre of Iran

Rail

Heightened levels of investment in Iranian rail infrastructure will be a key driver of construction sector growth in the coming years, as developed market multinationals increasingly capitalize on an easing of sanctions to ramp up investment in a subsector traditionally dominated by regional governments and various state-owned agencies. Our optimistic outlook for the rail subsector is further bolstered by the Iranian government's announced plans to upgrade and expand its railway network with an estimated USD25bn worth of investment. Plans include expanding the country's rail network to a track length of 25,000km by 2025, from 15,000km currently.

According to our Key Project Database (KPD), the rail sector accounts for the highest number of current infrastructure projects (numerically and in terms of cumulative value) in Iran, a fact we expect to persist in

light of the country's strategic location along a host of regional transit routes. We note the fact the vast majority of investment in Iranian rail infrastructure has traditionally been either directed by the Iranian state, as a result of the country's international isolation, or, to a lesser degree, by regional players in the Middle East, Europe, and Asia, who have funded rail infrastructure projects in a bid to broaden trade ties and cement geo-political influence. The resulting dominance of the state in the Iranian rail sector has resulted in a substantial infrastructure deficit (average age of rail infrastructure is 85 years) and offers significant scope for an increase in private sector investment and expertise.

The aforementioned announcement by Ferrovie dello Stato Italiane (FS) to construct a high speed rail line aligns with our broader view that Iran is poised to witness an uptick in rail related infrastructure investment. The company expects to sign a deal in February 2017, valued at approximately EUR1bn (USD1.1bn), to build the first section of a high-speed rail line. The announcement also aligns with our view that Iran will, despite considerable downside risks surrounding its banking sector and political environment, witness a steady increase in infrastructure investment by Western corporations as its risk profile improves over the next year. The easing of sanctions in 2015 and the attendant access to international financial markets will drive continued improvement in the Financing pillar of Iran's Project Risk Score (*see chart*). Moreover, the head of the UN Nuclear Agency declared in June that Iran appears to be hewing to its obligations under the 2015 Nuclear Accord, making a 'snapback' of sanctions increasingly unlikely in coming months, in turn providing greater certainty around Iran's investment climate and supporting investor sentiment.

In addition, **Islamic Republic of Iran Railways** (RAI) has signed a memorandum of understanding (MoU) with German **Siemens** for cooperation in the rail sector. The MoU includes projects such as Tehran-Mashhad railroad electrification and the construction of Tehran-Isfahan high-speed railway. Under the terms of the deal, Siemens will form partnerships with local companies to facilitate technology transfer.

State-owned, emerging market companies are also continuing to invest - in the first part of the year, state-owned **Russian Railways** (RZD) signed a USD1.28bn contract with RAI to electrify a 495km railway line. The deal involves the line between Garmsar, on the Tehran-Mashhad main line, and Incheh Borun on the border with Turkmenistan through Sari and Bandar Torkaman. The contract is funded by a Russian government credit allocation to the government of Iran and it is expected to be completed in Q418.

In a more general sense, Iran has already developed a railway system and we highlight this subsector as a key beneficiary of investment in future. The network carries not only passengers but also freight - although this is limited. Iran's railway network services account for approximately 25% of the total freight

transported in the country. There is a total of 8,442km of railway track, of which the majority is standard gauge, but the country also has a broad-gauge system. Only 148km of the track are electrified.

Prior to the removal of sanctions, China had accounted for a high percentage of investment flowing into the Iranian rail sector. Evidencing this trend, **China Railway Engineering Corporation** (CREC), in collaboration with Iran-based **Khatam-al Anbiya Construction**, started work on a EUR2.4bn (USD2.73bn) high-speed railway network in February 2015. The railway network will run around 400km from the capital Tehran to Isfahan and it is expected to be completed over the next four years.

Regional Integration

A number of railway infrastructure projects have been announced that will connect Iran to other countries, thus offering increased access for rail freight. Work is under way on a railway to connect Iran with Iraq (rail tracks have been laid on Iran's side), and the country is developing its freight transport relations with the landlocked states of central Asia, with plans to launch a container train route between Almaty in Kazakhstan, Tashkent in Uzbekistan and Istanbul in Turkey.

In April 2016, work was also reportedly started on a dual-gauge rail bridge project to connect Iran and Azerbaijan. The 82m long three-span bridge, to be built across Astarachay River, will comprise a 1,520mm and a 1,435mm gauge rail track. The bridge will link **Azerbaijan Railways**' railhead at Astara with the similarly named Iranian city, where it will connect with the **Islamic Republic of Iran Railways** network. Construction of the Astarachay bridge will be completed by end-2016 (International Railway Journal). A line from Rasht to Astara is reportedly scheduled to be commissioned in 2017.

In turn, the North-South Rail Corridor, an ambitious project to create a freight-rail link from Europe, via Russia and Azerbaijan, through Iran and eventually linking to India and South East Asia, has also reported progress. It is hoped that the rail line will carry about 20mn tonnes of cargo a year and improve transport links across Eurasia. In September 2014, Iran's Minister of Roads and Urban Development, Abbas Akhoundi, revealed the government is ready to make a trilateral investment with Azerbaijan and Russia to complete the Qazvin-Rasht-Anzali-Astara railway project. The Qazvin-Rasht-Astara railway is part of the North-South Transport Corridor. Also, in May 2014, the Russian government agreed to build the 167km long Rasht-Astara railway line in Iran's north-western region. The line forms part of the proposed Qazvin-Rasht-Astara railway which is expected to carry 5-7mn tonnes of cargo and 1.4mn passengers per year.

Ports

Since the war with Iraq, Bandar Abbas has overtaken Khorramshahr as Iran's major port, handling three quarters of the 20mn tonnes of cargo that pass through Iran's Gulf ports each year. Smaller ports at Bushehr, Bandar Lengeh and Chah Bahar have also assumed greater importance. In addition, the Caspian ports have benefited from Iran's attempts to develop its relations with the central Asian republics, while modernisation programmes have been implemented at Bandar-e Anzali and Chah Bahar. Iran has also developed a transport network on its waterways. The major system is 850km long and is based on the Karun River and Lake Urmia.

In terms of the Caspian ports, the Iranian Sea ports of Anzali and Amirabad, located in the north of the country, are to undergo major capacity upgrades to double their loading and unloading capabilities, according to the Head of the Iranian Ports and Maritime Organization (PMO), Ata'ollah Sadr. The port of Anzali will increase its cargo-handling capacity from 8mn tonnes per year to 16mn tonnes. Amirabad, which is already Iran's largest Caspian Sea port, will go from a 5mn tonnes capacity to 10mn. The expansion projects have been split into two phases. The first of these is under way and has seen investment of USD52.3mn, while the second and larger phase, will need USD130mn of investment. The PMO has approved finance worth USD110mn for construction of four berths as well as a dredging operation across the Amirabad port's basin.

Despite the various obstacles facing the Iranian construction sector, we do see scope for these projects to be realised. The Caspian Sea port upgrades come off the back of increased demand for imported grain, namely from Kazakhstan and Russia. A major part of the expansion in capacity is focused towards the import of grains, with the port's third silo set to have a total capacity of 54,000 tonnes. With the increase of the number of silos in Amirabad, it will turn into the grain hub of the northern Iran for the transit of the commodity from north to south. Iran, once a wheat exporter, has been importing vast amounts of the grain in recent quarters.

The governments of India, Iran, and Afghanistan have taken a significant step towards closer co-operation by signing an agreement on May 23 2016 to develop Iran's southern port of Chabahar. Once the port is developed, it will provide a major boost for Indo-Iranian trade, and also provide a new route for Afghanistan's exports, bypassing Pakistan. In particular, the new port at Chabahar is designed to compete with Pakistan's port of Gwadar, which is being developed with Chinese assistance as part of the China-Pakistan Economic Corridor (CPEC). CPEC in turn is part of a larger Chinese initiative known as 'One Belt

One Road' (OBOR), which envisages new land and sea routes connecting China to Western Eurasia and East Africa.

Now that most international sanctions on Iran have been eased, India has moved to revive the project. Iran stands to benefit from Chabahar, as it will get an enhanced port from which to export more goods to India and the Asia-Pacific region, at a time when Iran is seeking to reintegrate itself into the global economy. Iran would also benefit from increased Indian investment. For their part, it seems that Indian firms are seeking to gain first-mover advantage in one of the world's biggest new emerging markets, at a time when Western companies are still hesitant about entering Iran.

Table: Key Transport Infrastructure Projects

Project Name	Value (USDmn)	Size	Unit	Companies	Time-frame End	Status
Chabahar-Zahedan-Mashhad Railway	3,400.00	1,330	km	Iran Roads and Transportation Ministry[Operator]{Iran}	2015	Under construction
Imam Khomeini International Airport Expansion Project Phase 2, Tehran	2,800.00	-	-	Bonyad Taavon[Sponsor]{Iran}, Government of Iran[Sponsor]{Iran}	-	At planning stage
Tehran-Isfahan High-speed Railway	2,730.00	400	km	China Export & Credit Insurance Corporation (Sinosure)[Financier]{China}, China Railway Engineering Corporation (CREC)[Construction]{China}	2019	Under construction
Tehran-Khosravi Rail Line	2,000.00	569	km	-	-	At planning stage
Tehran-Mashhad Rail Line Electrification Project	2,000.00	900	km	Mapna[Construction]{Iran}	-	Under construction

BMI Infrastructure Key Projects Database

Energy And Utilities Infrastructure – Outlook And Overview

***BMI View**: Iran's power and utilities sector will continue to reap the benefits of the recent easing of the international sanctions regime, as international investors pile into a sector suffering from decades of underinvestment and characterized by significant pent-up demand. We expect infrastructure associated with the extraction, transport, and consumption of hydrocarbons to be a particular focus given Iran's heavily oil and gas oriented economy, with power plants and oil and gas pipelines emerging as bright spots, while water and renewable infrastructure lags behind.*

Latest Updates

- South Korea-based **Doosan Heavy Industries & Construction** secured a KRW220bn (USD185mn) contract from Iranian firm **Sazeh Sazan** to build a desalination plant in Iran. Doosan will be responsible for engineering, procurement, construction and test operations as well as the plants operation and maintenance for 12 years. The facility, dubbed SAKO SWRO, will be at Bandar Abbas. It will process 200,000 tonnes of sea water into fresh water daily, sufficient for 670,000 people. Construction work is slated to be completed in October 2018.
- Our optimistic view of Iran's oil and gas pipeline sector is in part informed by an August announcement by **Iran Gas Engineering and Development Company (IGEDC)** managing director Hassan Montazer Torbati, in which he outlines plans to lay an additional 6,000km of natural gas pipeline in the coming years. The build out of Iran's pipeline network will be necessary to accommodate a projected uptick in natural gas consumption within Iran, in addition to facilitating its stated desire to boost export capacity to neighbouring nations.
- State-owned **Technopromexport** became Russia's first industrial enterprise to secure a contract in Iran since the removal of international sanctions when it won a tender in August to construct a 1.4GW thermal power station in the Iranian port of Bandar Abbas. The facility, which will cost USD1.1bn to construct, will have four 350MW generators and a seawater desalination plant with capacity of 200,000 cubic metres per day. A Russian state loan will fund 85% of the project costs, while the remainder will be provided by Iran.

Structural Trends

2016-2020: Strong Demand To Attract Investment

Iran's energy and utilities sector is poised for robust growth in a post-sanctions environment as it emerges from decades of isolation and underinvestment. The historical economic importance of the energy industry in Iran coupled with favourable structural demand trends in the energy space will ensure growth is concentrated in the power and utilities and oil and gas pipeline subsectors.

Power Plant Investment To Surge

The relaxation of nearly all international sanctions placed on Iran, strong growth in power demand and the government's supportive policies towards renewable energy will drive investment into Iran's power market over the coming decade. We expect power consumption to increase by an annualized average of 4.1% between 2016 and 2025, supported by robust average real GDP growth of 4% per year over the same time horizon, which will necessitate an expansion of power capacity in the country. Energy Minister Hamid Chitchian indicated in July that Iran needed approximately USD30bn of investment in the country's power sector.

Although Iran has the installed capacity to meet demand, the country's undiversified power sector is susceptible to blackouts. Iran possesses the world's second-largest gas reserves and has built a power sector that is overwhelmingly reliant on this indigenous fuel. Gas is expected to account for 70% of the country's total power generation by 2018, increasing to more than 73% by 2024. Gas-fired projects include two 1.04GW combined cycle plants in the south of the country, a 1.3GW combined cycle plant at Arak, a 1GW facility in Bandar Abbas, and a 1GW combined-cycle plant being built by the **Tehran Regional Electricity Company** in Qom.

In light of the above, we have seen a spate of international investment into the power sector, both from regional neighbours and international companies. Reflecting this trend, Turkish firm **UNIT** International also signed a USD4.2bn deal on June 1 with the Iranian energy ministry to build seven natural gas-fired power plants in Iran. The combined-cycle power plants will be built in seven separate regions and will have a combined installed capacity of 6,020MW. Construction of the seven power stations is scheduled to start in Q117. Once complete, the power plants are expected to meet 10% of the country's energy needs.

In March 2016, the governments of Iran and South Korea have signed three deals, worth about USD1.6bn. The desalination facility will be built in the Chabahar Free Trade-Industrial Zone (CFZ) by South Korean steel-making company POSCO and Korea Electric Power Corporation, reports the Tehran Times. A second deal involves a memorandum of agreement signed between POSCO and Iranian steelmaker Pars Kohan Diar Parsian Steel (PKP) to jointly build a steel mill, also in CFZ. POSCO's subsidiary POSCO Energy signed the third memorandum of understanding with PKP to build a 500MW gas-fired power plant, which will use gas from the planned steel mill.

An unnamed Belgian firm will develop a new 600MW combined-cycle power plant near Tabriz city, north western Iran, reports Islamic Republic News Agency, citing Reza Hosseini, deputy head of the Centre for Investment Services of East Azerbaijan Province. The F class power plant will be constructed near the Soufian power plant within three to four years. Hosseini said the plant's construction will involve an investment of around USD700mn, which will be made available by the Belgian firm.

In the post-sanctions context, we expect Russia to continue to play a predominant role, particularly in Iran's nuclear energy sector. To realise the above mentioned expansion in power generation capacity, Iran and Russia have signed several agreement on energy cooperation and are constructing shared power grids. In fact, Iran and Russia entered into a preliminary agreement to build at least two nuclear power plants in March 2014, according to Iranian Atomic Energy Organisation spokesperson, Behrouz Kamalvandi. The two new 1,000MW stations will be built alongside the existing 1,000MW power plant in Bushehr.

In addition, Russia announced in April 2014 that it will invest USD10bn in Iran's power sector, including hydropower and thermal power plants, as well as transmission and distribution (T&D) infrastructure. It has been suggested that four units of the power plants will be built in the southern port city of Bandar Abbas, two units in the Sahand city, north-west Iran and two units in the Tabas city in the east. Under the contract, the Russians will reportedly also renovate four more plants in Iran.

Gas Pipelines Key To Iranian Gas Ambition

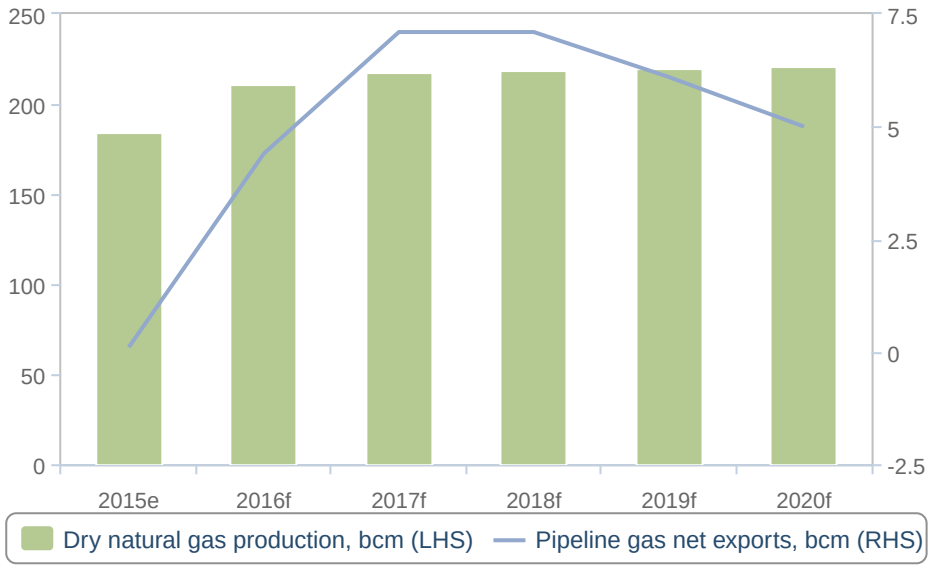
Iran's oil and gas pipeline sector is poised for extensive growth in the wake of the easing of the sanctions regime in 2015 and underpins the positive growth story associated with Iran's broader construction sector, which we expect to expand in real terms by 7.9% in 2016. Growth will be supported by a robust project pipeline that will further the Iranian government's aims of improving the connectivity of the nation's domestic pipeline network and boosting its natural gas export capacity.

Our optimism for the growth prospects of Iranian pipeline infrastructure over the next five years is founded upon the commitment of the Iranian government to an ambitious pipeline construction program. According to Hassan Montazer Torbati, a managing director of **Iran Gas Engineering and Development Company (IGEDC),** the Islamic Republic will lay approximately 6,000km of new gas pipelines in the coming years to bolster its existing network of 34,000km. In addition, Torbati indicated that Iran currently has ten gas pressure stations under construction, and has plans to construct 36 more in the coming years. The most significant standalone project in the pipeline is the planned Iran - Oman subsea pipeline, which would move natural gas from Iran across the Persia Gulf to Oman, where, utilizing existing Omani infrastructure, it

would be processed and exported as Liquefied Natural Gas (LNG). The state-owned **National Iranian Gas** and the **Iranian Offshore Engineering and Construction Companies** have held trilateral talks with an unnamed Omani firm regarding the USD1.5bn project, which is expected to solicit private sector involvement upon the conclusion of survey studies. The pipeline will transfer 20mn cubic metres of Iranian gas per day to Oman for 25 years. Seven private contractors, including South Korea based **Kogas** and Dutch firm **Intecsea**, have registered interest to date.

Iran To Feed Regional Gas Demand

Dry Natural Gas Production & Pipeline Gas Net Exports, bcm



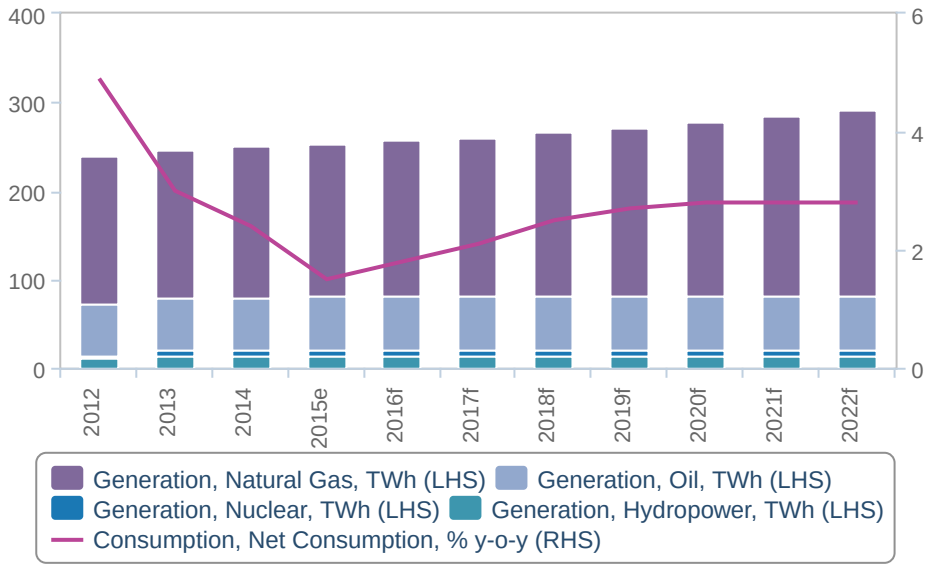
e/f = estimate/forecast. Source: National Sources/BMI

Iran's plan to further expand its natural gas pipeline infrastructure is set against a backdrop of surging demand, domestically and among Iran's regional neighbours, trends which we expect to continue to provide commercial support to the scale of the Iranian government's pipeline investment programme. Domestic demand for natural gas in Iran's next calendar year is projected to be 33% higher than in 2013, with demand rising to 212bn cubic meters per year, according to our forecast. The ongoing extension and modernization of Iran's gas pipeline network is meant to accommodate this growing demand and will also facilitate the increased consumption of natural gas throughout rural Iran, where only 60% of citizens utilise gas.

However, Iran's growing appetite for natural gas pales in comparison to the size of the country's reserves, currently ranked the second largest in the world, a disparity which ensures that Iran will retain export capacity for the foreseeable future. The government aims to capitalize on its gas potential by exporting to regional neighbours via pipeline, and to that end either has contracts in place or has signed Memoranda of Understanding (MOU) with countries like Iraq, Pakistan, and Oman (in addition to its current sole export destination of Turkey). The government hopes to export 68bn cu m/yr by 2020, a projection which, even if never fully realized, nevertheless underpins our optimistic outlook for Iran's oil and gas pipeline sector.

Highly Reliant On Gas

Iran Power Generation Mix And Electricity Consumption Real Growth % y-o-y



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

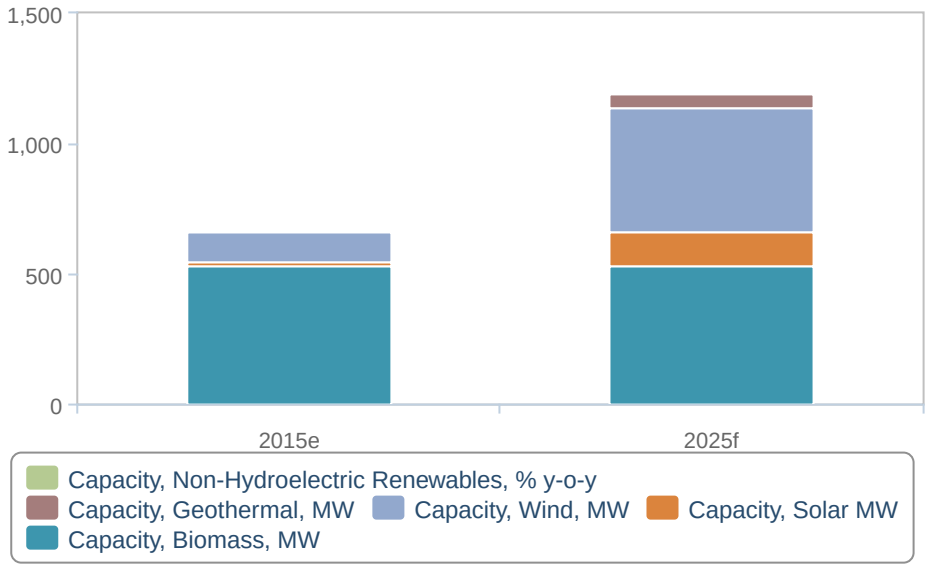
Renewables To Remain In Gas's Shadow

Investor interest has notably increased over the last few months and the project pipeline for both renewable energy and conventional power projects has strengthened - we have seen investment pledges from numerous international companies, particularly Italian firms, but also German, UK, Turkish and South Korean companies.

We expect gas to remain the dominant fuel for electricity generation, actually increasing its share to 75% (from a current level of around 70%) of the country's total power mix over our 10-year forecast period. By increasing its dependence on domestic gas resources, Iran will be able to reduce the amount of oil used in power generation and preserve it for export. They expect oil-fired power generation to grow by just 1.2% between 2016 and 2025, reducing its share in the power mix from 22% to 17%. Conversely, natural gas will increase by 46.3% during the same time period, as new gas-fired power plants are gradually commissioned and the existing fleet of gas power plants are upgraded or replaced with more efficient combined cycle gas turbines. Average efficiency rates across Iran thermal power plant fleet are currently reported to be 37%.

Renewables On The Rise, But Below Expectations

Iran - Non Hydro Renewables Capacity By Type



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

While we acknowledge that the project pipeline is strengthening and interest in Iran's power market will continue to rise, we remain cautious with regards to how much of the planned project pipeline will be commissioned. This is due to the sizeable risks associated with doing business in the country - ranging from limited access to financing, corruption and bureaucratic hurdles and government economic interventionism.

This is particularly evident in the renewables sector, which has seen a significant influx of international players enter the market via the signing of MoUs with Iran for the development of renewable energy

projects. The government aims to install 5,000MW of renewables capacity by 2018 and has increased its feed-in-tariffs in order to reach this target. However, we do not expect the government to succeed in meeting these targets, owing to the aforementioned risks and the underdeveloped nature of the renewables sector at present (renewable electricity generation contributes less than 1% to the total, as of 2016). Although we expect robust growth in wind and solar capacity, installed non-hydro renewables capacity will stand at just over 1GW by 2018.

Progress On The Water Front

Iran is projected to rank 14th globally by 2020 with regard to levels of water stress, according to the World Resources Institute's Water Stress Index and given the country's frequent water shortages - particularly in times of drought - international investors will continue to benefit from additional opportunities in the water sector.

Continuing the trend of South Korean companies investing heavily across Iranian infrastructure, Iran in August signed three MOU's with K-Water and Daelim for water supply and management and wastewater treatment solutions. In addition, one of the aforementioned deals between the governments of South Korea and Iran at the port of Chabahar involves the construction of a 60 megalitre-a-day desalination plant in Iran.

The Iranian government has also been active in funding water projects; in March 2015, the government opened the fifth and sixth units of a wastewater treatment plant in southern Tehran. The plant will cover more than 1mn people and produce 16,000MW of electricity annually. The project is part of a wider project, Tehran Sewerage Project, covering more than 11mn people in Tehran. The government has also allocated IRR20trn (USD713.6mn) to implement six other sewage treatment projects across Tehran, according to President Hassan Rouhani.

Iran's challenging environment for investment has increased the country's dependency on multilateral agencies funding for infrastructure projects. In addition to the above mentioned project for the Sarney Dam, the **Islamic Development Bank (IDB)** also approved a EUR144mn (USD197.61mn) loan for the development of water and wastewater projects in the Iranian province of Fars in February 2014. The fund will be utilised by Iran's **Water & Wastewater Company** to construct wastewater facilities in Abadeh, Fasa, Darab, Sepidan, Neiriz and Firouzabad, according to Water & Wastewater Company's MD, Hamid Reza Janbaz. In addition, the IDB also earmarked EUR200mn (USD250.17mn) for building rural wastewater networks in Iran in November 2014.

Furthermore, the Iranian Ministry of Energy signed an agreement in September 2014 with local water and sewage utility company **ABFA** to develop seven water and wastewater management projects in the country. About IRR9.5trn (USD310mn) will be invested in the projects, including a project to facilitate water supply in Khash and building desalination plants in Bandar Torkman, Gomishan and Kerman. Under the agreement, the company will also upgrade wastewater treatment plants in Zavareh and Tehran. In the topic of desalination plants, the government started pilot testing of a solar-powered desalination facility in Hormozgan Province and the test results will be used to commercialise the project.

Table: Key Projects: Energy & Utilities

Project Name	Sector	Value (USDmn)	Size	Unit	Companies	Time-frame End	Status
Bushehr Nuclear Power Plants - Phase II	Power Plants & transmission grids	10,000.00	2,000	MW	Atomic Energy Organisation of Iran[Sponsor]{Iran}	-	At planning stage
Bakhtiari Hydropower Plant CDM Project, Zagros Mountains, Lorestan	Power Plants & transmission grids	1,500.00	1,500	MW	Iran Water & Power Resources Development Co[Operator]{Iran}, Rahbord Energy Design & Development Eng. Co. (REDECo) [Consultant/Project Management]{Iran}	-	Under construction
Caspian Sea-Semnan Water Pipeline And Desalination Plant	Water	1,000.00	200	mn m3 per year	-	-	Under construction
Tabas Coal Fired Power Station, Khorasan	Power Plants & transmission grids	880.00	650	MW	Tavanir[Sponsor]{Iran}, Iran Power Plant Investment Company[Operator]{Iran}, Mapna[Equipment]{Iran}	-	Under construction
Persian Gulf coast water supply pipeline	Water	243.30	762	km	-	-	Announced
Qazvin Wind Park, Kahak	Power Plants & transmission grids	200.64	100	MW	Mapna[Sponsor]{Iran}	2016	Under construction

BMI Infrastructure Key Projects Database

Residential/Non-Residential Building – Outlook And Overview

BMI View*: We expect Iran's residential and non-residential building sector to mirror the broader economy in returning to growth in 2016 after years of stagnation. In particular, Iran's brightening macroeconomic outlook in a post-sanctions environment will galvanize investment in the industrial and commercial subsectors; and while structural demand for residential construction remains robust on the back of demographic considerations, growth in the sector will remain relatively muted owing to the distortionary effects of sanctions and the ill-conceived Mehr housing programme.*

Latest Updates

- Investment in industrial infrastructure in particular will witness an uptick as Iran's economy emerges from sanctions-driven isolation. On June 21, the Turkish government signed a memorandum of understanding with the Iran Chamber of Commerce, Industries, Mines and Agriculture to construct an industrial zone in Iran. Turkey will initially spend USD10bn on the project, which will be accompanied by technology transfer. Iran has proposed seven locations for the industrial zone, according to Iranian Deputy Minister of Industry, Mine and Trade, Ali Yazdani.
- We expect inflation to continue its downward trend in 2016, which will have the effect of boosting domestic purchasing power and supporting demand for low end housing. Although Iran's 2016 forecasted inflation of 9% remains relatively high by regional standards, it nevertheless represents a significant decrease when compared to its preceding three year average of 27%.
- The Iranian government has yet to unveil a comprehensive successor to its 'Mehr' housing program, a policy widely acknowledged to have failed in its stated goal of dramatically increasing the amount of affordable housing in Iran. In addition, President Rouhani indicated in August that he would prefer more private sector involvement in the construction of housing, which signals that unlike his predecessor, he is less likely to adopt a state-driven model in delivering affordable housing.

Structural Trends

2016-2020: Housing Growth Subdued Despite Shortfall

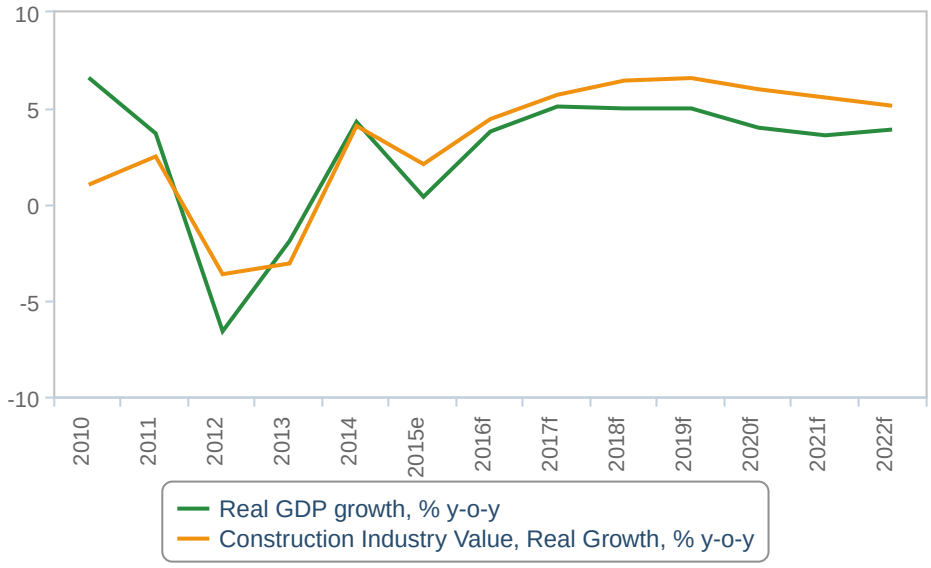
Although we hold a more optimistic long term of Iran's residential construction industry, sector value growth in 2016 will remain constrained by the lingering effects of recently removed international sanctions and a legacy of government mismanagement. As such, we expect that there to be a multi-year period of adjustment before structural market fundamentals and Iran's persistent housing deficit engender a return to sustained growth.

Years of sanctions against Iran have significantly eroded the purchasing power of the ordinary Iranian, as a plunging rial raised the cost of imported goods and soaring inflation lowered real income rates, both of

which have dampened demand for new residential construction in 2016. Concurrently, the capital controls imposed upon wealthier Iranians that prevented them from investing their money abroad incentivized them to park their money in property in Tehran and elsewhere, which had the effect of inflating a property bubble and in turn prompted developers to construct high end residential properties; when the bubble burst in 2014, the country was left with an overhang of available high end housing that was nevertheless too expensive for ordinary Iranians to afford. We expect that a multi-year period of sustained economic growth will translate into heightened demand for housing and eventually catalyze a return to real growth in the residential sector.

Back On The Right Track

Iran GDP And Construction Industry Forecasts



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

The interplay of elevated price pressures and a weak currency has contributed to high unemployment in Iran in recent years. Iranians' purchasing power eroded steadily over the past several quarters, with inflation making it difficult to purchase basic goods. That said, we expect activity in the housing market to recover from 2016, on the back of government policy to support the sector and improving macroeconomic conditions - particularly unemployment - which will result once sanctions are lifted.

In an effort to reduce the country's chronic housing deficit, which by some estimates is as large as 750,000 units per year, the Iranian government back in 2007 announced the Mehr initiative, which sought to deliver

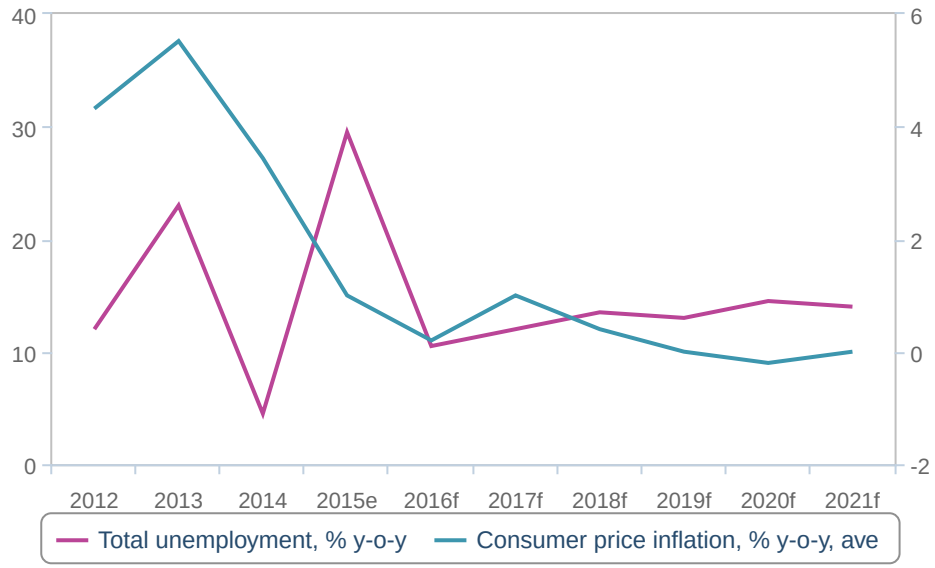
two million low cost housing units with mortgages guaranteed by the regime. The initiative, which formed the cornerstone of the government's housing policy, misfired in a number of crucial ways:

- Location mismatch: Many of the units were constructed in rural and desert areas, far away from burgeoning urban areas like Tehran and Isfahan, with some lacking vital necessities like access to water. As the majority of poor urban dwellers were disinclined to move to such areas, many of them currently sit empty.
- Corruption: Government insiders who were able to anticipate or circumvent particular legislation and buy up large swaths of Mehr housing stock subsequently set off a speculative frenzy, which had the effect of driving prices beyond the means of those the policy was intended to help.

The current administration led by President Hassan Rouhani has pledged to halt, or at least scale back, the Mehr plan, a move which will likely encourage private sector companies to return to affordable housing dvelopment and contribute to a gradual decline in housing costs. However, it is our view that housing prices will remain relatively elevated in the short term, largely a result of the aforementioned price and location mismatches, and that any possible growth effects resulting from a change in government policy will only be apparent in the coming years.

Improving Macroenomics

Iran Inflation And Unemployment Rates



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

Industrial Construction Gaining Steam

We have also started to notice increasing activity in Iran's industrial construction sector as the removal of sanctions galvanizes international investment in the Islamic Republic.

Most recently, in May 2016 South Korean construction companies agreed to build hospitals with 6,000 beds in Iran at a total cost of USD2bn, according to the country's Ministry of Health and Welfare. More than 50 memorandums of understanding (MoUs) have been signed for the healthcare projects as well as projects from other sectors, following South Korean President Park Geun-hye's visit in Iran earlier in May. According to the MoUs, Samsung C&T will build two hospitals in Tehran and Mazandaran, while Hyundai and POSCO Daewoo Corporation will build another hospital in Fars. Healthcare facilities will also be built by Daelim Industrial, GS Engineering & Construction, Hanwha Corporation and Korea Medical Holdings.

Also in May 2016, it was reported that South Korea-based Daewoo Engineering & Construction (Daewoo E&C) has signed a memorandum of understanding (MoU) with Iran-based Bahman Geno Company to jointly build an oil refinery in Iran. The project, worth about USD10bn, involves building a refinery with capacity of 300,000 barrels per day in Bandar-e Jask. South Korean construction firm Hyundai Engineering & Construction and several local companies will also work on the project.

Additionally, the government reportedly plans to build eight condensate refineries in the South Pars region in Bushehr province, as announced in June 2015. According to Iran's Oil Ministry, the private sector will be heavily involved in the implementation of this project. The refineries will have production capacity of 24,800 barrels per day (b/d) of liquefied gas, 148,000b/d of heavy naphtha, 128,000b/d of light naphtha, 149,600b/d of diesel and 29,600b/d of jet fuel. Expanding its refining capacity will be critical for the long-term growth of the country.

Furthermore, the **Steel Authority of India Limited** (SAIL) plans to build a steel manufacturing plant in Bandar Abbas. The USD1.62bn project comprises construction of processing units, warehouses, production units, distribution units and related infrastructure. The project is scheduled to be completed in Q119. This followed the announcement that two China-based firms, **Metallurgical Corporation of China** and **Zhongye Changtian International Engineering**, reportedly secured a contract to build; a USD297mn pellet plant in the Iranian province of Yazd in February 2014. Both firms will develop the plant under an engineering, procurement, construction and financing contract. Once complete, the plant will be capable of producing 5mn tons of pellets annually. The plant is scheduled to start operating by July 2016.

Investments in hospital structures are also to see an increase in interest. Confirming our expectation, the first half of 2016 saw Italian firm Pessina Costruzioni sign a memorandum of understanding (MoU) with Iran's Ministry of Health to build five hospitals in Iran, Three 1,000-bed hospitals will be built in Tehran, reports the Iran Project. Two 500-bed units will reportedly be built in the cities of Rasht and Nayshabur. Separately, the Export-Import Bank of Korea signed an MoU with an Iranian entity to develop 10 hospitals and pharmaceutical centres in the country.

Table: Key Projects: Construction & Social Infrastructure

Project Name	Sector	Value (USDmn)	Size	Unit	Companies	Time-frame End	Status
Bandar-e Jask Oil Refinery, Hormozgan	Industrial Construction	10,000.00	300,000	b/d	Hyundai Engineering & Construction[Construction] {South Korea}, Bahman Geno Company[Operator]{Iran}, Daewoo Engineering & Construction Company[Construction]{South Korea}	-	At planning stage
NALCO Aluminium Complex	Industrial Construction	2,600.00	1,000	'000 tonnes	National Aluminium Company Limited (NALCO)[Sponsor] {India}	-	At planning stage
Bandar Abbas Steel Plant, Hormozgan	Industrial Construction	1,620.00	2,000	'000 tonnes	Steel Authority of India Limited (SAIL)[Operator]{India}	2019	Announced
Bafq Pellet Plant, Yazd	Industrial Construction	300.00	5,000	'000 tonnes	Bafgh Mineral Complex Iron and Steel Industry Company - B-MISCO[Sponsor]{Iran}, China Metallurgical Group Corporation[Construction] {China}, Zhongye Changtian International Engineering Company[Construction]{China}, Outotec[Consultant/Project Management]{Finland}	2016	At planning stage
Sarooj Pars Complex, Kerman	Commercial Construction	120.00	60,000	square metres	WJ Towell[Operator](50){Oman}, Sarooj Construction Company[Operator](50){Oman}	-	Under construction

BMI Infrastructure Key Projects Database

Industry Risk Reward Ratings

Iran - Infrastructure Risk/Reward Index

The removal of sanctions against Iran in January 2016 and the improvement in infrastructure market access and the country's broader risk profile has led to a dramatically improved score on our RRI Index in Q4, with Iran's overall score jumping to 48 from its Q3 score of 42.3. Despite the improvement, Iran scores below the MENA regional average and given the structural problems inherent in Iran's economy and political system, we anticipate the country will continue to do so in coming years.

Rewards

Industry Rewards

Iran's Q4 Industry Reward score improved dramatically, from 42.5 to 55, vaulting the country above the regional average of 52.1 for the first time in years. Iran's improvement aligns with our increasingly bullish view of construction sector growth potential following the lifting of sanctions, which we have revised upwards to 7.9% for 2016. Although we do not expect the construction sector to recover to pre-crisis growth levels soon due to structural weaknesses in the economy, we nevertheless believe that the gathering pace of investment pledges by international firms warrant such an increase. In terms of value, the Iranian construction industry is sizeable, and is underpinned by a large and growing population, ensuring that heightened structural demand will remain a key driver of sector growth.

Country Rewards

Iran trails the regional average of 54.6 with its Country Rewards score of 42.7, which has held steady this quarter. The need to strengthen the capital ratios and improve non-performing loan ratios in the country's banking sector continued to weigh on Iran's country structure score in Q4. The country also suffers from a poorly structured financial system that has further deteriorated in isolation from the global financial system, which creates hurdles when attempting to access capital. Iran scores modestly in terms of its labour market, which is characterized by above average wages for the region and a lack of vocational skills (owing to a decades-long brain drain). Lastly, according to the World Bank, Iran scores a perfect 100 with regard to electricity.

Risks

Industry Risks

Iran scores an unchanged 35.0 for Industry Risks in Q4, reflecting the high barriers to entry and lack of competition in the country's infrastructure market. The Foreign Investment Promotion and Protection Action (FIPPA) has improved regulations surrounding foreign investment. However, the level of investment still remains capped in most instances and Iranian companies still need to hold the majority stake in most ventures**.** The amount of foreign direct investment is small and will have to grow significantly if Iran is to make headway with privatisation plans. Although a number of foreign firms have invested in the country following the easing of sanctions, the sector remains dominated by a small number of state-owned domestic firms, which serves to dampen competition.

Country Risks

Iran receives an improved score of 46.2 for the Country Risks sub-category, again below the regional average of 55, as foreign firms still find the legal/regulatory aspect of doing business in Iran laborious and prohibitive. The country's score is weighed down by a lack of separation between the executive and judicial branches, as well as the risk of renewed political and economic isolation should sanctions be reinstated. The country suffers from endemic levels of corruption, while a complicated and poorly enforced commercial legal code undermines the effectiveness of the Iranian judicial system. Although nominally independent, political interference in the judicial system is rife, which further damages the business environment for foreign firms.

Note: Individual country scores are subject to change, based on the latest data available.

MENA Infrastructure RRI: Oil Prices And Security Remain Key Risks

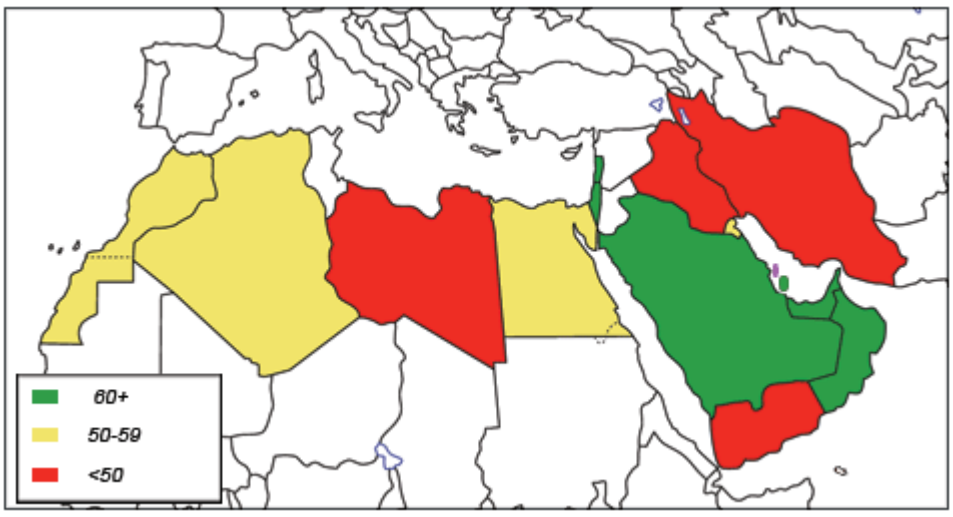
BMI View: *Some of the MENA region's strongest infrastructure markets will see shrinking rewards on offer over 2016 and 2017 as economies slow on the back of fiscal consolidation. Nevertheless the GCC will remain the most attractive markets, while interest in Iran continues to gain traction.*

This quarter we are highlighting the following trends and changes in our Infrastructure Risk/Reward Index (RRI) for the Middle East and North Africa (MENA) region:

- Scores in the region have remained stable this quarter, with the GCC dominating the top positions within the regional table, North African markets holding firm in the middle and conflict torn states vastly underperforming the regional RRI scores.
- Fiscal pressures continue to mount in oil exporting countries and economic growth will slow substantially in 2017 as a result. This will be particularly striking in terms of the impact on reward opportunities in the previously booming GCC markets. Qatar and the UAE will still enjoy solid levels of construction industry real growth.
- Iran remains on top of our watch list for an improving risk/reward profile. Currently Iran languishes in 11th out of 14 markets in the MENA region, although there has been a significant uptick in investor activity since the removal of sanctions which will boost rewards when the market begins to gain traction in the coming years.

Rewarding Markets Clear

MENA Regional RRI Scores



Notes: Scores 0-100, Higher score=lower risk. Source: BMI

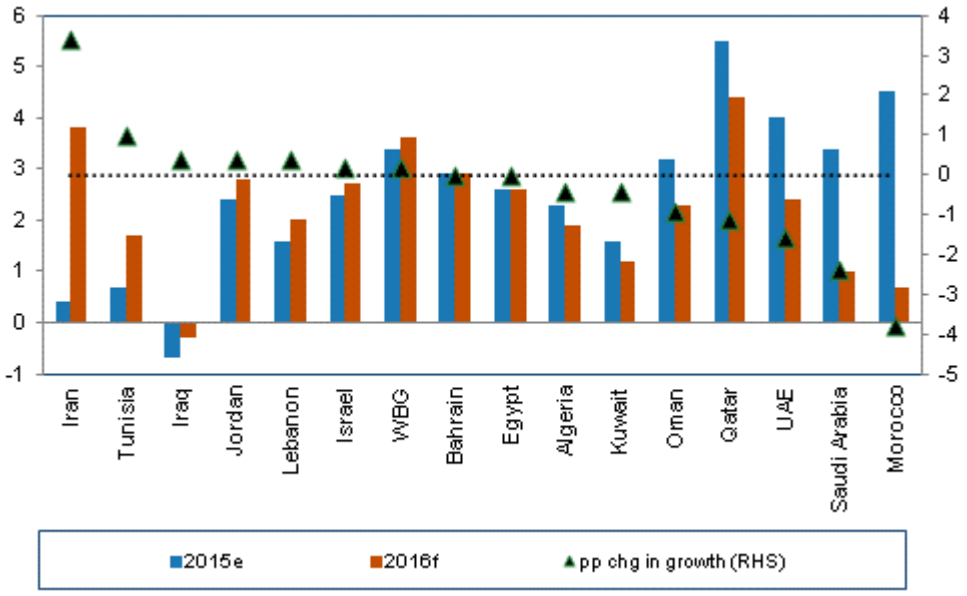
Slower Economic Growth To Take Hold On Rewards

The Gulf Cooperation Council (GCC) members on the whole remain the most attractive market in the MENA region, according to our Infrastructure Risk Reward Index (RRI). Overall the GCC's relative economic openness, infrastructure-focused governments and keenness to attract international investors to position themselves as global business hubs, means they will remain choice markets for construction, engineering and services companies looking to expand their global footprint. Qatar, Saudi Arabia, Oman and the UAE occupy the top four spots in our regional table. Kuwait and Bahrain outperform regional averages in three of the four pillars of the RRI, but lower Industry Rewards scores - largely on account of limited market size and slower growth - mean they do not accompany their GCC counterparts at the top of the table.

We expect these structural advantages to see the long-standing outperformance of GCC markets to continue over our 10-year forecast period, but over 2016 and 2017 we see some tempering of this as the impact of lower energy prices truly takes hold of economic growth, putting rewards on offer in these markets under pressure.

Economic Growth In MENA Is Slowing

Selected Countries - Real GDP Growth, % chg y-o-y, And Percentage Point Change In Growth

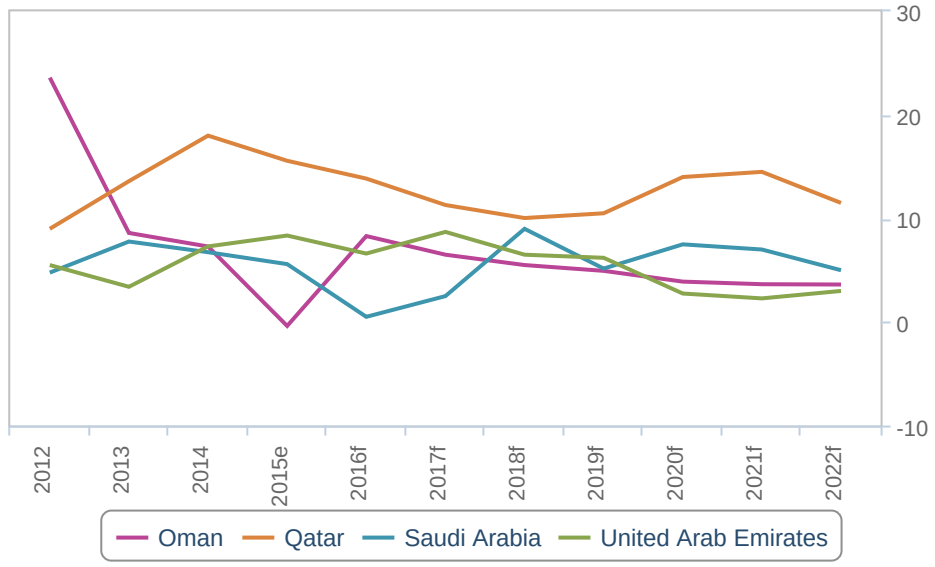


e/f = BMI estimate/forecast. Source: National Statistics, UN, IMF, BMI

In light of this new economic environment, governments across the GCC have engaged in fiscal consolidation. While infrastructure spending is not the major focus of this, there has been some rationalisation of project pipelines. Furthermore and key for our outlooks for the regional construction markets, this fiscal consolidation is impacting business confidence and liquidity is tightening with the potential for rate hikes before the end of 2016. Combined, investment from the private sector and capital available for construction firms has reduced over 2016, which we believe will drag on construction industry growth.

Weakening Infrastructure Forecasts

Construction Industry Value Real Growth Forecasts



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

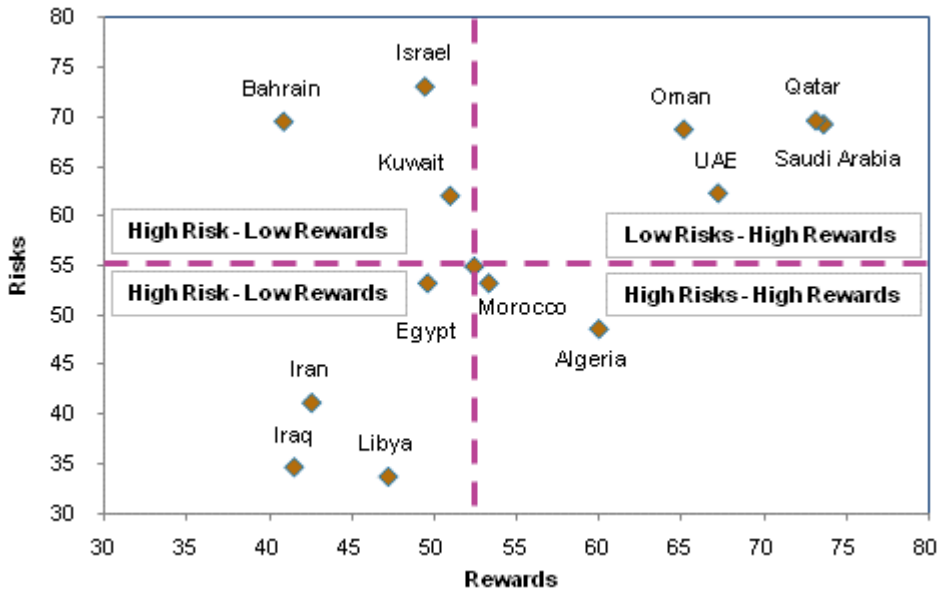
While this is a major theme, infrastructure opportunities - especially in the UAE, Qatar and Saudi Arabia - will remain robust as governments retain substantial financial resources as well as move to secure additional revenue streams to lessen the impact of lower oil prices. For example, all GCC states plan to introduce a common VAT by 2018 and there have been numerous subsidy reforms already undertaken across the member states.

In Qatar, which has tops of our RRI regional table, we continue to see strength in the construction sector even in the face of lower energy prices. Qatar also has a sizeable sovereign wealth fund and is able to tap into international debt markets, as well as having the World Cup in 2022 to prepare for which will force it to prioritise infrastructure spending. While the government has spoken of the need to control spending, we do not expect a major shift in government expenditures or an effect on consumer confidence over the coming quarters.

Qatar is a relative exception, however, in terms of being able to maintain substantial Industry Rewards in such an environment. As such, we expect that there will be a surge in the use of private financing for infrastructure projects. While largely in very nascent stages of development, most GCC markets are now actively developing frameworks in order to leverage private investors into infrastructure projects. Traditionally the region has leaned on hydrocarbons wealth to publicly fund infrastructure, however we have seen a growing number of PPPs and intentions to use PPPs announced. Saudi Arabia's Vision 2030 for example, announced in April, indicated plans to establish a PPP unit and employ the model to procure infrastructure more systematically. Oman, one of the most stable and open markets in the GCC, has the longest history of using PPPs in the region and one of the greatest needs. As part of its ninth five year plan spanning 2016 to 2020, the government in late 2015 announced its intention to overhaul said PPP framework so as to make it yet more attractive to private investors -- details are expected to be released at some point in Q3 (*see 'PPPs To Drive Growth In Water Sector', 22 June*).

Rewards Falling, Risks Rising

MENA - Risk/Reward Index Matrix*



Scores 0-100, with higher scores preferable. Source: BMI

Iran's Rewards Tempting Investors

With regards to Iran, we maintain our outlook for slow but steadily improving construction industry growth in 2016 as we international sanctions are lifted. Building upon the trend we've seen in the past year, both regional neighbours and developed nations are expanding their investment in Iranian infrastructure, with the transportation and power sub-sectors emerging as outperformers (*see 'Growing Investment Commitments To Support Construction Sector' 9 June*). Furthermore, a reduction in risk factors and an improving economic climate are improving Iran's ability to fund infrastructure projects. The table below attests to the interest in Iranian infrastructure, showing deals signed over H116. While not indicative of actual construction activity to come, it does show the potential rewards boost Iran's RRI score could receive over the coming years.

Table: Select Infrastructure Investments January -- June 2016

Sector	Amount (USDbn)	Project	Partner Company	Country	Funding Structure
General	N/A	Plan to increase bilateral trade to USD600bn over 25 years	N/A	China	N/A
Oil and Gas	10	300,000 bpd refinery at Bandar-e Jask	Daewoo, Hyundai	South Korea	MoU for joint-build
Power	4.2	Power Infrastructure	Unit International	Turkey	Build Operate
Rail	3.38	Tehran-Hamadan and Qom-Arak high-speed rail lines	Ferrovie dello Stato Italiane	Italy	EPC
Power	3	5000MW Power plant	Consortium of Turkish companies	Turkey	EPC
Rail/General	2.5	Loan for infrastructure projects	Russian Railways, Rostec	Russia	State Loan
Social	2	Hospitals (6,000 beds)	Daewoo, Hyundai, Daelim, Hanwa	South Korea	EPC
General	1.6	Desalinisation plant, steel mill, 500MW gas power plant	POSCO, Korea Electric Power Corporation	South Korea	EPC
Road	1.5	121km Tehran- Shomal highway	Daewoo	South Korea	EPC
Rail	2	Railway Electrification	China ExIm Bank	China	N/A
General	0.6	Power Plant, Steel Company, Telecom Network	FATA, Beleli, Danielli	Italy	EPC
Port	0.5	Development of Port of Chabahar. Smelter in Chabahar Free Trade Zone. 500km railway connecting Chabahar to the Iranian city of Zahedan	Various	India	State Loan
Airport	2.8	Second terminal at Imam Khomeini International Airport and others	Bouygues, ADP, Vinci	France	EPC & Operate (Vinci)
Rail	1.5	Electrification of select rail lines throughout Iran	Siemens	Germany	EPC (w/ maintenance contracts)
Airport	0.3	A new terminal at Mehrabad International Airport	Italian Milan Airport	Italy	EPC

Source: Local News, BMI Research

Egypt and Morocco Top Higher Risk Markets

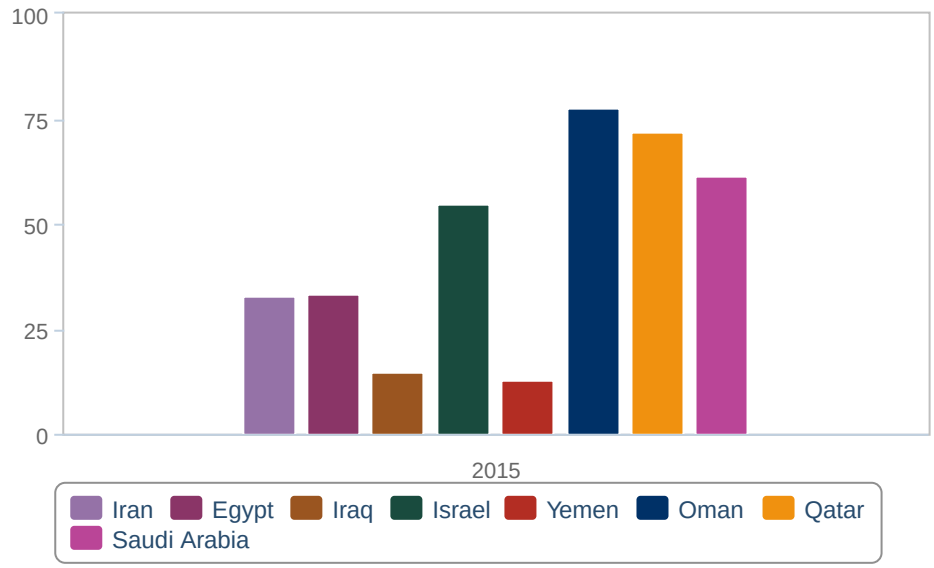
We see little prospect for a full resolution to the volatility in Iraq, Yemen and Libya; as such, these market's risk/reward profile remains heavily weighted towards risks. Together these markets are the lowest scoring in

our RRI for the MENA region and while could be substantial reward potential to come from reconstruction efforts (as we have previously seen in Libya and Iraq), they remain a distant prospect at present.

Despite expectations of Islamic State (IS) being militarily defeated in Iraq, Iraq's political stability will not improve over the coming months. There is little hope for sectarian tensions and the political crisis in Baghdad to wane rapidly, while IS could fuel instability by carrying out terror attacks throughout the country in response to military defeats on the front line. In Libya, while we expect the formation of a unity government between the Tripoli and Tobruk sides to occur in 2016, we believe Western military intervention against IS in Libya, in the form of airstrikes, is likely over the coming months as the group continues to expand its presence in the country. Finally, in Yemen, gradual progress towards a peace deal offers some respite, but we do not expect a lasting agreement to be put in place for months. Even an end to the conflict would provide only slight relief to the problems facing the economy.

Varying Security Enviroments

MENA - Crime & Security Risk Index*



high score = low risk. Source: BMI Operational Risk Index

Of the higher risk markets, we note Morocco and Egypt offer comparatively safer operating environments and significantly higher rewards. In both cases, governments are in place which are extremely supportive of

infrastructure investment and furthermore, are utilising the private sector to help realise ambitious project pipelines.

Morocco's construction industry will register decent annual average growth over our 10-year-forecast period as government expenditure, as well as foreign investment continues to flow into the transport, energy and residential sectors. The draft 2016 budget is targeting 17,000 housing units and increasing capital expenditure spending by close to 8% to MAD61.4bn. Similarly, we expect Morocco to remain a leading destination for FDI over 2016, benefiting from strong political support for economic diversification, and relative security compared to the rest of the Middle East and Africa. Morocco's share of African FDI increased from 3.6% in 2009 to 6.6% in 2014, according to data from the UNCTAD's 2015 World Investment Report. This compares to a continuous decline in all other North African countries, with Algeria, Tunisia and Egypt's cumulative share falling from 20.5% of total African FDI in 2009 to 13.6% in 2014.

We expect Morocco's RRI performance to remain one of the more stable in the regional grouping. The market benefits from relative security, its favourable geographic location and the government's pro-investment stance, which will support the country's transition towards higher-value manufacturing. Rabat is providing financial and trade incentives to companies setting up business in Morocco, as well as developing an extensive network of free trade zones around the country. We expect the current coalition government to be re-elected in the September 2016 parliamentary elections, allowing for policy continuity until 2021.

Egypt's significant infrastructure project pipeline continues to garner the interest of international investors, but we note this quarter the security and economic situation in the country has deteriorated significantly and we expect the situation to worsen before it stabilises. The government's ability to finance projects is under threat as sovereign bond yields have shot up since November 2015, following the bombing of a Russian airplane in the Sinai Peninsula, which is devastating the tourism industry - a crucial foreign exchange earner and driver of infrastructure investment. At the same time, the budget deficit has swelled (we forecast 10.0% of GDP in 2016) and will decline only slowly despite subsidy reform and lower oil prices. In addition, yields on Egypt's bonds will inevitably rise over the coming quarters, given the further hikes in US interest rates in H216 and our expectation for a 10% devaluation in the Egyptian pound against the US dollar. That said, the robust government support for public-private partnerships (PPPs) and a growing infrastructure project pipeline will see the construction industry grow strongly in coming quarters. Egypt will tender 12 PPPs across all sectors in the next 15 months for an estimated value of USD4bn.

Table: MENA RRI

	Rewards			Risks				
Country	**Rewards**	**Industry Rewards**	**Country Rewards**	**Risks**	**Industry Risks**	**Country Risks**	**Risk/ Reward Index**	**Regional Rank**
Qatar	74.7	75	74.2	70.7	75	67.8	73.5	1
Saudi Arabia	67.1	70	61.6	67.2	75	62	67.1	2
United Arab Emirates	65.6	70	57.3	63.8	60	66.3	65	3
Oman	63.5	65	60.7	67.5	82.5	57.4	64.7	4
Israel	54.3	40	80.9	75.6	75	76	60.7	5
Kuwait	59.1	52.5	71.3	61.4	57.5	64	59.8	6
Algeria	56.7	65	41.3	50.3	47.5	52.1	54.8	7
Egypt	51.2	47.5	58.1	54.3	55	53.8	52.1	8
Morocco	50	45	59.4	56.5	55	57.5	52	9
Bahrain	39.3	25	65.8	70	77.5	65	48.5	10
Iran	50.7	55	42.7	41.7	35	46.2	48	11
Iraq	43.1	45	39.7	36.2	32.5	38.6	41.1	12
Libya	42.5	47.5	33.3	33.6	32.5	34.4	39.9	13
Yemen	17.8	17.5	18.3	30.6	37.5	26	21.6	14

Source: BMI

Market Overview

Competitive Landscape

Since the Iranian revolution the construction industry has been dominated by domestic companies, and we expect them to continue to play a protagonist role in the development of the country's infrastructure. However, with the lifting of sanctions, we expect to see a widespread return of foreign investors, which is already beginning to materialise. We do note that a different set of sanctions for American companies continue, meaning a return of American companies will remain limited over the coming quarters.

Although European construction companies used to have a strong presence in Iran prior to the revolution, the majority of foreign players in the country have come from China or Russia during the last 30 years, targeting the transport and energy infrastructure sectors, respectively. Both countries have vested interests in Iran, in terms of geopolitics and commodities trade, and therefore have contributed heavily to fund major infrastructure projects. This trend was exacerbated by the 2011/2012 international sanctions imposed on Iran on the back of its nuclear programme. More recently, Sino-Iranian relations have strengthened with Iran having been approved as a founding member of the China-backed Asian Infrastructure Investment Bank (AIIB) in April 2015. In addition, Iran is highly supportive of China's Silk Road Economic Belt initiative as it would improve connectivity between Asia and the Middle East.

With the lifting of sanctions, we are seeing other companies from the Middle East, Asia and Europe preparing their return to Iran, with deals beginning to be signed as of Q216-Q316. For example, the **Islamic Republic of Iran Railways** (RAI) has signed a memorandum of understanding (MoU) with German **Siemens** for cooperation in the rail sector. The MoU includes projects such as Tehran-Mashhad railroad electrification and the construction of Tehran-Isfahan high-speed railway. Under the terms of the deal, Siemens will form partnerships with local companies to facilitate technology transfer. Another example includes the deal signed between the Italian and Iranian governments in February 2016 who signed a memorandum of understanding (MoU) for railway work worth about USD5.6bn. The work will be carried out by Italy's state-run Ferrovie dello Stato Italiane for Islamic Republic of Iran Railways.

India has also announced plans to build a port in the south-east of Iran in 2015. The governments of India, Iran, and Afghanistan have taken a significant step towards closer co-operation by signing an agreement on May 23 2016 to develop Iran's southern port of Chabahar. Once the port is developed, it will provide a major boost for Indo-Iranian trade, and also provide a new route for Afghanistan's exports, bypassing Pakistan. In particular, the new port at Chabahar is designed to compete with Pakistan's port of Gwadar, which is being developed with Chinese assistance as part of the China-Pakistan Economic Corridor (CPEC).

CPEC in turn is part of a much bigger Chinese initiative known as 'One Belt One Road' (OBOR), which envisages new land and sea routes connecting China to Western Eurasia and East Africa.

Further to this, local media reported the visit of an Indian delegation to Iran to explore opportunities in trade, energy, and infrastructure, with the aim to secure a first-mover advantage. India's **Larsen & Tuobro** (L&T) is studying projects in Iran's oil and gas sectors while **Tata Power**, **Adani Enterprises**, and **National Aluminium Co** are reportedly considering a power project, port and a smelter complex, respectively. Even US-based energy firms are reportedly surveying the Iranian market. In the region, we highlight **Orascom**, **Galfar**, and **Arab Contractors** as having the greatest potential to tackle projects in Iran. We therefore expect cement producers, equipment providers, and engineering companies to see demand for their products and services rise sharply.

Despite our more positive outlook on Iran's infrastructure now that sanctions have been lifted, we highlight risks that will continue to limit growth in the market. Some of the main challenges in increasing the use of public-private partnerships (PPPs) is the lack of transparency when tendering projects, questions over judicial independence, lack of established mechanisms to resolve contract disputes and corruption. At present, Iran's institutional framework does not provide significant investor protection nor address these issues. This is in addition to weaknesses in the labour market, high transaction costs and lengthy lead time for infrastructure projects.

Domestically, Iran's construction industry has been criticised for having poor building standards. Given Iran's high degree of isolation, construction firms have struggled to access modern technologies. In addition, building codes are widely disregarded and municipal governments have failed to enforce them or to run a proper inspection system.

Table: Iran EQS Data

Name	Latest FY Earnings	Market Cap (USD)	Revenue (USD)	Net income (USD)	Total Debt/ EBITDA	Interest Coverage Ratio	PE Ratio
Bilfinger SE	12/2014	1,936.728	10,225.64	-94.8541	1.186813	3.759674	na
China Gezhouba Group Co LT-A	12/2014	7,269.023	11,309.48	371.2016	5.982992	3.31632	19.82377
China National Chemical-A	12/2014	7,207.086	11,067.27	513.8812	1.136973	16.26681	14.68498
China Railway Group Ltd-H	12/2014	50,681.45	95,789.83	1681.531	7.156757	1.604153	12.48964
Daelim Industrial Co0 Ltd	12/2014	2,480.957	8,831.007	-431.343	na	-3.33127	na
Maire Tecnimont SPA	12/2014	1,050.975	2,053.023	66.81897	4.150313	19.43998	16.43407
Saipem SPA	12/2014	4,066.022	17,101.63	-305.552	7.694444	0.276382	na
Power Construction CorpOf-A	12/2014	24,460.17	26,408.73	776.8698	7.432638	2.072325	22.142
Vinci SA	12/2014	36,932.58	51,868.16	3302.621	3.301532	5.614247	12.57047

na = not available. Source: Bloomberg

Company Profile

Iran Power Plant Projects Management Co. (Mapna)

Strengths

- Mapna is one of the largest contractors of power and industrial projects in Iran, with 29 subsidiary companies.
- Iran's government is reportedly planning heavy investment in the electricity sector.
- Well diversified by sector.

Weaknesses

- High exposure to the home market.
- Structural weaknesses in the Iranian economy and reduced government revenue as a result of low oil prices will limit public investment in infrastructure.

Opportunities

- With Iranian electricity demand rising rapidly, there is scope for building new power plants and Mapna is at the forefront of this.
- The removal of sanctions in January 2016 will facilitate increased project financing opportunities and attract foreign investment.

Threats

- Iran's business environment will continue to suffer from entrenched corruption, cumbersome bureaucracy, and a lack of transparency when tendering projects.
- The uncompetitive labour market threatens to increase the cost of infrastructure projects.
- The nuclear agreement signed in July 2015 could be derailed or abandoned at any point, particularly from 2017 onwards.

Company Overview

Mapna, formed in 1993, is a major state-owned Iranian industrial conglomerate with 29 subsidiaries operating in the power, oil, railway and infrastructure sectors. In terms of infrastructure, the company specialises in power, oil and gas, and petrochemicals projects, as well as railway transportation projects. The company has expanded into operational and maintenance services to secure more international projects.

Strategy

Mapna's strategy appears to be one of regional and international expansion. As well as power plants in Sri Lanka and India, the company has also been awarded the contract for the 324MW Najaf power plant, as well as the 324MW Al-Emarah Power plant, both of which are in Iraq. It is our view that the ongoing reconstruction of Iraq presents a potential growth market for Mapna, as the country looks to repair its shattered infrastructure. Aligning with this trend, the company started work on a USD2.5bn natural gas-fired power plant project in the Rumaila area of Basra in August 2015. Work on this plant - which will add 3GW of electricity to the Iraqi national power grid - has started after 18 months of negotiations with the Iraqi government. According to Executive Director Abbas Ali Abadi, the project is scheduled to be completed in four years, while the first unit will join the national network in early 2017.

That said, Mapna's biggest projects remain in Iran. These include the Khouzestan Steel Complex Combined Cycle Power Plant, with a capacity of 968MW. The company is also negotiating a major deal to construct a massive combined-cycle power plant with a capacity of 2,100MW. With the country's growing demand for electricity and the growing opportunities unleashed by the easing of sanctions in January 2016, we believe Mapna's main focus will be domestic over the forecast period.

Recent Developments

In March 2016, Mapna signed an agreement with Siemens that would see Mapna acquire the technology to manufacture gas turbines and partner with Siemens to construct 20 such turbines and other gas generators over the next decade.

Iran's government has prioritised the construction of coal-fired power plants in the country; as announced by Mostafa Ali-Rabbani, an official at Iran Power Development Company in November 2014. Rabbani claimed that after conducting feasibility studies at Tabas in South Khorasan province, more than 1bn tonnes of coal reserves have been found. According to Rabbani, two 325MW power plants are under construction in Tabas and Mapna Group is responsible for supplying the main equipment.

In the last few years, Mapna has financed 10 independent power projects (IPPs), including the South Isfahan (954MW), Tous (954MW) and Asalouyeh (954MW) plants. It is also in the process of developing the Mobin Gas Utility Power Plant (1,944MW), as well as power plants in Sri Lanka and Syria.

Since 1993, the company has undertaken projects worth EUR17bn, in terms of power projects, and has been responsible for building 86% of Iran's total grid capacity, representing 52,000MW. Turnover is about EUR4bn per year.

Outside of Iran, Mapna is also pursuing opportunities in the power sector. In August 2014, the company submitted a statement of qualification to build two power plants in Oman. The winner will be granted a licence to develop, design, finance, engineer, build, own, operate and maintain two independent power projects with a total capacity of 2,650MW at two locations in northern Oman.

In the transport sector, a consortium comprising Mapna, Mapna Rail Construction and Development, Mapna International, CMC and SuPower secured financial approval for

the 900km Tehran-Mashhad railway project in July 2014. The two Chinese companies - CMC and SuPower - will invest USD2bn in the project. Work under the engineering, procurement and construction (EPC) contract includes the renovation of the existing structure as well as the construction of an electrified railway network for trains with speeds exceeding 250km per hour.

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.

We mainly use OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, we use 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. We select 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.

It must be remembered that human intervention plays a necessary and desirable role in all of our 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

Construction Industry

Construction Industry Value

Our data is derived from GDP by output figures from each country's national statistics office (or equivalent). Specifically, it measures the output of the construction industry over the reported 12-month period in nominal values (ie domestic currency terms). As it is derived from GDP data, it is a measure of value added within the industry (ie the additional contribution of the construction industry over other industries, such as cement production). Consequently, it does not measure the nominal value of all inputs used in the construction industry, which, for most states would increase the overall figure by 50-60%. Furthermore, it is important to note that the data does not provide an indication of the total value of a country's buildings, only the construction sector's output in a given year.

This data is used because it is reported by virtually all countries and can therefore be used for comparative purposes.

Construction Industry Value Real Growth

Our data and forecasts for real construction measures the real increase in output (rather than nominal growth, which would also incorporate inflationary increases). In short, it is an inflation-adjusted value of the output of the construction industry y-o-y. Consequently, real growth will be lower than the nominal growth of our 'construction value' indicator, except in instances where deflation is present in the industry.

Data for this is sourced from the constant values for construction value added, using the same sources noted above. We use officially calculated data to accurately account for inflation specific to the construction industry.

Construction Industry, % Of GDP/Construction Value (USD)

These are derived indicators. We use **BMI**'s Country Risk team's GDP and exchange rate forecasts to calculate these indicators.

Capital Investment

Total Capital Investment

Our data is derived from GDP by expenditure data from each country's national statistics office (or equivalent). It is a measure of total capital formation (excluding stock build) over the reported 12-month period. Total capital formation is a measure of the net additions to a country's capital stock, so takes into account depreciation as well as new capital. In this context, capital refers to structures, equipment, vehicles etc. As such, it is a broader definition than construction or infrastructure, but is used by **BMI** as a proxy for a country's commitment to development.

Capital Investment (USD), % Of GDP, Per Capita

These are derived indicators. We use our Country Risk team's population, GDP and exchange rate forecasts to calculate them. As a rule of thumb, we believe an appropriate level of capital expenditure is 20% of GDP, although in rapidly developing emerging markets it may, and arguably should, account for up to 30%.

Government Capital Expenditure

This is obtained from government budgetary data and covers all non-current spending (ie spending on transfers, salaries to government employees, etc). Due to the absence of global standards for reporting budgetary expenditure, this measure is not as comparable as construction/capital investment.

Government Capital Expenditure, USDbn, % Of Total Spending

These are derived indicators.

Construction Sector Employment

Total Construction Employment

This data is sourced from either the national statistics office or the International Labor Organization (ILO). It includes all those employed within the sector.

Construction Employment, % y-o-y; % Of Total Labour Force

These are derived indicators.

Average Wage In Construction Sector

This data is sourced from either the national statistics office or the ILO.

Infrastructure Data Sub-Sectors

BMI's Infrastructure data examines the industry from the top down and bottom up in order to calculate the industry value of infrastructure and its sub-sectors. We use a combination of historic data as reported by the central banks, national statistics agencies and other official data sources, and **BMI**'s Infrastructure Key Projects Database tool.

Where possible we source historic data for the relative portion of either infrastructure spend or value generated by the various sub-sectors we classify as infrastructure. We seek to segment official infrastructure data into pre-set categories classified by us, across all countries, in order to optimise the ability to compare industry value across the sub-sectors of infrastructure. We then apply ratios to the infrastructure subsector value in order to derive the value. Real growth is calculated using the official construction inflation rate.

In those instances where historic data is not available, we use a top down and bottom up approach incorporating full use of **BMI**'s Infrastructure Key Projects Database, in most cases dating back to 2005. This allows us to calculate historical ratios between general infrastructure industry value and its sub-sectors,

which we then use for forecasting. Our Key Projects Database is not exhaustive, but it is comprehensive enough to provide a solid starting point for our calculations.

The top down approach uses data proxies. We have separated countries into three tiers. Each tier comprises a group of countries on a similar economic development trajectory and with similar patterns in terms of infrastructure spending, levels of infrastructure development and sector maturity. This enables us to confirm and overcome any deficiencies of infrastructure-specific data by applying an average group ratio (calculated from the countries for which official data exists) to the countries for which data is limited.

- Tier I - Developed States. Common characteristics include:
  - Mature infrastructure markets;
  - Investments typically target maintenance of existing assets or highly advanced projects at the top of the value chain;
  - Infrastructure as percent of total construction averages around 30%.
  - Tier I countries: Canada, Germany, Greece, UK, US, France, Hong Kong, Taiwan, Singapore, Israel, Japan, Australia.
- Tier II - Core Emerging Markets. Common characteristics include
  - The most rapidly growing emerging markets, where infrastructure investments are a government priority;
  - Significant scope for new infrastructure facilities from very basic levels (eg highways, heavy rail) to more high value projects (renewables, urban transport);
  - Infrastructure as percent of total construction averages around 45% and above.
  - Tier II countries: Colombia, Malaysia, Mexico, South Korea, Peru, Philippines, Turkey, Vietnam, Poland, Hungary, South Africa, Nigeria, Russia, China, India, Brazil, Indonesia.
- Tier III- Emerging Europe. Common characteristics include:
  - Regional socioeconomic trajectories;
  - Development defined by recent or pending accession to European structures such as the EU. Infrastructure development to a large degree dictated by EU development goals and financed through vehicles such as the PHARE and ISPA programmes, and institutions such as the EBRD and EIB;
  - Infrastructure as percentage of total construction averages between 30% and 40%.
  - Tier III countries: Czech Republic, Romania, Bulgaria, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Croatia, Ukraine.

This methodology has enabled us to calculate infrastructure industry values for states where this was not previously possibly. Furthermore, it has enabled us to create comparable indicators.

The top down hypothesis-led approach has been used solely to calculate the infrastructure industry value as a percentage of total construction. For all sub-sector calculations we apply the bottom-up approach, ie calculating the ratios from our Key Projects Database where data was not otherwise available.

Risk/Reward Index Methodology

BMI's Risk/Reward Index (RRI) provides a comparative regional ranking system evaluating the ease of doing business and the industry-specific opportunities and limitations for potential investors in a given market.

The RRI system divides into two distinct areas:

Rewards: Evaluation of sector's size and growth potential in each state, and also broader industry/state characteristics that may inhibit its development. This is further broken down into two sub categories:

- Industry Rewards (this is an industry-specific category taking into account current industry size and growth forecasts, the openness of market to new entrants and foreign investors, to provide an overall score for potential returns for investors).
- Country Rewards (this is a country-specific category, and the score factors in favourable political and economic conditions for the industry).

Risks: Evaluation of industry-specific dangers and those emanating from the state's political/economic profile that call into question the likelihood of anticipated returns being realised over the assessed time period. This is further broken down into two sub categories:

- Industry Risks (this is an industry-specific category whose score covers potential operational risks to investors, regulatory issues inhibiting the industry, and the relative maturity of a market).
- Country Risks (this is a country-specific category in which political and economic instability, unfavourable legislation and a poor overall business environment are evaluated to provide an overall score).

We take a weighted average, combining industry and country risks, or industry and country rewards. These two results in turn provide an overall Risk/Reward Index, which is used to create our regional ranking system for the risks and rewards of involvement in a specific industry in a particular country.

For each category and sub-category, each state is scored out of 100 (100 being the best), with the overall Risk/Reward Index a weighted average of the total score. Importantly, as most of the countries and territories evaluated are considered by us to be 'emerging markets', our score is revised on a quarterly basis. This ensures that the score draws on the latest information and data across our broad range of sources, and

the expertise of our analysts. Our approach in assessing the Risk/Reward balance for infrastructure industry investors globally is fourfold:

- First, we identify factors (in terms of current industry/country trends and forecast industry/country growth) that represent opportunities to would-be investors.
- Second, we identify country and industry-specific traits that pose or could pose operational risks to would-be investors.
- Third, we attempt, where possible, to identify objective indicators that may serve as proxies for issues/ trends to avoid subjectivity.
- Finally, we use **BMI**'s proprietary Country Risk Index (CRI) in a nuanced manner to ensure that only the aspects most relevant to the infrastructure industry are incorporated. Overall, the system offers an industry-leading, comparative insight into the opportunities/risks for companies across the globe.

Sector-Specific Methodology

In constructing these indices, the following indicators have been used. Almost all indicators are objectively based.

Indicators

Table: Infrastructure Risk/Reward Index Indicators

	Rationale
Rewards	
Industry rewards	
Construction expenditure, USDbn	Objective measure of size of sector. The larger the sector, the greater the opportunities available.
Sector growth, % y-o-y	Objective measure of growth potential. Rapid growth results in increased opportunities.
Capital investment, % of GDP	Proxy for the extent the economy is already oriented towards the sector.
Government spending, % of GDP	Proxy for extent to which structure of economy is favourable to infrastructure/
Country rewards	
Labour market infrastructure	From BMI's Country Risk Index (CRI). Denotes availability/cost of labour. High costs/low quality will hinder company operations.
Financial infrastructure	From CRI. Denotes ease of obtaining investment finance. Poor availability of finance will hinder company operations across the economy.
Access to electricity	From CRI. Low electricity coverage is proxy for pre-existing limits to infrastructure coverage.
Risks	
Industry risks	

Infrastructure Risk/Reward Index Indicators - Continued	
	Rationale
No. of companies	Subjective evaluation against BMI-defined criteria. This indicator evaluates barriers to entry.
Transparency of tendering process	Subjective evaluation against BMI-defined criteria. This indicator evaluates predictability of operating environment.
Country risks	
Structure of economy	From CRI. Denotes health of underlying economic structure, including seven indicators such as volatility of growth; reliance on commodity imports, reliance on single sector for exports.
External risk	From CRI. Denotes vulnerability to external shock - principal cause of economic crises.
Policy continuity	Subjective score from CRI. Denote predictability of policy over successive governments.
Legal framework	From CRI. Denotes strength of legal institutions in each state. Security of investment can be a key risk in some emerging markets.
Corruption	From CRI. Denotes risk of additional illegal costs/possibility of opacity in tendering/business operations affecting companies' ability to compete.

Source: BMI

Weighting

Given the number of indicators/datasets used, it would be inappropriate to give all sub-components equal weight. Consequently, the following weighting has been adopted:

Table: Weighting Of Indicators	
Component	**Weighting, %**
Rewards	70, of which
- Industry rewards	65
- Country rewards	35
Risks	30, of which
- Industry risks	40
- Country risks	60

Source: BMI