

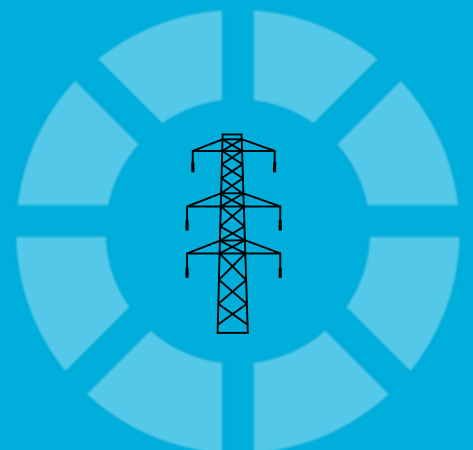
**Q1 2014**

[www.businessmonitor.com](http://www.businessmonitor.com)

# **IRAN**

## **INFRASTRUCTURE REPORT**

INCLUDES 10-YEAR FORECASTS TO 2022





# Iran Infrastructure Report Q1 2014

INCLUDES 10-YEAR FORECASTS TO 2022

---

## Part of BMI's Industry Report & Forecasts Series

Published by: **Business Monitor International**

Copy deadline: October 2013

**Business Monitor International**  
Senator House  
85 Queen Victoria Street  
London  
EC4V 4AB  
United Kingdom  
Tel: +44 (0) 20 7248 0468  
Fax: +44 (0) 20 7248 0467  
Email: [subs@businessmonitor.com](mailto:subs@businessmonitor.com)  
Web: <http://www.businessmonitor.com>

© 2013 **Business Monitor International**  
All rights reserved.

All information contained in this publication is copyrighted in the name of **Business Monitor International**, and as such no part of this publication may be reproduced, repackaged, redistributed, resold in whole or in any part, or used in any form or by any means graphic, electronic or mechanical, including photocopying, recording, taping, or by information storage or retrieval, or by any other means, without the express written consent of the publisher.

### DISCLAIMER

All information contained in this publication has been researched and compiled from sources believed to be accurate and reliable at the time of publishing. However, in view of the natural scope for human and/or mechanical error, either at source or during production, **Business Monitor International** accepts no liability whatsoever for any loss or damage resulting from errors, inaccuracies or omissions affecting any part of the publication. All information is provided without warranty, and **Business Monitor International** makes no representation of warranty of any kind as to the accuracy or completeness of any information hereto contained.



# CONTENTS

<b>BMI Industry View .....</b>	<b>5</b>
<b>SWOT .....</b>	<b>7</b>
<i>Infrastructure SWOT .....</i>	7
<b>Industry Forecast .....</b>	<b>9</b>
<i>Construction And Infrastructure Forecast Scenario .....</i>	9
<i>Table: Iran Construction And Infrastructure Industry Data, 2011-2016 .....</i>	9
<i>Table: Iran Construction And Infrastructure Industry Data, 2017-2022 .....</i>	10
<i>Key Trends And Developments In The Industry .....</i>	11
<i>Transport Infrastructure – Outlook And Overview .....</i>	15
<i>Major Projects Table - Transport .....</i>	19
<i>Table: Major Projects Table - Transport .....</i>	19
<i>Energy And Utilities Infrastructure – Outlook And Overview .....</i>	21
<i>Major Projects Table - Energy &amp; Utilities .....</i>	24
<i>Table: Major Projects Table - Energy And Utilities .....</i>	24
<i>Residential/Non-Residential Building – Outlook And Overview .....</i>	27
<b>Industry Risk Reward Ratings .....</b>	<b>31</b>
<i>Iran - Infrastructure Risk/Reward Ratings .....</i>	31
<i>Rewards .....</i>	31
<i>Risks .....</i>	32
<i>MENA - Infrastructure Risk/Reward Ratings .....</i>	33
<i>Table: MENA Infrastructure Risk / Reward Ratings .....</i>	36
<b>Market Overview .....</b>	<b>38</b>
<i>Competitive Landscape .....</i>	38
<i>Table: Iran EQS Data .....</i>	39
<b>Company Profile .....</b>	<b>40</b>
<i>Iran Power Plant Projects Management Co. (Mapna) .....</i>	40
<b>Global Industry Overview .....</b>	<b>43</b>
<i>Table: Latin America PPP Round-Up .....</i>	47
<b>Methodology .....</b>	<b>52</b>
<i>Industry Forecast Methodology .....</i>	52
<i>Sector Specific Methodology .....</i>	53
<i>Risk Reward Rating Methodology .....</i>	57
<i>Sector Specific Methodology .....</i>	58
<i>Table: Infrastructure Risk Reward Rating Indicators .....</i>	58
<i>Table: Weighting Of Indicators .....</i>	59

## BMI Industry View

**BMI View:** *We currently maintain a short-term bearish outlook for the Iranian construction sector.*

*Although official data has not yet been published, we estimate a contraction in the industry in both 2012 and 2013 at 1.6% and 1.0% respectively. This is the result of a challenging macroeconomic picture, international sanctions and a prohibitive business environment. We are, however, more optimistic over the medium-to-longer term as an improvement in economic conditions should bring some respite for the sector. As such, we expect moderate growth to return in 2014 at an estimated 1% in real terms and an average of 3.5% between 2015 and 2022.*

The Islamic Republic remains a country of pronounced risks, including political instability, economic stagnation and social tensions, and we believe the current situation is unsustainable over the long run.

Despite a spike in oil prices, the latest wave of US energy sanctions and the EU oil embargo, coupled with a ban on London-issued insurance on oil tankers, has taken its toll on Iranian oil production, and consequently the economy at large. With its main avenue for earning foreign currency - oil represents half of the Iranian government's revenues, and accounts for an estimated 53% of the country's total exports - more or less depleted the government will be forced to cut back further on public spending.

### **Key developments in the industry:**

- A challenging macroeconomic backdrop will continue to weaken the outlook for Iran's construction sector over the coming quarters. Elevated inflation will also weigh on real industry growth - **BMI** forecasts inflation to average 35% year-on-year (y-o-y) in FY2013/14 - due to a weakening currency. The Central Bank undertook a de facto devaluation of the rial in July 2013 from IRR12,260/US \$ to IRR24,779/US\$. This will also have an adverse effect on the availability and cost of imported capital goods, exerting yet more pressure on company profit margins.
- Oil revenues account for a significant chunk of government income, estimated at 55% of total revenues in FY2011/2012. This percentage is expected to fall as a result of international sanctions and this will have an adverse impact on public spending on infrastructure.
- In terms of Teheran's nuclear programme, the latest developments point to a notable improvement in relations between Iran and the West. At the time of writing, further talks between the parties were being held and there were high expectations for a negotiated solution to move forward.
- With the exception of Russia and China, foreign interest in Iran's construction sector will remain limited, while constrained government finances, persistent project implementation issues and sluggish activity in the oil and gas sector will continue to constrain growth in industry value.
- We have seen progress on the US\$450mn Iran to Iraq gas transmission pipeline. Completion was scheduled for July 2013 but the section in Iraq was delayed as a result of the unstable security situation and property issues. Despite political pressure from the US and the current sanctions imposed on Iran, we expect the project to be operational soon.

- In terms of maritime infrastructure, the Caspian Sea ports of Anzali and Amirabad, located in the north of Iran, are to undergo major capacity upgrades to double both 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.

# SWOT

## Infrastructure SWOT

### SWOT Analysis

#### Iran Infrastructure Industry SWOT

#### Strengths

- Demand is strong in new housing, and the oil and gas sectors.
- Iran has a wealth of natural resources, which is of particular advantage to the construction sector. This wealth includes 9% of the world's confirmed oil reserves and 16% of its natural gas reserves. It also has plentiful reserves of iron ore, non-metallic minerals (including copper, zinc and bauxite) and decorative stones such as marble and granite.
- The country is investing in its refinery sector in an attempt to become more self-sufficient.

#### Weaknesses

- Not enough housing capacity is added annually. Annual housing demand is around 1.5mn dwellings, but only around 700,000 are completed per year, resulting in a huge backlog.
- The Iranian construction industry has been criticized for having poor building standards. Constructors are unwilling to invest money in modern technologies, building codes are widely disregarded, and municipal governments have failed to enforce them or to run a proper inspection system.
- There are persistent reports of widespread corruption, including the routine payment of bribes to officials by major construction companies.
- Exorbitant land prices account for half of construction costs.
- Growing government deficit impacts public spending on infrastructure projects, and already the authorities are placing greater reliance on private investment - of which there is very little - most notably due to the US and EU energy sanctions.

**Iran Infrastructure Industry SWOT - Continued**

**Opportunities**

- Conditions for foreign companies and contractors were eased as a result of the introduction of the Law for the Attraction and Protection of Foreign Investment (LAPFI), approved in 2002.
- The Iranian government is now actively pursuing opportunities in Iraq, one of the major economies in the region and now politically moving closer to Iran.
- Changes to the government's food subsidy programme could release funds for investment in infrastructure.

**Threats**

- Iran is located in a high seismic activity zone and earthquakes have cost the country millions of US dollars in reconstruction work. The long-term rebuilding costs for the quake-hit city of Bam are estimated at almost US\$1bn.
  - Sanctions designed to halt Iran's nuclear programme have resulted in Western investors pulling out of the country and a US ban on any foreign financial institution from transacting with Iran's Central Bank - the main conduit for the country's energy deals.
-



# Industry Forecast

## Construction And Infrastructure Forecast Scenario

**Table: Iran Construction And Infrastructure Industry Data, 2011-2016**

	2011	2012e	2013f	2014f	2015f	2016f
Construction industry value, IRRbn	302,351.0	393,056.3	526,695.4	663,636.3	779,772.6	909,214.9
Construction industry value, US\$bn	28.5	32.2	25.7	26.5	30.0	37.9
Construction industry, real growth, % y-o-y	2.1	-1.6	-1.0	1.0	2.5	2.6
Construction industry, % of GDP	5.5	5.5	5.5	5.5	5.4	5.4
Total capital investment, IRRbn	1,505,516.2	1,966,204.1	2,634,713.5	3,332,912.6	3,966,166.0	4,680,075.9
Total capital investment, US\$bn	141.8	161.2	128.5	133.3	152.5	195.0
Total capital investment, % of GDP	27.2	27.5	27.5	27.4	27.7	27.8
Capital investment per capita, US\$	1,880.1	2,109.2	1,659.5	1,698.9	1,919.4	2,423.6
Real capital investment growth, % y-o-y	14.2	-1.0	-1.0	1.5	4.0	4.0
Construction industry employment, '000	2,929.1	2,891.8	2,868.9	2,891.6	2,948.9	3,009.9
Construction industry employment, % y-o-y	1.7	-1.3	-0.8	0.8	2.0	2.1
Total workforce, '000	53,696.8	54,318.9	54,902.9	55,445.3	55,945.9	56,408.2
Construction industry employees as % of total labour force	5.5	5.3	5.2	5.2	5.3	5.3
<b>Cement production (including imported clinker), tonnes</b>	65,123,867.7	64,223,936.4	63,405,053.6	64,576,606.9	67,728,517.4	71,007,023.9
Cement production (including imported clinker), tonnes, % y-o-y	17.6	-1.4	-1.3	1.8	4.9	4.8
Cement consumption, tonnes	65,990,880.5	64,977,687.6	64,119,959.7	65,311,456.7	68,492,791.6	71,802,307.1
Cement consumption, tonnes, % y-o-y	17.0	-1.5	-1.3	1.9	4.9	4.8
Cement net exports, tonnes	-867,012.8	-753,751.2	-714,906.0	-734,849.8	-764,274.2	-795,283.2
Cement net exports, tonnes, % y-o-y	-17.4	-13.1	-5.2	2.8	4.0	4.1

f = BMI forecast. Source: BMI, Bank Markasi, USGS, UN

Table: Iran Construction And Infrastructure Industry Data, 2017-2022

	2017f	2018f	2019f	2020f	2021f	2022f
Construction industry value, IRRbn	1,027,412.8	1,155,839.4	1,302,631.0	1,471,973.0	1,670,689.4	1,896,232.4
Construction industry value, US\$bn	46.7	52.5	62.0	70.1	92.8	107.5
Construction industry, real growth, % y-o-y	3.0	3.5	4.7	5.0	3.5	3.5
Construction industry, % of GDP	5.4	5.4	5.4	5.5	5.5	5.4
Total capital investment, IRRbn	5,428,888.0	6,243,221.2	7,117,272.2	8,113,690.3	9,168,470.1	10,635,425.3
Total capital investment, US\$bn	246.8	283.8	338.9	386.4	509.4	602.9
Total capital investment, % of GDP	28.5	29.2	29.7	30.2	30.3	30.5
Capital investment per capita, US\$	3,030.7	3,445.6	4,070.1	4,591.5	5,992.8	7,026.3
Real capital investment growth, % y-o-y	6.0	6.0	6.0	6.0	5.0	5.0
Construction industry employment, '000	3,082.2	3,169.1	3,289.8	3,424.3	3,523.1	3,625.4
Construction industry employment, % y-o-y	2.4	2.8	3.8	4.1	2.9	2.9
Total workforce, '000	56,844.1	57,271.8	57,713.2	58,184.1	58,690.6	59,228.8
Construction industry employees as % of total labour force	5.4	5.5	5.7	5.9	6.0	6.1
<b>Cement production (including imported clinker), tonnes</b>	76,107,726.6	81,514,471.5	87,234,689.6	93,297,683.6	98,650,978.7	104,271,583.9
Cement production (including imported clinker), tonnes, % y-o-y	7.2	7.1	7.0	7.0	5.7	5.7
Cement consumption, tonnes	76,935,698.6	82,376,912.7	88,122,373.2	94,211,498.6	99,585,839.4	105,228,031.2
Cement consumption, tonnes, % y-o-y	7.1	7.1	7.0	6.9	5.7	5.7
Cement net exports, tonnes	-827,972.0	-862,441.2	-887,683.6	-913,815.1	-934,860.7	-956,447.3
Cement net exports, tonnes, % y-o-y	4.1	4.2	2.9	2.9	2.3	2.3

f = BMI forecast. Source: BMI, Bank Markasi, USGS, UN

**BMI View:** We maintain a short-term bearish outlook for the Iranian construction sector. Although official data is yet to be published, we estimate a contraction in the industry in both 2012 and 2013 of 1.6% and 1% respectively. This is the result of a challenging macroeconomic picture, international sanctions and a prohibitive business environment. However, we are more optimistic over the medium-to-longer term as an

*improvement in economic conditions should bring some respite for the sector. As such, we expect moderate growth to return in 2014 at an estimated 1% in real terms and an annual average of 3.5% between 2015 and 2022.*

The more conciliatory approach of new President Hassan Rouhani is expected to have a positive impact on Iran's macroeconomic prospects over the medium term and this represents an upside risk to our forecast. However, devaluation of the Iranian rial by the Central Bank will increase the cost of imported construction materials, potentially prolonging the contraction of the industry.

In addition, Iran's macroeconomic outlook will be highly influenced by developments in negotiations with the West on the country's nuclear programme. We see three potential scenarios in negotiations. One sees talks continuing without key developments over the next 24 months, the second considers a major breakthrough within six to twelve months, and a third a breakdown in talks within the same time frame. Should the second or third scenario play out, this will prompt us to significantly revise our forecasts.

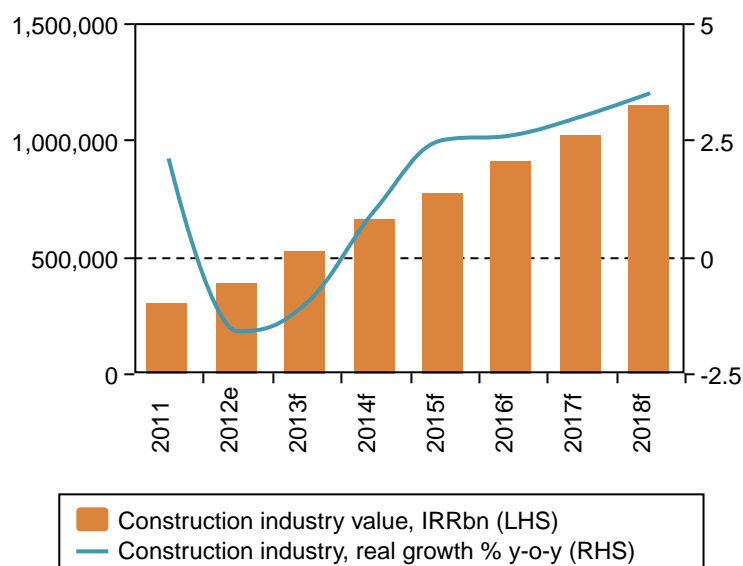
## Key Trends And Developments In The Industry

- **Baseline assumptions:** We estimate that Iran's economy will have contracted by 1.6% in real terms in 2013 and a return to growth of 2.4% in 2014. Low base effects and a rebound in oil exports, coupled with improving business and consumer confidence following the victory of moderate cleric Hassan Rouhani in Presidential elections in June 2013, will ensure that growth returns to positive territory in 2014.
- The macroeconomic picture will likely improve over the medium term. In particular, we expect macroeconomic management to improve significantly under Rouhani's presidency, which will lead to an acceleration in the headline growth figure over the coming years. This, in turn, creates potential upside to our construction industry forecast.
- In addition, the availability of imported goods has decreased significantly as a result of the ongoing depreciation of the rial. This is particularly relevant to the construction industry as imported materials have become considerably more expensive.
- *Our Country Risk team has recently upwardly revised our forecast for consumer price inflation to average 35.0% in FY2013/14, compared to 31.6% in FY2012/13. Although it will remain high, inflation in 2014 is expected to decline gradually, mainly as a result of base effects and a relative improvement in the outlook for the rial.*
- In June 2013, the US State Department renewed six-month waivers on Iranian sanctions for China, India and seven other countries, as the aforementioned countries agreed to cut down their purchases of oil from Iran. Moreover, the US unveiled the first sanctions to specifically target the rial, which include penalties on anyone facilitating 'significant' transactions in the Iranian rial or holding significant amounts of the currency outside Iran.
- However, in terms of Teheran's nuclear programme, the latest developments point to a notable improvement in relations between Iran and the West. President Hassan Rouhani held a phone call with US President Barack Obama in September 2013 - the first conversation between US and Iranian presidents since the 1979 Iranian revolution. At the time of writing, further talks between the parties are being held and there are high expectations for a negotiated solution to move forward.

- In terms of nuclear energy, Iran has made significant progress lately as the 1,000MW Bushehr nuclear power plant became fully operational in July 2013. The west has opposed any such developments, claiming that the Iranian nuclear programme is a cover for the development of atomic weapons.

## Strong Growth Potential

Iran - Construction Industry Value And Real Growth %



e/f = estimate/forecast. Source: BMI, Bank Markasi

### Return To Positive Growth In 2014

We estimate a contraction in Iran's construction industry at 1.6% in 2012 and 1.0% in 2013. The outlook for the sector has been challenging, with a combination of constrained public spending, a prohibitive business environment and a complex macroeconomic picture. However, we are more optimistic towards 2014 and beyond as we expect economic growth to accelerate significantly over the medium term.

Iran has amassed a hefty US\$40bn backlog of incomplete projects, and the fact that the number of markets prepared to accommodate Iranian output are dwindling (several key customers have cut Iranian crude imports further) means that there is little incentive to invest in Iran's upstream sector, and related infrastructure. Consequently, although Iran possesses 9% of the world's proven oil reserves, a lack of new developments and foreign expertise has left the country heavily reliant on existing and ageing infrastructure, with few opportunities for any international construction players to invest in necessary upgrades.

Oil revenues account for a significant chunk of government income, estimated at 55% of total revenues in FY2011/2012. This percentage is expected to fall as a result of international sanctions and this will have an adverse impact on public spending on infrastructure.

Although the severe constraints on public spending are likely to persist over the near term at least, there are a number of major public projects in the pipeline. The most recent illustration of this came in April 2013 with the government's announcement that it will invest IRR52trn (US\$4.1bn) in the development of 20 water supply projects across the country. The projects are scheduled to be implemented by the end of Q114. They are intended to ameliorate a water shortage within the Islamic republic.

Meanwhile, with foreign investors largely deterred by the country's opaque and volatile business environment, China and Russia will likely remain the only countries with a significant presence. Both have vested interests in Iran, most significantly in terms of geopolitics and the commodities trade, and have therefore contributed funding for related infrastructure projects in the past. However, we have noted setbacks to the relationship with China in recent months, with the Asian giant pulling out of the US\$4.7bn development of phase 11 of the South Pars gas field, as well as the US\$2bn, 1,500MW hydro-dam project in Bakhtiari. As a result, we now question the viability of the planned US\$1.5bn Iran to Pakistan pipeline, which is unlikely to be built without significant Chinese backing.

That said, China - with a total of US\$30bn worth of bilateral trade - has invested heavily in both roads and railways. In October 2011, the Chinese government made an offer to build a US\$2bn freight rail line - a modern day silk route - in Iran. The line would allow the continuous rail transport of goods from China, through the Middle East, all the way to Europe. However, no progress has been reported.

Likewise, the North-South Rail Corridor, an ambitious project to create a freight-rail link between Europe, via Russia and Azerbaijan, through Iran and eventually linking to India and South East Asia, advanced in October 2012 - with the unveiling of a cooperation agreement between transport ministry representatives from Russia, Azerbaijan and Iran. It is hoped the rail line will carry around 20mn tonnes of cargo a year, and improve transport links across Eurasia. Ongoing negotiations among the various stakeholders were reported to be taking place in June 2013.

We are also seeing progress on the US\$450mn Iran to Iraq gas transmission pipeline which is 90% complete as for July 2013. Although the pipeline was expected to be completed already, the section in Iraq was delayed as a result of unstable security and property issues. Despite political pressure from the US and the current sanctions imposed on Iran, the project is expected to become operational in 2014.

### **A Word Of Caution**

We must, however, reiterate that estimated growth is based on our aforementioned core scenario, and we highlight that official data is not always timely and transparent. In addition, the volatile political landscape means that a slight change to any variable could have far-reaching implications for our outlook for the country and its construction sector.

A breakdown over the nuclear talks could weigh heavily to the downside on our forecasts. Further hardship and isolation due to continued sanctions could eventually result in further depletion of foreign reserves, the effect of which would be an economic nosedive leading to the rationing of goods, and the country's construction sector grinding to a virtual halt.

Considerable upside potential comes in the form of political change. With Hassan Rouhani as the new leader, we expect macroeconomic management to improve significantly under his presidency. Rouhani's more conciliatory approach may lead to more open and constructive negotiations that could see a partial lifting of sanctions and a 'return to normal' over the medium term.

## Transport Infrastructure – Outlook And Overview

Iran's transport sector is catering for the needs of a population of approximately 77mn and the business needs of an economy potentially worth US\$587bn. We believe that there are upside predictions for both of these numbers and this will place a strain on the country's transport infrastructure if it does not continue, or rather start, to expand and modernise. Despite government ambitions to attract investment into road, rail and air links to meet the needs of a rising population, there has been little activity in the past five years. The ambition has naturally been severely dampened by current US and EU sanctions as a result of Iran's debated nuclear programme.

### **Flying In**

Iran has a total of 319 airports, of which 140 have paved runways. The country has yet to develop a significant tourist 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 for 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 US\$1bn in investment into the aviation sector. The main ongoing 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 highly ambitious in the current climate. Tehran has yet to secure financing commitments for its planned expansion of Qeshm International Airport.

Funding problems will pose the biggest challenges to Iran's proposed air expansion strategy and transport infrastructure more widely. In order to compensate for the lack of funds, the Iranian government is to sell bonds worth IRR7trn (US\$570mn), as reported in February 2013. The investment should help finance the development of transport infrastructure projects in the country, as it did in 2012 when 54 projects were developed using IRR30trn (US\$2.4bn) of investment generated by bond sales.

### **Driving Up**

**BMI** predicts that the number of cars on Iranian roads is set to grow in the long term, although gasoline rationing measures may place a downside risk on this forecast as it becomes more difficult for citizens to buy fuel. Rapidly increasing car sales are placing a strain on the country's road infrastructure and the roads

may need to be repaired more often, as they deal with greater loads and traffic. The country's roads must take the brunt of most of the freight transported within its borders. Roads made up 75% of freight transported in 2012 and this is set to grow to 78% in 2017.

Iran has a total of 198,866km of roads, of which 160,366km are paved, and the country boasts 1,948km of expressways. The country'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.

Construction of the Shrine to Shrine Highway officially began in mid-October 2010 and was started by President Ahmadinejad. It is designed to connect the cities of Qom and Mashhad. The 1,100km highway, which is to pass through the cities of Garmsar, Semnan and Sabzevar, will include an electric railway. The project is expected to cost around US\$4bn but this number could increase as a result of severe delays.

US-imposed gasoline import sanctions inflict an additional financial burden on the Iranian government, damaging further its ambitious energy expansion plans and also handicapping areas such as freight transport. Despite holding the world's third-largest oil reserves, Iran has struggled to meet growing domestic fuel demand owing to the burden of subsidies and inadequate refining capacity.

### **Rolling In**

Unlike a number of other Middle Eastern nations, Iran has already developed a railway system. The network carries not only passengers but also freight - although this is limited. Iran's railway network services approximately 24% 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 is electrified. The network is based on lines centred in Tehran. Three run southwards: to Bandar Imam Khomeini on the Gulf (with a spur to Khorramshahr); to the Gulf port of Bandar Abbas near Qeshm; and, to Kerman (with a spur running to Isfahan and Shiraz).

**BMI** notes that although Iran's rail freight sector is falling behind the road sector, a plan to privatise wagons could attract interest, as there is growth potential in the market. **BMI's** view is based on analysis of rail infrastructure projects that are underway or have been announced and will connect Iran's railway to other countries, thus offering increased access for rail freight. Work is underway on a railway to connect Iran with Iraq, 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.



Some tangible progress was reported in June 2013 with the inauguration of a new railway line between Gorgan and Incheh Borun. The 80km line is part of the Kazakhstan-Turkmenistan-Iran transit corridor, which is currently being developed by the three countries. The section linking Turkmenistan and Iran is under construction.

Furthermore, former president Mahmoud Ahmadinejad inaugurated a 48km railroad connecting Miandoab and Maragheh in the north-western province of West Azerbaijan. The project is part of a 184km national railroad development, which will connect Maragheh in East Azarbaijan province with Orumiyeh in West Azerbaijan province.

In November 2012, a trilateral memorandum of understanding by the Islamic Republic of Iran Railways, the National Development Fund and the Ministry of Industries and Mines was announced by Iran Railways' Managing Director, Abdol-Ali Saheb-Mohammadi. The agreement will see EUR1bn (US\$1.28bn) earmarked for the country's railway industry and railroad spanning approximately 420km. The railroad network is due to link together all the provinces in the country over the next two years.

For some time now, we have seen strong Chinese interest in investing in Iran's railway sector. In October 2011, the Chinese government made an offer to build a freight rail line, aimed at allowing continuous rail transport of goods from China, through the Middle East to Europe. The line is expected to cost US\$2bn, starting in Tehran and running to Khosravi on the Iraqi border and will also offer a passenger service.

In addition, China and Iran have also signed a major agreement for the development of underground rail transport in Iran. Despite revelations that a contract for a US\$4bn system has been signed, further details have not been confirmed. Even the location of the investment has not yet been revealed, though Tehran currently has a metro system and the government began work on two new lines in 2007.

### **Sailing Through**

Since the war with Iraq, Bandar Abbas has overtaken Khorramshahr as the country'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 both 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 underway and has seen investment of US\$52.3mn, while the second and larger phase, will need US\$130mn of investment. The PMO has approved finance worth US\$110mn for construction of four berths as well as a dredging operation across the Amirabad port's basin.

While we are bearish on the broader 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 who have reported particularly strong harvests. Where other ports, in particular on Iran's Gulf Coast, will suffer from the drop in demand for consumer goods, food is not affected by the international sanctions leveraged on Iran. A major part of the expansion in capacity is focussed towards the import of grains, with the port's third silo set to have a total capacity of 54000 tons. 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 the south. Iran, once a wheat exporter, is forecast to need at least 5 million tonnes of imports over the next quarter, after importing an estimated 50,000 tonnes over the last month.

Iran's ports are still limited in their capacity, only able to service 100,000 tonne vessels. This has forced Tehran to ask ships to dock at the main UAE ports, such as Dubai's Jebel Ali, so that goods can be loaded onto smaller ships and then sent to Iran.

However, we have observed some investment in Iran's port sector that has enabled larger vessels to use the country's maritime facilities. In January 2010, the Iranian Port of Bushehr received a container ship with 3,000 twenty-foot equivalent units (TEUs). Industry observers believe the docking of such a large container ship signifies that the Port of Bushehr has enhanced its infrastructure and competence level. This will also prove beneficial in increasing the port's business as it will attract more shipping companies.

The ongoing diplomatic struggle concerning the country's nuclear energy sector is likewise having an effect on the country's port infrastructure. Port operator Tidewater Middle East Co (Tidewater) was added to a US Treasury Department blacklist for sanctions in July 2011. The firm is the largest handler of container shipping at Iranian ports and is estimated to be responsible for more than 90% of the container operations in Iran.

## Major Projects Table - Transport

**Table: Major Projects Table - Transport**

Project Name	Sector	Value (US \$mn)	Capacity/ Length	Companies	Timeframe	Status
Khoy airport upgrades	Airports	4		na		Announced
Imam Khomeini International Airport terminals	Airports	2500		na		At planning stage
40 multipurpose ports	Ports	4000		na		Under construction (September 2012)
Construction of the port of Pars located in Bushehr	Ports	300		na		Under construction (Construction underway)
Storage and port facilities, South Pars (phase 12)	Ports	500		NIOC		Contract Awarded (Contract signed)
Bandar Abbas port renovation	Ports		6300000 TEU	na		Suspended
Development of Chabahar Port	Ports	340		Khatam al-Anbiya (KAA)	2009-2012	Contract Awarded (Contract signed)
Inceburun-Gorgan railway	Rail	98	80 km	na	2012-2013	Completed (June 2013)
rail line, Tazraj-Ensheab, Homozgan region	Rail		200 km	na		In tender/Tender launched (January 2011- Bids due )
Iran-Turkmenistan-Kazakhstan	Rail	150	86 km	na	-2012	Under construction
Tehran-Qom-Esfahan rail line	Rail		410 km	na		Under construction
Iran-Tajikistan-Afghanistan-China-Kyrgyzstan rail network	Rail	294	392 km	Metra[Feasibility]		Announced
azvin-Rasht-Astara railway upgrade	Rail	400	6000 '000 tonnes	na	-2014	Under construction (April 2012 - 70% completed)
Qazvin-Rasht-Astara railway project	Rail			na	2014-	Under construction
North-South Rail Corridor	Rail	400	566 km	na		Contract Awarded (February 2011 - Inter-governmental JV agreement signed)
Tehran Monorail	Rail		12 km	na	2008-	Cancelled (Bidders short listed but cancelled)
Regional rail network across Iran	Rail	63		na		Under construction (Construction of first phase underway)
Iran-Armenia rail link connection	Rail	1800	80 km	na	2008-2011	At planning stage (Costs to be confirmed by April 2011)

## Major Projects Table - Transport - Continued

Project Name	Sector	Value (US \$mn)	Capacity/ Length	Companies	Timeframe	Status
Chabhar Port to Fahraj Railway	Rail		600 km	Indian Railways	2008-	Contract Awarded
Iran, Russia and Azerbaijan railway	Rail		8.4 km	na	2008-	Approved (Governmental agreement to proceed)
Electrification of Tebriz-Azarshahr railway	Rail		46 km	Russian Railways	2008-2009	Contract Awarded
Iran-Turkmenistan-Kazakhstan	Rail	650	960 km	na	2011-	Under construction (June 2011)
Iran-Azerbaijan Railway	Rail		350 km		2009-	Contract Awarded (MoU Signed)
Chabahar-Sarakhs railway	Rail	2500		Khatam al-Anbiya (KAA)	2010-	Contract Awarded (Tender winner announced)
Monorail system, Qom	Rail	120	6 km	na	2009-2011	Under construction
Bam-Zahedan railway line	Rail	291	1.8 km	na	-2008	Under construction (70% complete)
rehabilitation of a rail line, Lorestan region	Rail		60 km	na		In tender/Tender launched (January 2011- Bids due)
Isfahan Underground line 1	Rail	99.24		Mapna, Namad Mobtaker Company	2010-2013	Contract Awarded
Tahran-Khosravi rail line	Rail	2000	570 km	na		Contract Awarded (Contract signed with Chinese company)
National railway lines project (inc. Qazvin and Anzali, Shiraz and Assaluyeh and Miyaneh and Ardabil)	Rail	12500		na		Under construction
Tehran-Mashhad rail line	Rail		900 km	na		Under construction
Tehran-Shomal Freeway	Roads & Bridges		121 km	na	-2010	Contract Awarded
Persian Gulf bridge project	Roads & Bridges	1000	2.2 km	na		Announced

Source: BMI Key Projects Database

## Energy And Utilities Infrastructure – Outlook And Overview

Data for Iran's electricity generation and consumption show a country capable of meeting its own power demands but distant from achieving its energy export ambitions. Our Power analysts estimates that electricity generation in 2013 was 223.2TWh, just exceeding the country's power consumption of 185.4TWh for the year. This looks set to continue over the medium-term, with consumption forecast to climb to 220.7TWh in 2018. This will then be met by supply, which is expected to increase to reach 263.5TWh. To realise this expansion in generation capacity, Iran and Russia have signed a letter of intent on energy cooperation and are constructing shared power grids.

### Filling Up On Gas

Although Iran has the installed capacity to meet demand, the country's undiversified power sector is susceptible to blackouts. Iran has 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 over 70% of the country's total power generation by 2018, increasing to more than 73% by the end of our forecast period in 2022. Recent 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.

An additional US\$3bn is needed for the 40%-complete liquefied natural gas (LNG) facility at Tombak Port in the southern province of Bushehr, according to **Iran LNG Company's** managing director, Ali Kheir-Andish. The facility, which has a capacity of 10.8mn tonnes per year, had received US\$1.5bn in investment as of December 2010. Substantial investment is also needed for downstream industries. Iran will, reportedly, invest US\$46bn to upgrade its nine refineries and build seven new ones.

Furthermore, Assalouyeh - in the same province of Bushehr - is to house a 600,000 tonne capacity petrochemical facility. Upon completion, the planned facility will be the largest of its kind in the Middle East. The plant will be built by Iranian infrastructure services provider the **National Petrochemical Company**, with works having already begun in the Pars Special Economic Zone, as of July 2013.

In addition, final stage construction work on a US\$7bn gas pipeline connecting Iran and Pakistan started in March 2013, despite having faced repeated delays since its conception in 1990s. Gas is expected to start flowing from Iran by the end of 2014 in order to contribute to Pakistan's gas shortfall and ameliorate the country's energy deficit. The project, dubbed the peace pipeline, was slated to connect Iran's giant South Pars gas field to India through Pakistan (IPI Pipeline). However, the US has been opposing the involvement

of India and Pakistan, claiming that the project could violate sanctions imposed on Iran for carrying out nuclear activities to develop a weapons capability. For now, the project has been forfeited by India, citing costs and security issues, following a nuclear deal with the US.

We are also seeing tangible progress on the US\$450mn Iran to Iraq gas transmission pipeline which is 90% complete as for July 2013. Although the pipeline was expected to be completed already, the section in Iraq was delayed as a result of unstable security and land ownership issues. We expect this project to become operational despite political pressure from the US and the current sanctions imposed on Iran.

### **Developing Nuclear No Matter What**

The country is in the process of developing a highly controversial nuclear power sector. Russia has helped Iran to complete the construction of the Bushehr nuclear power station and has started delivering fuel to the facility. The programme is viewed with suspicion by members of the international community, who fear that Iran may go on to develop a nuclear bomb. **BMI** believes that the nuclear facility could contribute 2.4% of Iran's energy by 2014. In September 2013, the Russian government handed over operational control of the first unit of Bushehr to the Iranians according to head of Iran's Atomic Energy Organization, Ali Akbar Salehi. Russian experts would be responsible for looking after the facility throughout the two-year warranty period. Additionally, Russia would supply fuel to the facility for 10 years. Meanwhile, the two governments are discussing the construction of new nuclear power plants and the second unit at Bushehr is already under consideration with the engagement of Rosatom.

Iran's nuclear programme is of primary concern to the West. With Tehran continuing to build up its uranium enrichment capabilities, Iran's relations with the West will remain highly strained. However, moderate cleric Hassan Rouhani - the new President of Iran elected in June 2013 - has shown signs of a more conciliatory approach towards the nuclear talks and the latest developments point to a notable improvement in relations between Iran and the West. Iran's President Hassan Rouhani held a phone call with US President Barack Obama on September 27 - the first conversation between US and Iranian presidents since the 1979 Iranian revolution.

While this is unlikely to result in an immediate solution to the nuclear issue, confidence in a negotiated agreement has increased. Indeed, the White House said in June 2013 that it is prepared to engage Iran directly over its disputed nuclear programme, with a view to reaching a diplomatic solution that will fully address the international community's concerns. While there remain significant obstacles to a major improvement in Washington-Tehran relations, US President Barack Obama is seeking to take advantage of

Rouhani's more cooperative approach to pursue a strategy of rapprochement with the Islamic Republic, which can be a valuable legacy for its second term in office.

### **Uncontroversial Power**

In moves, which are unlikely to rouse similar levels of protest, the governments of Iran and Turkey are planning to construct several power plants, said Iranian deputy energy minister Mohammad Behzad, following a visit by an Iranian delegation headed by Energy Minister Majid Namjou to Turkey. He added that the two countries discussed plans for constructing thermal and renewable power plants with generation capacities of 6-10GW, as well as hydropower plants with capacities of 10GW.

Electricity cooperation with other countries is increasingly a focus of the government, with news that Iran's Energy Minister has been quoted by the state's news agency saying that the construction of a third electricity transmission line from Iran to Armenia, with a capacity of 800-900MW, was due to begin in June 2011. However, construction has not started yet due to multiple obstacles. The minister said the project is expected to cost up to US\$110mn and is to be followed by a further joint Iranian-Armenian project, a hydroelectric power plant based on the Aras River, subject to negotiation.

Iran is also exploring renewable energy sources, and has launched commercial operations at its biggest solar power plant in Mashhad. The plant, likely to produce 72,000kWh of electricity annually, will produce enough power to meet the requirements of Razavi Khorasan province, according to the plant's CEO Gholam Reza Karamian. The plant, which has 216 solar panels, has been designed and constructed by native experts. Moreover, the plant has been fitted with solar trackers to improve efficiency.

Hydroelectric power is a major plank of Iran's programme to become more self-sufficient in energy consumption as it tries to boost generation capacity by 5,000MW. The Karoun-4 Roller-Compacted Concrete (RCC) dam, which sits across the Karoun River in Chaharmahal-Bakhtiari province in Iran, was inaugurated by former president Mahmoud Ahmadinejad in July 2011. The IRR12.8bn (US\$1.19bn) dam will generate power and provide water for industrial and agricultural purposes in the province. The completion of the dam marks the fact the country's dam-building industry has become self-sufficient.

### **Progress On The Water Front**

In April 2013, the Iranian government has announced that it will invest IRR52trn (US\$4.1bn) in the development of 20 water supply projects across the country. The projects are scheduled to be implemented by the end of Q114 and they are intended to ameliorate a water shortage within the Islamic republic. One of

the projects is the construction of a 762km water pipeline that will provide drinking water to more than 1.5mn people. The pipeline, which will be the longest water supply pipeline in Iran, is aimed at serving the potable water demands of five large cities and eleven small cities along the Persian Gulf coasts. The Iranian government has invested IRR1.8trn (about US\$146mn) so far in the project, which is estimated to entail a total investment of IRR3trn (US\$243.3mn).

Another project is the construction of desalination plants that will serve the water demands of people in the Iranian provinces of Hormuzgan, Kerman and Yazd. The plants are likely to be completed in four phases with private investment. Desalination plants can produce 1mn cubic metres per day of drinking water and 1,000MW of power. The Iranian government has already set up 10 pumping stations, more than 600km of water supply lines and reservoirs with a capacity of 10,000 cubic metres. It is expected that desalination plants will serve 40-50% of drinking water demands of the urban population of Hormuzgan province and its islands.

## Major Projects Table - Energy & Utilities

Table: Major Projects Table - Energy And Utilities

Project Name	Sector	Value (US\$m)	Capacity/Length	Companies	Timeframe	Status
Segment of pipeline to northwestern Iran	Oil & Gas Pipelines	1300		Khatam al-Anbiya (KAA)		Contract Awarded
Two 1,100km oil pipelines, southeastern Khuzestan province to Rey refinery, Tehran	Oil & Gas Pipelines	1300	1100 km	Khatam al-Anbiya (KAA)		Contract Awarded
Gas pipeline (Iran-Iraq)	Oil & Gas Pipelines	450	220 km	na	2013-2018	Announced
Kuwait-Iran Pipeline	Oil & Gas Pipelines		590 km	na		At planning stage
Azerbaijan-Iran Pipeline	Oil & Gas Pipelines		1474.5 km	Socar	2010-2012	Under construction
Iran-Pakistan-India Pipeline	Oil & Gas Pipelines	1500	2775 km	ILF Consulting Engineers Polska sp. z o.o., GAIL India, Tadbir Energy, Pakistan Interstate Gas Company (ISGC), Government of Iran[Sponsor], Government of China[Sponsor]	2005-2014	Under construction (EPC signed for 785km Pakistan section, Iran section completed)
Iraq-Iran pipeline from Basra to Abadan	Oil & Gas Pipelines		40 km	na	2009-	Announced
Iran-Armenia fuel pipeline	Oil & Gas Pipelines		365 km	na	2009-	Under construction



## Major Projects Table - Energy And Utilities - Continued

Project Name	Sector	Value (US\$m)	Capacity/Length	Companies	Timeframe	Status
Iran-Turkey Transmission Line	Power Plants & transmission grids	1500	2000 MW	na		Contract Awarded (Memorandum signed)
gas-fired power plant near to the Zahedan	Power Plants & transmission grids		1000 MW	na	2009-	Announced
Cycle Power Plant in Heris	Power Plants & transmission grids		1200 MW	Zenel Company, Tavanir	2008-2010	Contract Awarded (Joint agreement signed)
Bakhtiari hydropower plant, Zagros Mountains, Lorestan Province	Power Plants & transmission grids		1500 MW	Iranian Revolutionary Guards, Khatam al-Anbiya (KAA)	2012-	Under construction (December 2012 - Pre-construction work underway)
Iran - Armenia 3rd electricity transmission line	Power Plants & transmission grids	110	650 MW	na		At planning stage (June 2011 - At final planning stages)
Third Iran-Armenia Transmission L	Power Plants & transmission grids	110	850 MW	na		Under construction
Ghadir Solar and Wind Power Plant	Power Plants & transmission grids	4500	1000 MW	na	2011-	Contract Awarded (MoU signed)
8 electricity power plants in Khuzestan	Power Plants & transmission grids		6000 MW	na	2008-	Announced
8 power stations in Khuzestan Province	Power Plants & transmission grids			na	2008-	Announced
177 dams	Power Plants & transmission grids			na	2008-	Announced
gas-fired power plant	Power Plants & transmission grids	10000	6000 MW	Power Grid Corporation of India Ltd (PGCIL), National Thermal Power Corporation (NTPC)	2009-	At planning stage
Bushehr Nuclear Power Plant	Power Plants & transmission grids	1000	1000 MW	Rosatom, Atomstroyexpert	1995-2011	Completed (September 2011 - Connected to grid)
Rudbar-e-Lorestan hydropower project	Power Plants & transmission grids	9.52	450 MW	PAPyry's Infrastructure & Environment business group		At planning stage
Jarandaq wind power plant	Power Plants & transmission grids		60 MW	na	2011-	Feasibility studies/ EIA underway
Tehran Biomass Plant	Power Plants & transmission grids		2 MW	na	2010-	Announced

## Major Projects Table - Energy And Utilities - Continued

Project Name	Sector	Value (US\$mn)	Capacity/ Length	Companies	Timeframe	Status
Iran-Russia electricity grid link	Power Plants & transmission grids			na	2008-	Contract Awarded (Letter of intent signed, RAO UES seeking the project)
Qom and Kashan waste water treatment plants	Water	200		Islamic Development Bank (IDB)	2009-	Project finance closure (Funding announced)
20 Country-Wide Water Supply Projects	Water	4100			-2014	Under construction (Construction due to begin)
Persian Gulf coast water supply pipeline	Water	243.33	762 km	na	2013-	Announced (April 2013)
Caspian Sea-Semnan Water Pipeline And Desalination Plant	Water	1000		na		Announced (Capacity - 200mn cubic metres)
Tehran wastewater facilities	Water	320		Tehran Wastewater		Project finance closure (November 2011 - IDB loan awarded)
Two wastewater treatment plants, Tehran city	Water	328.38		na		Project finance closure (IDB provided loan)

Source: BMI Key Projects Database

## Residential/Non-Residential Building – Outlook And Overview

***BMI View:** Despite sanctions and a falling currency Iran's Residential/Non-Residential construction sector sees newer and grander announcements. Unable to verify this data we remain cautious and have not incorporated this into our still bearish forecast of 1.0% year-on-year real growth in 2014. We believe the residential and non-residential sub-sector will fare particularly poorly, underperforming infrastructure as a constituent of total construction, as domestic purchasing power slumps and the costs of inputs into the building process rise incrementally in the face of a collapsed depreciating currency.*

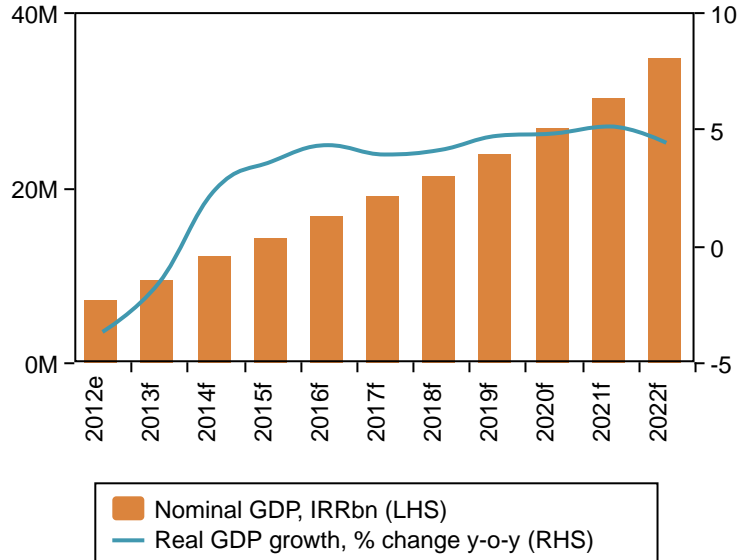
Demand for housing stock has traditionally been a key driver for the construction sector in Iran, but now, on the back of an intensification of international sanctions in response to the country's nuclear programme, the sector is falling behind. In January 2011, the country was facing a housing deficit of 1.5mn housing units. However, despite a dire economic outlook, state media continues to announce newer and grander projects (similar announcements seen in all construction sub-sectors).

Nevertheless, the interplay of elevated price pressures and a weakening currency will ensure unemployment levels remain high in 2013. Iranians' purchasing power has been eroding steadily over the past several quarters, with inflation making it increasingly difficult to purchase basic goods. With the cost of building materials continuing to rise and demand for housing weakened by the challenging conditions facing Iranian households, residential construction activity is likely to be heavily constrained.

In the years before Ahmadinejad, private capital supplied most of the funding for the housing sector as this used to be a profitable business. However, external banking sanctions, the government's failure to deliver on housing programmes, subsidy reforms that have made construction materials more expensive, depreciation of the Iranian rial, in addition to political and legal uncertainties have led to a crisis in Iran's housing market. As a result, there is currently a shortage of urban housing that affects particularly the middle class.

## Bad Economics

Nominal GDP And Real Growth (%)\*

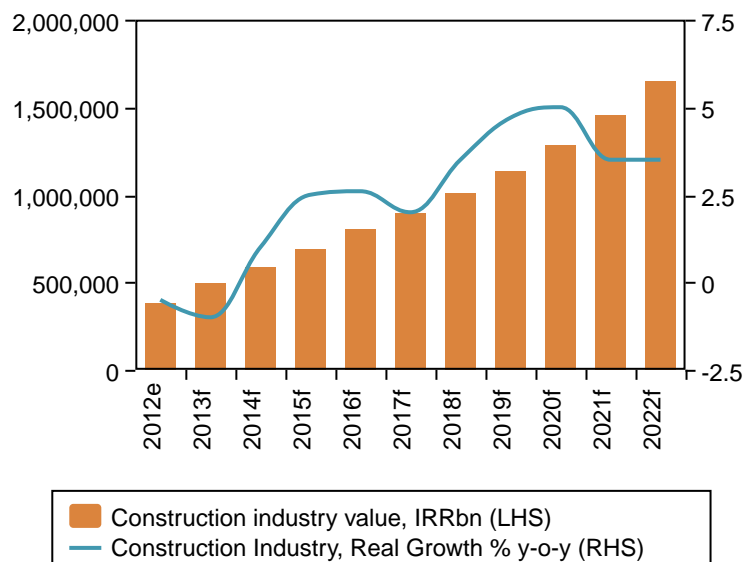


\*Year Begins in March (Iranian calendar). Source: BMI, UN

A potent example is the statement by then Minister of Housing and Urban Development, Ali Nikzad, (who has now become the Minister of Transportation and Housing) who claimed that a total of 1.7mn units were in the pipeline or under construction, with two Turkey-based firms carrying out a project to build 25,000 units. We have been unable to confirm this data. Yet questions should be raised as to how this flagship development is being financed. As a result we have not incorporated this into our overall construction forecast that remains weighed down by heavy sanctions.

## Sanctions Weigh Heavy

Construction Industry Value And Real Growth (%)



Source: BMI, Bank Markasi, UN

In March 2012, former President Ahmadinejad inaugurated a housing complex in Andimeshk containing 4,000 units. Similarly, Iran's north-eastern Razavi Khorasan Province reportedly saw the delivery of 3,030 residential units in 2010/11, while a total of 440,000 units were delivered nationwide over the 12-month period. The Iranian government seemingly continues to ramp up residential construction to narrow the country's housing deficit, with 800,000 units planned to be built in rural villages. Iran's housing and urban development ministry issued 700,000 building permits in the year to March 2011.

Following a government announcement in February 2011, Turkish construction firm **Kusadasi** is to build 20,000 new housing units in Parand near Tehran. The project is part of an expansion of cooperation between the two countries in residential construction. The planned units will be completed in a period of 18 months. The two countries are also reportedly considering developing industrial towns along their shared border to boost trade.

Yet despite these ambitious announcements the residential sector is still dominated by the massive Mehr housing project. In July 2010, deputy housing minister Jamshid Noorsalehi announced that five foreign

companies had concluded contracts to build 40,000 houses for the project. Land was prepared for building 1mn residential housing units in Q310, and in September 2011, it was reported that the scheme will see the construction of 430,000 urban residential units in early 2013. Around 20,000 housing units were supposed to be built by a Turkish company and 5,000 housing units by a South Korean firm in the new city of Parand.

So far, the government has failed to deliver the number of houses it had promised. In addition, the Mehr project has been heavily criticized for over-expanding the country's money supply. By increasing market liquidity, the scheme has been blamed for contributing to high inflation. Inflation as high as 30% in 2012 considerably deter investment in the industry. As a result, high inflation coupled with the fall of the Iranian rial and a shortage of houses in the market, are causing housing prices to soar - which threatens to create a property bubble.

A project that does appear to see the light of day is the US\$830mn Fars Shopping Complex in Shiraz (though it is still unclear how retailers will fill the vast space) where UAE developer **Royal Star International** has recently completed extensive work. Construction Week reports that the 420,000m<sup>2</sup> centre houses 2,500 shops - more than any other mall in the world. The mall, opened in September 2011, is also said to include a five-star hotel, an exhibition and a conference centre as well as an amusement park.

Finally, the latest census figures indicate that Iran has more than 730 hospitals and clinics. Around 10% of this capacity is operated by the private sector or organisations such as the Social Security Organisation of Iran. However, the imposition of trade sanctions on Iran is reported to be significantly affecting patient care, due to constant lack of supply.

## Industry Risk Reward Ratings

### Iran - Infrastructure Risk/Reward Ratings

The potential for growth in Iran's overall infrastructure market is one of the country's redeeming features, with a combination of its dilapidated infrastructure and the government's reported spending pledge. However, for Iran, political risk is the greatest ongoing threat, and is now accompanied by strict sanctions against the country preventing many of the largest construction companies from entering. Sanctions are also hitting the government's finances to the extent that public infrastructure investment is being significantly reduced. As a result, the country has the second lowest score after Yemen in the Middle East region, with 40.3 out of 100.

## Rewards

### Industry Rewards

Iran scores just 37.5 for industry rewards, one of the lowest scores among its peers in the region, and thus well below the regional average. With the economy only expected to post contraction, coupled with rising inflation and the threat of further international sanctions, **BMI** does not expect the construction sector to recover to pre-crisis growth levels over the forecast period. In terms of value, the Iranian construction industry is relatively sizeable, although growth remains constrained by a poor economy and relatively inexperienced construction companies.

### Country Rewards

Iran is again well below the regional average with its country rewards score of 42.7. The need to strengthen the capital ratios and improve non-performing loan ratios in the country's banking sector weighed on Iran's country structure score. Iran also scores rather modestly in terms of its labour market. It has been observed that stringent local labour laws have prompted its labour population to seek employment abroad. This exodus has been a major problem for the construction sector, resulting in delayed projects. The country also suffers because of a poorly structured financial system, which creates hurdles when attempting to access capital.

Meanwhile, the possibility of intensifying international sanctions as a result of the country's nuclear ambitions is likely to have a further negative impact on the market. This would limit Tehran's ability to finance populist measures, such as investment in infrastructure.

## Risks

### Industry Risks

Iran's poorest performance in **BMI**'s risk/reward ratings is in the industry risks sub-category, where the country continues to receive a score of 35.0. Iran's score reflects the high barriers to entry and lack of competition in the country's infrastructure markets. The country's score places it well below the regional average as a result of growing international pressure due to the country's controversial nuclear programme. The business environment in Iran is also constrained by the government's reluctance to allow substantial foreign investment in the country. 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 quite small and will have to grow significantly if Iran is to make head way with its privatisation plans.

### Country Risk

Iran receives a score of 47.6 for the country risk sub-category - again, well below the regional average. Foreign firms still find the legal-regulatory aspect of doing business in Iran laborious and prohibitive. The country's score is deflated by a lack of separation between the executive and judicial branches, as well as the increasing risk of political and economic isolation from bolder Western-led sanctions. 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 within the judicial system is rife; this further damages the business environment for foreign firms.



## MENA - Infrastructure Risk/Reward Ratings

**BMI View:** We expect the MENA project pipeline to continue to flow on the back of persistently high oil prices and (re)construction efforts, resulting in abundant rewards and attractive opportunities for global investors. In the case of Qatar, the country continues to improve its overall rating, consolidating its position on top of the list. However, we also highlight the persistent risks inherent in investing in the region. Political instability continues to be a major deterrent for investors as epitomised by the crisis in Egypt. Increased violence, mounting security threats and political uncertainty weigh heavily on our overall ratings. In certain cases, these risks will continue to significantly outweigh the country's reward potential as reflected by Yemen's poor score which keeps it at the bottom of the regional ranking.

### **Key Developments Q413:**

The overthrow of democratically elected President Mohamed Morsi in July 2013 represents a major setback in Egypt's path to stability after the 2011 crisis. However, the interim government has brought a semblance of stability to Egypt's political scene and a degree of policy continuity which was not present for much of 2013.

According to our Country Risk analysts, political risks in Egypt have peaked and we see significant potential for greater stability in the coming months. On a security level, there has been a slight improvement following the military's move against militias operating in the Sinai Peninsula, a traditional hotbed of instability. Whilst the army's campaign is not yet completed it shows the government's commitment to pacifying the most potent source of instability in the country. This is not to say that we expect, or have seen, a substantial reduction in political risks of late. The government's decision to extend the state of emergency for two months led to protests by supporters of both the Muslim Brotherhood and Interim Government. In addition, a plethora of risks await the government, not least organising a new constitution, elections and how to keep the Muslim Brotherhood engaged in the political process.

Considering the significance of the country in the Middle East, there is potential for further instability in the region. As a result, Egypt has dropped yet one more position in our Risk/Reward Rating, going from 52.4 in Q213 to 47.6 in Q114. Deteriorating scores are expected to have a detrimental impact on investment in the country, affecting construction and infrastructure industry growth.

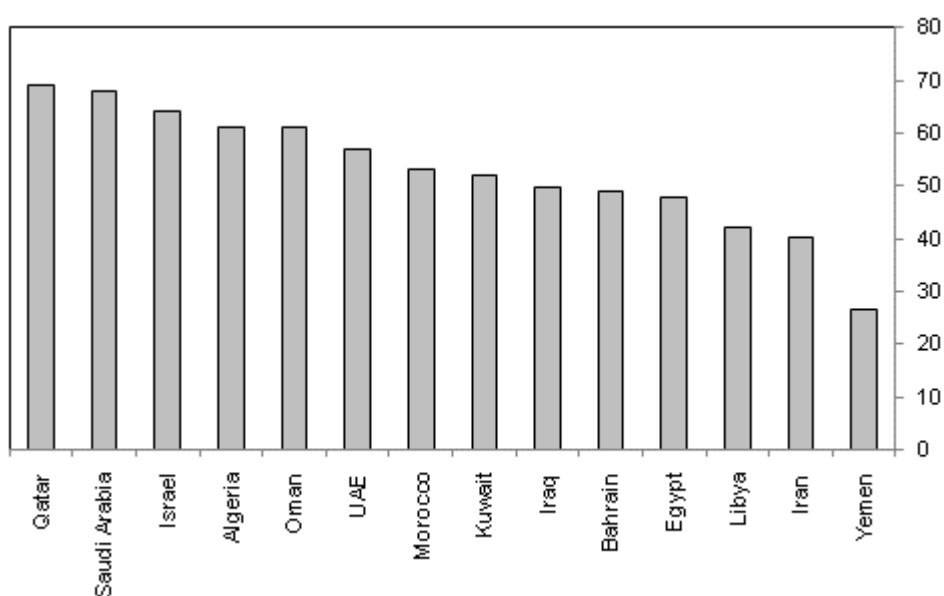
Saudi Arabia - backed by a slew of projects announced in the kingdom's infrastructure market as part of its US\$385bn Development Plan - maintains the second position in the regional ranking, improving its score to

67.9. This was an anticipated move following the commitment by the government to radically stimulate the social infrastructure space, with a new mortgage law, US\$68bn housing plan, and a vast number of social infrastructure projects expected to invigorate the market in the long-run.

Qatar sits comfortably on its top spot, and we do not anticipate changes in the country's position in the medium term. However, we do highlight that many industry participants have complained on late payments and heavy bureaucracy. The latter two aren't necessarily registered in the ratings yet, but are nevertheless important for any player wanting to enter the Qatari construction market.

### Qatar's Solid Leadership

MENA Infrastructure R/R Ratings Q114



Source: BMI

#### Key Themes and Trends:

Gulf Cooperation Council (GCC) countries continue to outperform regional competitors, providing a combination of both greater rewards and lower risks. Qatar sits firmly on the top, tightly followed by construction behemoth Saudi Arabia. The country retains its position as regional outperformer, on the back of a stacked pipeline of projects - all with a definite deadline ahead of the 2022 World Cup.

Israel continues to prove the least risky country in the region with a strong country risk score of 71.4, well above the regional average of 54.3. In terms of country rewards, the country's performance is the fifth best in the region. With some tentative steps in the Iran / US nuclear talks and an extremely promising gas market, we expect Israel's rewards score to continue to strengthen.

#### Strong Potential In The GCC

The GCC countries - Qatar, Saudi Arabia, Oman, UAE, Baharain and Kuwait - continue to outperform the region in terms of both high rewards and low risks. The majority of GCC countries (except Saudi Arabia) have relatively small construction industries, yet a strong stream of sovereign wealth propped projects backed up by, relatively, transparent institutions means that investors will continue to benefit from these countries for the foreseeable future.

Off the back of the announcement of a number of mega-projects (all with a fixed, no-fail, 2022 deadline), Qatar stormed to the top of our ratings at the start of 2012. Saying this, we believe that the country has made a credible commitment to infrastructure spending, and that its expenditure will reach over US\$150bn over the next five years, providing a significant boon to companies looking to invest in the region.

As anticipated, Saudi Arabia continues to perform well in our ratings. This is explained by an ongoing slew of projects announced in the kingdom's infrastructure market as part of a US\$385bn Development Plan. We are witnessing what we consider to be a commitment by the government to radically stimulate the social infrastructure space, with a new mortgage law, US\$68bn housing plan, and a vast number of social infrastructure projects expected to invigorate the market in the long-run. We believe that incremental reforms, partially affected by pressures unleashed during the Arab Spring, have the potential to raise the country's business environment ratings for the foreseeable future.

Bahrain and the UAE have maintained a stable score this quarter. Bahrain continues to benefit from increasing oil receipts and a close relationship with its Saudi neighbours. However, we note that risks are still latent in the form of social and political stability, eroding confidence in Bahrain's construction market. In turn, the UAE continues to report strong activity in the construction sector as a result of significant public spending, a clear regulatory environment, a growing tourism sector and increased foreign direct investment. Having said that, we are now seeing a moderated scale of future projects, in line with a more realistic demand picture. We believe this outlook will be supported by ongoing or re-started projects, rather than a stream of new construction contracts.

### Abundant Opportunities Despite Volatility In North Africa

The major political upheavals of the Arab Spring have been a reminder of the pivotal role that political risk plays in shaping the infrastructure landscape for investors. Here both Libya and Egypt serve as poignant examples.

Gulf countries, and to a lesser extent the US, have shown a significant interest in the region's infrastructure development, reflected in Morocco's upswing, with many trying to secure first mover advantage. The markets hold huge potential in energy infrastructure and projects flowing from national (re)construction efforts. The risks from a still politically uncertain environment remain, as recently evidenced by Egypt.

### Iraq Up, Iran Down

In this quarter, Iraq has slightly improved its score from 48.5 to 49.6, gaining two positions in our regional rankings. However, the country remains below the regional average of 52.9. Iraq scores well in terms of rewards, fuelled by a huge rise in housing, transport and energy infrastructure contracts. The country's risks score, on the other hand, continues to be among the weakest. This is partly explained by an increase in sectarianism and an uptick in violence.

In turn, Iran continues to score second lowest on our regional rankings. We retain a broadly bearish outlook for the country as a result of the challenging macroeconomic picture, international sanctions and an opaque regulatory system. However, the election of moderate cleric Hassan Rouhani as the new president is expected to have a positive impact on Iran's macroeconomic prospects over the medium term and this represents an upside risk to our forecast.

**Table: MENA Infrastructure Risk / Reward Ratings**

	Rewards		Risks			Infrastructure Risk Rewards Rating	Regional Ranking	
	Industry Rewards	Country Rewards	Rewards	Industry Risks	Country Risk			
Qatar	65.0	74.2	<b>68.2</b>	75.0	67.7	<b>70.6</b>	<b>68.9</b>	<b>1</b>
Saudi Arabia	70.0	58.3	<b>65.9</b>	75.0	70.8	<b>72.5</b>	<b>67.9</b>	<b>2</b>
Israel	47.5	84.2	<b>60.3</b>	75.0	71.4	<b>72.8</b>	<b>64.1</b>	<b>3</b>
Algeria	75.0	44.7	<b>64.4</b>	47.5	57.6	<b>53.6</b>	<b>61.1</b>	<b>4</b>
Oman	55.0	60.7	<b>57.0</b>	82.5	61.8	<b>70.1</b>	<b>60.9</b>	<b>5</b>

**MENA Infrastructure Risk / Reward Ratings - Continued**

	Rewards		Risks					
UAE	55.0	57.3	<b>55.8</b>	45.0	68.6	<b>59.2</b>	<b>56.8</b>	<b>6</b>
Morocco	62.5	61.8	<b>62.2</b>	55.0	16.7	<b>32.0</b>	<b>53.2</b>	<b>7</b>
Kuwait	35.0	71.3	<b>47.7</b>	57.5	65.8	<b>62.5</b>	<b>52.1</b>	<b>8</b>
Iraq	62.5	39.7	<b>54.5</b>	32.5	41.8	<b>38.1</b>	<b>49.6</b>	<b>9</b>
Bahrain	25.0	65.8	<b>39.3</b>	77.5	68.0	<b>71.8</b>	<b>49.0</b>	<b>10</b>
Egypt	42.5	54.8	<b>46.8</b>	55.0	46.0	<b>49.6</b>	<b>47.6</b>	<b>11</b>
Libya	47.5	36.7	<b>43.7</b>	32.5	41.5	<b>37.9</b>	<b>42.0</b>	<b>12</b>
Iran	37.5	42.7	<b>39.3</b>	35.0	47.6	<b>42.6</b>	<b>40.3</b>	<b>13</b>
Yemen	25.0	18.3	<b>22.6</b>	37.5	34.5	<b>35.7</b>	<b>26.6</b>	<b>14</b>
<i>Regional Average</i>	<b>50.4</b>	<b>55.0</b>	<b>52.0</b>	<b>55.9</b>	<b>54.3</b>	<b>54.9</b>	<b>52.9</b>	

Source: BMI

## Market Overview

### Competitive Landscape

Iran's business environment remains opaque and difficult to penetrate for any outside investors. China and Russia are, by and large, the only two countries with continued international presence. Both countries have vested interests in Iran, in terms of geopolitics and commodities trade, and, therefore, have contributed heavily to fund major infrastructure projects.

Most projects have so far been geared towards Iran's relatively well-developed transport system. There are 8,442km of railways, most of which are single-track, and 198,866km of roads, 80% of which are paved. There are many airports in the country, although the majority have unpaved runways.

Furthermore, Iran has a number of ports, although many areas of the Caspian Sea and Persian Gulf are politically sensitive. The waters around the islands of Abu Musa and the Tunbs in the southern Persian Gulf are particularly sensitive and are militarised. Normalising international relations would allow Iran to attract investment into its ports and benefit significantly from international trade.

In terms of the domestic construction industry, it has been criticised for having poor building standards. Constructors are unwilling to invest money in modern technologies, 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 (US \$)	Revenue (US\$)	Net income (US\$)	Total Debt/ Ebitda	Interest Coverage Ratio	PE Ratio
BILFINGER SE	Dec-12	4,474.95	10,941.26	353.48	1.70	7.82	11.75
CHINA GEZHOUBA GROUP CO LT-A	Dec-12	2,238.41	8,254.31	247.64	6.67	2.59	8.69
CHINA NATIONAL CHEMICAL-A	Dec-12	8,237.00	8,395.21	488.72	0.31	47.44	15.10
CHINA RAILWAY GROUP LTD-H	Dec-12	10,013.54	73,796.21	1,165.52	8.12	1.40	9.61
DAELIM INDUSTRIAL CO LTD	Dec-12	2,829.65	8,031.00	434.30	2.71	6.56	7.14
MAIRE TECNIMONT SPA	Dec-12	354.46	2,745.70	-266.95	N/A	-5.02	N/A
SAIPEM SPA	Dec-12	9,127.63	17,190.87	1,159.86	2.60	10.57	8.77
SINOHYDRO GROUP LTD-A	Dec-12	4,378.88	19,660.74	648.89	5.73	2.06	6.56
VINCI SA	Dec-12	32,158.57	50,384.72	2,464.63	3.66	4.91	11.29
SHANGHAI CONSTRUCTION GROUP	Dec-12	N/A	14,469.45	253.56	6.15	3.88	N/A
POSCO ENGINEERING & CONSTRUC	Dec-11	N/A	5,549.37	99.31	3.61	4.74	N/A
CHINA NATIONAL MACHINERY IND	Dec-11	N/A	29,735.62	630.92	3.70	N/A	N/A
CHINA METALLURGICAL GROUP CO	Dec-11	N/A	36,668.72	-399.75	13.47	1.14	N/A

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**
- Sanctions, coupled with the global economic downturn and high inflation have helped to create a dire fiscal situation in Iran, which restricts public investment in infrastructure.
- Opportunities**
- With Iranian electricity demand rising rapidly, there is scope for constructing new power plants, and Mapna is at the forefront of this.
- Threats**
- International pressure on Iran regarding its nuclear ambitions could derail the economy and restrict Mapna's international expansion.
- 

**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 also expanded into operational and maintenance services to enable it to secure more international projects.

**Strategy** Mapna's strategy appears to be one of 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. **BMI** believes that the reconstruction of Iraq could be a strong area of growth for Mapna, as the country looks to repair its shattered infrastructure.

However, Mapna's biggest projects remain in Iran. These include the Khuzestan Steel Complex Combined Cycle Power Plant, which will have 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. Indeed, of Mapna's current order book of 25 projects only one is located outside Iran. With the country's growing demand for electricity, we think Mapna's main focus will be domestic over the forecast period.

## Recent Developments

### Recent Activity And Projects

According to Fars News Agency, Mapna was awarded the construction of a new gas refinery in Qeshm Island in July 2013. The refinery will have a capacity of 80mn cubic feet of gas per day and the company is expected to invest US\$200mn in the project.

Also, in June 2013, Mapna offered to start supplying Pakistan with electricity in order to prevent an energy crisis. According to the Daily Times, Pakistan's currently shortfall is 7,000MW and Mapna has the capacity to produce up to 10,000MW for the neighbouring country. This could be the beginning of a series of investments of Mapna in Pakistan's infrastructure.

In 2011, Mapna signed a development contract with NIOOC for the production of gas and generation of electricity at Fourz B gas field.

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. In addition, in September 2008, Mapna agreed a deal with Iran **National Petrochemical Company** (NPC) to construct the first phase of the EUR1.2bn Damavand Petrochemical Complex. NPC is to provide 80% of the funding, with Mapna supplying the remaining.

Mapna has also been active in the rail sector for 15 years and is currently completing a project involving the construction of 200 locomotive units, through a partnership with Germany's **Siemens**. Mapna is also contracted to produce three locomotives per month for the **Iran Railway Company**.

The group signed an engineering, procurement and construction (EPC) contract worth IRR1,000bn (US\$99.24mn) in March 2010 for the development of Isfahan Underground's line one. The underground line will run from the northwest of Isfahan to the south of the city. The company will develop the 20.6km line with partner **Namad Mobtaker Company**.

In late 2009, Iran's government announced that it would need to construct power plants generating 26,500MW of energy in the next five years in order to meet electricity consumption rates. Annual consumption has been growing at 8% a year according to the Iranian Energy ministry. Such an ambitious expansion plan could result in numerous contracts for Mapna, which has built the majority of Iran's current electricity grid. However, in the same period, the Energy Ministry approved EUR880mn in financing from the oil stabilisation budget to develop independent power plants and independent

providers started producing electricity; a paradigm shift could see Mapna take on fewer contracts.

Abbas Aliabadi, the managing director of the group, said to Zawya in July 2013 that the group owns power plants that produce 8,000MW of electricity of which 2,000 MW pertain to Parand and Sanandaj power plants. He also added that the government debt to Mapna had reached IRR30tr in March 2013 that if paid, would be an important liquidity source for the firm.

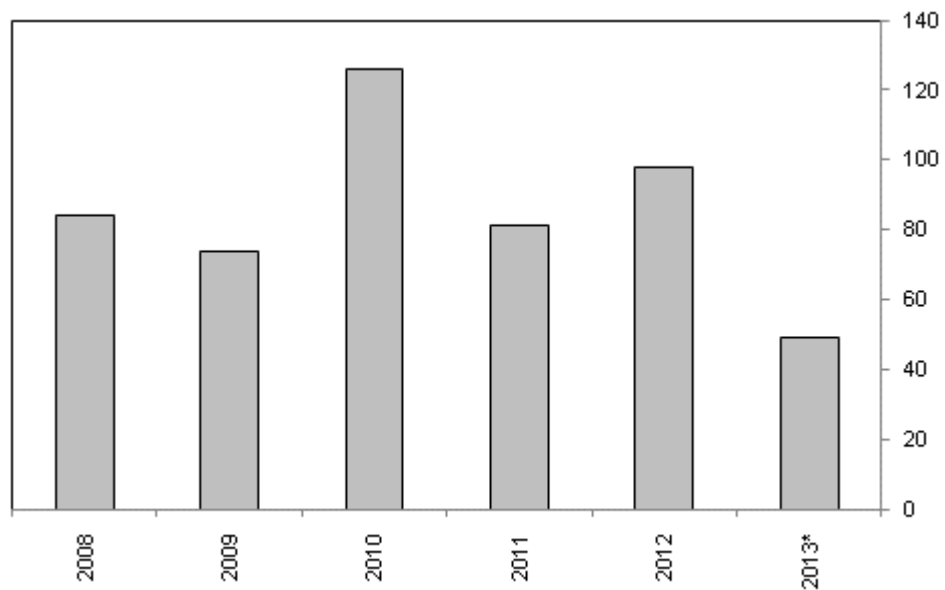
Since 1993, the company has undertaken projects worth EUR17bn, in terms of power projects, and has been responsible for building 86% of Iran's total grid capacity, representing 52,000MW. Turnover is around EUR4bn per year.

## Global Industry Overview

Competition for private capital is increasing across the infrastructure space. This is because an ever-growing number of countries are turning to the public-private partnership (PPP) model to develop new infrastructure to revive and support economies as well as take the financial burden off the public sector. PPPs, long confined to low risk developed markets, are increasingly gaining traction in emerging markets; however, higher risks are making them harder to promote. Using our Project Finance Ratings and our analysis of projects and financing trends, **we highlight that the Asia region stands to be the major winner in the competition for private sector capital, whilst Latin America and Africa will continue to see mixed performances, with regulatory and financing improvements necessary for greater success.**

### On Track For An Average Year

PPPs Reaching Financial Close



\*H1 2013, Source: Infrastructure Investor Research & Analytics

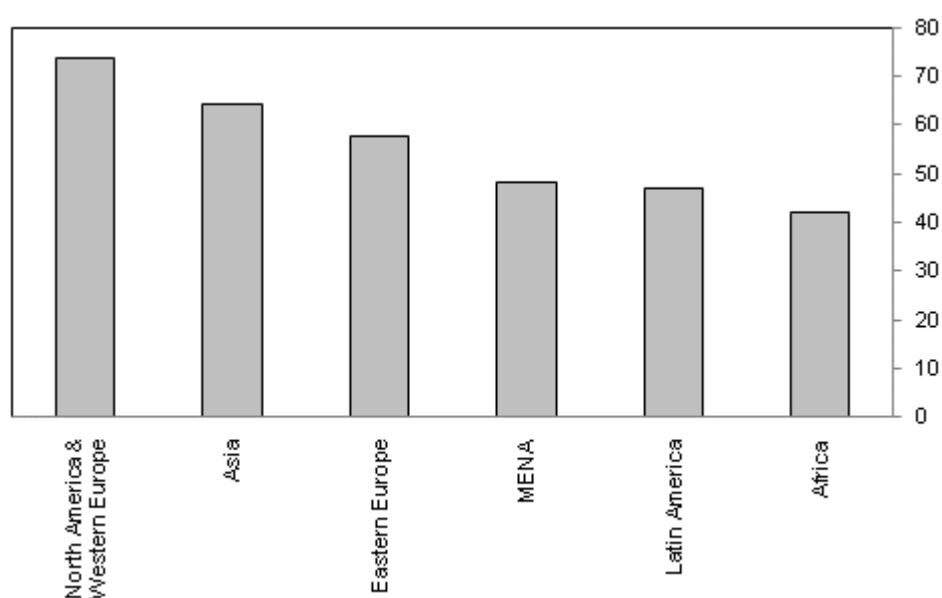
Over the past 12 months, there have been a growing number of public-private partnership (PPP) opportunities coming to market in emerging markets. Some have been in the pipeline for a number of years, and are finally making progress; whilst others are in new countries that are taking their first steps into the

PPP market. The end result is that the infrastructure space is flooded with PPP project opportunities in emerging markets.

This however does not mean that PPPs in emerging markets are universally embraced by the private sector. Many sponsors and developers are still calculating the risks associated with these projects, while financiers for high risk emerging market assets are still rare. At a time when project financing is constrained globally, this is creating high competition for capital amongst emerging market projects, with those offering the best returns in the most stable environment most likely to be successful.

### Developed Markets Still Appeal More

Average Project Finance Rating, By Region



Scores out of 100, Source: BMI

According to **BMI**'s infrastructure Project Finance Ratings, which assess the risk to raising and repaying financing over the life-cycle of a project, Western European and North American countries remain the most conducive destinations for carrying out PPPs. This is due to greater access to financing, the well established regulatory environment and the limited political and structural risks in these markets. However, of the emerging market regions, Asia is the outperformer. Whilst Asia includes a number of developed market players, such as Singapore and Australia - two of the strongest PPP markets globally, which provides some

artificial elevation - all but three countries in the region (of 15) score above the global average, including Vietnam, the Philippines, Malaysia and Thailand.

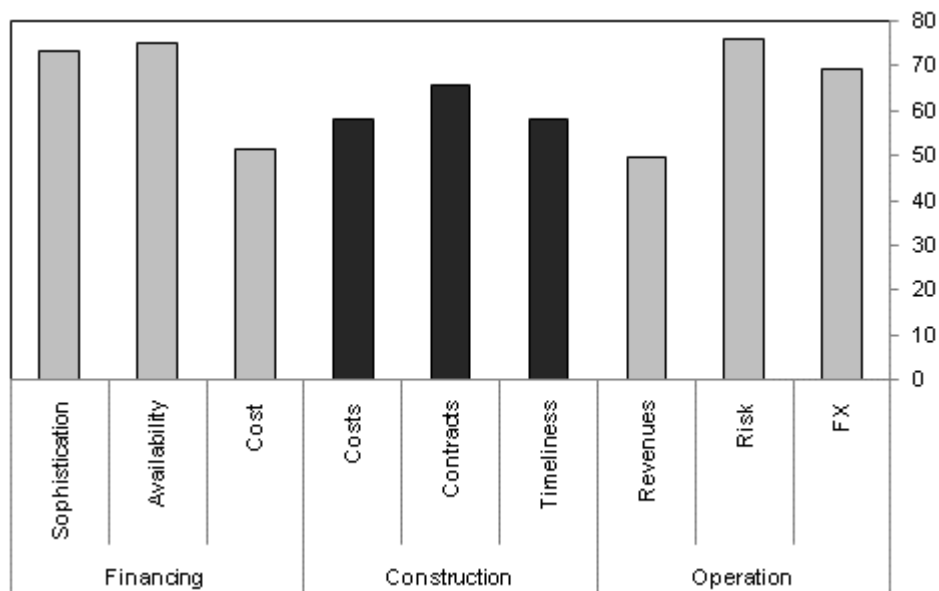
**Asia: Institutional Delays Slowly Improving**

Despite Asia posing perhaps the lowest risk among the various emerging market regions, institutional weaknesses are still thwarting ambitious PPP plans from some of the region's major economies. In Indonesia, the slow issuance of a construction permit from the sub-sovereign government has caused delays in other pre-construction activities for the Central Java coal-fired power plant project, the largest PPP project awarded by Indonesia so far (see *'PPP Progress To Remain At A Glacial Pace'*, September 25 2013). In the Philippines, delays to its PPP Programme have been caused by the lack of sufficient institutional capacity to carry out pre-construction activities (e.g. documentation, spatial planning, feasibility studies, public consultation, permit issuance, land acquisition) to a level of detail desired by all project stakeholders - namely local residents, project developers and financiers (see *'PPP Programme Unlikely To Be Completed In Full'*, September 4 2013). These delays are reflected in our break down for the Asia region, where the construction phase is the area where the highest risk is noted, with permits, timeliness and cost overrun concerns all heightened.

However, progress is being seen. In the Philippines, two of the five packages (under phase two of the Philippines' PPP schools project) have been awarded. Whilst in Vietnam, significant interest was registered for the Dau Giay-Phan Thiet expressway project in Q3 2013. These developments should ensure at least partial realisation of PPP programmes and are supporting our view that investor interest is high for the region.

## Construction Blockers

### Asia Project Finance Ratings



Scores of out 100, Source: BMI

### Latin America: Flooding The Market

The Latin America region has some of the most ambitious PPP plans, with a number of countries looking to use the model for the first time. However, in general, risks across the region are some of the highest globally, and this will only be exacerbated by the nascent nature of PPP regulations in many countries.

Against this backdrop, we hold varying degrees of optimism for the region's PPP plans, and highlight that already, those offering less appealing terms for investors have struggled to attract interest, whilst the newer markets are experiencing delays in bringing projects to market.

Brazil, despite promising one of the largest concession programmes globally, will continue to face difficulties. Investor interest has been weak, with domestic companies dominating the bidding for the projects on offer. In addition, delays and additional regulatory changes continue to emerge which may act to further deter investor interest in upcoming concessions. Elsewhere in the region, we believe Central

American countries will struggle to attract significant investor interest owing to uncertain returns and immature regulations.

Conversely, we hold a more positive picture for Peru and Colombia. Despite deep run delays in bringing projects to market, recent progress has seen encouraging international investor interest. Over 2013, Colombia launched tenders under its COP44bn 4G concessions programme, with a considerable number of Expressions of Interest (EOI) submitted for highway and airport projects - the concession for Baranquilla Ernesto Cortissoz Airport received 21 EOIs in September 2013, whilst five highway projects moved into the final tendering phases in October 2013, with a further three projects launched in late September 2013. In Peru, success has been less impressive, but progress is still notable. Whilst delays have plagued transport projects under the US\$10bn concessions portfolio, energy and utilities concessions such as natural gas distribution and electricity transmission lines have been awarded - with Spanish companies winning the majority of these projects.

**Table: Latin America PPP Round-Up**

<b>Country</b>	<b>PPP Updates</b>
Brazil	US\$235bn concession portfolio, including US\$121bn in transport concessions.
Peru	US\$10.4bn portfolio of transport and power projects
Colombia	US\$20bn in highway concessions.
Mexico	US\$315bn NIP (2013-2018) will focus on PPPs for infrastructure
Chile	Transport concessions
Paraguay	New PPP bill currently being debated, hoping to attract US\$30bn in investment over 10 years
Honduras	Public-private promotion agency, Coalianza, released the tender for construction and operation of the Palmerola Airport, with a contract hoped to be awarded in September 2013
Guatemala	Established a PPP agency in November 2011 is hoping to launch its first concession for Line 1 of the Guatemala City passenger railway in 2014
El Salvador	A PPP will be used to develop the Cuscatlán International Airport and a wind farm
Trinidad & Tobago	12 social infrastructure projects selected for PPP model in August 2013

Source: BMI Research

### **Sub-Saharan Africa: High Risk Prompts Different Approach**

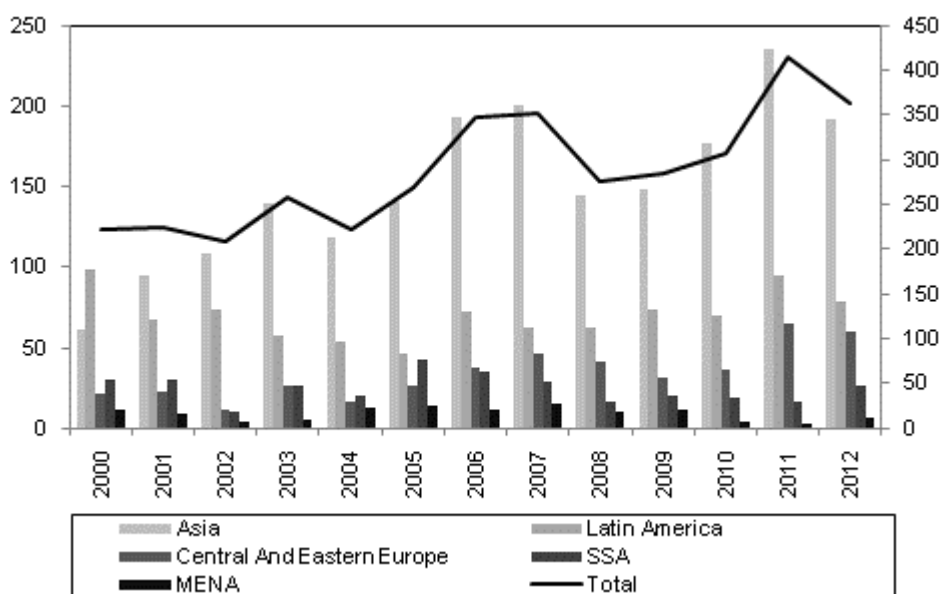
Sub-Saharan Africa (SSA) is also increasingly looking to attract private capital through the PPP model. Over the past year Tanzania, Kenya, Rwanda, Ghana, Cameroon and Namibia, amongst others, have

registered an interest in pursuing PPPs. The most successful countries thus far have been Cote d'Ivoire, Cameroon, Ghana and Namibia. Cote d'Ivoire in particular is seeking out alternative and creative financing methods in order to open up financing to enable private sector players to take up projects.

Whilst opportunities remain attractive, and rewards could be substantial, risks in the region remain the highest globally (with SSA posting the lowest average Project Finance Rating). Given the long term nature of PPPs, this is a major deterrent for investors. Risks - both regulatory and political - are one of several hurdles, but the biggest and most immediate obstacle is financing. Therefore, it has been unsurprising that we have seen a number of initiatives to increase access to private sector capital in Africa. In addition to loan guarantees provided by multi-lateral agencies (such as the World Bank's MIGA), a new vehicle titled Africa50 is aiming to open up project finance for the region. The fund, which was launched in September, is hoping to raise US\$500mn to provide bridge financing, direct loans and loan guarantees across the region (see, 'Africa50 Aims To Tackle Obstacles To Infrastructure Growth', October 2 2013).

### CEE And SSA Fall Behind

Number of Project Reaching Financial Close, By Region



Source: World Bank



### **Eastern Europe: Still Waiting For The Revival**

Prior to the financial crisis, Eastern Europe was the next big region for PPPs; however, the market has never recovered this promise. Despite a desperate need for private capital for infrastructure, brought on by the regions' continued austerity drives, the weak economic climate means that returns on offer are unappealing, and therefore Eastern Europe is unable to compete for the limited infrastructure financing available.

Turkey is one of the few exceptions, playing host to one of the largest project finance closures in the year so far - namely the third Bosphorus bridge in September 2013 (*see, 'Domestically Funded Bridge A Positive Signal For Future Growth View Related Content', September 17 2013*). However, in order to achieve this, the project had to be funded exclusively by domestic banks. Turkey's ability to go to the international market was dented by political risk and currency weakness, and we expect that for the remainder of the country's PPP projects, domestic capital will play a crucial role.

### **Western Europe & North America: Still Leading The Pack**

Western Europe, in addition to Canada and Australia, remains the favoured market for PPPs; however, owing to a combination of diminished project pipelines and constrained project finance, only Canada has really managed to return to pre-crisis levels of deal making. The volume of PPPs has declined significantly in the region as banks have been unable to play the role they previously held in providing debt financing. Equity financing has also declined as corporates focus on debt reduction rather than asset expansion.

Conversely, deal flow in the secondary market has been strong, with the sale of existing PPPs and concessions rapidly expanding, particularly by cash strapped infrastructure companies to cash rich institutional investors. In Western Europe, they are typically high value and well established stable assets, such as airports and regulated utility assets, while in Australia, the sale of existing PPPs have primarily been toll roads that have failed to stay afloat due to overly-bullish traffic volume projections.

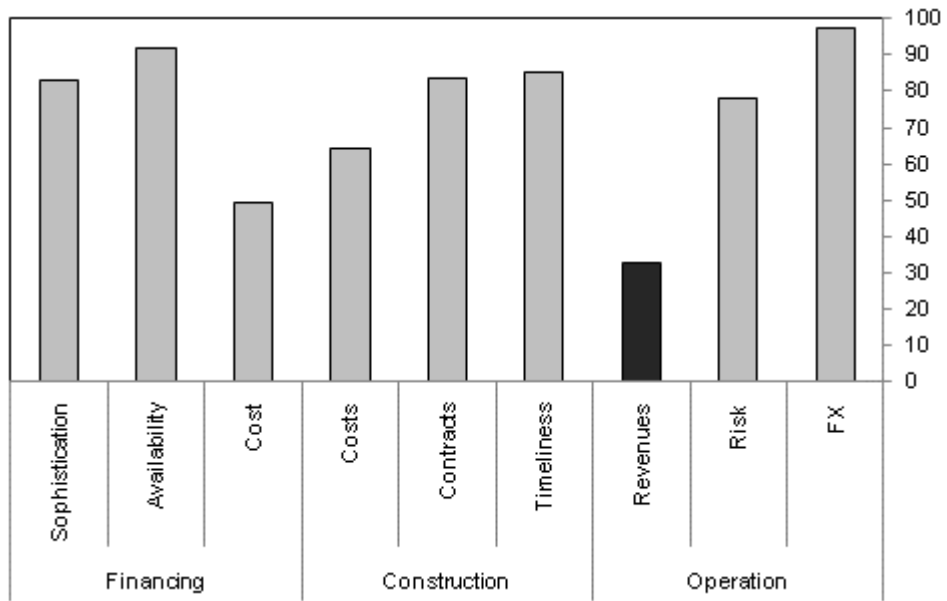
With the region's economy still struggling to recover, the returns on offer are questionable for PPPs especially in the periphery and this is deterring investors. In Australia, the numerous failures with existing toll road PPP projects has deterred investors from financing such projects, propelling the government to introduce alternative PPP models that reduces project risks to private investors (*see 'PPP Road Failures Prompt Risk Reallocation', June 28 2013*).

Another prime example is Greece. Although the country had some success in the transport sector with the PPP model, the funding of projects remains a challenge as private finance has all but dried up in light of the severe economic instability. The issue is notable in our Project Finance Ratings, with the operation phase receiving the lowest score for Western Europe & North America, owing to an extremely weak outlook for revenues.

Indeed, financing in general is not the biggest obstacle, but rather the number attractive of opportunities on offer. Despite limited PPPs coming to market, of those that do, most attract significant interest, and therefore Western Europe still accounts for the majority of project finance deals over the past year. This is supported by new financiers entering the market to take a stake in low risk, stable assets coming to market - such as insurance companies **AXA** and **Legal & General** (see, 'AXA Helps Insurance Fill The Financing Gap', June 21 2013).

### Revenue Weakness

North America & Western Europe Average Project Finance Rating



Source: BMI

In the US, a market offering more promising rewards than Western Europe, progress in introducing PPPs to the transport sector has seen only mixed success of late. Here, rather than financing or rewards, the

obstacles are political and popular opposition to private operation of infrastructure. A prime example is the failure of the Midway Airport privatisation in September 2013. The project fell through due to unappealing terms as the Mayor tried to appease taxpayers, and failed to appeal to private companies (*see, 'Midway Grounded As Politicians Struggle To Find Middle Ground', September 17 2013*). Despite this, our core view has been, and remains that we will see growing employment of the PPP model in the US, especially in highway projects. Investor interest is high, and financing, through various government funding programmes and a number of investment vehicles, is available. Indeed, in September 2013, **Cintra** and **Meridiam Infrastructure** closed financing on a concession to extend the North Tarrant Express in Texas.

# Methodology

## Industry Forecast Methodology

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

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

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

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

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

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

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

BMI uses the selected best model to perform forecasting.

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

## Sector Specific Methodology

### **Construction**

#### 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 (i.e. domestic currency terms). As it is derived from GDP data, it is a measure of value added within the industry (i.e. 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 year-on-year. 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 (US\$)

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 (US\$), % 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 (i.e. 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, US\$bn, % 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 Labour 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 our 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 strategic 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 percent 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 possible. 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 Rating Methodology

**BMI's Risk Reward Ratings (RRR)** provide 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 RRR 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 market and country risks, or market and country rewards. These two results in turn provide an overall Risk Reward Rating, 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 rating a weighted average of the total score. Importantly, as most of the countries and territories evaluated are considered by BMI to be 'emerging markets', our rating is revised on a quarterly basis. This ensures that the rating draws on the latest information and data across our broad range of sources, and the expertise of our analysts.

BMI's 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 Ratings (CRR) 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 ratings, the following indicators have been used. Almost all indicators are objectively based.

**Table: Infrastructure Risk Reward Rating Indicators**

Indicator	Rationale
<b>Rewards</b>	
<b>Industry rewards</b>	
Construction expenditure, US\$bn	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/
<b>Country rewards</b>	
Labour market infrastructure	From BMI's Country Risk Ratings (CRR). Denotes availability/cost of labour. High costs/low quality will hinder company operations.
Financial infrastructure	From CRR. Denotes ease of obtaining investment finance. Poor availability of finance will hinder company operations across the economy.
Access to electricity	From CRR. Low electricity coverage is proxy for pre-existing limits to infrastructure coverage.
<b>Risks</b>	
<b>Industry risks</b>	
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.
<b>Country risks</b>	
Structure of economy	From CRR. Denotes health of underlying economic structure, including seven indicators such as volatility of growth; reliance on commodity imports, reliance on single sector for exports.

**Infrastructure Risk Reward Rating Indicators - Continued**

<b>Indicator</b>	<b>Rationale</b>
External risk	From CRR. Denotes vulnerability to external shock - principal cause of economic crises.
Policy continuity	Subjective rating from CRR. Denote predictability of policy over successive governments.
Legal framework	From CRR. Denotes strength of legal institutions in each state. Security of investment can be a key risk in some emerging markets.
Corruption	From CRR. 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**

<b>Component</b>	<b>Weighting, %</b>
Rewards	70, of which
- Industry rewards	65
- Country rewards	35
Risks	30, of which
- Industry risks	40
- Country risks	60

Source: BMI

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.