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INCLUDES 10-YEAR FORECASTS TO 2022

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BMI Industry View

BMI View: *Despite huge international opposition, plans to develop nuclear capacity remain central to the Iranian power industry's ability to meet its energy requirements. Although sanctions pose problems for many developed nations wanting to invest in Iran, the country still stands to benefit from investment from its neighbours, such as India, and greater development of its renewables generation capacity .The country also stands to gain from the power and gas import requirements of India and Pakistan.*

Iran will continue to rely largely on conventional thermal sources for electricity generation, with many of the power projects that are currently under construction slated to increase the nation's natural gas generation capacity. At the same time, the government appears committed to plans to to increase its nuclear capacity, despite external political resistance and sanctions, as well as ongoing teething problems at the Bushehr plant - at present the country's only nuclear reactor. Meanwhile, the country's growing generation capacity suggests that it may increase exports to energy-hungry neighbours Turkey and Pakistan.

Key trends and developments in the Iranian electricity market:

- While the country continues to face external opposition to its nuclear ambitions, it is determined to continue in its efforts to meet its long-term generation plans and rely on domestic expertise. In February 2013, the Atomic Energy Organisation of Iran (AEOI) designated 16 nuclear power sites (coastal areas of the Caspian Sea, Persian Gulf, Sea of Oman, Khuzestan and north-western parts of the country). In June, the government claimed that significant progress had been made in the construction of the Arak heavy water reactor, which is scheduled to be completed by 2014.
- Teething problems continue to disrupt production at Iran's first nuclear power plant in Bushehr, which became operational in 2011 after years of delays. In March 2013, technicians experienced significant delays when attempting to connect the plant to the main grid, and Ambassador to Russia Mahmoud Reza Sajjadi announced in June that the plant was experiencing technical problems with its generator.
- During the period 2013-2022, Iran's overall power generation is expected to increase by an annual average of 2.7%, to reach 287.2 terawatt hours (TWh). Driving this growth is the build-up of output from the country's first nuclear power facility, which was connected to the grid in 2012 and is scheduled to be operating on a commercial scale by March 2013. However, operation halts at the plant suggests that it may not be fully operational and represents downside risks to our 2013 forecasts. Growth from non-hydro renewables generation is expected accelerate and deliver an average annual supply growth of 2.5% over the 2013-2022 period.
- Iran's 2013 real GDP is forecasted by **BMI** to contract by 1.0%, following an estimated contraction of 3.2% in 2012. However, growth is forecasted to recover to an average of 3.5% between 2014 and 2022.The population is expected to rise from an estimated 75.6mn in 2012 to 82.0mn by 2022, while net power consumption looks set to see far greater gains, increasing from an estimated 183.1TWh to 245.5TWh over the period. Over 2013-2022, electricity demand is forecast at to grow at an average annual rate of 3.0%.
- Thanks partly to the projected rise in net generation, growth of which falls below underlying demand trend, Iran's power supply surplus is likely to increase slightly over the medium term, although the

country is keen to develop its power export capability. A decline in the percentage of transmission and distribution (T&D) losses from an estimated 15.4% in 2012 to 14.1% by end-2022 will further support the widening of the surplus. The forecasted net export capability in 2022 is put at 1.1TWh.

SWOT

Iran Power SWOT Analysis

Strengths	▪ The country has vast oil and gas reserves, which provide the basis for energy self sufficiency. It also has some hydroelectric resources, and despite international opposition, Iran continues to pursue its nuclear power ambitions.
Weaknesses	▪ The price of natural gas to residential and industrial consumers is state controlled at extremely low prices, encouraging rapid consumption growth and replacement of fuel oil, kerosene and liquefied petroleum gas (LPG) demand. However, there have been recent efforts to improve reduce the subsidies and raise prices.
Opportunities	▪ Iran is believed to have the potential to produce some 6.5GW of electricity from wind energy. It also has solar power potential. ▪ The country is surrounded by nearby countries such as India and Pakistan, who face a shortage of electricity, providing an opportunity for Iran to increase production for export. Iran currently trades power with Afghanistan, Armenia, Azerbaijan, Iraq, Pakistan, Turkey and Turkmenistan.
Threats	▪ UN and EU sanctions on the republic pose a significant threat to the participation of foreign firms in the power sector. ▪ International resistance to the nuclear energy programme could result in delays to capacity expansion.

Industry Forecast

Iran Snapshot

Table: Country Snapshot: Economic and Demographic Data

	2012	2017f	2022f
GDP, US$bn	561.72	1,353.76	2,150.28
GDP per capita, US$	7,429.03	17,074.87	26,222.22
Real GDP growth, %	-3.25	2.97	4.25
Population, mn	75.61	79.28	82.00

Source: BMI Macroeconomic Databases

Table: Country Snapshot: Power Sector

Access to Electricity, % of population	**97.9**
Quality of Electricity Supply (Value)	4.7/7
Quality of Electricity Supply (Rank)	72/144

Source: BMI, World Economic Forum - Global Competitiveness Report 2012-2013, World Bank

Iran Power Forecast Scenario

Electricity Generation and Power Generating Capacity

Table: Iran Total Electricity Generation Data And Forecasts, 2011 - 2016

	2011	2012e	2013f	2014f	2015f	2016f
Total Generation, TWh	220.20	220.32	223.28	227.34	232.72	239.93
Total Generation, Growth % y-o-y	-0.14	0.05	1.34	1.82	2.37	3.10
Total Generation, KWh per capita	2,943.90	2,913.77	2,922.18	2,945.71	2,986.92	3,051.94
Thermal Generation, TWh	208.10	208.86	206.63	210.29	215.17	221.80
Thermal Generation, Growth % y-o-y	-0.84	0.37	-1.07	1.77	2.32	3.08
Thermal Generation, KWh per capita	2,782.14	2,762.27	2,704.27	2,724.82	2,761.68	2,821.27
Thermal Generation, % of Total Electricity Generation	94.51	94.80	92.54	92.50	92.46	92.44
Coal Generation, TWh	0.40	0.40	0.40	0.41	0.42	0.43
Coal Generation, Growth % y-o-y	-0.84	0.00	0.30	2.90	2.23	1.10
Coal Generation, KWh per capita	5.34	5.29	5.25	5.35	5.41	5.42
Coal Generation, % of Total Thermal Electricity Generation	0.19	0.19	0.19	0.20	0.20	0.19
Coal Generation, % of Total Electricity Generation	0.18	0.18	0.18	0.18	0.18	0.18
Natural Gas Generation, TWh	152.04	152.80	150.51	154.12	158.96	165.55
Natural Gas Generation, Growth % y-o-y	-0.84	0.50	-1.50	2.40	3.14	4.15
Natural Gas Generation, KWh per capita	2,032.64	2,020.83	1,969.81	1,996.97	2,040.17	2,105.82
Natural Gas Generation, % of Total Thermal Electricity Generation	73.06	73.16	72.84	73.29	73.87	74.64
Natural Gas Generation, % of Total Electricity Generation	69.05	69.35	67.41	67.79	68.30	69.00
Oil Generation, TWh	55.66	55.66	55.72	55.76	55.79	55.82
Oil Generation, Growth % y-o-y	-0.84	0.00	0.10	0.08	0.06	0.05
Oil Generation, KWh per capita	744.15	736.15	729.22	722.50	716.10	710.02
Oil Generation, % of Total Thermal Electricity Generation	26.75	26.65	26.97	26.52	25.93	25.17
Oil Generation, % of Total Electricity Generation	25.28	25.26	24.95	24.53	23.97	23.26

Iran Total Electricity Generation Data And Forecasts, 2011 - 2016 - Continued						
	2011	2012e	2013f	2014f	2015f	2016f
Nuclear Generation, TWh	0.10	0.00	5.26	5.44	5.72	6.01
Nuclear Generation, Growth % y-o-y		-100.00		3.50	5.23	4.99
Nuclear Generation, KWh per capita	1.31	0.00	68.79	70.49	73.47	76.45
Nuclear Generation, % of Total Electricity Generation	0.04	0.00	2.35	2.39	2.46	2.50
Hydropower Generation, TWh	11.82	11.27	11.19	11.40	11.61	11.89
Hydropower Generation, Growth % y-o-y	25.33	-4.65	-0.69	1.83	1.83	2.45
Hydropower Generation, KWh per capita	158.02	149.06	146.49	147.68	148.96	151.24
Hydropower Generation, % of Total Electricity Generation	5.37	5.12	5.01	5.01	4.99	4.96
Non-Hydropower Renewables Generation, TWh	0.18	0.18	0.20	0.21	0.22	0.23
Non-Hydropower Renewables Generation, Growth % y-o-y	-85.11	1.82	8.93	4.30	4.28	7.12
Non-Hydropower Renewables Generation, KWh per capita	2.43	2.45	2.64	2.72	2.81	2.99
Non-Hydropower Renewables Generation, % of Total Electricity Generation	0.08	0.08	0.09	0.09	0.09	0.10

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

Table: Iran Total Electricity Generation Long Term Forecasts, 2017 - 2022						
	2017f	**2018f**	**2019f**	**2020f**	**2021f**	**2022f**
Total Generation, TWh	246.49	254.22	263.19	270.76	278.16	287.21
Total Generation, Growth % y-o-y	2.74	3.13	3.53	2.88	2.73	3.25
Total Generation, KWh per capita	3,109.02	3,181.17	3,269.42	3,340.86	3,411.09	3,502.43
Thermal Generation, TWh	227.82	234.95	243.34	250.28	257.06	265.48
Thermal Generation, Growth % y-o-y	2.72	3.13	3.57	2.85	2.71	3.28
Thermal Generation, KWh per capita	2,873.50	2,940.08	3,022.90	3,088.14	3,152.39	3,237.50
Thermal Generation, % of Total Electricity Generation	92.42	92.42	92.46	92.44	92.42	92.44
Coal Generation, TWh	0.43	0.44	0.45	0.45	0.44	0.42
Coal Generation, Growth % y-o-y	1.25	1.72	1.41	0.98	-2.50	-3.95
Coal Generation, KWh per capita	5.45	5.50	5.53	5.55	5.38	5.14
Coal Generation, % of Total Thermal Electricity Generation	0.19	0.19	0.18	0.18	0.17	0.16
Coal Generation, % of Total Electricity Generation	0.18	0.17	0.17	0.17	0.16	0.15
Natural Gas Generation, TWh	171.55	178.66	187.03	193.95	200.74	209.17
Natural Gas Generation, Growth % y-o-y	3.62	4.14	4.69	3.70	3.50	4.20
Natural Gas Generation, KWh per capita	2,163.77	2,235.65	2,323.38	2,393.16	2,461.72	2,550.82
Natural Gas Generation, % of Total Thermal Electricity Generation	75.30	76.04	76.86	77.50	78.09	78.79
Natural Gas Generation, % of Total Electricity Generation	69.60	70.28	71.06	71.63	72.17	72.83
Oil Generation, TWh	55.84	55.85	55.87	55.88	55.88	55.89
Oil Generation, Growth % y-o-y	0.04	0.03	0.02	0.02	0.01	0.01
Oil Generation, KWh per capita	704.29	698.94	693.99	689.43	685.29	681.54
Oil Generation, % of Total Thermal Electricity Generation	24.51	23.77	22.96	22.33	21.74	21.05
Oil Generation, % of Total Electricity Generation	22.65	21.97	21.23	20.64	20.09	19.46
Nuclear Generation, TWh	6.28	6.56	6.77	6.99	7.17	7.35
Nuclear Generation, Growth % y-o-y	4.52	4.50	3.20	3.24	2.56	2.50

Iran Total Electricity Generation Long Term Forecasts, 2017 - 2022 - Continued						
	2017f	**2018f**	**2019f**	**2020f**	**2021f**	**2022f**
Nuclear Generation, KWh per capita	79.23	82.15	84.16	86.30	87.97	89.66
Nuclear Generation, % of Total Electricity Generation	2.55	2.58	2.57	2.58	2.58	2.56
Hydropower Generation, TWh	12.15	12.45	12.82	13.23	13.66	14.10
Hydropower Generation, Growth % y-o-y	2.17	2.52	2.90	3.22	3.26	3.25
Hydropower Generation, KWh per capita	153.22	155.85	159.19	163.21	167.50	171.99
Hydropower Generation, % of Total Electricity Generation	4.93	4.90	4.87	4.89	4.91	4.91
Non-Hydropower Renewables Generation, TWh	0.24	0.25	0.25	0.26	0.26	0.27
Non-Hydropower Renewables Generation, Growth % y-o-y	3.30	2.06	2.96	1.90	1.47	2.17
Non-Hydropower Renewables Generation, KWh per capita	3.06	3.10	3.16	3.20	3.23	3.28
Non-Hydropower Renewables Generation, % of Total Electricity Generation	0.10	0.10	0.10	0.10	0.09	0.09

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

Table: Iran Electricity Generating Capacity Data And Forecasts, 2011 - 2016

	2011	2012e	2013f	2014f	2015f	2016f
Net Capacity, MW	57,397.63	58,485.14	59,555.57	60,898.37	62,311.44	64,017.27
Net Capacity, Growth % y-o-y	2.21	1.89	1.83	2.25	2.32	2.74
Thermal Capacity, MW	49,609.77	49,609.77	50,676.38	51,923.02	53,293.79	54,901.77
Thermal Capacity, Growth % y-o-y	2.53	0.00	2.15	2.46	2.64	3.02
Thermal Capacity, % of Total Capacity	86.43	84.82	85.09	85.26	85.53	85.76
Nuclear Capacity, MW	0.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Nuclear Capacity, Growth % y-o-y			0.00	0.00	0.00	0.00
Nuclear Capacity, % of Total Capacity	0.00	1.71	1.68	1.64	1.60	1.56
Hydropower Capacity, MW	7,703.00	7,787.73	7,787.73	7,881.19	7,920.59	8,015.64
Hydropower Capacity, Growth % y-o-y	0.00	1.10	0.00	1.20	0.50	1.20
Hydropower Capacity, % of Total Capacity	13.42	13.32	13.08	12.94	12.71	12.52
Non-Hydroelectric Renewables Capacity, MW	84.86	87.63	91.46	94.17	97.06	99.87
Non-Hydroelectric Renewables Capacity, Growth % y-o-y	25.05	3.27	4.36	2.96	3.07	2.89
Non-Hydroelectric Renewables Capacity, % of Total Capacity	0.15	0.15	0.15	0.15	0.16	0.16

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

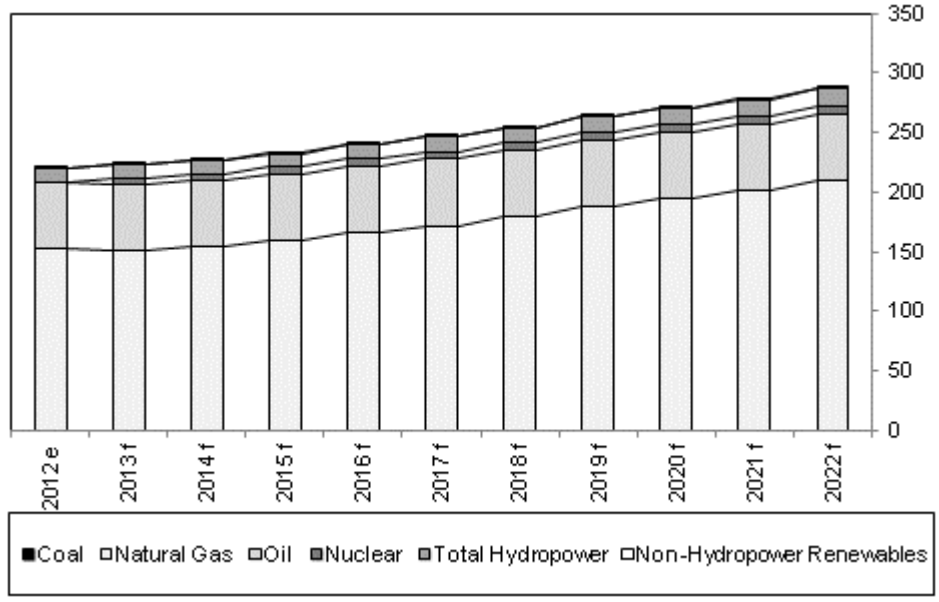
Table: Iran Electricity Generating Capacity Long Term Forecasts, 2017 - 2022						
	2017f	**2018f**	**2019f**	**2020f**	**2021f**	**2022f**
Net Capacity, MW	65,620.97	67,426.63	69,431.39	71,229.83	72,919.42	74,706.85
Net Capacity, Growth % y-o-y	2.51	2.75	2.97	2.59	2.37	2.45
Thermal Capacity, MW	56,389.60	58,002.35	59,829.42	61,468.75	62,974.73	64,618.37
Thermal Capacity, Growth % y-o-y	2.71	2.86	3.15	2.74	2.45	2.61
Thermal Capacity, % of Total Capacity	85.93	86.02	86.17	86.30	86.36	86.50
Nuclear Capacity, MW	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Nuclear Capacity, Growth % y-o-y	0.00	0.00	0.00	0.00	0.00	0.00
Nuclear Capacity, % of Total Capacity	1.52	1.48	1.44	1.40	1.37	1.34
Hydropower Capacity, MW	8,127.86	8,318.86	8,493.56	8,650.69	8,832.35	8,973.67
Hydropower Capacity, Growth % y-o-y	1.40	2.35	2.10	1.85	2.10	1.60
Hydropower Capacity, % of Total Capacity	12.39	12.34	12.23	12.14	12.11	12.01
Non-Hydroelectric Renewables Capacity, MW	103.51	105.42	108.41	110.39	112.34	114.80
Non-Hydroelectric Renewables Capacity, Growth % y-o-y	3.65	1.85	2.84	1.82	1.76	2.20
Non-Hydroelectric Renewables Capacity, % of Total Capacity	0.16	0.16	0.16	0.15	0.15	0.15

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

Iranian power generation in 2012 is estimated by **BMI** to have reached just over 220TWh, up an estimated 0.1% from the previous year. Overall thermal generation is expected to have risen by 0.4% and is forecast to accelerate over the course of our forecast period to 2022.

Iran Total Net Generation, By Type (TWh)

2012-2022



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

During the period 2013-2022, Iran's overall power generation is expected to increase by an annual average of 2.7%, to 287.2TWh. Driving this growth in the near-term is the output from the country's first nuclear power facility, which was connected to the national grid in early 2013, though operations at the facility continue to suffer from teething problems. Increase in natural gas generation is slated to be the main driver of generation growth, and is forecasted to account for 72.8% of total generation in 2022 versus an estimated 69.4% in 2012. Non-hydro renewables are expected to deliver average annual supply growth of 3.85% over the period 2013-2022.

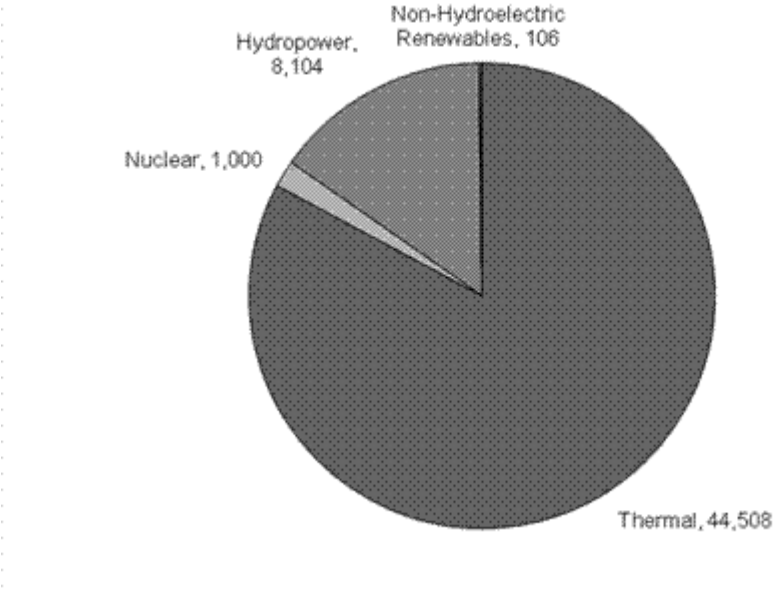
As a result of significant state investment in the generation sector, a number of new power plants (mainly hydroelectric and combined-cycle) have come online. Conventional thermal sources are expected to remain the dominant fuel for electricity generation, with many power projects under construction or planned that will utilise gas. In first two months of 2013, Iran inaugurated three power plants, with the Shirkouh power plant, a 484 megawatt (MW) combined cycle power plant in the central province of Yazd the most recent. The other two plants are the Shahid Bastami power plant in the city of Shahrood and Quds power plant in the city of Semnan, both of which have a production capacity of 324MW.

New gas-fired projects include two 1.04GW combined-cycle plants in the south, 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.

India has been assessing plans to build a 6GW gas-fired power plant in Iran. This would be connected to India via a 1,500km high-voltage transmission line. Indian power company **NTPC** and Indian transmission company **PGCIL** have been evaluating the project, which is estimated to cost US$10bn. The power plant would be located in Iran, and the majority of electricity generated (approximately 4GW of the 6GW) would then be exported to India. While little has been heard from their Indian counterparts, Mehr news agency quoted Iranian Energy Minister, Majid Namjou, in November 2012, suggesting that India is likely to go ahead with the plan.

Iran Total Capacity (MW)

2012e



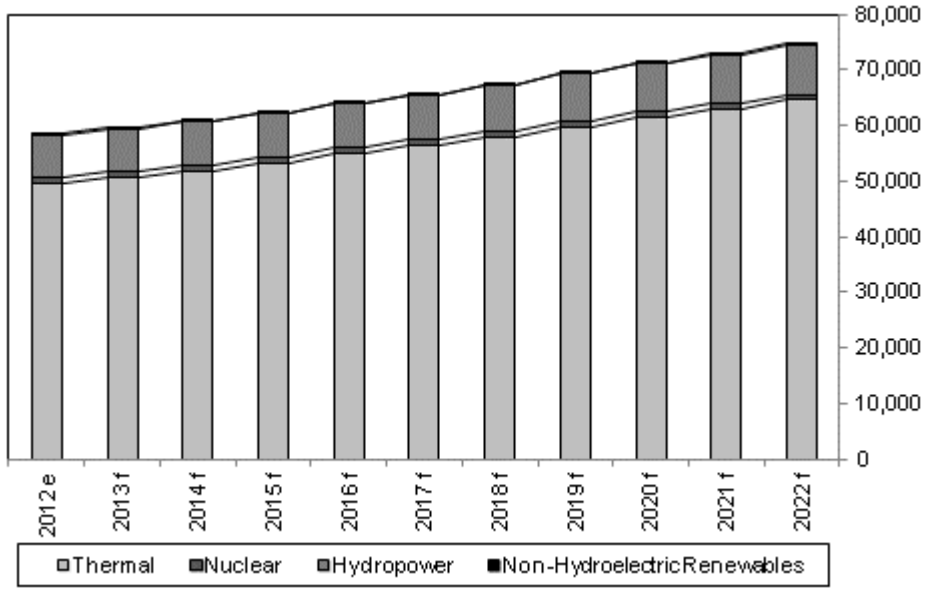
Source: BMI, UN Data, EIA

In December 2012, Iran saw its first private combined cycle power plant, with a capacity of 968MW inaugurated in Reshvanshahr. Iranian Energy Minister, Majid Namjou, has announced the government's intention to begin more such projects, claiming that the country has plans to convert 12 more thermal plants

to combined cycle plants. With its neighbours in need of electricity imports, the openness of the country's energy ministry for the private sector to build and export electricity will help grow this sector and meet its aim to export electricity to Lebanon, while expanding trade with several other economies in the region. Energy minister Namjou has announced that the necessary permissions for the building of 80 new power plants have been given to the private sector. According to the minister, plans are in place to privatise a further 28 power plants within the calendar year (ending March 2014).

Iran Total Capacity (MW), by Type

2012-2022



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

In September 2011, Iran connected its Bushehr nuclear power plant to the national electricity grid, according to the Atomic Energy Organization of Iran (AEOI). The plant will be operated by Iranian and Russian technicians for several years. The reactor was expected to enter commercial operation in April 2012, but there have been further delays, with the plant having only reached 100% capacity at the end of August 2012. The facility continues to suffer from technical difficulties, with the generator having experienced technical difficulties in June 2013.

In November 2010, Iran opened a new gas power plant in Aliabad Katoul, IRNA reported. The 1GW Aliabad Katoul gas power plant was officially opened on November 17 2010, according to Mehdi

Motevallian, the managing director of **Iran Power Plant Investment Company**. The gas power plant, near the northern Iranian city of Gorgan, Golestan province, is equipped with six 162MW units and can generate a total of 972MW.Given the international community's hostile reaction to Iran's nuclear ambitions, and the strong possibility of fresh and tougher sanctions, there is a question mark over the timing and scale of Iran's decision to introduce nuclear capacity. We have assumed that the first plant will be scaled gradually up to its full design capacity during the forecast period, but have not included any additional nuclear power stations in our forecasts, despite the government announcing plans for another research reactor to be set up. This also leads us to forecast the increase in natural gas generation as the primary driver of capacity.

Given the tensions between Iran and the developed nations, Iran has often sought allies in other large countries, such as China and Russia. This has come in the form of awarding contracts to companies from these countries and the choice to use their technology and equipment, as opposed to the Korean and Japanese. Yet, these relationships have not always been smooth. In late May 2012, Iran's government terminated a contract which had been awarded to China for the construction of the south-western Bakhtiari hydropower plant, according to Energy Minister Majid Namjou. China's proposed US$2bn financial package for the 1,500MW plant was rejected by the Iranian Central Bank, with the project having now been awarded to the Iranian Revolutionary Guard Corps' engineering arm, Khatam al-Anbiya. The cancellation of the contract could have an adverse impact on the economic relationship between China and Iran. Also in May 2012, a 1000MW unit 2 at Bushehr was announced, with construction involving foreign contractors due to begin by March 2014.

Apart from conventional generation sources, the country is also looking into expanding its renewable generation. The largest hydropower projects are the 2GW Karun 3 plant, the 2GW Godar-e Landar facility and a 1GW station in Upper Gorvand. In July 2006, Abbas Aliabadi, director of **Iran Power and Water Resources Development Company** (IWPCO), announced that Iran planned to add 6.4GW of hydroelectric power generating capacity over five years.

The Karoun-4 Roller-Compacted Concrete (RCC) dam, which sits across the Karoun River in Chaharmahal-Bakhtiari province in Iran, was inaugurated by President Mahmoud Ahmadinejad on July 6 2011. The IRR12.8bn (US$1.19mn) dam will generate power and provide water for industrial and agricultural purposes in the province. The completion of the dam marks the fact that the country's dam-building industry has become self-sufficient.

Iran is believed to have the potential to produce some 6.5GW of electricity with wind energy. It also has solar power potential, but non-hydro renewables do not currently form a major part of Iranian energy

policy. However, there are companies looking to capitalise on this opportunity by indigenise the technology and manufacture of various parts. **MAPNA Generator Company** is one such company, which is looking to construct nine wind turbines, and manufacture 2.5MW generators by mid-2014, according to Mr Hamid Amini, the company's deputy Managing Director.

Iran has launched commercial operations at its biggest solar power plant in Mashhad, reports IRNA. 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.

In May, the government unveiled the country's first materials production line for wind turbines, its first 2MW turbine, as well as its first crane for turbine repairs.

Electricity Consumption

Table: Iran Total Electricity Consumption Data And Forecasts, 2011 - 2016

	2011	2012e	2013f	2014f	2015f	2016f
Net Consumption, TWh	182.34	183.07	185.41	189.88	194.94	201.83
Net Consumption, Growth % y-o-y	-0.20	0.40	1.28	2.41	2.66	3.53
Net Consumption, KWh per capita	2,437.73	2,421.16	2,426.63	2,460.34	2,501.94	2,567.23

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

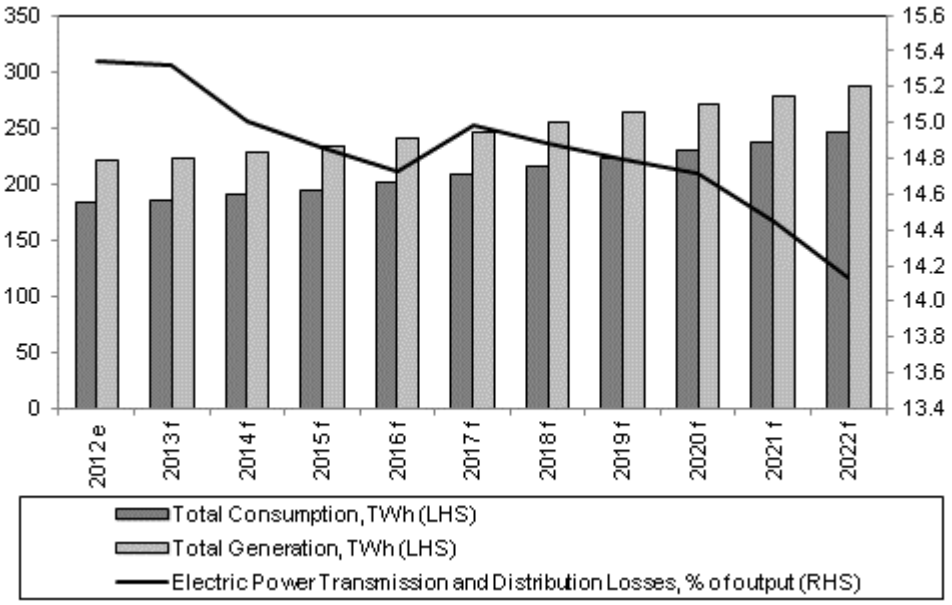
Table: Iran Total Electricity Consumption Long Term Forecasts, 2017 - 2022

	2017f	2018f	2019f	2020f	2021f	2022f
Net Consumption, TWh	207.90	215.32	221.97	230.05	237.41	245.53
Net Consumption, Growth % y-o-y	3.01	3.57	3.09	3.64	3.20	3.42
Net Consumption, KWh per capita	2,622.24	2,694.41	2,757.39	2,838.56	2,911.42	2,994.21

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

Iran Total Net Generation And Consumption (TWh)

2012-2022



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

Given that Iran's real GDP growth is forecast to contract by a further 1.0% in 2013, with energy consumption anticipated to grow at a tepid pace of 1.3%. Beyond this, we expect consumption growth to pick up and average at a rate of 3.2% per annum between 2014 and 2022. The population is expected to rise from an estimated 75.6mn in 2012 to 82.0mn by end-2022, with net power consumption set to increase from 183.1TWh to 245.5Wh over the same period.

Transmission & Distribution, Imports & Exports

Table: Iran Electric Power Transmission And Distribution Losses Data And Forecasts, 2011 - 2016

	2011	2012e	2013f	2014f	2015f	2016f
Electric Power Transmission And Distribution Losses, TWh	33.80	33.82	34.20	34.13	34.59	35.34
Electric Power Transmission And Distribution Losses, % of Output	15.35	15.35	15.32	15.01	14.86	14.73

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

Table: Iran Electric Power Transmission And Distribution Losses Long Term Forecasts, 2017 - 2022						
	2017f	2018f	2019f	2020f	2021f	2022f
Electric Power Transmission And Distribution Losses, TWh	36.94	37.83	38.93	39.85	40.20	40.61
Electric Power Transmission And Distribution Losses, % of Output	14.98	14.88	14.79	14.72	14.45	14.14

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

Table: Iran Trade Data And Forecasts, 2011 - 2016						
	2011	2012e	2013f	2014f	2015f	2016f
Total Net Imports, TWh	-4.06	-3.43	-3.66	-3.33	-3.20	-2.77

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

Table: Iran Trade Long Term Forecasts, 2017 - 2022						
	2017f	2018f	2019f	2020f	2021f	2022f
Total Net Imports, TWh	-1.66	-1.07	-2.29	-0.86	-0.55	-1.07

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

Thanks partly to the projected rise in net generation, which falls short of the underlying demand trend, Iran's power supply surplus is likely to record slight increases - in line with the country's ambition to develop its power export capability. A decline in the percentage of transmission and distribution (T&D) losses from an estimated 15.4% in 2012 to 14.1% in 2022 will help balance the market. The estimated net export capability in 2022 is put at 1.1TWh.

Tavanir is responsible for electricity transmission. Iran has three main power distribution networks: the interconnected network, which serves all of Iran, apart from remote eastern and southern areas, using 440kV and 230kV transmission lines; the Khorassan network, which serves the eastern Khorossan province; and the Sistan and Baluchistan network, which serves the remote south eastern provinces of Sistan and Baluchistan. The government's goal is to join these three networks to establish one national grid.

In December 2004, a protocol was reached on synchronising the power grids of Iran, Azerbaijan and Russia, with 500MW being exchanged at the beginning of 2006. In August 2004, Turkmenistan had started power exports to Iran via a new transmission line (Sarahs). This line added to previous power export capacity from Turkmenistan to Iran via the Balkanat-Gonbad line, which was started in June 2006. Another line is also to be constructed. With more such infrastructure in place, Iran would be in a better position to grow its energy exports to its energy-hungry neighbours.

The government's current five-year investment plan for the power sector sees US$9.8bn spent on the transmission system and a further US$7.1bn ploughed into distribution. Iran has three main power distribution networks and the government's goal is to join these to form one national grid. Additional links to the power grids of neighbouring states are likely in order to facilitate greater regional supply flexibility and accommodate Iranian power exports.

Further extending their energy cooperation, Iran and Russia have signed a letter of intent to accelerate the construction of shared power grids, both between them and regionally, according to a report from the Iranian News Agency.

The Iranian government has entered into agreements with the governments of Russia and Turkey to jointly construct power plants in Iran, with the aim of exporting electricity to other countries, according to Iranian Energy Minister Majid Namjou. Under the terms of the agreement, the Turkish companies will be permitted to construct new power plants and invest in Iran's power sector. In addition, Tehran and Moscow have decided to form a joint venture (JV) to build new power plants. Iran's electricity exports exceeded 5.5TWh in the Iranian year ended March 20 2011.

News agency IRNA has reported that the **Lebanese Electricity Company** has decided to purchase electricity from Iran, as of April 15 2012. Lebanese Prime Minister Najib Mikati referred to a decision by his cabinet to permit the purchase of electricity from Iran and the subsequent participation of Lebanon's representative in a multilateral meeting to be attended by representatives from Syria, Iraq and Iran.

Lebanese sources wrote that the Lebanon had started purchasing electricity from Iran - with the first consignment comprising 25MW, which will be increased to 100MW. The sources said that Iran's electricity will be exported to Lebanon via Iraq and Syria. They also noted that since Iran is facing US-imposed economic and financial sanctions, Lebanon's Electricity Company had received the necessary permits from Lebanon's Foreign Ministry.

Qatar, Oman and the United Arab Emirates (UAE) are likely to buy up to US$2bn of Iranian electricity once a gas field in the Arabian Gulf is operational, a senior Iranian energy minister has said, according to Al Arabiya.

The gas field is to be developed under a US$3.8bn deal between **Iran Offshore Oil Company** and Iran's Power Projects Management Company. Exports to the Gulf states are probable.

'The field will result in 3GW of power production, largely available as exports to the UAE, Oman and Qatar,' Iranian deputy energy minister Mohammad Behzad told the Fars news agency in March 2012.

Iraqi news agency Aswat al-Iraq has reported that a new Iranian electricity supply line has started operations, carrying 100 MW of imported electricity from Iran. The new line is aimed at meeting the 550MW of power demanded by Wasit province, in the centre of Iraq. The province currently only receives less than 150 MW from Iraq's national grid, and consequently suffers from regular electricity blackouts.

Iran will establish two new power transmission lines to boost electricity exports to Turkmenistan, reported the Tehran Times.

Abdolhamid Farzam, an official with the Iranian Energy Ministry, said that the two 400kV lines will provide the opportunity to exchange electricity among Iran, Turkmenistan, Kyrgyzstan and Uzbekistan. Iran plans to connect its power grid to the six countries of the Caspian Sea and the Caucasus region.

Minister Namjou said in May 2012 that the government plans to turn the country into a centre for the transit of electricity in the region. The government is following up development plans outside the country pertaining to power and energy and seeks to emerge as the regional power transit hub. He added that Iran seeks to provide countries including, Iraq, Turkey, Afghanistan and Pakistan with electricity.

Namjou said that by the end of the Fifth Five-Year Economic Development Plan (2015), Iran will boost its electricity generation capacity by 25GW to reach 73GW.

Mohammad Behzad, deputy energy minister, said in April that the energy ministry will roll out power projects which will increase Iran's electricity generation capacity by 5GW in the 2012 calendar year. Over 10GW should be added to the generation capacity of hydroelectric and thermal power plants by August 2013, the last month of President Ahmadinejad's administration.

Industry Risk/Reward Ratings

MEA Power Risk/Reward Ratings

BMI View: *Whilst industry-specific indicators are buoyed by comparatively strong macroeconomic and demographic fundamentals and supported by base effects, scores across Middle East and Africa markets continue to be held back by structural, political and policy related problems. Saudi Arabia and Sudan have once again retained their positions as the regional out - and under-performer, while dynamics in play did little to produce a shift within regional and sub-regional ranking. That said, we note that a number of projects and policy changes announced in countries such as Kenya, Nigeria, Saudi Arabia and the UAE create upside potential for these markets.*

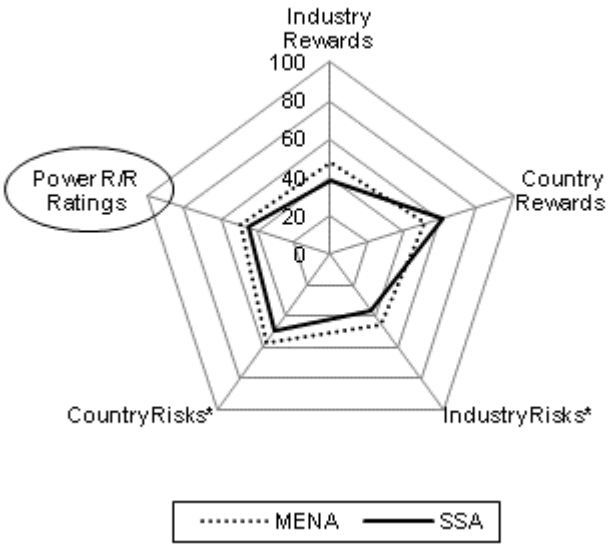
Disparities within and between the power markets that are part of **BMI**'s Middle East and Africa (MEA) region remain as stark as ever, with up to a 22.3 point differential between rewards and risks on offer in a country (Iran) and a 33.15 point differential between the regional outperformer (Saudi Arabia) and the tail ender (Sudan). Hence, the all-encompassing methodology behind our Risk/Reward Ratings is instrumental in teasing out the idiosyncrasies that characterise these power markets (very high scores in one category are often cancelled out by very low scores in another), and analyse how industry and country-specific trends shape the opportunities on offer.

MENA: Outperforming, But On A Downtrend

With relatively better balanced risks and rewards, the Middle East and North Africa (MENA) region continues to outperform the sub-Saharan Africa one, and the fact that the challenges faced by sub-Saharan Africa (SSA) countries are largely structural in nature leads us to reiterate our view that changes in the sub-regional ranking will be slow to materialise.

Less Promising Fundamentals Not Enough To Dethrone MENA

Regional Overview - MENA And SSA Power Industry Risk/Reward Ratings, Scores Out Of 100



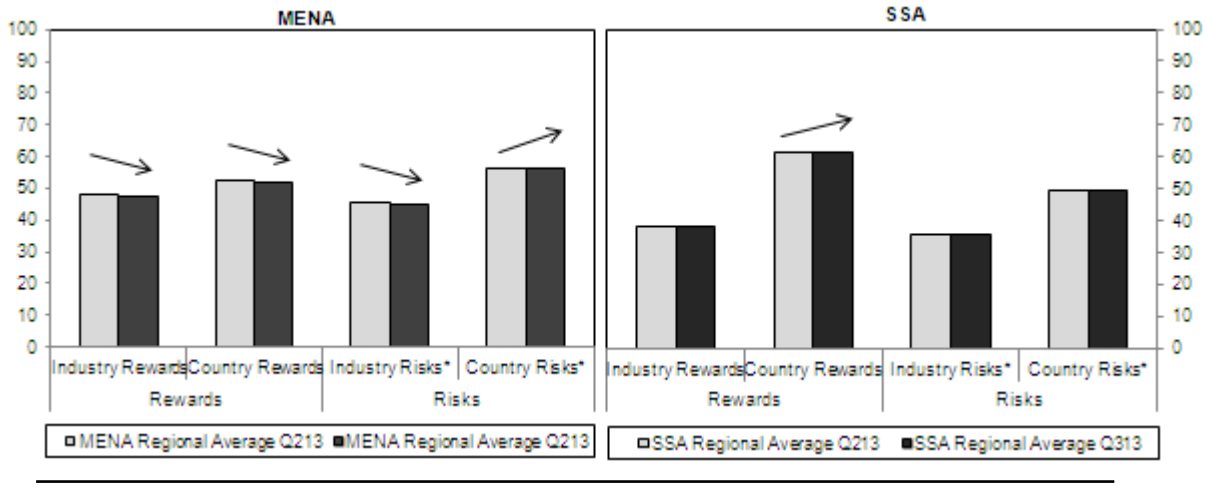
**Higher score = Lower risks. Source: BMI*

Despite its increasingly attractive macroeconomic profile - especially amid stagnating developed markets - the strong economic growth observed in sub-Saharan Africa markets is in part a result of base effects. Furthermore, in spite of ambitious promises of reforms and increased capital investment in generating capacity and transmission infrastructure, the regional Power Risk/Reward Ratings average remains the lowest globally- testament to several impediments that prevent timely development. Not only is policy implementation often divorced from actual capital expenditure, but endemic corruption and poor governance cause the real picture (and scores) to diverge from the projected one.

Considering the structural nature of many of these risks, it is thus not entirely surprising that scores were only marginally affected this quarter.

Trends In Play, With Very Modest Changes

MENA And SSA Power Risk/Reward Ratings - Q213 Vs. Q313, Scores Out Of 100



**Higher score = Lower risks. Source: BMI*

That said, **BMI**'s political, macroeconomic and sector-specific analysis evidence that, two years after the onset of the Arab Spring, the Middle East and North Africa's macroeconomic, political and social backdrop is likely to remain in flux in 2013, thus weighing on the overall outlook of these markets for a number of sectors. With our Country Risks analysts expecting GDP growth to slow down in the GCC while picking up in North Africa, and policy risks taking a greater share of investors' attention as well as growing balance of payments strains, we therefore anticipate that a number of indicators could see changes in the coming quarters, with the potential to alter not only the rankings within the region, but also its overall scores.

Aside from changes in the indicators used to evaluate macroeconomic and funding dynamics, we note that policy-related metrics in the Country Risks as well as in the Industry Risk sections of our matrix could be affected. Most notably, our Country Risk experts note that the nature of political risk is set to evolve, with focus shifting towards increasingly erratic and unpredictable policy decisions, as opposed to large-scale civil unrest. In the Gulf, such policy will focus on efforts to increase participation rates of the national workforce in the private sector, in addition to legislation that aims to help move away from dependence on hydrocarbons. In North Africa and the Levant, governments could face their biggest test since early 2011, with highly unpopular economic reforms needing to be implemented, yet widespread public opposition and elevated unemployment raising the risk of policy slippage or reversals. Such dynamics could have important

ramifications for big ticket projects, as well as for sub-segments such as nuclear and renewables, for which policy continuity is of paramount importance.

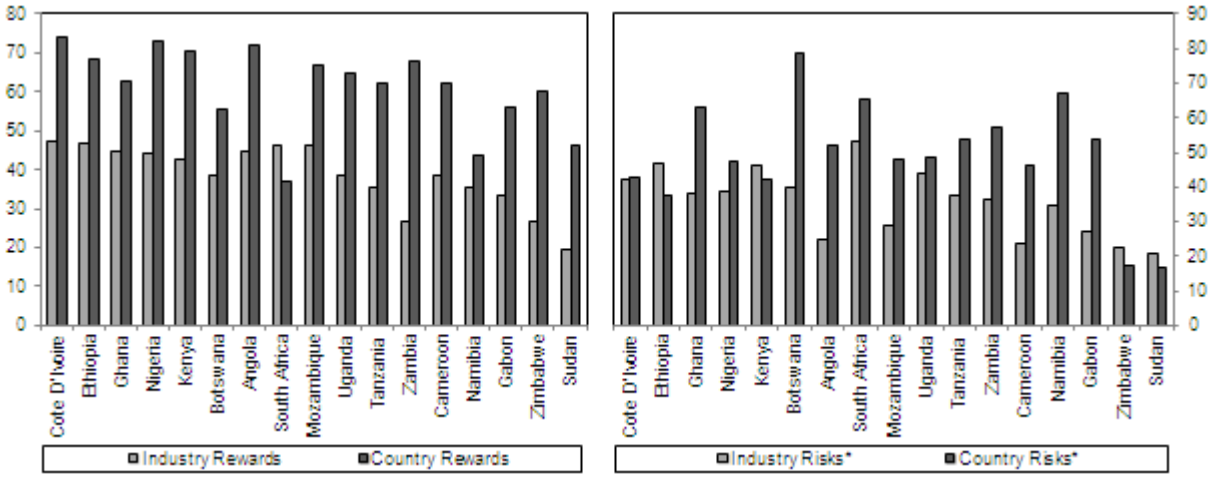
Regional Trends Solidly In Place…

As highlighted above, the challenges faced by the region are largely structural in nature. Hence a number of key takeaways from **BMI**'s updated MEA Power Ratings remain largely the same, including the following:

- Unsurprisingly, sub-Saharan Africa continues to underperform the MENA region, owing primarily to higher Country Risks as well as lower Industry and Country Rewards. The difference would be even starker were it not for markets such as Cote d'Ivoire and South Africa, who's more sophisticated infrastructure and regulatory frameworks provide some support to the sub-regional scores.

Risks Continue To Cast Shades On Opportunities In Several SSA Markets

SSA Power Industry Risk/Reward Ratings, Scores Out Of 100



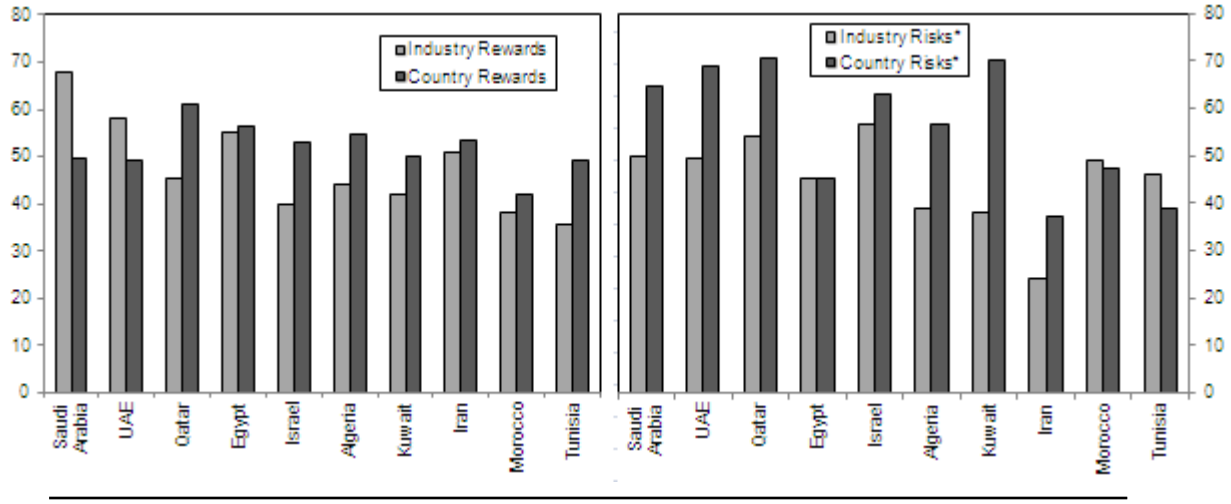
**Higher score = Lower risks. Source: BMI*

- The lower part of our Risk/Reward table for SSA offers support to the view that structural concerns and regulatory risks are a key dampener for power markers in the region, with our scores highlighting an unfavourable combination of high risks and low rewards in Gabon, Zimbabwe, and Sudan - all three long-term underperformer in our power ratings.
- Progresses in the Renewables sector are helping to lift the overall scores of a number of markets, including the more established ones such as Kenya and South Africa, but also emerging markets such as Saudi Arabia and the United Arab Emirates.
- Saudi Arabia and Sudan have retained their positions as the regional out - and under-performer. Once again Saudi Arabia is indeed the regional leader in our Power Risk/Reward Ratings, with its higher

Industry Risk score helping to maintain a 3.5 points gap between it and its fast-rising competitor, the UAE.

Relatively More Balanced Profiles Gain Top Spots

MENA Power Industry Risk/Reward Ratings, Scores Out Of 100



** Higher score = Lower risks. Source: BMI*

… But Some Potential Changes On The Cards?

This notwithstanding, we believe that some shifts within the rankings of our sub-regional tables could soon be on the cards, with a number of projects and policy changes announced in countries such as Kenya, Nigeria, Saudi Arabia and the UAE create upside potential for these markets. Most notably:

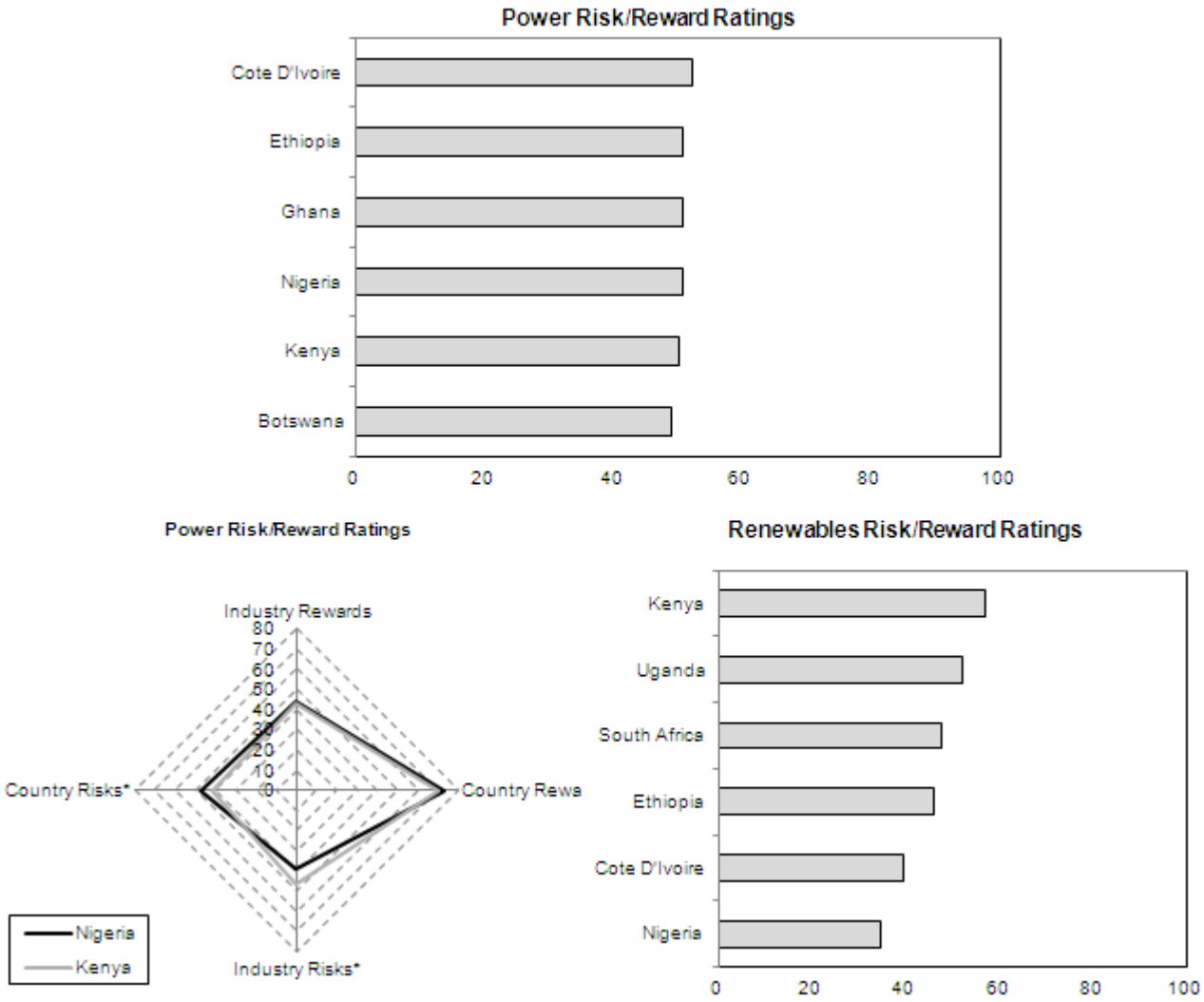
- A number of developments in 2012 - including some tangible progresses in the privatisation process - suggest that Nigeria's flagging power sector could finally be on the verge of a long-awaited turnaround. Significant hurdles remain, with the relatively low scores in the Industry and Country Risk section of our matrix reflecting issues ranging from deep-rooted corruption and persistent insecurity to vested interests and fuel-related bottlenecks. That said, if fully realised the policy and regulatory changes underway could provide a real boost not only to the market's Industry Risk scores, but would also likely translate in a stronger performance in the Reward section. A point further reinforced by the creation of a US$50mn fund from the Climate Investment Fund (CIF) targeted at energy efficiency and renewable energy projects in Nigeria, which comes as another upside risk for the renewables segment and thus the power as a whole.
- Similarly, developments in the renewables segment bode well for Kenya's Risk/Reward profile, with the country already ranking first in **BMI**'s Risk/Reward Ratings for the segment. In addition, a potential hike in tariff creates further upside for the market. Despite having been met by opposition from private sector players and manufacturers, the new power tariffs proposed by Kenya Power (KP) have indeed the

potential to see implementation. Whilst previous requests by the company had been deferred on the ground that they were not strictly necessary, payment obligations for new plants coming online and inflation dynamics could strengthen the company's position during current negotiations.

- Conversely, further downside risks are emerging for South Africa. South Africa's decision to delay an introduction of a carbon tax supports our underlying views of the country's power market and the government's ability to implement new policies. A point reinforced by the country's decision to meet Eskom's request for a hike in tariffs only partially.

Renewables And Reforms To Boost Some Scores?

SSA Power Industry Risk/Reward Ratings, Top 6 Markets; and SSA Renewables Industry Risk/ Reward Ratings, Top 6 Markets, Scores Out Of 100



**Higher score = Lower risks. Source: BMI*

Table: MENA Power Risk/Reward Ratings (Scores Out Of 100)

	Industry Rewards	Country Rewards	Rewards	Industry Risks*	Country Risks*	Risks*	Power R/R Ratings	Rank
Saudi Arabia	68.00	49.60	60.92	49.86	64.69	56.22	59.28	1
UAE	58.00	49.40	54.69	49.33	69.07	57.79	55.78	2
Qatar	45.50	61.00	51.46	54.02	70.51	61.09	54.83	3
Egypt	55.25	56.60	55.77	45.41	45.34	45.38	52.13	4
Israel	40.00	53.20	45.08	56.66	62.79	59.29	50.05	5
Algeria	44.00	54.60	48.08	38.90	56.82	46.58	47.55	6
Kuwait	42.00	50.20	45.15	38.22	70.20	51.92	47.52	7
Iran	50.75	53.60	51.85	23.91	37.06	29.55	44.04	8
Morocco	38.00	42.00	39.54	49.24	47.47	48.48	42.67	9
Tunisia	35.50	49.40	40.85	46.29	38.86	43.11	41.64	10
Regional Average	*47.70*	*51.96*	*49.34*	*45.19*	*56.28*	*49.94*	*49.55*	

**Higher score = Lower risks. Source: BMI*

Table: SSA Power Risk/Reward Ratings (Scores Out Of 100)

	Industry Rewards	Country Rewards	Rewards	Industry Risks*	Country Risks*	Risks*	Power R/R Ratings	Rank
Cote D'Ivoire	47.50	74.20	57.77	41.94	42.69	42.26	52.34	1
Ethiopia	47.00	68.40	55.23	46.74	37.81	42.92	50.92	2
Ghana	44.50	62.80	51.54	38.27	63.25	48.98	50.64	3
Nigeria	44.00	72.80	55.08	38.51	47.56	42.39	50.64	4
Kenya	42.50	70.60	53.31	46.06	42.05	44.34	50.17	5
Botswana	38.50	55.60	45.08	40.02	78.61	56.56	49.09	6
Angola	44.50	72.00	55.08	25.01	51.95	36.56	48.59	7
South Africa	46.50	36.80	42.77	53.40	65.06	58.39	48.24	8
Mozambique	46.00	66.80	54.00	28.91	47.97	37.08	48.08	9
Uganda	38.50	64.80	48.62	43.94	48.73	45.99	47.70	10
Tanzania	35.50	62.40	45.85	37.63	54.02	44.66	45.43	11
Zambia	26.50	68.00	42.46	36.58	57.38	45.49	43.52	12
Cameroon	38.50	62.00	47.54	23.50	46.13	33.20	42.52	13
Namibia	35.50	43.60	38.62	34.84	66.96	48.61	42.11	14
Gabon	33.50	56.20	42.23	27.09	53.86	38.56	40.95	15
Zimbabwe	26.50	60.00	39.38	22.33	17.25	20.15	32.65	16

SSA Power Risk/Reward Ratings (Scores Out Of 100) - Continued								
	Industry Rewards	*Country Rewards*	*Rewards*	*Industry Risks**	*Country Risks**	*Risks**	*Power R/R Ratings*	*Rank*
Sudan	19.50	46.40	29.85	20.95	16.94	19.23	26.13	17
Regional Average	*38.53*	*61.38*	*47.32*	*35.63*	*49.31*	*41.49*	*45.28*	

**Higher score = Lower risks. Source: BMI*

Iran Power Risk/Reward Rating

The Rewards side of the equation favours Iran rather more than the Risks, as the country has sizeable demand from its energy-hungry neighbours Turkey and Pakistan. However, its poor growth prospects, due to international opposition and significant market size, continue to weigh on its overall score. Risks are high in both industry and country terms.

Rewards

Industry Rewards

Iran's strongest asset in the Industry Rewards segment is its good market coverage, with almost all of the population having access to electricity. Moreover, it has access to other nearby markets, many of which suffer from net energy shortfalls, which allows it the opportunity to export electricity produced. It fares less well in terms of overall power consumption, generation and capacity. The country has a below-average score for five-year growth in power generation, generating capacity and demand.

Country Rewards

Boosting the score for Country Rewards is the low level of electricity import dependency. There is above-average growth in population and in terms of five-year GDP per capita. However, a poor showing in terms of the inflation outlook and real GDP growth suggests the government may find it hard to raise prices.

Risks

Industry Risks

The country's Industry Risk profile is generally unattractive. Iran scores badly for liberalisation level, its financing, the transparency of the tendering process, as well as its poor outlook for renewables. Weaknesses in these areas create much uncertainty for private sector firms and are likely to hinder the propensity of the private sector to contribute to growth.

Country Risks

Policy continuity helps support Iran's Country Risks score, but the country fares poorly in terms of short-term political stability, institutions and corruption. International opposition to the country's plans further weigh on the government's ability to push through its plans.

Market Overview

Key Policies And Market Structure

Regulation and Competition

Iran's power sector is primarily controlled by state-owned utility **Tavanir**. Power plant construction is handled by the **Iran Power Development Company** (IPDC), a wholly owned subsidiary of Tavanir, which is also responsible for electricity transmission and distribution. However, in recent years the government has taken steps towards privatisation, with a number of power plants having been sold off in IPOs, and further privatisations planned over the coming years. Eventually, Tavanir may be broken up as part of a broader privatisation package.

Iran has received several offers for investment in the form of loans and build-operate-transfer (BOT) contracts, but progress has been relatively slow - not aided by the challenging political climate that acts as a deterrent for foreign investors. BOT contracts allow the investors to build and operate the generating facility for a period of 15-20 years, after which time the plant is turned over to the Energy Ministry. Negotiations have taken place with international energy firms on expansion plans for power plants at Bandar Abbas, Shaid Rajai, Alborz, Ramin and Kerman.

In June 2009, Iran's first BOT power plant became fully operational, when the last of six 159MW open-cycle gas turbine generating sets comprising the Chehelsotun power plant in South Isfahan were brought online. The 950MW gas-fired plant was developed by a 50:50 joint venture (JV) between the Iranian investment house **IHAG** and local power contractor **Mapna**. The first unit at the Chehelsotun plant was brought on line in 2005.

In addition to BOT plants, Iran has attempted to promote a build-own-operate (BOO) model for the 2GW Zanjan 1-4 independent power project (IPP). In September 2004, the BOO plan was dealt a setback due to a lack of bidders. Overall, Iran is planning 5.8GW of BOT projects and 7GW of BOO projects.

In June 2005, the World Bank was invited by the government of Iran to engage in a dialogue on reform of the power sector, as well as to identify areas of cooperation. In January 2006, a workshop was held in Tehran to discuss private sector participation in the power sector and the development of a power exchange. During this workshop, the World Bank presented international lessons learned and was further informed of the government's plans for power sector reform.

In February 2010, Iran began the process of privatising a number of the country's power plants. Iran's deputy energy minister, Mohammad Behzad, announced plans to privatise 20 power plants in the first half of the 2010/11 Iranian calendar year, and to date 18 plants have been sold off to the private sector.

The power plants have so far been privatised via IPO. This is the method which has been used to privatise stakes in other state-owned companies over the past few years. Iran has the financial infrastructure in place to successfully carry out the IPO, but there is concern as to the identities of potential subscribers.

An amendment to Article 44 of the Iranian Constitution, in 2004, allowed for the privatisation of state-owned companies and in 2007, Supreme Leader Ayatollah Ali Khamenei called for the process to be sped up. In spite of this constitutional mandate, privatisation has historically proceeded very slowly, perhaps in large part due to resistance among elements of the regime to ceding control of the state-dominated economy to the private sector.

Majid Salehi, the Managing Director of Iran Power Development Company, has revealed that around 28 new power plants will begin production by the end of the government's tenure in the next Iranian year, starting March 2013. Investment of approximately IRR50trn will be required for the projects, which will be developed as part of the energy ministry's Mehr Mandegar programme. The 648MW Kermanshah Power Plant will be the first to start production, while the gas-fired units of the Zanjan, Semnan and Shahround power plants should become operational in the coming months. The ministry has granted permits for the private sector construction of renewable energy power plants, with a combined production capacity of 12GW, according to Iran Renewable Energy Organisation's Managing Director, Yousef Armodeli.

Pricing

Electricity prices are heavily subsidised in Iran, and this places a heavy burden on the government's fiscal health. In 2008, the government enacted a subsidy reform plan with the aims of reducing subsidies over time and curbing domestic consumption. This was done to create a surplus between generation and consumption, to achieve the government's aims to boost electricity exports. Gas and petrol prices are also subsidised, and in an effort to improve efficiency and conservation of energy, the government is likely to continue to raise prices, which will leave more Iranian gas production for electricity generation purposes.

Iran Power Projects Database

Table: Key Power Projects Database

Project Name	Value (US$mn)	Capacity/ Length	Companies	Timeframe	Status
Gas-fired power plant	10,000	6,000MW	NTPC, Power Grid Corporation of India	2009-	Planning stage
177 dams	na	na	na	2008-	Project announced
Gas-fired power plant near to the Zahedan	na	1,000 MW	na	2009-	Project announced
8 electricity power plants in Khuzestan	na	6,000MW	na	2008-	Project announced
8 power stations in Khuzestan Province	na	na	na	2008-	Project announced
Bushehr Nuclear Power Plant	1,000	1,000MW	Atomstroyexport, Rosatom	1995-2011	Connected to grid (September 2011)
Iran-Russia electricity grid link	na	na	na	2008-	Letter of intent signed. RAO UES seeking the project
Cycle Power Plant in Heris	na	1,200MW	Tavanir, Zenel Company	2008-2010	Joint agreement signed
Iran-Turkey Transmission Line	1,500	2,000MW	na	na	Memorandum signed
Rudbar-e-Lorestan hydropower project	9.52	450 MW	PAPyry	na	At planning stage
Aliabad Katoul gas power plant	na	1,000MW	Iran Power Plant Investment Company	-2010	Due to come online in November 2010
Ghadir Solar and Wind Power Plant	4,500	1,000MW	na	2011-	MoU Signed
Third Iran-Armenia Transmission L	110	800-900MW	na	na	Under Construction
Iran - Armenia 3rd electricity transmission line	110	500-800MW	na	na	At final planning stages (June 2011)
Tehran Biomass Plant	na	2MW	na	2010-	Project announced
Jarandaq wind power plant	na	60MW	na	2011-	Feasibility studies underway

Key Power Projects Database - Continued

Project Name	Value (US$mn)	Capacity/ Length	Companies	Timeframe	Status
Yazd solar CSP and gas power plant	426	467MW	na		

Source: BMI

Competitive Landscape

Iran's power sector is controlled by **Tavanir**. Eventually, Tavanir may be broken up as part of a privatisation package. In addition to power generation, Tavanir is also responsible for electrical transmission.

In June 2009, Iran's first build, operate, transfer (BOT) power plant became fully operational, when the last of six 159MW open-cycle gas turbine generating sets in the Chehelsotun power plant in South Isfahan were brought online. The 950MW gas-fired plant, the first to be completed in Iran under a BOT agreement, was developed by a 50:50 joint venture (JV) between Iranian investment house **IHAG** and local power contractor **Mapna**. The first unit at the Chehelsotun plant was brought online in 2005.

In addition to BOT plants, Iran has attempted to promote a build, own, operate (BOO) model for the 2GW Zanjan 1-4 independent power project (IPP). In September 2004, the BOO plan was dealt a blow due to a lack of bidders. Overall, Iran is planning 5.8GW of BOT projects and 7GW of BOO projects.

In February 2010, Iran's deputy energy minister, Mohammad Behzad, announced plans to privatise 20 power plants by September 2010, the end of the first half of the 2010/11 Iranian calendar year. Behzad stated that a proposal for privatising six new power plants had been submitted to the Iranian Privatisation Organisation and that a further four would be proposed by the end of the year, according to the Mehr News Agency. These 10 joined 10 power plants that were already approved for privatisation.

The power plants were privatised via an initial public offering (IPO). This is the method which has been used to privatise stakes in other state-owned companies over the past few years.

An amendment to Article 44 of the Iranian Constitution, in 2004, allowed for the privatisation of state-owned companies and in 2007, Supreme Leader Ayatollah Ali Khamenei called for the process to be sped up. In spite of this constitutional mandate, privatisation has historically proceeded very slowly, perhaps in large part due to resistance among regime elements to ceding control of the state-dominated economy to the private sector.

Construction of 10 power plants has been transferred to the private sector, state-utility Tavanir stated in June 2010, according to a report in Iran Daily, although no further details were disclosed. The country needs 5GW of new electrical power every year, which requires private participation, according to Tavanir's deputy head, Gholam Reza Khoshkholq.

Majid Salehi, the managing director of Iran Power Development Company, has revealed that around 28 new power plants will begin production by the end of the government's tenure in the next Iranian year, starting March 2013. Investment of approximately IRR50trn will be required for the projects, which will be developed as part of the energy ministry's Mehr Mandegar programme. The 648MW Kermanshah Power Plant will be the first to start production, while the gas-fired units of the Zanjan, Semnan and Shahround power plants should become operational in the coming months. The ministry has granted permits for the private sector construction of renewable energy power plants, with a combined production capacity of 12GW, according to Iran Renewable Energy Organisation's Managing Director, Yousef Armodeli.

Regional Overview

MEA Industry Overview

BMI View: *Our relatively upbeat view on power markets across the Middle East and Africa in 2013 and beyond remain in place, corroborated by a number of positive developments in countries such as Nigeria, Kenya and the UAE. Comparatively strong macroeconomic and demographic fundamentals, coupled with political and social considerations, will continue to make investment in the power sector a priority. Yet we caution that the magnitude and success of capacity expansion and diversification programmes will be strongly dependent on access to finance and improvements in the regulatory framework.*

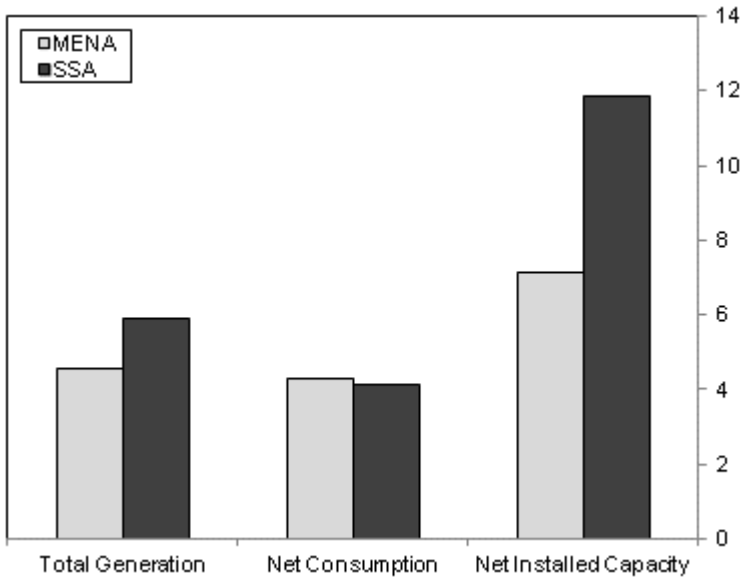
The Middle East and Africa (MEA) region has long been a global underperformer in the power sector, with largely inadequate power infrastructure being a common denominator and representing one of the most frequently cited barriers to entry and economic growth. Especially in Sub-Saharan markets, the inadequacy of physical infrastructure is a major obstacle to growth as it negatively impacts productivity and raises the cost of production. In addition, deficiencies in power infrastructure have played a part in fuelling high inflation in various economies in Sub-Saharan Africa (SSA), as they exacerbated supply-side shocks. Similarly, high exposure to imports of fuels and/or of electricity, coupled with the growing reliance on emergency power provider such as **Aggreko** and **APR** weigh on governments' coffers. Lastly, inadequate and sporadic power supply in the region represents a source of social and political tension, as illustrated most recently by the case of Egypt.

Fundamental considerations are thus increasingly forcing governments and regional utilities to face the growing need for investment in generating capacity and related infrastructure, prompting them to advance a plethora of refurbishment and expansion programmes:

- With a number of major projects proposed or already under way across the region and supportive macroeconomic and demographic trends (in spite of the adverse external environment), **we continue to hold an upbeat view on the power sector, with generation, consumption and installed capacity set to see steep growth**.

Base Effects In Play

MENA And SSA Power Sector - Growth % y-o-y In 2013f



f = BMI forecast. Source: BMI

- That said, we highlight that the **positive performance is in part a result of base effects, especially in Sub-Saharan Africa (SSA)**.
- Moving to the sub-regional level, we note that a **substantial discrepancy** between the size of power infrastructure and the quality of electricity supply in **Middle East and North African (MENA) power markets and their SSA peers is a dominant feature of the region**, and we expect the divergence to narrow only partially over our forecast period.
- Similarly, and despite the fact that average real GDP growth rate differentials between the economies of the hydrocarbon rich Gulf on the one hand, and the net-oil importers of North Africa on the other, are set to narrow according to our Country Risk analysts, we expect the **members of the Gulf Cooperation Council (GCC) to continue to outperform their North Africa neighbours in terms of capacity installation rate,** owing to several big ticket projects under development as well as the GCC's generally easier access to finance.
- However, we highlight that, **with MENA's macroeconomic, political and social backdrop likely to remain in flux in 2013, the risk of delays cannot be discounted.**
- With regard to SSA, **an expected resurgence of economic growth in East Africa in 2013 could add pressure to the power sectors of Kenya, Uganda and Tanzania.** A view reinforced by the developments in Kenya, the regional hub. With the elections in the country now behind us, positive knock on effects could be seen in other economies in the region.

- **Vice versa, we continue to hold a cautious stance on South Africa,** cognizant of the fact that the recent mining sector unrest was sparked by deep-rooted, structural issues that could re-surface in the coming months.

MENA: GCC Markets Attractive Despite Expected Slowdown

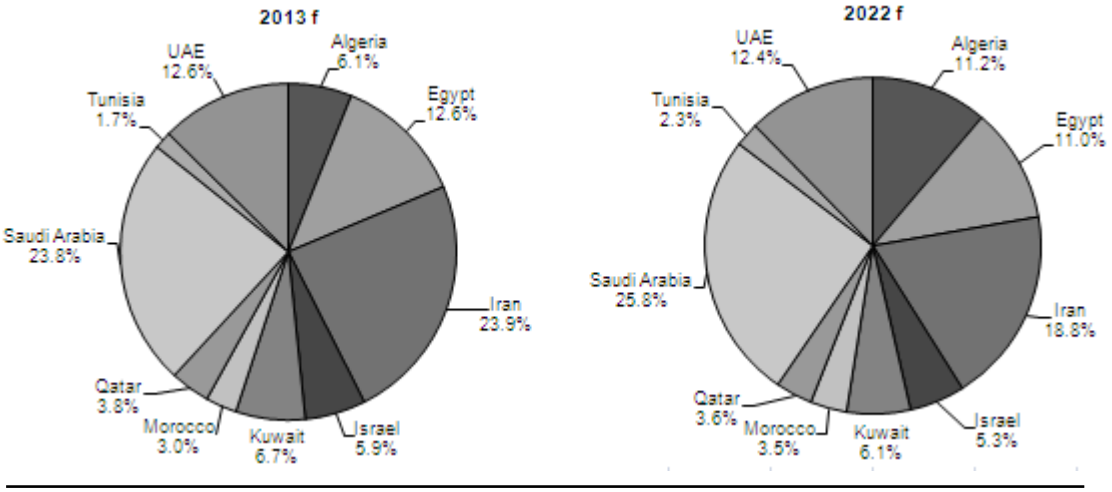
The size of power infrastructure and the quality of electricity supply in MENA power markets are largely superior to what is on offer in SSA. Yet dissimilarities exist within the region, with Saudi Arabia, Iran, Egypt and the UAE towering over the other power markets here under consideration: a picture that will see only moderate changes over our forecast scenario (2013-2022).

Average real GDP growth rate differentials between the economies of the hydrocarbon-rich Gulf on the one hand and the net-oil importers of North Africa on the other are set to narrow in 2013 according to our Country Risk analysts. Base effects are obviously a key aspect of this convergence, with the former group of states beginning to experience a cyclical downturn following two consecutive years of above-average economic expansion. That said, and in contrast with previous years, we believe the non-oil sectors across the GCC will outperform the oil sectors, as hydrocarbon output has in the majority of cases plateaued - **BMI**'s Oil & Gas Research team is now projecting output to expand by only low single digits in several cases.

These dynamics will inevitably have an impact on electricity consumption patterns, especially as loose monetary and fiscal policy continue to drive a solid expansion in non-oil GDP growth, with the large-scale public spending stimulus measures announced in 2011 continuing to support fixed investment activity and household consumption across the Gulf. In terms of capacity, a series of large-scale power projects and generally easier access to finance will allow the GCC to retain its leadership in the MENA region, despite the fact that markets such as Algeria will see strong growth in their installed capacity.

Saudi Arabia To Marginally Strengthen Its Lead

MENA Regional Capacity Mix, % By Country

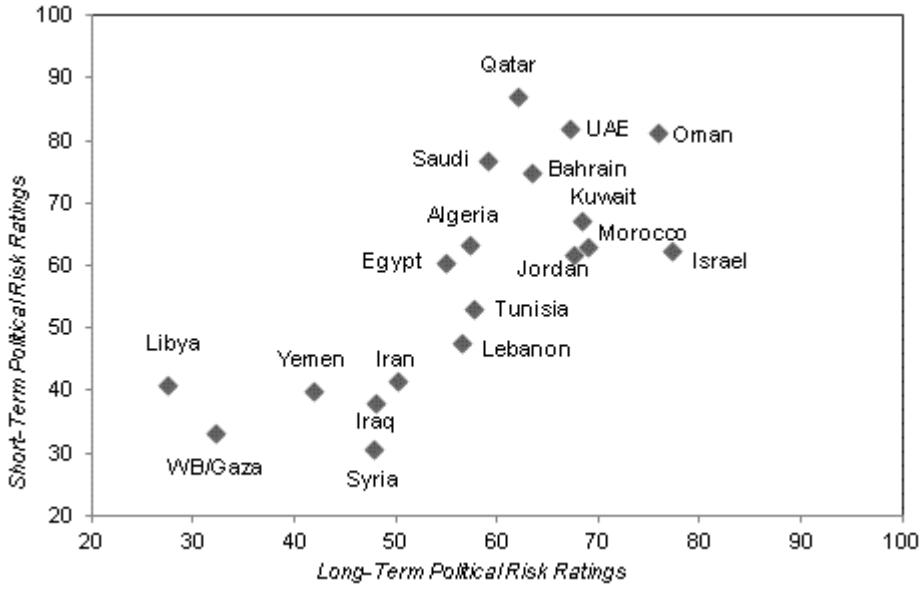


f = BMI forecast. Source: BMI

That said, two years after the onset of the Arab Spring, we believe however that MENA's macroeconomic, political and social backdrop is likely to remain in flux in 2013, and thus highlight risks to our outlook. Most notably, our Country Risk experts note that the nature of political risk is set to evolve, with focus shifting towards increasingly erratic and unpredictable policy decisions, as opposed to large-scale civil unrest. Such dynamics could have important ramifications for big ticket projects, as well as for sub-segments such as nuclear and renewables, for which policy continuity is of paramount importance.

Political Risk Not To Be Discounted

MENA - Breakdown Of Political Risk Ratings



Source: BMI

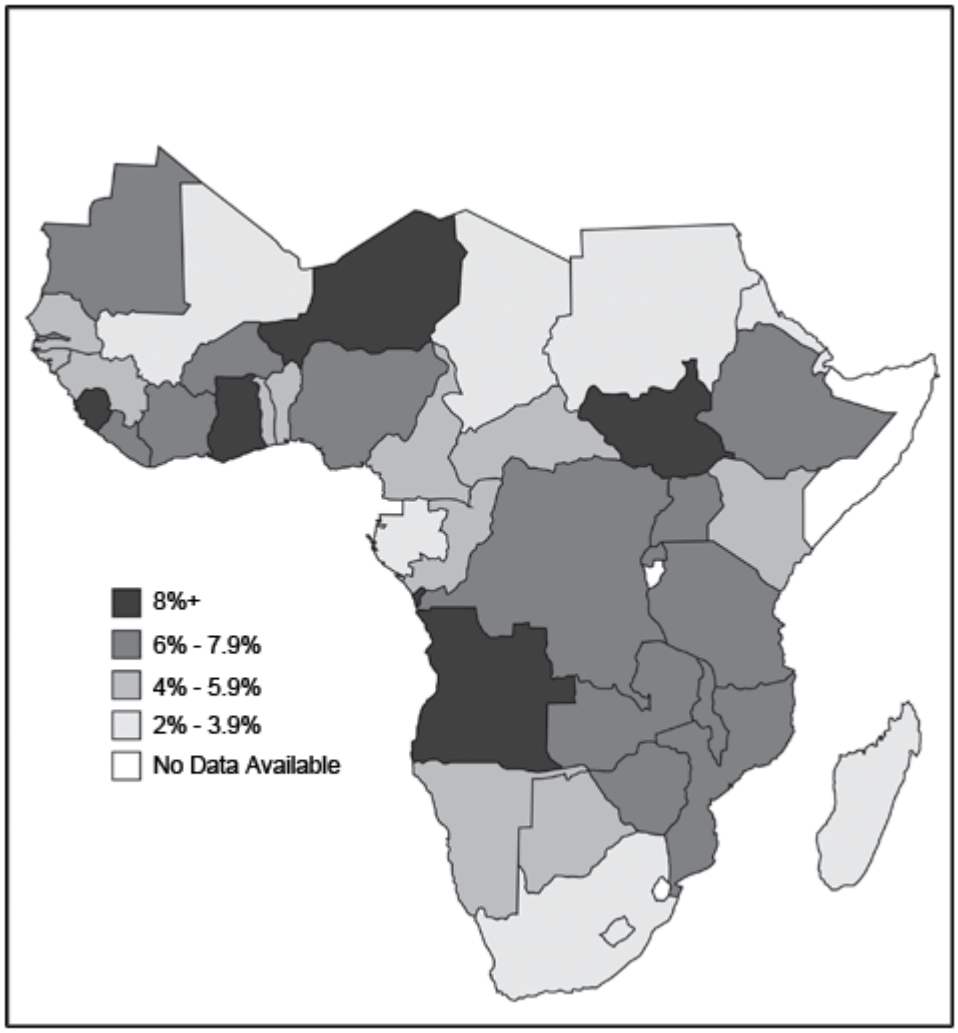
Fluid Picture for SSA Power Markets

Electricity infrastructure in SSA is still woefully inadequate, and increased pressure will come from economic growth, especially the mining sector, as well as rising per capita GDP. Nonetheless, funding difficulties and a riskier business environment are likely to limit the magnitude of capacity expansion programmes, thereby artificially capping electricity demand.

BMI forecasts that headline economic growth in the region will remain generally strong in 2013, in spite of various external headwinds ranging from tepid growth in the US, to China's bounce running out of steam by mid-year. Buoyed by favourable structural factors including natural resource wealth, youthful demographics and urbanisation, infrastructural improvements will thus remain a priority.

Sanguine Macro Expectations To Support Expansion

SSA - Map Of Real GDP Growth In 2013, %



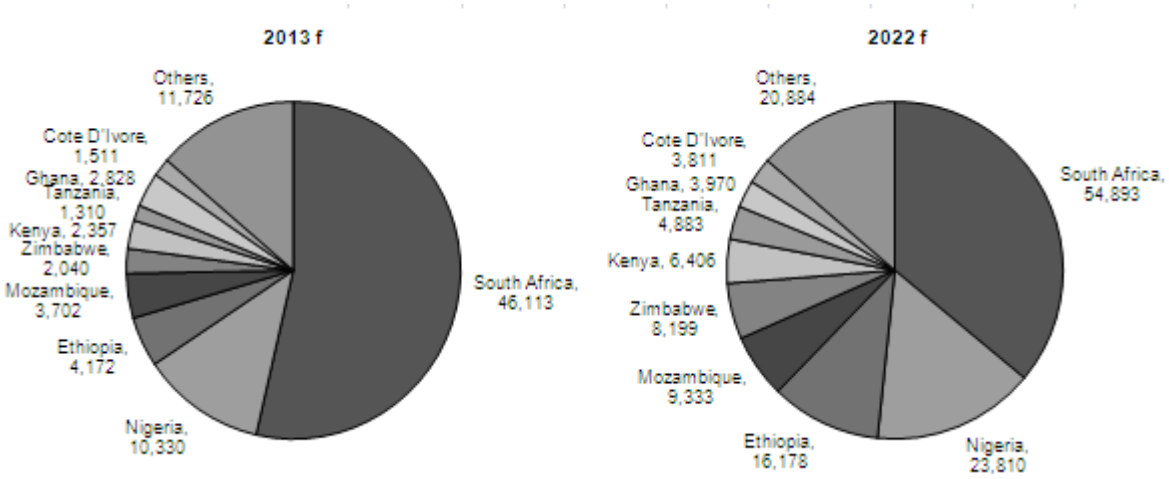
Source: BMI

Incorporating the expectations of our Country Risks analysts into our outlook, we highlight that a resurgence of economic growth in East Africa - where Kenya, Uganda and, to a lesser extent, Tanzania saw the pace of economic activity slow in 2012 as high interest rates (themselves a legacy of the 2011 food price crisis) stunted businesses and consumers in the first half of the year - could put pressure on existing power infrastructure. A view reinforced by the developments in Kenya, the regional hub. With the elections in the country now behind us, positive knock on effects could be seen in other economies in the region.

Accounting also for these dynamics, our forecasts portray a more fluid picture in SSA. The traditional regional bellwether, South Africa, is set to see its weight reduced as other promising markets in the region - most notably Kenya - carry out their expansion and refurbishment programmes, whilst regulatory and political risk weigh on the country's project pipeline and potentially on its power consumption.

Shift On The Cards

SSA Regional Capacity Mix, % By Country



f = BMI forecast. Source: BMI

In spite of our sanguine outlook, we note that many of the plans proposed by governments in SSA to hike power generating capacity are extremely ambitious and cannot be taken at face value. While oil exporters in the Middle East are well placed and even incentivised to invest in social and economic infrastructure, following unrest in the region, funding difficulties are likely to delay some of the projects in Africa. Most importantly, we believe that the existing inadequate regulatory environment creates downside risks for new projects, with national utilities facing a rising financial burden owing to the under-pricing of electricity and rising financial requirements. Regulatory reforms and tariff hikes are thus a necessity, and assistance from international and regional financial institutions will prove cardinal.

It is thus positive that, despite having been met by opposition from private sector players and manufacturers, the new power tariffs proposed by Kenya Power (KP) have the potential to see implementation. Whilst previous requests by the company had been deferred on the ground that they were not strictly necessary, payment obligations for new plants coming online and inflation dynamics could

strengthen the company's position during current negotiations. Similarly, a number of developments in 2012 - including, most notably, some tangible progresses in the privatisation process - suggest that Nigeria's flagging power sector could also finally be on the verge of a long-awaited turnaround. Yet, significant hurdles remain and we believe that issues ranging from deep-rooted corruption, persistent insecurity to vested interests, and fuel-related bottlenecks present pertinent downside risks.

Lack Of Diversification: Risky And Costly

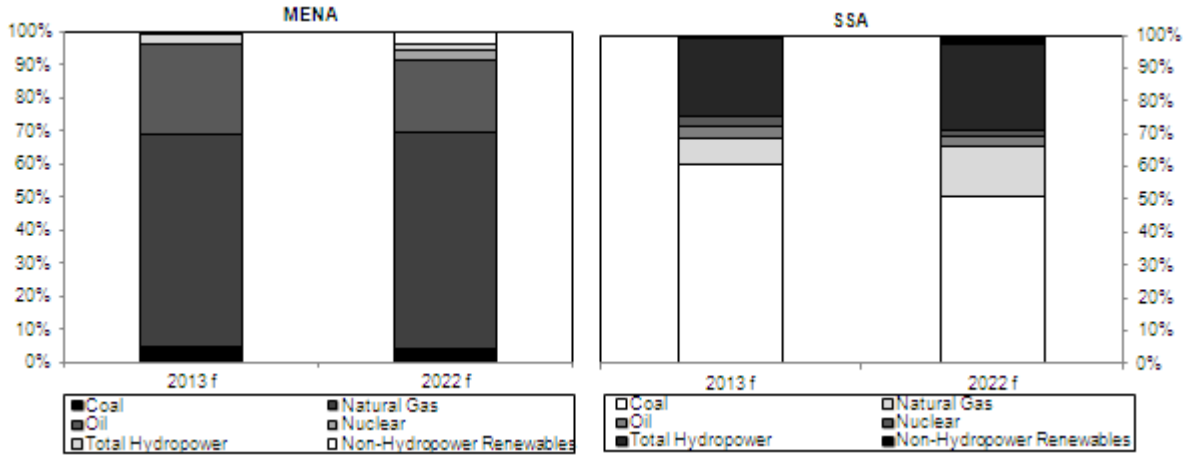
Countries in the region have been inclined to favour generation based on indigenous resources, with negative effects on energy security. The absence of adequate mix diversification has exposed the region to weather conditions and/or changes in fuel prices; and we therefore believe that attempts at mix diversification will underpin growth in the coming decade.

Despite the fact that several power projects that are at the planning stage or under construction are due to use oil, gas or coal (depending on domestic endowment), we expect interest in non-hydro renewable sources to increase, with solar and wind power to gain momentum. In this regard, whilst the outlook for the solar energy industry in developed countries remains lacklustre, a number of high-profile initiatives have put MENA in the limelight as the new hotbed for solar. Not only countries such as the UAE and Saudi Arabia have advanced ambitious targets and are considering the use of renewables to power desalination plants, but even Jordan, which desperately searching for domestic alternatives to meet its growing electricity demand, has implemented a national subsidy programme for renewable energy.

Furthermore, an emerging project pipeline suggests the renewables industry is spreading to the wider SSA region, where financing from international financial institutions - including the World Bank and the African Development Bank - is proving crucial. For instance, Rwanda advanced plans in early 2013 to rely on solar PV systems to reach rural areas, whilst a US$50mn fund from the Climate Investment Fund (CIF) targeted at energy efficiency and renewable energy projects in Nigeria comes as another upside risk for the renewables sector, and could benefit the country's aged and inefficient power network. That said, risks to investors remain significant, and our forecasts are generally more bearish than the ones unveiled by regional governments.

Some Diversification, But Slow To Materialise

Regional Generation Mix, % By Fuel



f = BMI forecast. Source: BMI

Glossary

Table: Glossary Of Terms	
bn: billion	**capex: capital expenditure**
CEE: Central and Eastern Europe	CHP: combined heat and power plants
DoE: US Department of Energy	e/f: estimate/forecast
EBRD: European Bank for Reconstruction and Development	EIA: US Energy Information Administration
EM: emerging markets	EU ETS: European Union Emissions Trading System
EU: European Union	EWEA: European Wind Energy Association
FDI: foreign direct investment	FIT: feed-in tariff
FTA: free trade agreement	GDP: gross domestic product
GHG: Greenhouse gas	GW: gigawatt (10^9 watts)
GWh: Gigawatt hour (1 GWh = 3.6 TJ)	GWEC: Global Wind Energy Council
IAEA: International Atomic Energy Agency	IEA: International Energy Agency
IMF: International Monetary Fund	IPO: initial public offering
IPP: independent power producer	km: kilometres:
kW: kilowatt (10^3 watts)	kWh: kilowatt hour
LNG: liquefied natural gas	MEA: Middle East and Africa
mn: million	MoU: memorandum of understanding
MW: megawatt (electric) (10^6 watts)	MWh: Megawatt hour
naL not available/applicable	NGL natural gas liquids
OECD: Organisation for Economic Co-operation and Development	OPEC: Organization of the Petroleum Exporting Countries
PV: solar photovoltaics	RES: renewable energy sources
R&D research and development	t: metric ton = tonne (1 t = 1,000 kg)
TPES: total primary energy supply	Trn: trillion
TW: terawatt (1012 watts)	TWh: terawatt hour (1 TWh = 3.6 PJ)

Source: BMI

Methodology

Methodology And Sources

Industry Forecasts

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. **BMI** mainly uses ordinary least squares (OLS) estimators and in order to avoid relying on subjective views and encourage the use of objective views, 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 a deep industry recession, 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:

- R2 tests explanatory power; Adjusted R2 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-co linearity.

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 ensures that analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not. Within the power industry, this intervention might include, but is not exclusive to, national policy, new investments or cancelled projects; plant utilisation; general investment climate and business environment changes; changing domestic or regional trends; macroeconomic indicators; and regulatory changes.

Example Of Generation Model

$Generation = \alpha + \beta 1\ Real\ GDP + \beta 2\ \%Industrial\ Production + \beta 3\ Fixed\ Capital\ Formation + \beta 4\ Population + \beta 5\ Fiscal\ Expenditure + u$

Note: Consumption and generation capacity are forecast using a similar regression model.

Power Industry - Data Methodology

Generation and Consumption Data

A number of principal criteria drive our forecasts for each generation and consumption variable, with the following identity forming the basis of our forecast model:

"Total Consumption = Total Generation + Total Net Imports - Transmission And Distribution Losses"

Total Generation

Total generation is defined as the process of producing electric energy or the amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatthours (kWh) or related units. While gross electricity production is measured at the terminals of all alternator sets in a station, and thus includes the energy taken by station auxiliaries and losses in transformers that are considered integral parts of the station, net electricity production is defined as gross production less own use of power plants. According to the IEA, the difference between gross and net production is generally observed to be about 7% for conventional: thermal stations, 1% for hydro stations and 6% for nuclear.

Historical figures for electricity generation are based on data published by the EIA and the World Bank, and consider net electricity production. Whenever possible, we compare these data with accounts published by government/ministry sources and official data of the companies operating in each country.

BMI's electricity generation forecasts examine the sector with a bottom-up approach, forecasting electricity production for each resource in order to calculate the value of total generation. The regression model used to calculate generation consider real GDP, industrial production, fixed capital formation, population and fiscal expenditure.

Total Consumption

Total consumption is commonly expressed in kilowatt hours (kWh) or related units.

Historical figures for electricity consumption are based on data published by the EIA. Whenever possible, we compare these data with accounts published by government/ministry sources and official data of the companies operating in each country. BMI's electricity consumption forecasts are based on a regression similar to the model illustrated above for electricity generation.

Total Net Imports

Historical figures for net imports are computed by **BMI** as total imports, minus total exports, based on data from the EIA. Total net imports forecasts are calculated by **BMI** as total consumptions, minus total generation, plus transmission and distribution losses.

Transmission And Distribution Losses

Transmission and distribution losses include electric energy lost due to the transmission and distribution of electricity. Much of the loss is thermal in nature.

Historical figures for electricity transmission and distribution losses are computed by **BMI** as generation, plus net imports, minus consumptions. However, transmission and distribution losses are calculated using a regression model in the forecasts.

Electricity Generating Capacity Data

Electricity generation capacity is defined as the maximum output, commonly expressed in megawatts (MW) or related units, that generating equipment can supply to system load, adjusted for ambient conditions.

Historical figures for electricity generation capacity are based on data published in the UN statistical databases. Whenever possible, we compare these data with accounts published by government/ministry sources and official data of the companies operating in each country.

BMI's electricity generation capacity forecasts examine the sector with a bottom-up approach, forecasting capacity for each resource in order to calculate the total value of capacity in each country. **BMI**'s electricity generation capacity forecasts are based on a regression similar to the model illustrated above for electricity generation.

Power Risk/Reward Ratings Methodology

BMI's new Risk/Reward (R/R) Ratings for the Power service considers a thorough and all-encompassing range of factors that affect the investment climate in the electricity sector in different ways.

BMI's approach in assessing the risk/reward balance for power 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.

Ratings System

Rewards: Evaluation of sector's size and growth potential in each state, and also broader industry/state characteristics that may favour or inhibit its development.

- Industry Rewards: Examines rewards specifically related to the industry i.e. headline industry growth rate.
- Country Rewards: Examines rewards more generally related to the country i.e. population size and growth.

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.

- Industry Risks: Examines risks specifically related to the industry i.e. regulatory issues.
- Country Risks: Examines risks more generally related to the country i.e. corruption or FX volatility.

Each state is scored out of 100 (100 being the best), with the overall risk/reward rating a weighted average of the total score (See table below). Given that these metrics are created to gauge Industry-specific risks, our final rating score is weighted more on Industry Rewards than Country Rewards. 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.

Power Risk/Reward Ratings - Matrix of Indicators Methodology				
		Indicator Weighting (%)	Sub-category Weighting (%)	Category Weighting (%)
Rewards				
Industry Rewards	Electricity Capacity (MW) - 5 Year Average	10.00	40.00	65.00
	Electricity Generation (GWh) - 5 Year Average	5.00		
	Electricity Generation (%) - 5 Year Average	8.00		
	Electricity Consumption (GWh) - 5 Year Average	5.00		
	Electricity Consumption (%) - 5Year Average	8.00		
	Access to Electricity, % population	4.00		
Country Rewards	Real GDP Growth (%) - 5 Year Average	5.00	25.00	
	GDP per Capita (%) - 5 Year Average	5.00		
	Population, % change y-o-y	5.00		
	Imported Raw Material Dependence	3.50		
	Electricity Import Dependence	3.50		
	Inflation - 5 Year Average	3.00		
Risks				
Industry Risks	Liberalisation Level	4.00	20.00	35.00
	Financing	6.00		
	Renewables Outlook	6.00		
	Transparency of tendering process	4.00		
Country Risks	Short Term Political Stability	4.00	15.00	
	Policy Continuity	2.00		
	External risk	3.00		
	Institutions	3.00		
	Corruption	3.00		

Table: Power Risk/Reward Indicators

Indicator	Rationale
Rewards	
Industry Rewards	
Electricity Capacity (MW) - 5 Year Average	Objective measure of size of sector, based on **BMI**'s Power Sector forecasts. The larger the sector, the greater the opportunities available.
Electricity Generation (GWh) - 5 Year Average	Objective measure of size of sector, based on **BMI**'s Power Sector forecasts. The larger the sector, the greater the opportunities available.
Electricity Generation (%) - 5 Year Average	Objective measure of growth potential, based on **BMI**'s Power Sector forecasts. Rapid growth results in increased opportunities.
Electricity Consumption (GWh) - 5 Year Average	Objective measure of size of sector, based on **BMI**'s Power Sector forecasts. The larger the sector, the greater the opportunities available
Electricity Consumption (%) - 5Year Average	Objective measure of growth potential, based on **BMI**'s Power Sector forecasts. Rapid growth results in increased opportunities.
Access to Electricity, % population	Objective measure of size of sector. The larger the sector, the greater the opportunities available; Low electricity coverage is proxy for pre-existing limits to infrastructure coverage.
Country Rewards	
Real GDP Growth (%) - 5 Year Average	Proxy for the extent to which structure of economy is favourable to the power sector. The more substantial the growth rate, the greater the demand and the need for additional generation.
GDP per Capita (%) - 5 Year Average	Proxy for the extent to which structure of economy is favourable to the power sector. The more substantial the growth rate, the greater the demand and the need for additional generation.
Population, % change y-o-y	Proxy for extent to which demographic dynamics are favourable to power sector. The more substantial the growth rate, the greater the demand and the need for additional generation
Imported Raw Material Dependence	Objective measure taken from **BMI**'s Oil and Gas service. It gives an indication of a Renewables market's exposure to thermal fuel imports, namely gas.
Electricity Import Dependence	Objective measure of sector Denotes underlying risks to the security of power sector. The lower the imports, the greater the energy security.
Inflation - 5 Year Average	Proxy for the extent to which structure of economy is favourable to the power sector. The lower the inflation, the better the financial outlook of power projects.
Risks	
Industry Risks	
Liberalisation Level	Subjective evaluation against **BMI**-defined criteria. This indicator evaluates barriers to entry.
Financing	Objective measure taken from **BMI**'s infrastructure Project Finance ratings. It quantifies the risks to both raising financing and repayment of project loans over the course of a project's life
Renewables Outlook	Objective measure taken from **BMI**'s Infrastructure service. This indicator is used as a gauge to measure the potential and sophistication of renewable sector
Transparency of tendering process	Subjective evaluation against **BMI**-defined criteria. This indicator evaluates predictability of operating environment.
Country Risks	
Short Term Political Stability	From CRR. Denotes health of political structure, including various indicators such as policy making-process, social stability and security/external threats and policy continuity.
Policy Continuity	Subjective rating from CRR. Denote predictability of policy over successive governments.
External risk	From CRR. Denotes vulnerability to external shock - principal cause of economic crises.

Power Risk/Reward Indicators - Continued	
Indicator	**Rationale**
Institutions	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

Sources

BMI uses publicly available information to compile the country reports and collate historical data.

Sources used in power industry reports include those from international bodies mentioned above, such as the EIA, the World Bank and the UN as well as local energy ministries, officially released company figures, national and international bodies and associations and news agencies.