Amy Saunders, Global Cement Magazine

The growing cement industry of the UAE

The United Arab Emirates (UAE) is a Federal State comprising seven Emirates; Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah and Umm al-Quwain spread over 83,600km^2 of land. Each Emirate is governed by an absolute monarch known as an Emir, while the UAE is governed by a central president from its capital city, Abu Dhabi. With a population of 9.4 million in 2014, the UAE is a major hub for tourism, finance, real estate and retail. Here *Global Cement* provides an overview of the cement industry of the UAE, including its producers, recent events and its near-future outlook.

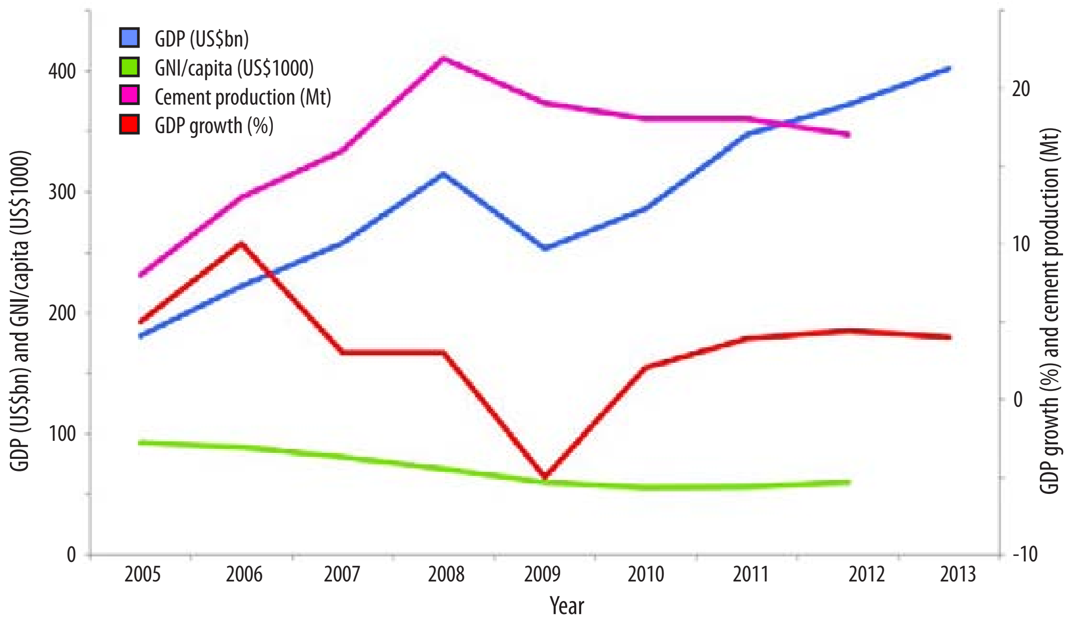
Economy

Since gaining independence from Britain in 1971, the UAE has had a strong market economy. Within the Gulf Cooperation Council (GCC), which includes Saudi Arabia, Kuwait, the UAE, Qatar, Bahrain and Oman, its economy is second only to Saudi Arabia's. High crude oil and natural gas reserves have aided its development. In recent years, to limit the potential negative effects of commodity price fluctuations, the UAE has diversified its economy and reduced its GDP reliance on oil and gas to around 25%.

The UAE's GDP (purchasing power parity - PPP) grew to US$270bn in 2013, up from US$259bn in 2012 and US$249bn in 2011 (Figure 1).[1] Its GDP growth rate in 2013 was 4%, down from 4.4% in 2012, but up from 3.9% in 2011. During 2013, GDP/capita grew to US$29,900, up from US$29,600 in 2012 and US$29,200 in 2011. The Consumer Price Indices (CPI) inflation rate was 1.3% in 2013, up from 0.7% in 2012. The UAE's GDP is generated 0.6% in agriculture, 61.1% in industry and 38.2% in the service sector. In 2013, its industrial production growth rate was 3.3%. The 4.6 million-strong labour force is employed in agriculture (7%), industry (15%) and the service sector (78%).

In 2013, the UAE exported US$369bn of goods, up significantly on the US$222bn in 2012. Crude oil comprised 45% of exports, while natural gas was also a major export product. Oil is the country's top commodity; in 2012, some 3.213m bbl/day (million barrels/day) was produced, making it the seventh-largest oil producing nation in the world. It also has 97.8bn bbl of proven oil reserves and 6.089tnm^3 of proven natural gas reserves.

Right: Dubai is one of the UAE's most iconic Emirates. It is the most-populous Emirate and the second-largest by land area after Abu Dhabi. Dubai is home to the world's largest shopping mall, the world's tallest man-made structure, the Burj Khalifa and it will play host to the World Expo 2020.



Year	Cement production (Mt)
2000	6.1
2001	6.1
2002	7.0
2003	8.0
2004	8.0
2005	8.0
2006	13.0
2007	16.0
2008	21.9
2009	18.9
2010	18.0
2011	18.0
2012	17.0

Above - Figure 1: The GDP (US$bn), GNI/capita* (US$1000), cement production (Mt) and GDP growth rate (%) in the UAE in 2005-2013). **Source:** The World Databank and the USGS Mineral Yearbooks.
*GNI = Gross National Income.

According to the CIA World Factbook, the UAE's short-term strategic plan focuses on further diversification and creating more opportunities for nationals through improved education and increased private sector employment.

Cement industry overview

According to the United States Geological Survey (USGS), cement production grew steadily in 2000-2005 to reach 8Mt.[2] In 2006, production began to grow more rapidly, ultimately reaching a peak of 21.9Mt in 2008, in the middle of an unprecedented construction boom in the UAE and the GCC. Production volumes fell to 18.9Mt in 2009 following the global financial crisis, when many mega-projects were paused. In 2012, the latest year for which data is available, the UAE produced 17Mt of cement. However, more recent data, once it becomes available, is expected to show that production levels have increased since 2012.

Since the crisis, the UAE's cement industry has suffered from overcapacity and has become a net exporter of cement. In 2012, it had more than 40Mt/yr of cement production capacity (including 26.8Mt/yr of clinker capacity) and an estimated domestic cement consumption of 15Mt/yr. The overcapacity had resulted from the completion of greenfield cement plant projects, as well as expansions to existing plants, in 2007-2009. Accordingly, UAE cement producers exported to 11 countries in 2012, including Iraq, Kuwait, Oman, Djibouti, Ethiopia, Mozambique, Sudan and Tanzania.

The UAE is now home to 12 integrated cement plants, eight cement grinding plants and 17 cement producing companies (Figure 2). The integrated cement plants have 29Mt/yr of cement production capacity, while the cement grinding plants have 10.44Mt/yr of capacity, giving a total of 39.84Mt/yr. Almost half, 13.3Mt/yr or 45.9%, of the UAE's integrated cement production capacity is located in Ras al-Khaimah. In contrast, cement grinding capacity is mainly divided between Dubai (4.44Mt/yr) and Abu Dhabi (5.1Mt/yr). The only Emirate with no cement plants, integrated or grinding, is Umm al-Quwain.

The UAE doesn't have a dedicated cement association, although UAE Cement website (http://www.uaecement.com) was established to provide information on the cement industries of the UAE and other Middle Eastern countries. According to UAE Cement, producers in the UAE manufacture OPC grades 42.5 and 52.5, sulphate-resistant cements, oil well cements, slag cements, blended cements and white cement.

Cement producers

The UAE had 17 cement producers in 2014. Multinational corporations like Lafarge, Holcim, UltraTech Cement (Aditya Birla Group), Binani and Cemex all have minor stakes in the country. However, the majority of cement production capacity is UAE-owned.

Integrated cement plant companies

Arkan Building Material Company became the UAE's largest cement producer by installed capacity in 2014. It runs the 1Mt/yr capacity Emirates Cement plant in Al Ain, Abu Dhabi and in November 2014 it opened a US$354m cement plant in Arkan, Abu Dhabi. The new plant has 4Mt/yr of clinker and 5.7Mt/yr of cement production capacity and is the UAE's largest cement plant. According to a company spokesperson, the new Al Ain plant will source its raw materials from its quarries in Al Ain and Oman. Arkan plans to sell 90% of its production on the domestic market and 10% to GCC countries.

Arkan is 51% owned by General Holding Corporation (SENAAT), which is itself wholly-owned by the Government of Abu Dhabi. The remaining 49% of the shares are listed on the Abu Dhabi Securities Market (ADX). In 2013, Arkan reported that its Emirates Cement plant revenues were US$45.3m, down from US$49.7m in 2012. The fall was attributed to intense market competition. Although Arkan maintained its sales volumes, prices fell significantly. The plant's profit fell to US$8.32m in 2013 from US$14.3m in 2012.

Union Cement Company (**UCC**) was the first cement producer in the UAE. The company was set up in 1972 and production started in 1975 under the management of Norcem AS, part of HeidelbergCement. Today, UCC operates the UAE's second-largest cement plant, which has 4.8Mt/yr of cement production capacity, in Ras al-Khaimah. The plant has four clinker kilns and six cement grinding mills:

- Kilns 1&2: 750t/day each;
- Kiln 3: 2000t/day;
- Kiln 4: 10,000t/day;
- 2x cement ball mills: 2x40t/hr;
- 2x cement ball mills: 2x45t/hr;
- 2x cement vertical roller mills: 2x210t/hr.

UCC is the UAE's only oil well cement producer. It produces the Norwell brand API 10 A Class G (HSR) oil well cement.

Integrated cement plants — **Active capacity = 29.0Mt/yr**

Ras al-Khaimah - 13.3Mt/yr

1. Star Cement (Birla), Ras al-Khaimah	2.4Mt/yr
2. Gulf Cement, Al Nakheel, Ras al-Khaimah	2.7Mt/yr (expansion to 3.8Mt/yr planned)
3. RAK White Cement, Ras al-Khaimah	0.61Mt/yr (expansion to 0.78Mt/yr ongoing)
4. Union Cement, Norcem Ras al-Khaimah	4.8Mt/yr
5. Pioneer Cement Industries (Raysut Cement), Al Ghayl, Ras al-Khaimah	1.7Mt/yr
6. Ras al-Khaimah Cement, Khor Khwair, Ras al-Khaimah	1.0Mt/yr

Abu Dhabi - 6.7Mt/yr

7. Emirates Cement (Arkan), Al Ain, Abu Dhabi	1.0Mt/yr
8. Al Ain Cement (Arkan), Arkan, Abu Dhabi	5.7Mt/yr

Fujairah - 5.5Mt/yr

9. Fujairah Cement Industries (JK Cement), Dibba, Fujairah	2.3Mt/yr (est) grey 0.6Mt/yr white
10. Lafarge Emirates, Fujairah	3.2Mt/yr

Sharjah - 2.0Mt/yr

11. Sharjah Cement & Industrial, Sharjah	2.0Mt/yr

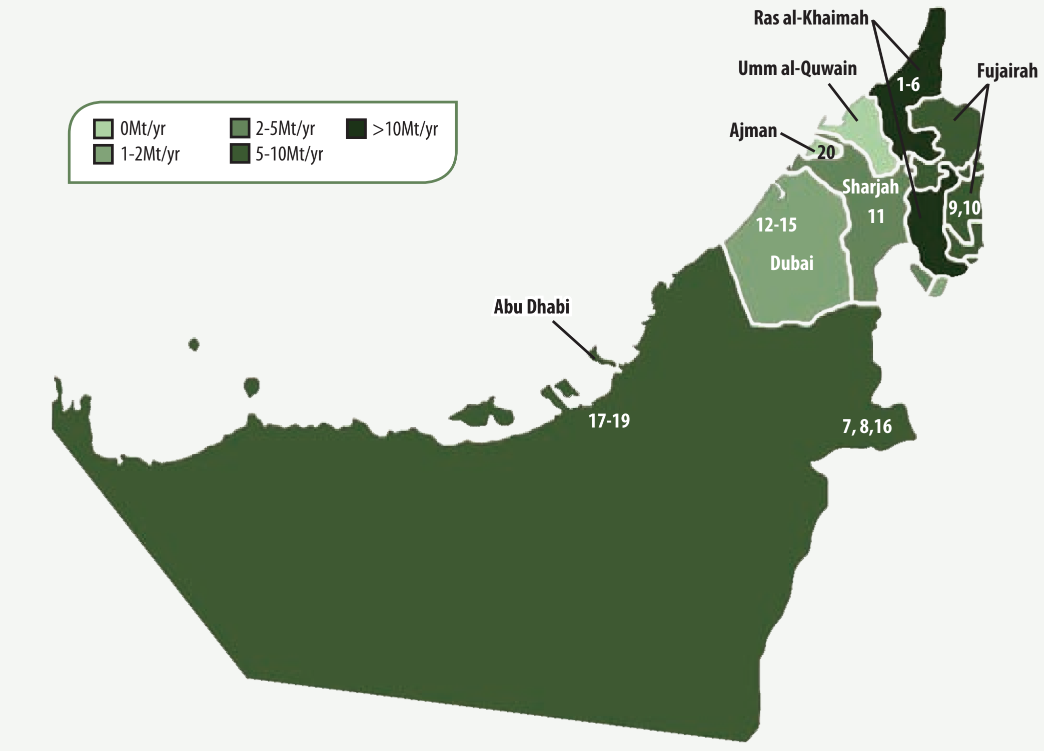
Dubai - 1.5Mt/yr

12. National Cement Co, Dubai	1.5Mt/yr

Cement grinding plants — **Active capacity = 10.44Mm^2/yr**

13. Binani Cement, Jebel Ali, Dubai	2.0Mt/yr
14. Cemex, Jebel Ali, Dubai	1.6Mt/yr
15. Jebel Ali Cement, Jebel Ali, Dubai	0.84Mt/yr
16. Nael Cement, Al Ain, Abu Dhabi	0.70Mt/yr
17. National Cement (44% Holcim), Al Mussaffah, Abu Dhabi	2.0Mt/yr
18. Star Cement (Birla), Al Mussaffah, Abu Dhabi	1.2Mt/yr
19. Teba Cement, Al Mussaffah, Abu Dhabi	1.2Mt/yr
20. Star Cement (Birla), Ajman	0.9Mt/yr

Integrated cement plants = 12
Cement grinding plants = 8
Total number of cement plants = 20
Total active capacity = 39.84Mt/yr



Right - Figure 2: The integrated cement plants and standalone cement grinding plants in the UAE in 2014, colour-coded by installed integrated cement production capacity in each Emirate. **Source:** The *Global Cement Directory 2015*.

As for many producers, UCC has reported strong financial results off the back of the UAE's recovering construction market. In the first six months of 2014, UCC achieved a net profit of US$16.2m, up by 181% year-on-year from US$5.76m during the same period of 2013. Its second quarter 2014 results, which ended on 30 June 2014, showed a net profit of US$11.2m compared to US$4.22m in 2013.

Lafarge Emirates Cement is a joint venture project that was established in 2005 between Lafarge and Dubai Group, a holding company of Dubai Holding LLC and the Government of Fujairah. Lafarge Emirates Cement operates the country's third-largest integrated cement plant, which has 3.2Mt/yr of cement production capacity, in Fujairah.

Fujairah Cement Industries was established in 1979 with the construction of a 520,000t/yr capacity cement plant in Dibba, Fujairah. It is a wholly-owned subsidiary of India's JK Cement. In 1995 the plant underwent its first expansion, during which the kiln capacity was increased from 500,000t/yr to 825,000t/yr. Further expansions in 1998-2004 increased the plant's production capacity to 1.5Mt/yr. The construction boom in 2007 prompted Fujairah Cement to set up a Polysius 7500t/day kiln on a site adjacent to the existing plant. It began production in 2010. Today, the Fujairah cement plant has two kilns (both Polysius) and three cement grinding mills:

- Kiln 1: 4600t/day;
- Kiln 2: 7500t/day;
- 3x cement ball mills: 3x100t/hr.

Fujairah Cement's clinker production capacity is currently estimated at 4.0Mt/yr, while its cement grinding capacity is around 2.3Mt/yr. The plant also has its own captive thermal power plant that generates 2 x 20MW of electricity. In March 2014, Fujairah Cement shipped its first batch of white cement after works to convert the plant to a dual-stream white and grey cement plant were completed.[3]

Gulf Cement, which operates a 2.7Mt/yr capacity cement plant in Ras al-Khaimah (Figure 3), was established in 1977 and commenced cement production in 1981. A second kiln, which has 2.8Mt/yr of clinker capacity, was installed in 2005-2006 by ThyssenKrupp and Polysius AG. The plant's total 3.8Mt/yr of clinker production capacity makes it the UAE's largest producer of clinker. Today the plant has two kilns and two cement grinding mills:

- Kiln 1: 4100t/day;
- Kiln 2: 7100t/day;
- 2x cement mills (CEMAG and CEMTEC): 2.7Mt/yr.

The plant uses a variety of natural gas, coal and oils as fuels. There is an on-site 27.25MW industrial gas turbine power plant for electricity production that is fuelled by natural gas. The plant also has a 33MW waste heat recovery (WHR) system, which was installed at line 1 in 2012-2013. According to the *Global Cement Directory 2015*, Gulf Cement plans to increase its cement production capacity to 3.8Mt/yr, although no completion date has been announced.

Above - Figure 3: Gulf Cement's 2.7Mt/yr capacity cement plant in Ras al-Khaimah commenced cement production in 1981. Since then, it has undergone many upgrades and expansions, with new kilns and grinding mills being installed.

In 2013, Gulf Cement reported sales of US$170m, up from US$165m in 2012. Net profit was US$18.7m in 2013 compared to a net loss of US$1.83m in 2012. US$47.6m of sales were local, down from US$67.9m in 2012, while US$122m of sales were due to exports, up from US$97.4m in 2012. In the first nine months of 2014, Gulf Cement's revenues were US$125m, up by 17% year-on-year from US$147m in 2013. Net profit was US$12.4m, down by 62% compared to the US$20.1m profit reported in the same period of 2013.

Star Cement is a wholly-owned subsidiary of UltraTech Cement, part of India's Aditya Birla Group. Star Cement operates one 2.4Mt/yr integrated cement plant in Ras al-Khaimah, one 1.2Mt/yr cement grinding plant in Abu Dhabi and one 900,000t/yr cement grinding plant in Ajman. Star Cement owns the largest number of cement plants in the UAE.

Sharjah Cement operates a 2Mt/yr capacity cement plant in Sharjah. The plant was commissioned in 1977 under the supervision of APCEM Engineering Co Ltd, a subsidiary of Blue Circle Industries. Sharjah Cement reported that, in the first half of 2014, its sales grew to US$104m, up by 18.7% from US$88m in the same period of 2013.[4] Its net profits rose by 135% year-on-year to US$8.5m in 2014. Sharjah Cement attributed the sales growth to an increase in exports and the larger net profit mainly to growing income from its investments.

Pioneer Cement Industries operates a 1.7Mt/yr capacity cement plant in Ras al-Khaimah. One of the UAE's newest cement companies, it was incorporated in 2004 and commenced cement production in 2006. In January 2011, Oman's Raysut Cement acquired Pioneer Cement for US$172m.[5] One of Pioneer Cement's notable achievements in recent years has been a reduction of its dust emissions to 20mg/m^3.

National Cement Co operates a 1.5Mt/yr capacity cement plant in Dubai, one of the UAE's smallest integrated cement plants. The company was established in 1968 in anticipation of the construction boom in the UAE and has served the market ever since.

Ras al-Khaimah Cement operates a 1Mt/yr capacity cement plant in Khor Khwair, Ras al-Khaimah. It has one 960,000t/yr clinker capacity kiln and one 135t/hr capacity cement ball mill. The plant benefits from an on-site gas turbine power plant that is fuelled by natural gas. As for Pioneer Cement Industries, Ras al-Khaimah Cement's dust emissions levels are reportedly 20mg/m^3.

Ras Al Khaimah Co For White Cement & Construction Materials (RAK White Cement) was founded in 1980 and has produced white cement since 1984. The group also produces lime and concrete blocks. The RAK White Cement plant has 610,000t/yr of white cement production capacity.

Originally the plant had three Taiheiyo 460t/day capacity dry-process kilns, but since 2006 major improvements have increased the kiln capacities to 520t/day. Kiln 2 was further upgraded to 900t/day capacity in March 2013, while the same upgrade was due to be completed to Kiln 1 in July 2014. Completion of this project has not yet been announced. By *Global Cement's* estimations, once the Kiln 1 upgrade is complete, the RAK White Cement plant will have 750,000t/yr white clinker and 786,000t/yr white cement production capacity.

Grinding clinker plant companies

Binani Cement operates the UAE's largest standalone clinker grinding plant in Jebel Ali, Dubai, which has 2Mt/yr of production capacity. The grinding plant is one of the Indian producer's recent international ventures, alongside its investment in China.

National Cement is a 2Mt/yr capacity clinker grinding plant in Abu Dhabi that is 44% owned by Holcim, which has full management responsibilities. The plant is a joint venture project with Emirates International Investment Co (EIIC). The plant has two clinker grinding mills.

Cemex has a 1.6Mt/yr capacity clinker grinding plant in Jebel Ali, Dubai. The Mexican company supplies the Dubai and Abu Dhabi markets. It also has nine ready-mix concrete plants in the country.

Teba Cement was established in 2008 and is one of the UAE's newest market entrants. It runs a 1.2Mt/yr capacity clinker grinding plant with a design that enables expansion to 2.7Mt/yr of grinding capacity. The plant has a 145t/hr capacity CEMTEC ball mill.

Everest Industries announces new fibre cement plant

In October 2014, India's Everest Industries announced plans to set up a fibre cement plant in the UAE as part of its global expansion strategy. The new 72,000t/yr capacity plant will be set up through a wholly-owned subsidiary company of Everest Industries, which is based in Mauritius.

Jebel Ali Cement operates a 840,000t/yr clinker grinding plant in Jebel Ali, Dubai. The plant was originally established in 1978 to produce oil well cement. In 1999 a new ball mill made the Jebel Ali Cement plant the UAE's first slag cement production plant, producing ground granulated blast furnace slag (GGBFS).

Nael Cement operates a 700,000t/yr capacity clinker grinding plant in Al Ain, Abu Dhabi.

Export market disputes

Countries with cement overcapacity have long exported to countries with shortfalls. The UAE has suffered from overcapacity since the global financial crisis, when many UAE mega-projects were paused. Since then, cement producers have continued to increase capacity, expecting cement demand to rise in the near future when the projects were restarted. As such, nearly 60% of the UAE's total cement production is currently exported to neighbouring countries.

Competition in the Middle East and North Africa (MENA) markets has caused disputes among producers. In January 2014, UAE producers defended their right to export to Oman amidst calls for curbs on imports. Oman's Raysut Cement had asked the Government of Oman to implement a ceiling on UAE imports. However, UAE producers denied that they were flooding the Oman market.

"There's a shortage and we are covering that shortage," said Suliman Ali Abdullah Al Shehi, sales manager at Gulf Cement. Raysut Cement had said that Oman only needs 1Mt/yr of cement, but that UAE producers were exporting 2.5Mt/yr. However, Fujairah Cement estimated Oman's demand at nearly 3Mt/yr. Raysut Cement requested that the Oman Government cap UAE cement imports and limit the load on each lorry crossing the border from the UAE.

Continuing later in the year, in August 2014 Raysut Cement announced that due to 'undue competition' in the local market, it had increased its exports to Yemen and Africa. However, competition in those markets was also fierce. To increase its exports by improving its bulk cement handling, in November 2014 Raysut Cement announced that it would build a distribution terminal in Duqm, additional silo capacity at its Salalah cement plant and an offshore unloader and blow pump system in the north of Oman. "The work is in a progressive stage and the company will reap benefits from these starting from early 2015," said Ahmed bin Alawi bin Abdulla Al Ibrahim, chairman of Raysut Cement.

Oman's cement producers face additional challenges in 2015 as the Government has raised its gas prices, despite falling oil costs.[6] Raysut Cement has estimated that the price increase will mean that its production costs grow by 3%. The dispute with the UAE's producers remains to be resolved and may escalate if Oman's cement companies are unable to be competitive in terms of pricing in their own country.

Region	2013 (%)	2014 (%)	2015 (%)
UAE	5.2	4.3	4.5
Saudi Arabia	4.0	4.6	4.5
MENA*	2.3	2.6	3.8
Oil exporters	2.2	2.5	3.9

Left- Table 1: The GDP growth rates of the UAE, Saudi Arabia MENA* countries and oil exporter countries in 2013, predictions for 2014 and 2015.
Source: The IMF World Economic Outlook, October 2014 update.
*MENA = Middle East and North African countries.
Oil exporters includes Bahrain, Libya, Oman and Yemen.

Mega-projects

The UAE is brimming with mega-projects, many of which are just being restarted following the crisis. The construction and cement industries have reported increasing demand off the back of these projects:[7,8]

- **The Etihad Railway Network**: A US$11bn project to build a 1200km railway that will run throughout the UAE (Figure 4), connecting major points, including Al Ain and Madinat Zayed.[9] The project has now entered stage two of construction.
- **Bluewaters island**: A US$1.6bn project to build a resort island off the coast of Dubai, owned by Meraas Holding (Figure 5).[10] Construction began in May 2013 and is ongoing.
- **Dubai airport**: A US$32bn project, announced in September 2014, to expand Dubai's Al Maktoum International Airport.[11] In December 2014, the airport overtook London Heathrow to become the world's busiest by visitor numbers.[12]
- **Abu Dhabi airport**: A new terminal, the Midfield Terminal Building, has been under construction since 2013.[13] Completion is expected in 2017.
- **Dubai Trolley**: The Dubai Trolley, a hop-on hop-off tram system that will span 7km, is under construction. The first phase, which covers 1km of downtown Dubai, is set to launch in the first quarter of 2015.[14]
- **2020 World Expo in Dubai**: In 2020, the World Expo will be held in Dubai. A 4.38km^2 site has been allocated in Jebel Ali and construction is expected to start in 2015 once the plans are finalised.[15]

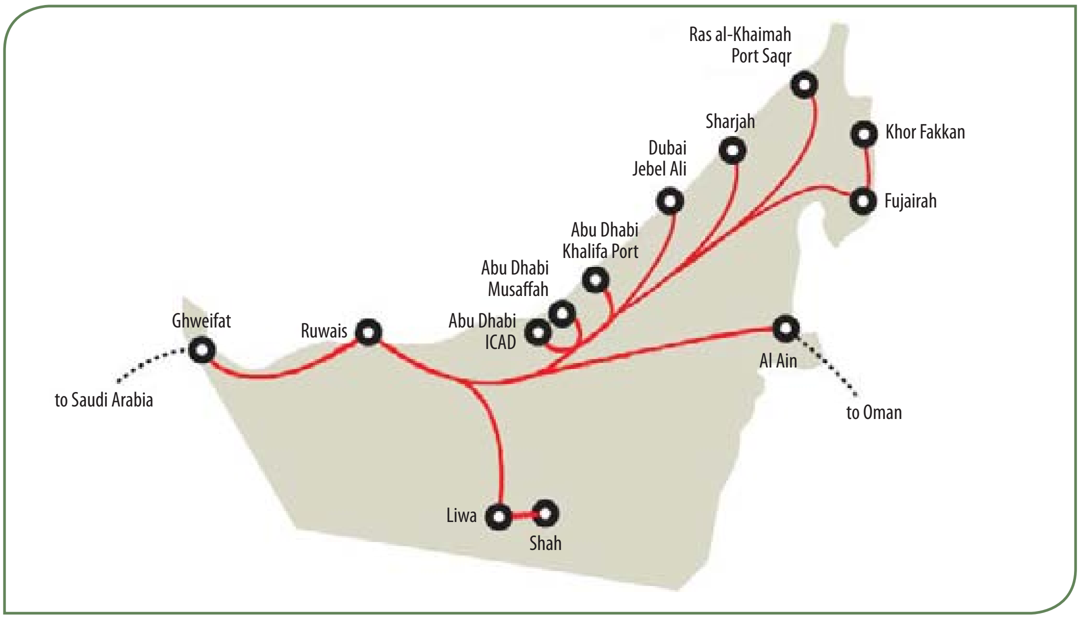
Outlook

In its October 2014 update, the International Monetary Fund (IMF) predicted that the UAE would experience 4.3% GDP growth in 2014, down from 5.2% in 2013 (Table 1).[16] This was expected to be followed by 4.5% growth in 2015. Both predictions are considerably better than for the MENA countries, which were expected to achieve 2.6% and 3.8% GDP growth in 2014 and 2015 respectively.

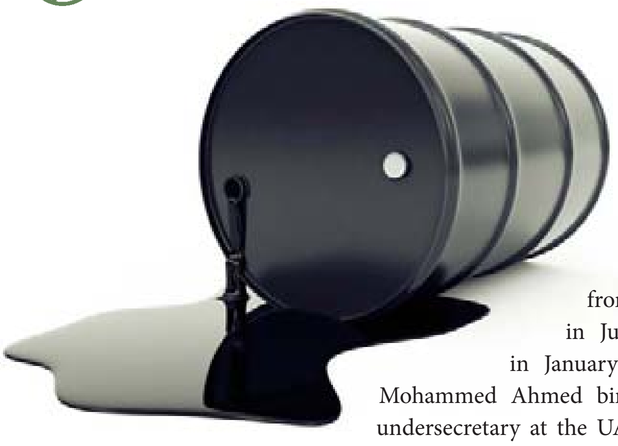
The strong growth expected in the UAE was attributed to a recovering real estate sector, although "Rapid increases in some segments of the real estate market have prompted concerns about possible excessive risk taking. IMF staff have advised that additional measures, such as macroprudential tightening and setting higher fees for reselling within a short time, are warranted, especially if real estate prices and lending continue to rise," stated the IMF.

Aside from the recovering housing market, which is partly bolstered by an increasing population, growth in the UAE is expected to be boosted by large-scale infrastructure projects for the foreseeable future.[7] Such projects are expected to mainly be concentrated in Dubai and Abu Dhabi. Indeed, a Dubai Chamber of Commerce and Industry study has forecast that the UAE's construction industry is expected to contribute 11.1% of the country's GDP by 2015 and 11.5% of GDP by 2021.[17] This compares to 10.6% in 2008 and 10.3% in 2011.

Cement producers have indicated that they also expect strong growth. Expansion and upgrade projects have seen the industry's integrated cement production capacity reach 29Mt/yr in 2014, while plant numbers have also grown. Sharjah Cement expects the near future to be good for business: Exports to Yemen, Iraq and North Africa have grown in recent years. In North Africa in particular, demand far outstrips domestic supply as infrastructure projects



Left - Figure 4: The 1200km long Etihad Railway network will connect all of the major regions of the UAE and, ultimately, interconnect with other GCC countries.



are booming. Despite this, Sharjah Cement also expects new pressure on prices due to increased demand and rising operational costs.

Oil prices plummeted from around US$105/barrel in June 2014 to US$52/barrel in January 2015. In October 2014, Mohammed Ahmed bin Abdul Aziz Al Shehhi, undersecretary at the UAE's Ministry of Economy, stated that the oil prices wouldn't reflect highly in its GDP.[18] "Oil accounts for less than 30% of our GDP, so there will be no impact. The UAE economy is now very diversified," he said. In January 2015, the UAE Energy minister, Suhail Al Mazrouei, confirmed that the UAE plans to push ahead with its plans to increase its oil production capacity to 3.5m bbl/day by 2017 from the current 3m bbl/day, adding that the economy remains strong.[19]

Potential threats to the UAE's cement market in the near future include:

- Bursting the housing bubble currently growing in Dubai and Abu Dhabi;
- A loss of export markets through;
    - Government legislation;
    - The spread of Ebola to North Africa;
- A new global financial crisis;
- Pausing of the UAE's mega-projects.

In summary, sources suggest that the UAE's construction industry and thus its cement sector will be strong for the rest of the decade, in the absence of uncontrollable events.

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Right - Figure 5: Construction at Meraas Holding's Bluewaters island project commenced in May 2013 after lengthy delays. Once completed (design shown here), Bluewaters will be home to a variety of hotels, businesses and shops, in addition to a 210m Ferris wheel overlooking Dubai.