CEMENT

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AUGUST 2015

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EXECUTIVE SUMMARY

Second largest cement market	• With nearly 390 million tonnes of cement production capacity, India is the second largest cement producer in the world. By 2020, cement production will reach to 550 million tonnes
Dominated by private players	• Of the total capacity, 98 per cent lies with the private sector and the rest with public sector, with the top 20 companies accounting for around 70 per cent of the total production
Higher share of large plants	• 188 large cement plants together account for 97 per cent of the total installed capacity, while 365 small plants account for the rest
Large concentration in South and West	• Of the total 188 large cement plants in India, 77 are located in the states of Andhra Pradesh, Rajasthan and Tamil Nadu

Source: Business Standard, Ministry of External Affairs, TechSci Research, Ministry of External Affairs (Investment and Technology Promotion Division)

CEMENT

ADVANTAGE INDIA

AUGUST 2015

ADVANTAGE INDIA

FY15

Production capacity: 390 million tonnes

FY20E

Production capacity: 550 million tonnes

Advantage India

Robust demand

- Robust infrastructure growth during 12th Five Year Plan to drive growth
- Demand is expected to be boosted by growth in real estate sector, initiative to build 100 smart cities to give a further stimulus

Long-term potential

- Oligopoly market, where large players have partial pricing control
- Low threat from substitutes
- Improvement in the sector is expected if government led projects gets translated into execution mode.

Increasing investments

- Robust investments are being made by the existing players to expand their capacity
- Increasing presence of Tier II cement players
- Use of alternate fuels to lower production costs and emissions

Attractive opportunities

- The North-East, which is witnessing a construction boom, offers attractive investment opportunities
- Large planned investments in infrastructure and housing is likely to boost demand for cement in the coming years as well

Source: Ministry of External Affairs (Investment and Technology Promotion Division) ,
Notes: FY20E – Estimated market size for 2020

CEMENT

MARKET OVERVIEW

AUGUST 2015

OVERVIEW OF THE INDIAN CEMENT INDUSTRY

Cement industry (FY15)

Large cement plants

- Cement plants: 188
- Installed capacity: 378.3 mtpa
- Cement production: 246.34 mt*

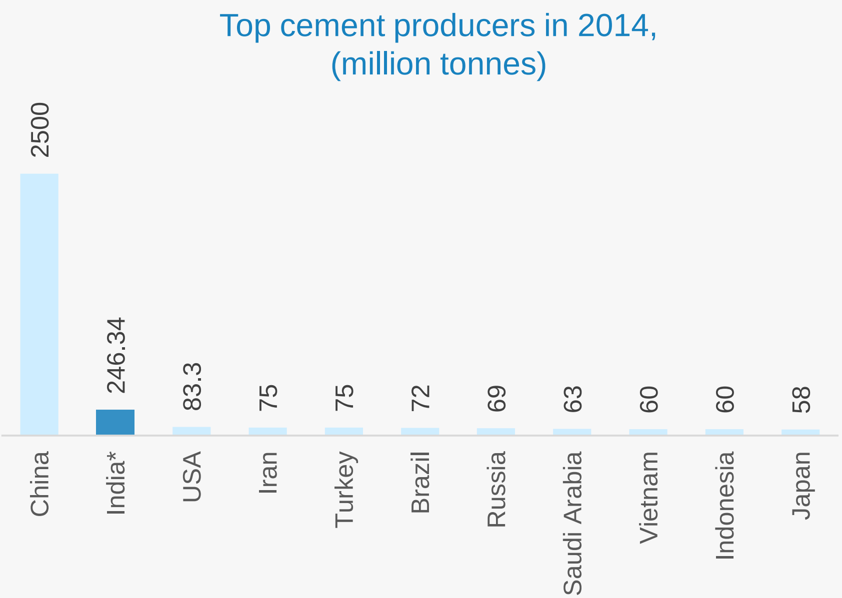
Mini and white cement plants

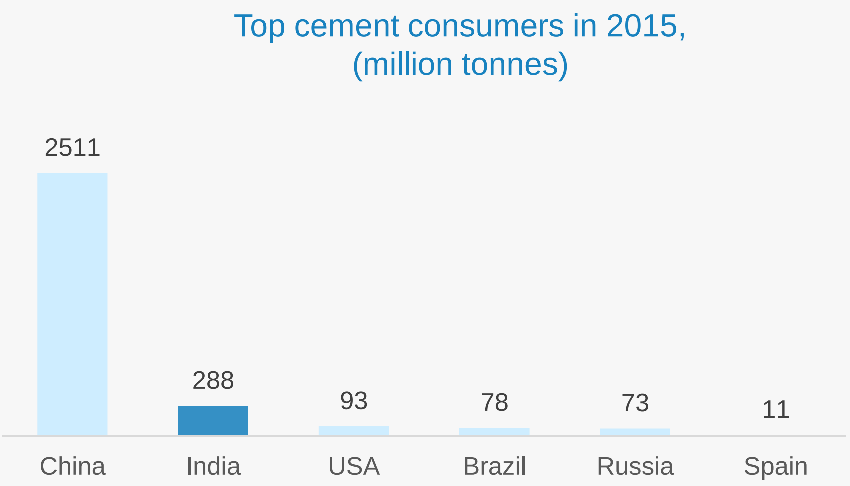
- Cement plants: 365
- Installed capacity: 11.7 mtpa
- Cement production: 33.66 mt

Source: Cement Manufacturers' Association (CMA), TechSci Research
Notes: mtpa - Million Tonnes Per Annum, mt – Million Tonnes
* Indicated (April 2014-February 2015)

INDIA – WORLD'S 2ND LARGEST CEMENT PLAYER

- India is the 2nd largest cement producer as well as consumer in the world led by the enormous growth in the infrastructure and construction sector for the last two decades
- India is already the second largest producer of cement, accounting for around 6.7 per cent of world's output





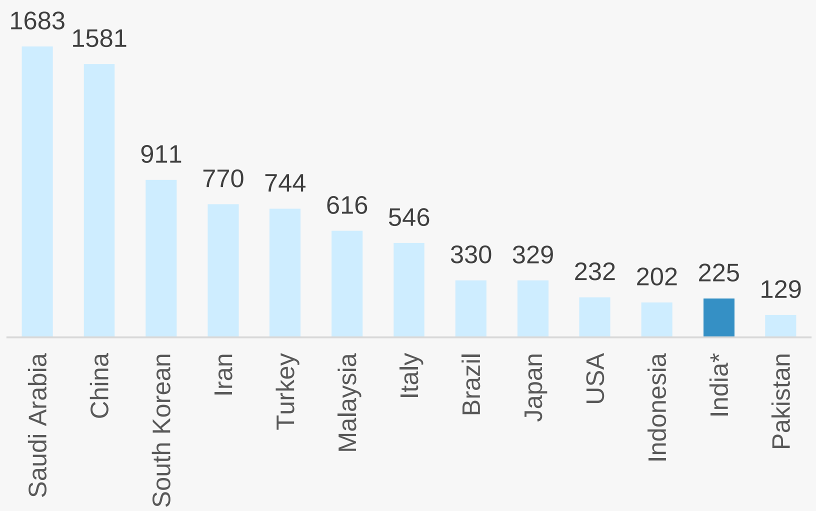
Source: International Cement Review, USGS Mineral Resources Report, TechSci Research
Note: * As of 2015

CEMENT

INDIA'S PER CAPITA CONSUMPTION WILL SET TO RISE

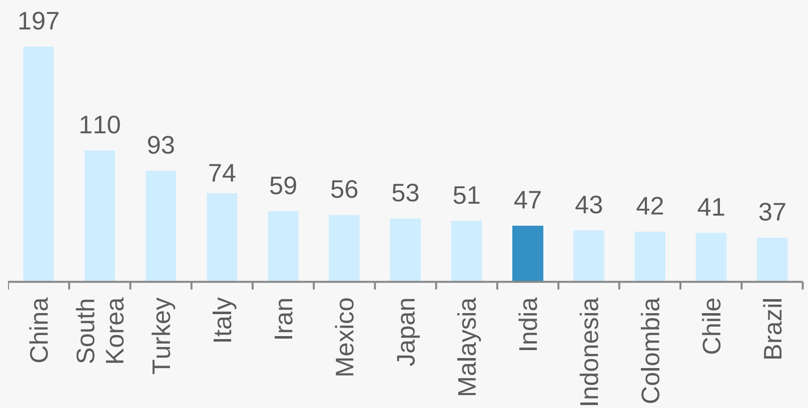
* As India's current per capita consumption of cement (225 kg as of 21 May 2014) is much lesser than the developed and other developing economies, there is a significant business opportunity to cater the unmet and rising demand
* In order to meet the rising demand, cement companies are expected to pent up production by around 56 MT in the next three years

Per capita cement consumption in 2013 (kg)



Source: International Cement Review, TechSci Research

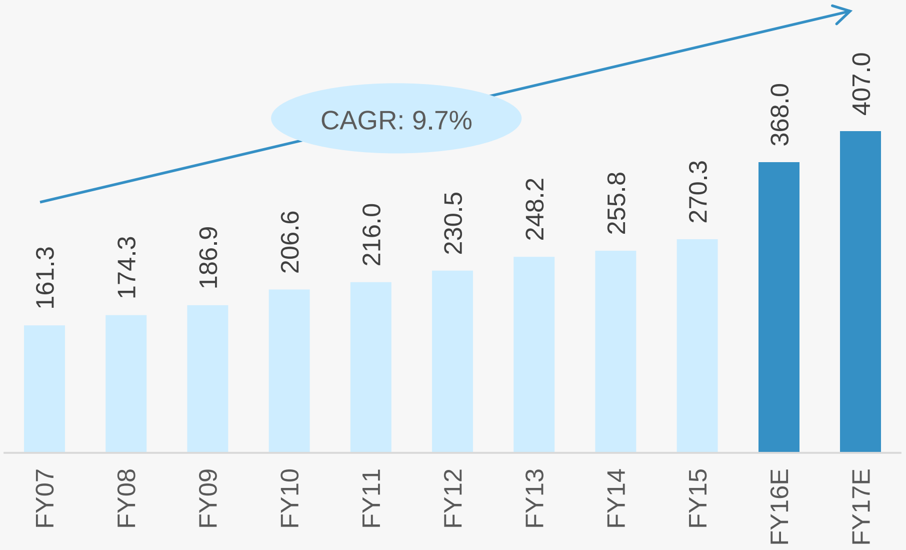
Cement intensity (grams per USD of PPP GDP)



Source: International Cement Review, TechSci Research, Ministry of External Affairs (Investment and Technology Promotion Division)
Note: PPP – Purchase Power Parity
* As of 2014

CEMENT PRODUCTION IN INDIA HAS BEEN GROWING AT A FAST PACE

Production of cement (million tonnes)



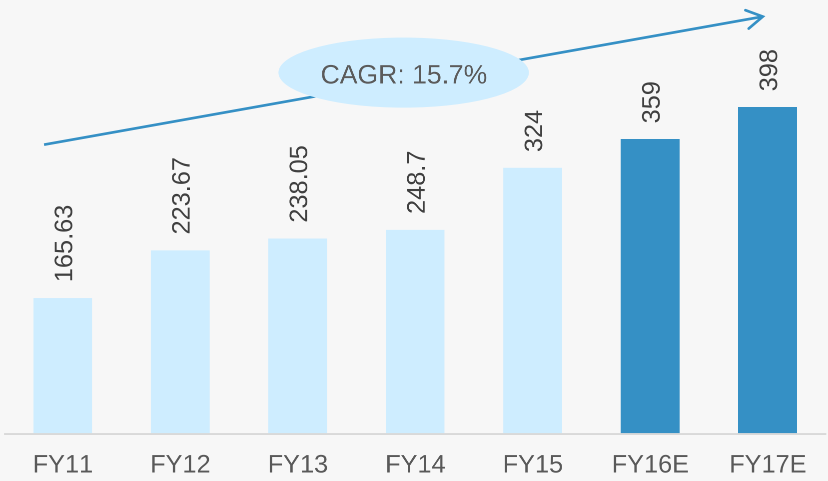
Source: Department of Industrial Policy & Promotion, Office of the Economic Advisor, TechSci Research

- Cement production increased at a CAGR of 6.7 per cent to 270.32 million tonnes over FY07–15
- As per the 12th Five Year Plan, production is expected to reach 407 million tonnes by FY17
- Availability of fly-ash (from thermal power plants) and use of advance technology has increased production of blended cement
- The environment-friendly blended cement is more cost-efficient to produce, as it requires lesser input of clinker and energy

DOMESTIC CEMENT CONSUMPTION IN INDIA ON AN UPTREND

- Domestic cement consumption is to reach 324 million tonnes in FY15 from 165.63 million tonnes in FY11
- The consumption is further expected to increase at a CAGR of 15.7 per cent during FY11-17 and reach 398 million tonnes
- Demand will be supported by infrastructure development in tier 2 and tier 3 cities
- The country's per capita consumption is around 225 kg as of May 2014, compared to the world average of over 350 kg per capita, which shows great potential for growth
- The cement consumption growth rate in the country has witnessed a decline from 9.56% in 2001 – 02 to 5.50% in 2014 – 15

Domestic cement consumption (million tonnes)

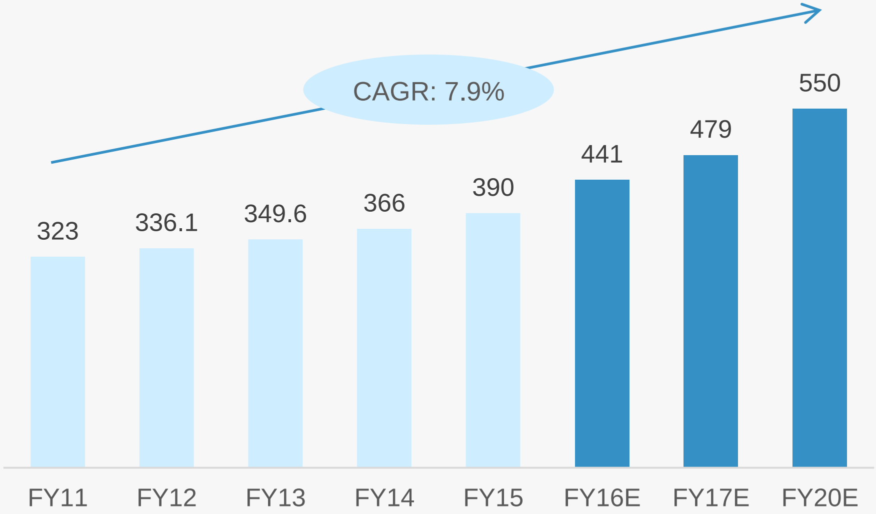


Source: CMA, CMIE Database, TechSci Research
Notes: E – Estimate, CAGR - Compound Annual Growth Rate

CAPACITY TO EXPAND GOING FORWARD

- Cement production capacity increased from 323 million tonnes in FY11 to 390 million tonnes in FY15
- Production capacity is expected to increase at a CAGR of 7.9 per cent during FY11-20E and reach 550 million tonnes

Cement production capacity (million tonnes)

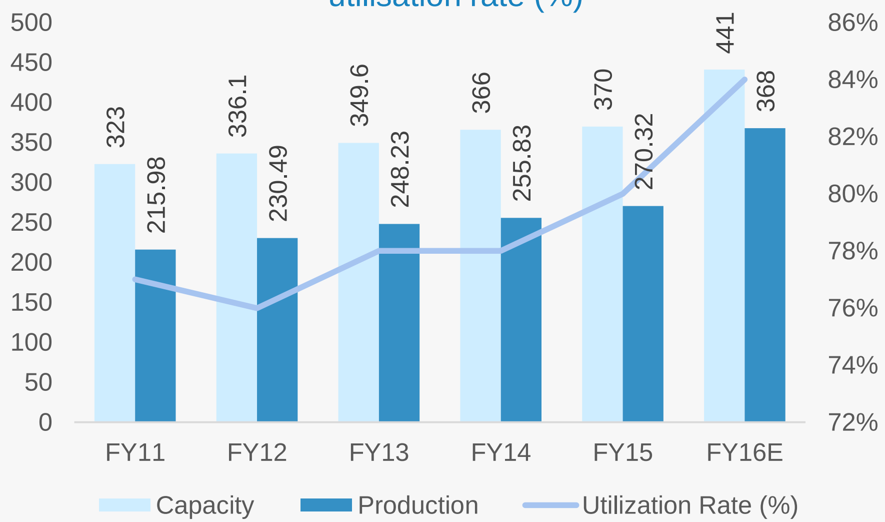


Source: The Economic Times, Business Standard, Ministry of External Affairs, TechSci Research
Notes: E - Estimate, CAGR - Compound Annual Growth Rate

CAPACITY UTILISATION RATE TO GROW DURING 12TH FIVE YEAR PLAN

- Cement capacity utilisation rate is expected to touch around 84 per cent in FY16E from 77 per cent in FY11
- The utilisation rate is at 80 per cent in FY15

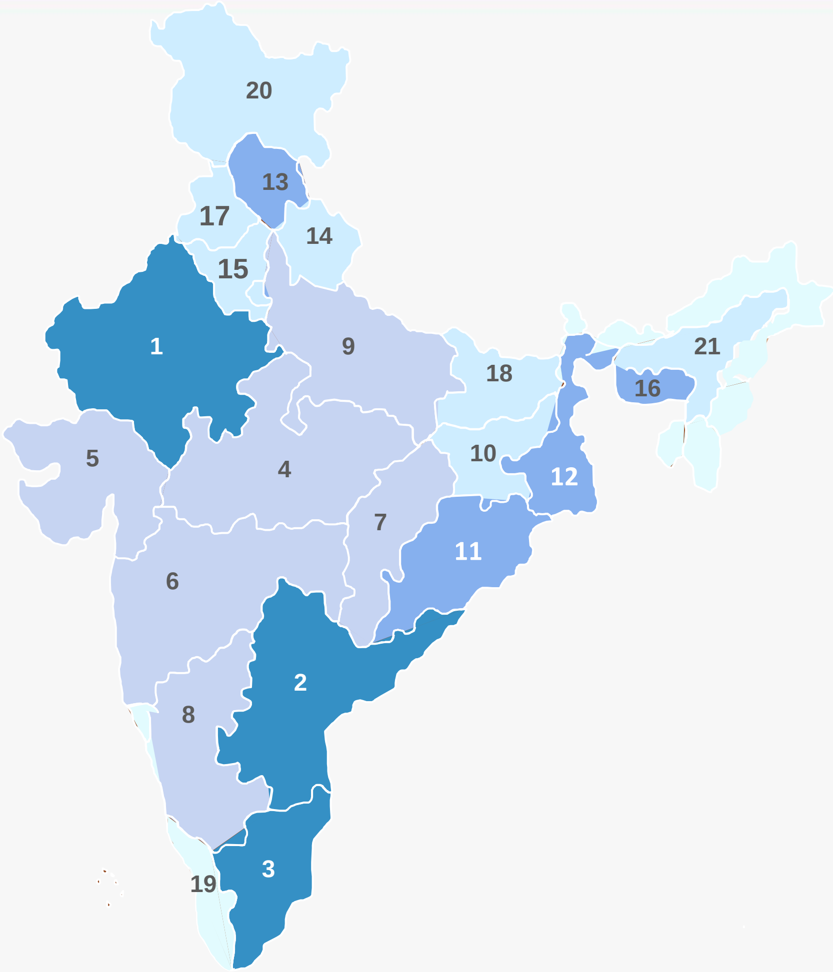
Cement capacity (million tonnes) and utilisation rate (%)



Source: ACC Limited Corporate Presentation, TechSci Research
Notes: E - Estimate, CAGR - Compound Annual Growth Rate

LARGE CEMENT PLANTS IN INDIA

* Currently, India has 188 large cement plants across states and is among the top ten exporters both by value and volume
* Andhra Pradesh is the leading state with 26 large cement plants, followed by Tamil Nadu and Rajasthan having 18 and 17 plants, respectively
* Major cement clusters include - Satna (Madhya Pradesh), Gulbarga (Karnataka), Yerranguntla (Andhra Pradesh), Nalgonda (Andhra Pradesh) and Chandoria (Rajasthan)



Source: Cement Manufacturer's Association (CMA), TechSci Research

THE INDUSTRY IS SPLIT INTO FIVE GEOGRAPHIC SEGMENTS

Cement industry

	Installed capacity (FY14)*	Key markets
South	132.7 mtpa	Tamil Nadu, Andhra Pradesh and Karnataka
North	80.3 mtpa	Rajasthan, Punjab, Haryana and the NCR
East	47.7 mtpa	West Bengal, Chhattisgarh, Orissa and Jharkhand
West	54.8 mtpa	West Bengal, Chhattisgarh, Orissa and Jharkhand
Central	46.3 mtpa	Uttar Pradesh, Madhya Pradesh

Source: Indian Minerals Year Book by Indian Bureau of Mines, TechSci Research
Notes: mtpa - Million Tonnes Per Annum, FY14* - Data from Centrum Cement Report

NOTABLE TRENDS IN THE CEMENT INDUSTRY

Increasing presence of cement players

- Presence of small and mid-size cement players across regions is increasing, which helps to diminish market concentration of industry leaders
- A large number of foreign players have also entered the market owing to the profit margins, constant demand and right valuation .
- Cement companies will go for the global listings either through the FCCB route or the GDR route

Tie – up with overseas

- India has joined hands with Switzerland to reduce energy consumption and develop newer methods in the country for more efficient cement production, which would help India meet its rising demand for cement in the infrastructure sector

Housing for All

- As per the Union Budget 2015 – 16, there has been a boost for low – cost housing
- Thrust on infrastructure development and Housing for All with 2 crore houses in Urban areas and 4 Rural areas is likely to revive the demand for cement sector

Source: Union Budget 2015 – 16, Emkay Global Financial Services

CAPACITY EXPANSION PLANS BY KEY PLAYERS ... (1/2)

Holcim

- In April 2014, Holcim, a Switzerland-based cement company, announced acquisition of Lafarge to create the biggest cement group in the world*
- In India, Holcim's subsidaries (ACC and Ambuja Cements) have a combined capacity of 45 mtpa, while Lafarge has a capacity of 8 mtpa in the country

ACC

- The subsidiary of Holcim, has plans for a USD500 million capacity expansion in India
- ACC will upgrade and expand its Jamul unit in Chattisgarh and its grinding unit in Jharkhand. This will increase ACC's capacity to 38 million tonnes per annum (mtpa) from 30 mtpa in a phased manner by 2016 and 55 million tonnes per annum (MTPA) in 2020

Ambuja Cements

- Ambuja Cements is targeting an investment of USD580 million for capacity expansion in Rajasthan, Madhya Pradesh and Uttar Pradesh
- The proposed project in Rajasthan is expected to add 5 million tonnes (MT) to Ambuja Cements' existing production capacity of 27.5 mtpa

Dalmia Cement

- Dalmia Cement is planning an investment of USD333.3 million to ramp up its manufacturing capacity to 21 mtpa from the existing 17 mtpa over the next two years.
- Dalmia has plans to set up a 2.5 million tonne (MT) greenfield unit at Belgaum in Karnataka. It also plans to scale up its two plants in North-East India for a total value of USD239 million and USD9.2 million, respectively

Source: TechSci Research
Note: * - still waiting for approval from European Commission

CAPACITY EXPANSION PLANS BY KEY PLAYERS ... (2/2)

Heidelberg Cement

- Heidelberg Cement, a Germany-based cement manufacturer has commissioned Phase-I of its Jhansi grinding unit
- The company has undertaken an investment worth USD259.4 million for expanding its capacity to 2.9 million tonnes (MT)
- Heidelberg aims to ramp up the operational capacity to 6 MT at its Damoh plant in Madhya Pradesh, striving to add an additional 9 MT by 2017

Vicat Group

- France-based, Vicat Group plans to invest USD600 million for 5.5 MT capacity by FY19
- It is negotiating an acquisition of uncontrolled 47 per cent stake in the joint venture Vicat Sagar Cement (Chattrasal, Karnataka) for an enterprise value of about USD680 million
- The joint venture Vicat Sagar currently has 2.75 MT capacity

Amrit Cement

- Amrit Cement India Ltd (ACIL) has announced the launch of Amrit Cement in the North-Eastern market
- The company plans to achieve a production level of 5 million tonnes per annum by 2015–16 through capacity expansion in North-Eastern Bihar and Nepal

Source: TechSci Research

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PORTERS FIVE FORCES ANALYSIS

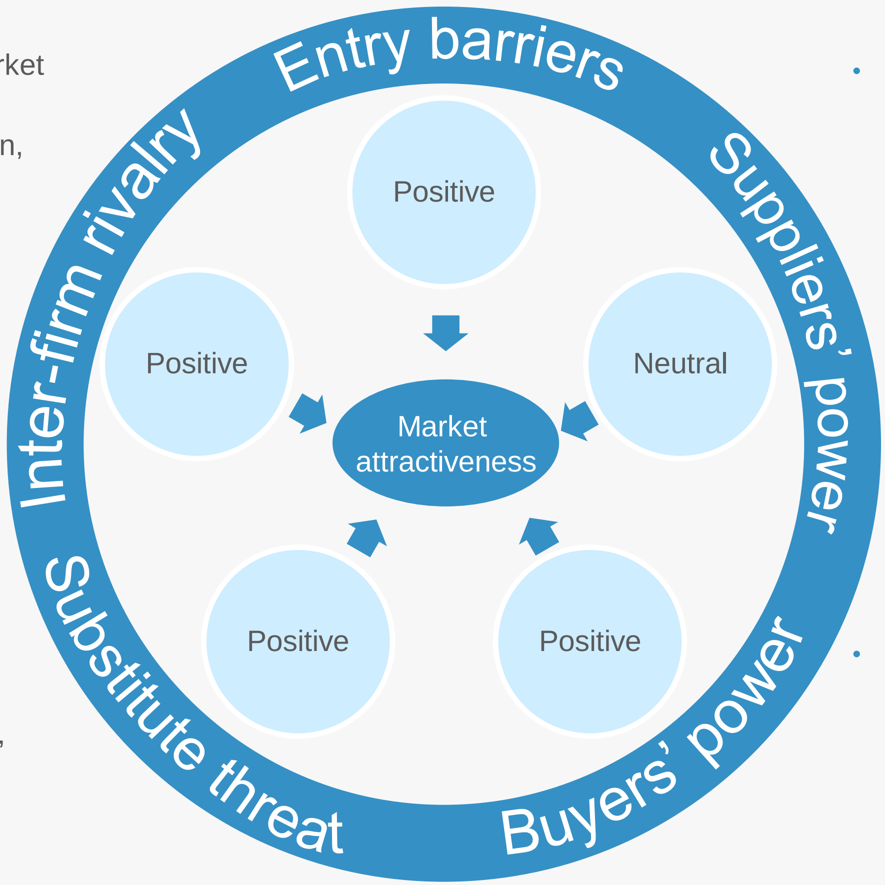
AUGUST 2015

CONDUCIVE INDUSTRY FORCES SUPPORT LONG-TERM ATTRACTIVENESS

- High – Huge capital investments required present substantial barriers to entry and achieving economies of scale

- Low – The Indian cement market is oligopolistic in nature, characterised by tacit collusion, where large players partially control supply for better price discipline

- Moderate – Cement players have to depend on the railways for carriage outward and local coal companies for fuel, although diversification of freight options and fuel sources is diminishing the suppliers' power



- Low – Although there are partial substitutes such as asphalt, glass, steel, wood, etc; practically cement has no direct substitutes

- Low – Substantial market concentration among large players ensures low bargaining power of buyers

Source: TechSci Research

STRATEGIES ADOPTED

AUGUST 2015

STRATEGIES ADOPTED

Adoption of cement instead of Bitumen	• The Government of India has decided to adopt cement instead of bitumen for the construction of all new road projects on the grounds that cement is more durable and cheaper to maintain than bitumen in the long run
Increase in Clean Energy Cess	• The Schedule Rate of Clean Energy Cess, levied on coal is being increased from Rs. 100 per tonne to Rs. 300 per tonne • The increase in the clean energy cess may lead to rise of power and fuel cost in the cement companies
Ready-mix concrete	• Companies are trying to develop a niche market for RMC (Ready Mix Concrete) • Penetration of RMC has been low at about 8 per cent (USA: 88 per cent; China: 33 per cent; Brazil: 32 per cent) because retail sales comprise mostly of bag cement**

Source: Ministry of External Affairs, Union Budget 2015 – 16, HDFC Bank annual report

GROWTH DRIVERS

AUGUST 2015

STRONG DEMAND DRIVERS IN THE NEAR TERM

Housing growth

- The Housing segment accounts for a major portion of the total domestic demand for cement in India
- Real estate market is expected to grow at a CAGR of 17.2 per cent over 2011–15 to USD126 billion
- Growing urbanisation, an increasing number of households and higher employment are primarily driving the demand for housing, accounting for 67 per cent of the total consumption
- Initiatives by the government are expected to provide an impetus to construction activity in rural and semi-urban areas through large infrastructure and housing development projects respectively

Infrastructure growth

- The government is strongly focused on infrastructure development to boost economic growth and is aiming for 100 smart cities
- It plans to increase investment in infrastructure to USD1 trillion in the 12th Five Year Plan (2012–17), compared with USD514 billion under the 11th Five Year Plan (2007–12)
- Infrastructure projects such as Dedicated Freight Corridors as well as new and upgraded airports and ports are expected to further drive construction activity,
- The government intends to expand the capacity of the railways and the facilities for handling and storage to ease the transportation of cement and reduce transportation costs

Commercial real estate growth

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Source: McKinsey Quarterly Report, TechSci Research, Ministry of External Affairs (Investment and Technology Promotion Division)

STRONG DEMAND DRIVERS IN THE NEAR TERM

Government Initiatives towards New Schemes

- Initiatives by the new government such as housing for all, smart cities, Swachh Bharat campaign, infrastructure spending, concrete roads initiative and an increase in allocation of funds to states are likely to see a positive impact on the industry in the next three-six months.
- The government's recent focus on road projects and an increase in state allocations will drive infrastructure and housing demand which will indeed drive the market for cement industry
- Projects like smart cities and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is expected to lead a surge in the demand for cement.

Development in Metro, Roads, Airports

- The metro rail projects in Mumbai, Bangalore and Hyderabad and the expansion phase in Delhi drives cement demand
- Airports modernization across major cities will also expand demand for cement industry
- The latest development in the Ahmedabad Metro Rail Project has also driven the cement demand to a large extent.

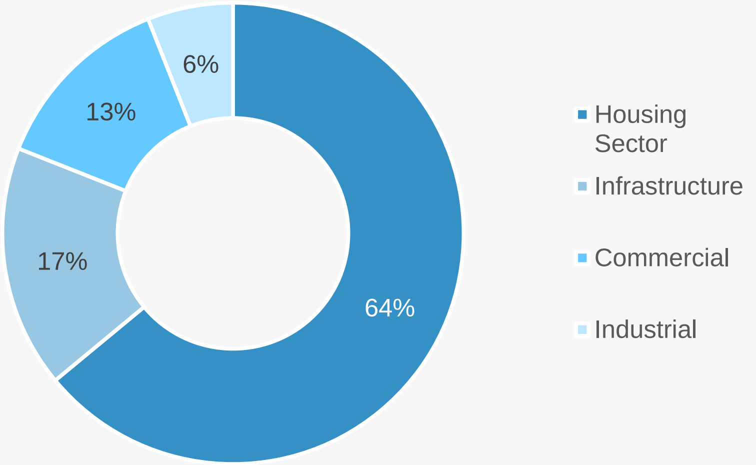
Commercial real estate growth

Source: McKinsey Quarterly Report, TechSci Research, Ministry of External Affairs (Investment and Technology Promotion Division)

HOUSING SECTOR LEAD IN CEMENT DEMAND

- Demand for cement is highly correlated with cyclical activities like construction and development
- Housing sector accounts for a significant 64 per cent of the total cement demand (USA: 22 per cent; China: 25 per cent; Brazil 56 per cent)^
- Real estate market is expected to grow at a CAGR of 17.2 per cent during 2011–15 to USD126 billion
- The rapidly increasing real estate industry in India is expected to push the demand for cement
  - Residential real estate demand is driven by rising population and growing urbanisation
  - Rising income levels are leading to higher demand for luxury projects
  - Demand for affordable housing is growing in order to meet the demand from lower income groups
- Commercial real estate demand will be driven by growth in IT/ITeS sector and organised retail

Major cement demand drivers (FY15)

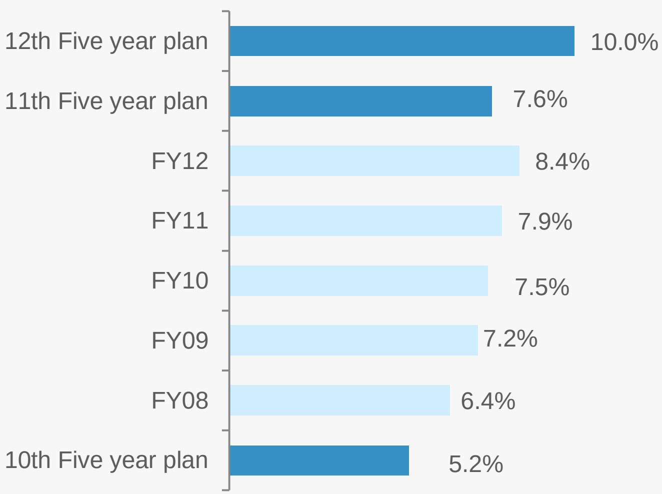


Source: TechSci Research, Ministry of External Affairs (Investment and Technology Promotion Division), ^Cement Vision 2025, AT. Kearney

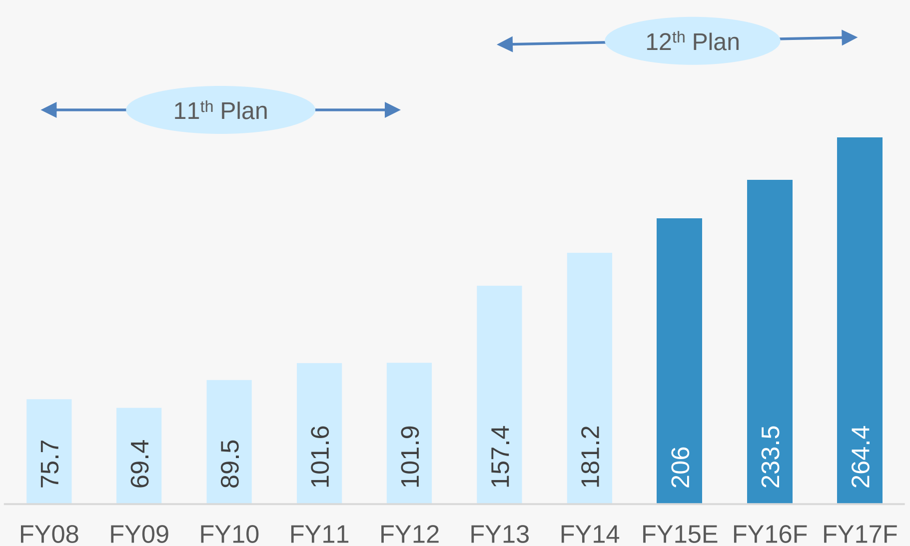
INVESTMENT IN INFRASTRUCTURE DRIVING SECTOR'S GROWTH

- Investment in infrastructure is the main growth driver for the cement industry
- The erstwhile Planning Commission estimates total infrastructure spending to be about of 10 per cent of the GDP during the 12th Five-Year Plan (2012–17), up from 7.6 per cent during the previous Five-Year Plan (2007–12)
- India's investment in infrastructure is estimated to double to about USD1 trillion during the 12th plan (2012–17) compared to the previous plan

Infrastructure spending as % of GDP



Infrastructure spending in % during 11th and 12th Five-Year Plan

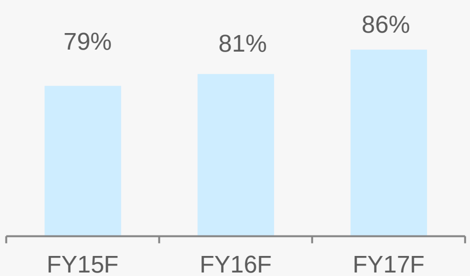


Source: CMIE Database

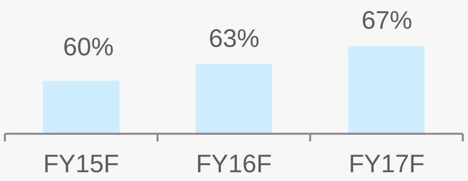
Note: Additional capacity creation estimates are based on increase in base lines, roads, housing and fiscal support

UTILISATION RATES ESTIMATED TO IMPROVE …

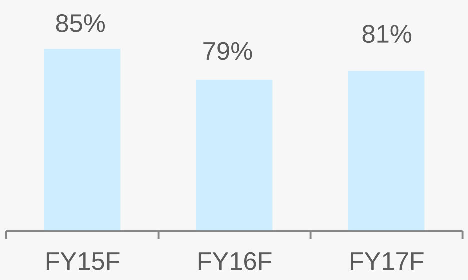
North



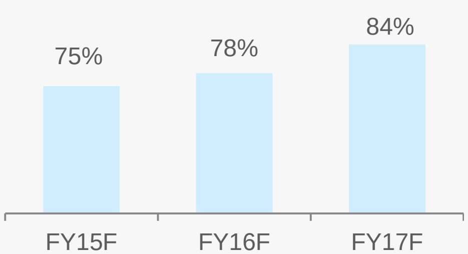
South



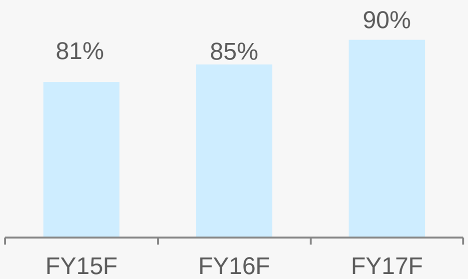
East



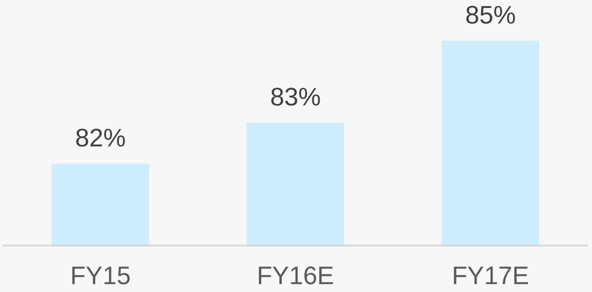
West



Central



All India

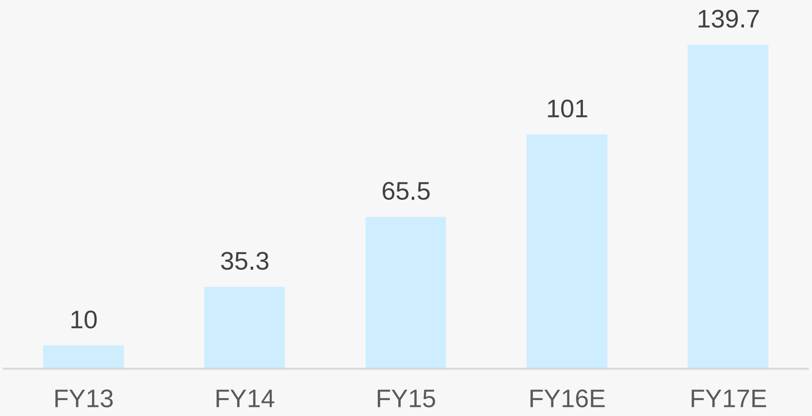


Source: CMA (Cement Manufacturers Association), Centrum Report, TechSci Research
Note: F- Forecast, E - Estimate

… CAPACITY ADDITIONS ALSO ON THE CARDS

- Total capacity of 390 million tonnes is being produced in FY15
- The strong momentum in capacity addition is not surprising given the sharp growth in construction, infrastructure and real estate in Indian economy
- Hence, the 12th Five Year Plan is estimated to have an additional capacity requirement of 156.0 million tonnes by FY17
- The total FDI in cement and gypsum products had reached USD3.098 billion between April 2000-May 2015

Capacity creation as per the 12th Five Year Plan (million tonnes)



Source: DIPP (Department of Industrial Policy and Promotion)
Notes: Additional capacity creation estimates are based on increase in base lines, roads, housing and fiscal support, E – Estimates

CASES OF SUCCESSFUL USE OF ALTERNATE FUELS IN CEMENT PRODUCTION

Company/Plant	Strategy	Benefits
Madras Cement's Alathiyur plant	Use bioenergy through burning of coffee husk and cashew nut shells	Annual cost savings of USD1.7 million
India Cements Ltd's Dalavoi plant	Use Low Sulphur Heavy Stock (LSHS) sludge as alternate fuel	Annual savings of USD6,500 approx
UltraTech's Gujarat Cement Works	Use tyre chips and rubber dust as alternate fuel	Reduction of about 30,000 tonnes of carbon emissions annually
Lafarge's Arasmeta plant	Substitute 10 per cent of coal used in kilns with rice husk	Higher energy savings and lower carbon emissions

Source: CMA, TechSci Research

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OPPORTUNITIES

AUGUST 2015

NORTH-EAST INDIA: A LAND OF OPPORTUNITIES FOR CEMENT FIRMS

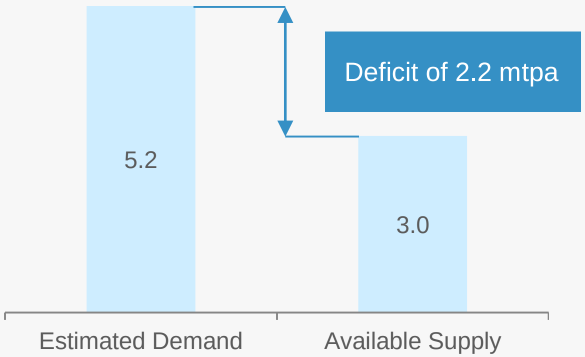
NE India: Cement demand

- The North Eastern (NE) region has consistently been in cement deficit for several years
- At present, cement demand in the NE is about 5.2 mtpa

NE India: Cement supply

- Cement manufactured locally is inadequate to meet the local demand for cement
- The deficit is met through cement purchased from other parts of India
- High transportation costs cause the landed costs of cement to increase considerably

NE India: Cement demand-supply gap

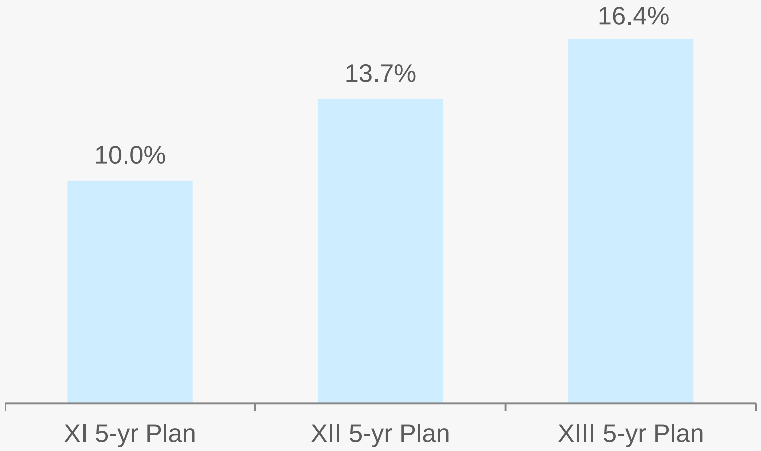


Source: Industry Sources, TechSci Research
Note: mtpa - Million Tonnes Per Annum

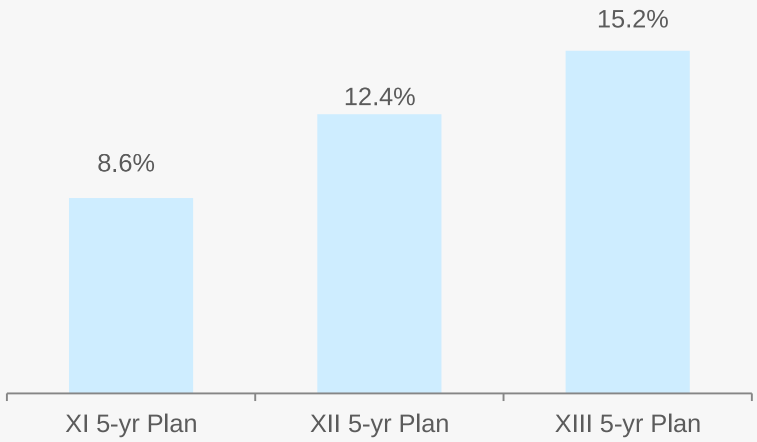
NORTH-EAST INDIA: DEMAND DRIVERS FOR CEMENT

* The Government has approved a package of fiscal incentives and other concessions for the North Eastern Region, namely the North East Industrial and Investment Policy, 2007, effective from 1 April, 2007
* The major policy and fiscal initiatives are expected to catalyse infrastructure and industrial development in the region, spurring the demand for cement
* Dungsam cement, A Bhutan-based player, is entering the Indian market, targeting mainly north-east market

NE states projected GDP growth at constant prices



NE states projected per capita income growth



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SUCCESS STORIES

AUGUST 2015

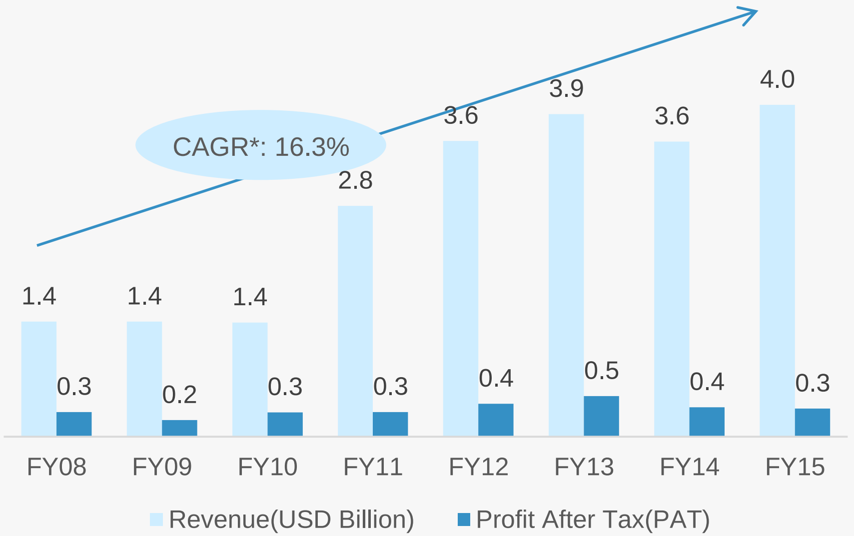
ULTRATECH CEMENT: A COMPELLING GROWTH STORY

- UltraTech is India's largest exporter of cement clinker spanning export markets in countries across the Indian Ocean, Africa, Europe and the Middle East
- UltraTech and its subsidiaries have a presence in five countries through 11 integrated plants, one white cement plant, one clinkerisation plant, 15 grinding units, two rail and three coastal terminals, and 101 RMC plants
- It has an annual capacity of 64 MT
- Projects: Mumbai Metro, Bangalore Metro Rail, Kolkata Metro Rail, Monorail, Coastal Gujarat Power

Milestones

- 2004 – Acquisition of L&T's Cement Business: UltraTech Cement Ltd
- 2006 – Narmada Cement Company Limited amalgamated with UltraTech
- 2010 – Samruddhi Cement Limited amalgamated with UltraTech Cement Limited
- 2012 – Acquisition of Adhunik Cement's Meghalaya plant
- 2013 – Buys Jaypee Cement's Gujarat unit

Revenue and Profit After Tax (PAT) in USD billion



Source: Company website, TechSci Research
Notes: RMC – Ready-Mix Concrete
* : CAGR is for Revenue

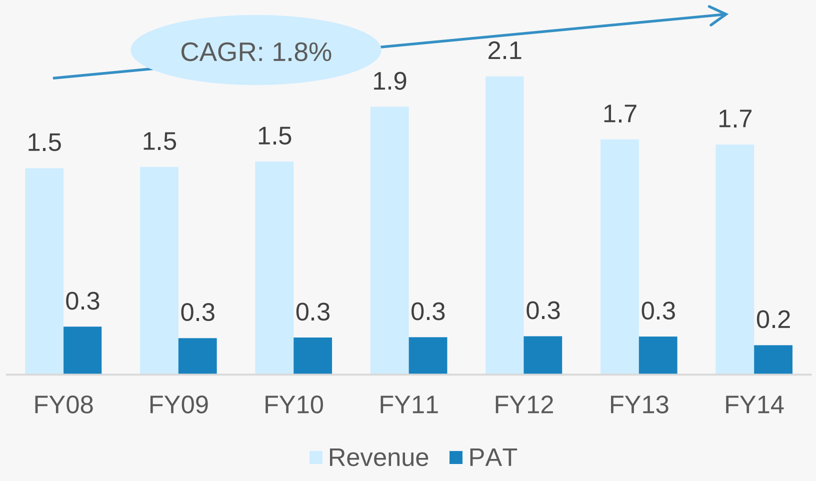
AMBUJA CEMENT: ON A HIGH GROWTH PATH

- Ambuja Cements Ltd (ACL) is one of the leading cement manufacturing companies in India.
- The company, initially called Gujarat Ambuja Cements Ltd, was founded by Narotam Sekhsaria in 1983
- Ambuja Cements is the second largest cement manufacturer in India, with nearly 10 per cent of the market share of total installed capacity
- It is the market leader in Northern India with 29 per cent of the total installed capacity

Milestones

- 2010 – Started cement plant at Nalagarh, Himachal Pradesh and Dadri, Uttar Pradesh with a capacity of 1.5 million tonnes
- 2011 – Acquired 85 per cent stake in Nepal-based Dang Cement
- 2012 – Expansion of Sankrail Grinding Unit, thereby increasing the capacity from 1.5 mtpa to 2.4 mtpa
- 2013 – Acquiring Holderind Investments Ltd, Mauritius (Holcim), These transactions will result in Ambuja holding 50.01 per cent stake in ACC

Revenue (USD billion)



Source: Company website, TechSci Research
Notes: mtpa – Million Tonnes Per Annum

CEMENT

USEFUL INFORMATION

AUGUST 2015

INDUSTRY ASSOCIATIONS

Cement Manufacturers' Association
CMA Tower, A-2E, Sector 24 NOIDA – 201 301
Uttar Pradesh, India
Phone: 91-120-2411955, 2411957, 2411958
Fax: 91-120-2411956
E-mail: cmand@vsnl.com
Website: www.cmaindia.org/index.html

BODIES PROMOTING INDUSTRY DEVELOPMENT

Indian Concrete Institute

Ocean Crest 79, Third Main Road, Gandhi Nagar, Adyar, Chennai – 600 020

Phone: 91-44-24912602

Fax: 91-44-24455148

E-mail: ici3@vsnl.in, ici4@airtelmail.in, vj6314@gmail.com

Website: www.indianconcreteinstitute.org

National Council for Cement and Building Materials

34th Milestone, Delhi-Mathura Road, Ballabgarh – 121 004 Haryana, India

Phone: 91-129-2242051/52/53/54/55/56; 4192222

Fax: 91-129-2242100; 2246175

E-mail: nccbm@vsnl.com; info@ncbindia.com

GLOSSARY

- **CMA**: Cement Manufacturers' Association
- **GDP**: Gross Domestic Product
- **GoI**: Government of India
- **INR**: Indian Rupee
- **MTPA**: Million Tonnes Per Annum
- **NE India**: North-East India
- **FY:** Indian Financial Year (April to March)
  - So FY10 implies April 2009 to March 2010
- **USD**: US Dollar
- Wherever applicable, numbers have been rounded off to the nearest whole number

EXCHANGE RATES

Exchange rates (Fiscal Year)

Year	INR equivalent of one USD
2004–05	44.81
2005–06	44.14
2006–07	45.14
2007–08	40.27
2008–09	46.14
2009–10	47.42
2010–11	45.62
2011–12	46.88
2012–13	54.31
2013–14	60.28
2014-15(Expected)	60.28

Exchange rates (Calendar Year)

Year	INR equivalent of one USD
2005	43.98
2006	45.18
2007	41.34
2008	43.62
2009	48.42
2010	45.72
2011	46.85
2012	53.46
2013	58.44
2014	61.03
2015(Expected)	61.03

Average for the year
2013* - from January to October 2013

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