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CEMENT

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GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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8 Cement

The Cement Industry in India is among the core Industries that is vital for economic growth and development. Ever since the Industry was delicensed in 1991, there has been remarkable growth that metamorphosed it to a globally competitive Market, making India the second largest producer of cement after China in the world. Cement is the basic building material and is used extensively in urban housing, industrial sector and infrastructure development. It has become synonymous with construction activity and the per capita consumption of cement is accepted as an important indicator of the country's economic growth.

In terms of quality, technology, productivity and efficiency, India compares well with the best in the world. The demand for cement is closely linked to the overall economic growth, particularly the housing and infrastructure sector. The recent government thrust on housing and infrastructure development augurs well for the industry. However, the per capita consumption of cement in India still remains substantially low at about 195 kg when compared with the developed world or world average which stands at about 520 kg. The Indian Cement Industry plays a key role in the national economy, not only by generating substantial revenue for State and Central Governments but also as a key industry that generates maximum employment directly or indirectly. India has a lot of potential for development in the infrastructure and construction sector and the cement sector is poised for a positive growth in the days ahead. Some of the recent major government initiatives such as development of 98 smart cities are expected to provide a major boost to the sector.

India exported about 6.22 million tonnes cement valued at ₹1,659 crore (including 2.85 million tonnes clinker, 2.28 million tonnes of portland grey cement and 0.03 million tonnes white cement) in 2015-16 to Sri Lanka, Nepal, Bhutan, Bangladesh and Myanmar, etc.

IBM captures data from mineral consuming industries as per provisions made under Rule 45, MCDR-2017 in Form 'M' (Erstwhile Form 'O').

As per the returns received from various cement plants and Survey of Cement Industry & Directory, 2015 the total installed capacity of these plants have been arrived at 479.35 million tonnes. The total production of cement during 2015-16 was 144.78 million tonnes.

The Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce, Govt. of India publishes data on production and capacity of cement in its Annual Report. As per Annual Report 2015-16, the total installed capacity of cement plants have been placed at 421.10 million tonnes and the production of cement during 2015-16 was 283.45 million tonnes.

The details of production and capacity are given in Table-1.

Three cement plants, having a total capacity of 9,90,000 tonnes per year produced white cement. Most of these capacities are modern and based on the energy-efficient dry processing technology.

There are as many as 193 plants with over a million tonnes or more capacity. In the Public Sector, however, there is only one Central Public Sector undertaking i.e., CCI which had 10 units, spread over eight States/Union Territories. Out of these, only three plants namely; Bokajan, Rajban and Tandur units are operating, the remaining cement plants have shut operations for more than a decade now. There are five large cement plants owned by various State Government Undertakings like Tamil Nadu Cement, Malabar Cements, J&K Ltd and Mawmluh-Cherra Cement Ltd, Shillong, Meghalaya. The companywise annual installed capacity and production of cement plants during the year 2015-16 in the country is furnished in Table-1.

Data on capacity, production and growth in cement industry are given in Table-2.

Table-1: Companywise Installed Capacities and Production of Cement Plants, 2015-16

(In million tonnes)

Company/ Plant Name/Locations	Capacity (As reported under Rule-45 of MCDR and Survey of Cement Industry and Directory- 2015)	Production (As reported under Rule-45 of MCDR)
Binani Group	**6.25**	**3.57**
Binani Cement	**6.25**	**3.57**
Sikar (G), Sikar, Rajasthan	1.4	-
Sirohi, Sirohi, Rajasthan	4.85	3.57
BK Birla Group	**26.8**	**12.24**
Century Textiles and Industries Ltd	**12.8**	**6.63**
Century Cement, Raipur, Chhattisgarh	2.1	-
Maihar Cement I & II, Satna, Madhya Pradesh	4.2	3.59
Manikgarh Cement I & II, Chandrapur, Maharashtra	5	3.04
Sonar Bangla (G), Murshidabad, West Bengal	1.5	-
Kesoram Industries	**10.75**	**5.61**
Kesoram Cement, Karimnagar, Telangana	1.75	0.9
Vasvadatta Cement, Kalaburagi, Karnataka	9	4.71
Mangalam Cement Ltd	**3.25**	**-**
Mangalam Cement I & II, Kota, Rajasthan	3.25	-
Cement Corporation of India Ltd	**1.44**	**0.19**
C.C.I. Ltd	**1.44**	**0.19**
Bokajan, Karbi, Assam	0.2	-
Rajban, Sirmaur, Himachal Pradesh	0.24	0.19
Tandur, Rangareddy, Telangana	1	-
Chettinad Cement	**15.5**	**1.81**
Anjani Portland Cements	**1.3**	**0.76**
Anjani Portland Cements, Nalgonda, Telangana	1.3	0.76
Chettinad Cement	**14.2**	**1.05**
Ariyalur, Tamil Nadu	5.5	-
Kallur, Kalaburagi, Karnataka	2.5	1.05
Karikkali, Dindigul, Tamil Nadu	4.5	-
Puliyur, Karur, Tamil Nadu	1.7	-
CK Birla Group	**8**	**0.32**
Orient Cement	**8**	**0.32**
Devapur, Adilabad, Telangana	3	-
Jalgaon (G), Jalgaon, Maharashtra	2	-
Chittapur, Kalaburagi, Karnataka	3	0.32
Dalmia Bharat Group	**24.28**	**2.33**
Adhunik Cement Ltd	**1.5**	**0.75**
Adhunik Cement Ltd, Jaintia Hills, Meghalaya	1.5	0.75
Calcom Cement India Ltd	**1.72**	**-**
Calcom Cement India Ltd, Nagaon, Assam	1.72	-
Dalmia Cement (Bharat) Ltd	**12.26**	**1.58**
Ariyalur, Tamil Nadu	3	-
Belagavi, Karnataka	2.6	0.51
Kadapa, Andhra Pradesh	2.66	1.07
Dalmiapuram, Trichy, Tamil Nadu	4	-
Dalmia Cement (Bharat) Ltd (Erstwhile Jaypee Group)	**2.1**	**-**
Bokaro (G), Bokaro, Jharkhand	2.1	-
OCL India Ltd	**6.7**	**-**
Bengal Works, Midnapore, West Bengal	1.35	-
Kapilas (G), Cuttack, Odisha	1.35	-
Rajgangpur, Sundargarh, Odisha	4	-

(Contd.)

Table-1 (Contd.)

Company/ Plant Name	Capacity	Production
Emami Group	**2.5**	-
Emami Ltd	**2.5**	-
Emami Cement, Balrampur, Chhattisgarh	2.5	**-**
GNG Group	**1**	**-**
Green Valley Industries	**1**	**-**
Green Valley Industries, Jowai, Meghalaya	1	-
Government of J&K	**0.4**	**-**
J&K Cement Ltd	**0.4**	**-**
J&K Cement Ltd, Pulwama, J&K	0.4	-
Government of Kerala	**0.62**	**-**
Malabar Cements	**0.62**	**-**
Walayar, palakkad, Kerala	0.42	-
Cherthala (G), Alappuzha, Kerala	0.2	-
Government of Tamil Nadu	**0.9**	**-**
Tamil Nadu Cement	**0.9**	**-**
Ariyalur, Ariyalur, Tamil Nadu	0.5	-
Alangulam, Virudhnagar, Tamil Nadu	0.4	-
Heidelberg Cement Group	**5.21**	**-**
Heidelberg Cement	**5.21**	**-**
Ammasandra, Tumakuru, Karnataka	0.51	-
Imlai (G), Damoh, Madhya Pradesh	2	-
Jhansi (G), Jhansi, Uttar Pradesh	2.7	-
Holcim Group	**62.5**	**16.54**
ACC Ltd	**31.6**	**4.48**
Bargarh, Odisha	2.14	1.08
Chaibasa, Singhbhum, Jharkhand	0.9	-
Chanda, Chandrapur, Maharashtra	3.8	-
Damodar (G), Purulia, West Bengal	0.53	-
Gagal-I & II, Bilaspur, Himachal Pradesh	4.4	-
Jamul, Durg, Chhattisgarh	1.58	-
Kudithini (G), Ballari, Karnataka	1.1	-
Kymore, Katni, Madhya Pradesh	2.72	-
Lakheri, Bundi, Rajasthan	1.5	-
Madukkarai, Coimbatore, Tamil Nadu	1.08	-
Sindri (G), Dhanbad, Jharkhand	1	-
Thondebhavi (G), Chikballapur, Karnataka	1.66	-
Tikaria (G), Sultanpur, Uttar Pradesh	3	-
Vizag (G), Vizag, Andhra Pradesh	0.4	-
Wadi & Wadi New, Wadi, Karnataka	5.79	3.4
Ambuja Cement Ltd	**30.9**	**12.06**
Bathinda (G), Bhatinda, Punjab	1.2	
Bhatapara, Raipur, Chhattisgarh	3.5	2.25
Dadri- (G), G B Nagar, Uttar Pradesh	1.8	0.78
Darlaghat, Solan, Solan, Himachal Pradesh	1.6	0.81
Farakka (G), Murshidabad, West Bengal	1.25	1
Ambujanagar I & II, Kodinar, Junagadh, Gujarat	5.5	-
Magdalla (G), Surat, Gujarat	1.2	-
Maratha Cement, Chandrapur, Maharashtra	4.75	3.3
Nalagargh, Solan (G), Solan, Himachal Pradesh	1.5	0.97
Rabriyawas, Pali, Rajasthan	3.6	2.22
Roorkee (G), Haridwar, Uttarakhand	1	0.73
Ropar (G), Ropar, Punjab	2.5	-
Sankrail (G), Howrah, West Bengal	1.5	-

(Contd.)

Table-1 (Contd.)

Company/ Plant Name	Capacity	Production
India Cements Ltd	**16.55**	**4.87**
Trinetra Cement, Banswara, Rajasthan	1.5	1.34
Chilamkur Works, Kadapa, Andhra Pradesh	1.46	-
Dalavoi, Ariyalur, Tamil Nadu	1.85	-
Parli (G), Beed, Maharashtra	1.1	-
Malkapur, Rangareddy, Telangana	2.4	-
Sankaridurg, Salem, Tamil Nadu	0.86	0.64
Sankarnagar, Tirunelveli, Tamil Nadu	2.05	1.41
Vallur (G), Chennai, Tamil Nadu	1.1	-
Vishnupuram, Nalgonda, Telangana	3.5	1.14
Yerraguntla, Kadapa, Andhra Pradesh	0.73	0.34
J.K. Cement Ltd	**10.8**	**5.3**
Gotan White, Nagaur, Rajasthan	0.5	-
Jharli(G), Jhajjar, Haryana	1.5	-
Mangrol, Chittorgarh, Rajasthan	2.5	2.07
Muddapur, Bagalkot, Karnataka	3	1.5
Nimbahera, Chittorgarh, Rajasthan	3.3	1.73
Jaypee Group	**28.46**	**0**
ACL, Jaypee Group	**2.56**	**-**
Durga Cement Works, Guntur, Andhra Pradesh	2	-
Vishaka Cement Works, Vizag, Andhra Pradesh	0.56	-
BJCL, Jaypee Group	**2.2**	**0**
Bhilai Jaypee (G), Durg, Chhattisgarh	2.2	0
JAL, Jaypee Group	**14.7**	**-**
Ayodhya (G), Ambedkar Nagar, Uttar Pradesh	1	-
Chunar (G), Mirzapur, Uttar Pradesh	2.5	-
Rewa, Madhya Pradesh	4.4	-
Roorkee (G), Haridwar, Uttarakhand	1.2	-
Sadva Khurd (Blending), Allahabad, Uttar Pradesh	0.6	-
Sikandrabad, Bulandsahar, Uttar Pradesh	1	-
Baga, Solan, Himachal Pradesh	1.5	-
Bagheri (G & B), Solan, Himachal Pradesh	2	-
Dalla, Sonbhadra, Uttar Pradesh	0.5	-
JCCL, Jaypee Group	**5**	**-**
Balaji Cement, Krishna, Andhra Pradesh	5	-
JPVL, Jaypee Group	**4**	**-**
Jayprakash Power Ventures (G), Singrauli, Madhya Pradesh	4	-
JK Lakshmi Cement Ltd	**9.04**	**3.86**
JK Lakshmi Cement Ltd	**8.44**	**3.56**
Sirohi, Rajasthan	4.65	3.56
Durg, Chhattisgarh	1.8	-
Jhajjar (G), Jhajjar, Haryana	1.3	-
Kalol (G), Gandhinagar, Gujarat	0.69	-
Udaipur Cement	**0.6**	**0.3**
Udaipur Cement, Udaipur, Rajasthan	0.6	0.3
JSW Group	**6.4**	**1.48**
JSW	**5.4**	**1.48**
Nandyal, Kurnool, Andhra Pradesh	4.8	1.48
Vijayanagar, Ballari, Karnataka	0.6	-
JSW (erstwile Heidelberg Cement (I) Ltd)	**1**	**-**
Dolvi (G), Raigad, Maharashtra	1	-
Kamal Group of Industries	**2.27**	**1.19**
KJS Cement	**2.27**	**1.19**
KJS Cement, Satna, Madhya Pradesh	2.27	1.19

(Contd.)

Table-1 (Contd.)

Company/Plant Name	Capacity	Production
Kanoria Group	**0.6**	**-**
Bagalkot Cement & Ind Ltd	**0.6**	**-**
Bagalkot Cement, Vijayapura, Karnataka	0.6	-
K.C.P. Ltd	**2.34**	**0.45**
Macherla, Guntur, Andhra Pradesh	0.82	0.45
Muktyala, Krishna, Andhra Pradesh	1.52	-
Kishan Group	**1.2**	**-**
Hi-Bond cement	**1.2**	**-**
Hi-Bond cement, Gondal, Gujarat	1.2	-
M. P. Birla Group	**15.4**	**4.16**
Birla Corp. Ltd	**9.6**	**2.42**
Chanderia , Chittorgarh, Rajasthan	3.5	-
Raebareli (G), Raebareli, Uttar Pradesh	0.8	-
Satna, Madhya Pradesh	3	2.42
Durgapur and Durga Hitech Cement (G), Bardhaman, West Bengal	2.3	-
Birla Corp. Ltd (Erstwhile Reliance Cement)	**5.8**	**1.74**
Butibori (G), Nagpur, Maharashtra	0.5	-
Durgapur (G), Burdwan, West Bengal	0.3	-
Kundanganj (G), Raebareli, Uttar Pradesh	2	-
Maihar, Satna, Madhya Pradesh	3	1.74
Maithan Group	**0.36**	**-**
Purbanchal Cement	**0.36**	**-**
Kamrup, Kamrup, Assam	0.36	-
Mehta Group	**4.46**	**1.59**
Gujarat Sidhee Cement, Junagadh, Gujarat	1.4	0.13
Saurashtra Cement, Porbandar, Gujarat	3.06	1.46
My Home Group	**8.5**	**3.3**
My Home Industries Ltd	**5.3**	**1.48**
Mellacheruvu, Nalgonda, Telangana	3.3	1.48
Mulakalapalli (G), Vizag, Andhra Pradesh	2	
Sri JayaJothi Cements Pvt. Ltd	**3.2**	**1.82**
Sri JayaJothi Cement Plant, Kurnool, Andhra Pradesh	3.2	1.82
Nandi Group	**1.35**	**-**
Panyam Cement	**1.35**	**-**
Panyam Cement, Kurnool, Andhra Pradesh	1.35	-
NCL Group	**1.98**	**0.69**
NCL Industries	**1.98**	**0.69**
Kondapalli (G), Krishna, Andhra Pradesh	0.99	
Simhapuri, Nalgonda, Telangana	0.99	0.69
Others	**20.97**	**5.15**
Amrit Cement	**1**	**-**
Jaintia Hills, Jaintia Hills, Meghalaya	1	-
Asian Concretes and Cements Pvt. Ltd	**1.3**	**-**
Asian Cement, Solan, Himachal Pradesh	1.3	-
Bhavya Cement	**1.4**	**-**
Bhavya Cement, Guntur, Andhra Pradesh	1.4	-
Burnpur Cement	**0.33**	**-**
Burnpur Cement, Burdwan, West Bengal	0.33	-

(Contd.)

Table-1 (Contd.)

Company/ Plant Name	Capacity	Production
DCM Shriram Cement	**0.4**	**-**
Shriram Cement Works, Kota, Rajasthan	0.4	-
Deccan Cement	**2.3**	**1.31**
Nalgonda, Telangana	2.3	1.31
Grey gold Cement	**0.09**	**0.09**
Grey gold Cement, Nalgonda, Telangana	0.09	0.09
Hills Cement Company	**1**	**-**
Hills Cement, Jaintia Hills, Meghalaya	1	-
Kakatiya Cement & Sugar Ind. Ltd	**0.3**	**0.24**
Kakatiya Cement, Nalgonda, Telangana	0.3	0.24
Khyber Industries (P) Ltd	**0.33**	**-**
Khyber Cement, Srinagar, J&K	0.33	-
Mancherial Cement	**0.35**	**0.08**
Mancherial Cement, Adilabad, Telangana	0.35	0.08
Murli Industries	**3**	**-**
Murli Cement, Chandrapur, Maharashtra	3	-
Nirma Ltd	**2.28**	**1.04**
Nirma Cement, Pali, Rajasthan	2.28	1.04
Parasakti Cement	**1.68**	**0.87**
Parasakti Cement, Guntur, Andhra Pradesh	1.68	0.87
Shree Digvijay Cement Co.	**1.08**	**0.99**
Shree Digvijay-Sikka, Sikka, Gujarat	1.08	0.99
Sparta Cements & Infra Ltd	**1**	**-**
Sparta Cements, Bhuj, Gujarat	1	-
Sri Chakra Cements	**1**	**-**
Narasimhapuri Cement Unit, Guntur, Andhra Pradesh	0.7	-
Annamarajupet Grinding Unit (G), Vizianagaram, Andhra Pradesh	0.3	-
Vijay Cements	**0.08**	**0.07**
Vijay Cements, Trichy, Tamil Nadu	0.08	0.07
Bheema Cement (Earlier Coromandel Cements)	**0.9**	**-**
Bheema Cement , Nalgonda, Telangana	0.9	-
Keerthi Industries (Formerly Suvarna Cement)	**0.62**	**-**
Keerthi Industries , Nalgonda, Telangana	0.62	-
Dhandapani Cements	**0.22**	**0.12**
Dhandapani Cements, Tiruchirapalli, Tamil Nadu	0.22	0.12
JEPPIAAR CEMENTS PRIVATE LIMITED	**0.07**	**0.07**
Jeppiaar Cement, Perambalur, Tamil Nadu	0.07	0.07
Hemadri Cement Ltd	**0.24**	**0.27**
Hemadri Cement, Krishna, Andhra Pradesh	0.24	0.27
Penna Group	**7.4**	**2.35**
Penna Cement Industries Ltd	**7.4**	**2.35**
Tandur, Rangareddy, Telangana	2	0.67
Boyareddypalli, Anantpur, Andhra Pradesh	2	-
Ganeshpahad, Nalgonda, Telangana	1.2	0.83
Talaricheruvu, Anantpur, Andhra Pradesh	2.2	0.85
Prithvi Group	**0.83**	**0.35**
Barak Valley Cement	**0.33**	**-**
Karimganj, Assam	0.33	-
Meghalaya Cements Ltd	**0.5**	**0.35**
Jaintia Hills, Meghalaya	0.5	0.35
R K Marble Group	**8**	**3.34**
Wonder Cement	**8**	**3.34**
Wonder Cement, Chittorgarh, Rajasthan	8	3.34
Rain Industries Limited	**4.27**	**2.21**
Rain Cements Ltd	**4.27**	**2.21**
Kurnool Cement Plant, Kurnool, Andhra Pradesh	2.77	1.35
Ramapuram Cement Plant, Nalgonda, Telangana	1.5	0.86

(Contd.)

Table-1 (Contd.)

Company/ Plant Name	Capacity	Production
Rajan B Raheja Group	**7**	**-**
Prism Cement Ltd	**7**	**-**
Prism Cement-I & II, Satna, Madhya Pradesh	7	-
Ramco Cements Ltd	**16.44**	**4.11**
Vizag (G), Vizag, Andhra Pradesh	0.9	
Alathiyur Works I & II, Perambalur, Tamil Nadu	3.05	1.56
Ariyalur, Perambalur, Tamil Nadu	3.5	1.71
Chengalpattu(G), Kanchipuram, Tamil Nadu	0.5	
Jayantipuram, Krishna, Andhra Pradesh	3.65	0.84
Kolaghat (G), P Medinipur, West Bengal	0.95	-
Mathodu, Chitradurga, Karnataka	0.29	-
Salem (G), Salem, Tamil Nadu	1.6	-
Ramasamyraja Nagar, Virudhnagar, Tamil Nadu	2	-
Ravi Sanghi Group	**4**	**2.43**
Sanghi Industries Ltd	**4**	**2.43**
Sanghi Cement, Kachchh, Gujarat	4	2.43
RNB Group	**0.4**	**-**
RNB Cement	**0.4**	**-**
East Khasi Hills, East Khasi, Meghalaya	0.4	-
Sagar Group	**3.75**	**0**
Sagar Cement Ltd	**1**	**0**
BMM Cement, Anantpur, Andhra Pradesh	1	0
Vicat Sagar Cement Pvt. Ltd.	**2.75**	**-**
Sagar Cement, Nalgonda, Telangana	2.75	-
Shree Cements Ltd	**26.84**	**18.5**
Shree Cements	**25.34**	**17.98**
Roorkee (G), Haridwar, Uttarakhand	1.8	1.76
Baloda Bazar, Raipur, Chhattisgarh	2.6	0.95
Bangur Cement (G), Aurangabad, Bihar	3.24	1.76
Beawar I & II, Ajmer, Rajasthan	3	1.52
Jaipur (G), Jaipur, Rajasthan	1.5	1.13
Khushkhera (G), Alwar, Rajasthan	3	2.98
Ras, Pali, Rajasthan	7	5.79
Suratgarh (G), Sriganganagar, Rajasthan	1.2	1.52
Bulandshahar (G), Sikandrabad, Uttar Pradesh	2	0.57
Shree Cements (Erstwhile Jaypee Group)	**1.5**	**0.52**
Panipat (G), Panipat, Haryana	1.5	0.52
Sinha Group	**1**	**-**
Kalyanpur Cement	**1**	**-**
Kalyanpur Cement, Rohtas, Bihar	1	-
Star Ferro and Cement Ltd	**3.69**	**0.37**
Megha Techhnical & Engineers Pvt. Ltd	**0.7**	**-**
MTEPL-Lumshong, Jaintia Hills, Meghalaya	0.7	-
Star Cement Ltd	**2.99**	**0.37**
CMCL-Hired (G), West Bengal	0.4	-
CMCL-Sonapur (G), Guwahati, Assam	1.8	-
CMCL-Lumshong, Jaintia Hills, Meghalaya	0.79	0.37
Swasata Group	**1.5**	**-**
Swasata Cements Ltd	**1.5**	**-**
Swasata Cements, Purulia, West Bengal	1.5	-
Tata Group	**0.5**	**-**
Tata Chemicals Limited	**0.5**	**-**
Tata Chemicals Cement Division, Mithapur, Gujarat	0.5	-

(Contd.)

Table-1 (Concld.)

Company/ Plant Name	Capacity	Production
Toshali Group	**0.44**	**-**
Toshali Cement Pvt. Ltd	**0.44**	**-**
Toshali Cements, Ampavalli, Koraput, Odisha	0.24	-
Toshali Cements, Bayyavaram (G), Vizag, Andhra Pradesh	0.2	-
UD Group	**0.5**	**-**
JUD Cements	**0.5**	**-**
Jaintia Hills, Jaintia Hills, Meghalaya	0.5	-
UltraTech Cement Ltd	**80.51**	**35.51**
UltraTech Cement Ltd	**70.01**	**33.42**
Aditya, Chittorgarh, Rajasthan	8	4.41
Aligarh (G), Aligarh, Uttar Pradesh	1.3	-
Gujarat Cement Works, Amreli, Gujarat	6.4	4.98
Anantapur, Anantpur, Andhra Pradesh	9	2.98
Arakkonam (G), Vellore, Tamil Nadu	1.1	-
Awarpur, Chandrapur, Maharashtra	6	2.98
Bhatinda (G), Bhatinda, Punjab	1.75	-
Dadri (G), G B Nagar, Uttar Pradesh	1.3	-
Ginigera (G), Koppal, Karnataka	1.3	-
Hirmi, Raipur, Chhattisgarh	2.75	2.48
Hotgi, Solapur, Maharashtra	4.08	2.69
Jafrabad, Amreli, Gujarat	0.5	0.36
Jharsuguda (G), Jharsuguda, Odisha	2.6	-
Kotputli, Jaipur, Rajasthan	4	2.83
Magdalla (G), Surat, Gujarat	0.75	-
Panipat (G), Panipat, Haryana	1.3	-
Rajashree, Kalaburagi, Karnataka	6.1	3.2
Ratnagiri (G), Ratnagiri, Maharashtra	0.48	-
Rawan, Raipur, Chhattisgarh	2.5	2
Reddipalayam, Ariyalur, Tamil Nadu	1.4	1.28
Vikram, Neemuch, Madhya Pradesh	6	3.23
WBCW (G), Burdwan, West Bengal	1.4	-
UltraTech Cement Ltd (Erstwhile Jaypee Group)	**10.5**	**2.09**
Bela, Rewa, Madhya Pradesh	2.6	-
Sewagram, Kachchh, Gujarat	3.2	2.09
Sidhi, Sidhi, Madhya Pradesh	2.3	-
Wanakbori (G), Kheda, Gujarat	2.4	-
Vicat Group	**7.75**	**2.06**
Bharathi Cement	**5**	**2.06**
Kadapa, Andhra Pradesh	5	2.06
Kalburgi Cement	**2.75**	**-**
Gulbarga, Karnataka	2.75	-
Zuari Group	**8.05**	**3.17**
Zuari Cement Ltd	**8.05**	**3.17**
Chennai (G), Chennai, Tamil Nadu	1	
Sitapuram, Nalgonda, Telangana	1.65	0.96
Yeraguntla, Kadapa, Andhra Pradesh	5.4	2.21
Nuvoco Vistas Corp Ltd	**10.4**	**1.34**
(Lafarge Cement)	**10.4**	**1.34**
Arasmeta, Janjgir, Chhattisgarh	1.65	1.34
Jojobera (G), Singhbhum, Jharkhand	4.6	-
Mejia (G), Bankura, West Bengal	1	-
Chittorgarh, Rajasthan	2.6	-
Sonadih, Raipur, Chhattisgarh	0.55	-
Grand Total	**479.35**	**144.78**

Source: Survey of Cement Industry and Directory 2015 and Annual Return in Form 'M' (Erstwhile Form 'O')

Table –2: Capacity, Production and Growth in Cement Industry, 2011-12 to 2015-16

(In million tonnes)

Year	Capacity growth			Production growth		
	Annual capacity	Growth	% Growth	Production	Growth	Growth%
2011-12	306.21	9.73	3.28	230.25	13.97	6.45
2012-13	324.94	18.73	6.11	235.11	4.86	2.11
2013-14	350.00	25.06	7.71	256.04	20.93	8.90
2014-15	356.00	6.00	1.71	276.93	20.89	8.15
2015-16	479.35*	123.35	34.65	283.45	6.52	2.35

Source: *DIPP, Annual Reports,*
** Survey of Cement Industry and Directory 2015 and Annual Return in Form 'M' (Erstwhile Form 'O')*

A large number of mega plants with capacity of one million tonne and above, possessing the latest technological features like roller process, vertical roller mills, process control equipment and efficient pollution control devices have emerged in different parts of the country. The induction of advanced technology has helped the Industry immensely to conserve energy & fuel and thereby save the raw materials substantially.

India is producing different varieties of cements like Ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC), Portland Blast Furnace Slag Cement (PBFSC), Oil-well Cement, Rapid Hardening Portland Cement, Sulphate Resistant Portland Cement (SRPC) and White Cement. BIS covers two types of PPC, viz. IS 1489 (Part1): 1991 (Reaffirmed 2009) Flyash-based and IS 1489 (Part 2):1991 (Reaffirmed 2009) Calcined clay-based. PPC is suitable for all general construction, particularly, for marine & hydraulic construction and other mass concrete structures. Portland Slag Cement (PSC)-IS 455:1989 (Reaffirmed 2009) is particularly useful for marine works. BIS specifies three grades of OPC – (i) IS 269:1989 (Reaffirmed 2008), i.e., 33 grade suitable for all general constructions, particularly for masonry and plastering works (ii) IS 8112:1989 (Reaffirmed 2009), i.e., 43 grade is particularly suitable for high strength concrete work, and (iii) IS 12269:1987 (Reaffirmed 2008), i.e., 53 grade suitable for specialised work, such as, precast concrete, prestressed concrete, long span structures/bridges, tall structures, etc. All these varieties of cement are produced strictly conforming to the BIS specifications for maintaining high quality. The Cement Quality Control Order dated 12 February 2003 issued under the BIS Act ensures quality of cement produced and sold in the market.

Power, coal and freight constitute about 15-20% each of the total production cost of cement while capital cost (interest and depreciation) forms 20-30 per cent. Although the industry is largely under Private Sector, Government controls more than 40% of the cost. Power, coal and freight costs are all regulated by Government bodies, such as, State Electricity Boards, Coal Monopolies and the Railways.

Operating Cost

The cement capacity in the country is mostly concentrated near the main raw material source, i.e., limestone. Other important raw material is coal (0.25 tonnes required per tonne of cement). Many cement plants are situated near the coal belts in eastern Madhya Pradesh, primarily due to two reasons, namely, (i) less freight cost incurred to transport coal, and (ii) inability of domestic coal producers to fulfil supply-requirements of cement plants due to fall in production and prioritised supply to power plants. However, limestone reserves have been the primary consideration in choosing the location of plants. Presence of clusters of capacity and high transportation cost make the cement market regional in nature with the producers supplying cement to areas around the location of the plant.

Power is a major parameter that influences the operating cost. Grid power purchased from SEBs is costlier than captive power from coal-based plants by more than 25-30 per cent. Where conditions are favourable, setting up captive wind power farms has become a realistic option for cement plants.

Coal Distribution

Coal being a low value, bulk product with regional concentration of deposits entails freight costs that constitute a substantial part in the production cost of cement. Though, rail is the predominant form of transport, road transport is

commonly used by plants located close to pitheads. The Government in its notification to the Cement Industry has permitted cement plants to operate their own captive coal mines. Many cement plants have expressed interest in taking up coal blocks on lease and operating the mines for coal. As proposed by the Government, cement is one of the core sectors for which captive mining blocks would be allocated.

As per Cement Manufacture Association's Annual Report 2015-16, inadequate availability of coal to cement industry is a major constrain. The supply of linked coal during 2002-03 was about 69% of total consumption, this has come down to about 23% during the year 2015-16, mainly due to the diversion of coal to the power sector.

Power Availability

The Industry's average energy consumption is estimated to be about 725 kcal/kg clinker thermal energy and 80 kWh/t cement electrical energy. The best thermal and electrical energy consumption presently achieved by the Indian Cement Industry is about 667 kcal/kg clinker and 67 kWh/t cement which are comparable to the best reported figures of 660 kcal/kg clinker and 65 kWh/t cement in a developed country like Japan. Since the controls were lifted, aggregate power requirements have grown rapidly with rising cement capacity without commensurate growth in power generating capacity in the country. To offset the power crisis situation, many cement plants have set-up installations for captive power generation. Further, as part of reform process in Coal Sector, the Government has also permitted 100% FDI in captive coal blocks in Cement Sector along with Power and Steel Sectors to facilitate and augment power availability.

Freight Costs

Logistics in the Cement Sector affect freight costs to a large extent. The basic raw materials for manufacturing cement, such as, limestone and coal are low value high bulk material and, as a result, entail huge freight cost which form the single largest cost component, usually accounting for 33% of the variable costs. During 1990s, the most significant developments were the emergence of big plants and formations of clusters of cement plants. These clusters, typically located far away from the major consumption centres meant that cement has to be transported over very long distances. The Indian Railways transported 105.35 million tonnes cement in 2015-16, merely decreased from 109.8 million tonnes of cement transported in 2014-15, as a part of revenue earning freight traffic. Alternatively, the cost-conscious manufacturers have attempted to use sea route for transportation as sea route is cost-effective and could benefit coast-based manufacturers. Some cement plants have set-up dedicated jetties for promoting bulk transportation and export.

Cost Control

Cement producers of the country have continuously attempted to lower the cost by various methods like:

- improved efficiency by increasing usage of captive power;
- locating units closer to the market place;
- increasing production of blended cement;
- availing of various State incentives like sales tax exemption; power tariff; exemption/ concession (Himachal Pradesh and Tamil Nadu);
- conversion from wet to dry process, wherever possible, depending on quality of limestone; and
- enhanced capacities to achieve economy of scale. (Expansion is the preferred route as setting up new plant costs thrice the cost of expansion).

Environment

Ministry of Environment and Forests has notified the emission standards for cement plants in 1987, which were subsequently revised in February, 2006. In India, the permissible stack dust emissions from various sources for existing cement plants is 1.50 mg/Nm and 100 mg/Nm for plants located in critically polluted areas. However, the limit for new plants in our country is 50 mg/Nm which is at par with some of the developed countries. All large plants do have in place necessary air pollution control equipment to control dust emissions. Thermal power stations use bituminous or sub-bituminous coal and produce large volumes of fly ash. Fly ash is a fine powder recovered from gases created by coal-fired electric power generation. These micron sized earth elements consist primarily of silica, alumina and iron. When mixed with lime and water, the fly ash forms a cementitious compound with properties very similar to portland cement. For producing one tonne of cement about 0.2 tonnes of fly ash can be used. It not only reduces the cost of cement produced by 5 to 10% but also save costs incurred on account of transportation & disposal of materials and in addition it also saves costs by 30 to 40% on land required for the power projects towards ash handling, i.e, a 1,000 MW project requires around 1,000 acres for ash dykes for a 25 year period for storing of fly ash.

At present, about 95 million tonnes fly ash are generated annually. It is estimated that about 32% utility of fly ash can be made in Cement Industry. Promoting use of fly ash would be a viable environment-friendly measure to manufacture Ordinary Portland Cement (OPC) without having to sacrifice the quality.

NTPC has plans to manufacture cement near six of its power plants through joint ventures. Grasim Industries Ltd, Ultra Tech Cement Ltd, Sanghi Cement Ltd, India Cements Ltd, Zuari Cement Ltd and My Home Industries Ltd, among others are learnt to have evinced interest in setting up greenfield cement plants in the vicinity of each 4,000 MW ultra power projects in order to utilise the fly ash that would be generated from them. NTPC has sought Expression of Interest from the interested parties on Built, Own and Operate (BOO)/JV mode using ash from its Thermal Power Plants.

Industrial wastes, such as, petcoke, tar waste and by-products, such as, red mud from aluminium industries, ferrous and non-ferrous slag from steel & other industries, phospho-chalk & phospho-gypsum from fertilizer industries, lime sludge from paper & sugar industries, carbide sludge from carbide industries, phosphorus furnace slag, etc. are now finding use in the manufacture of cement.

Ready-Mix Concrete

Ready-mix Concrete (RMC) is a relatively nascent market in India accounting for only about 0.5% of the demand. RMC is ready-to-use concrete blend of cement, sand & aggregate and water mixed in convenient proportion. It was first launched in Mumbai a few years ago and is gaining ground in other metros in India. RMC is a corollary to bulk handling and transportation of cement. It has several advantages. It is produced under controlled conditions and hence has consistency in quality and it can be directly powered in the required form which would not only save time but also would improve the quality of construction.

POLICY

The Export & Import Policy 2015-20, incorporated in the FTP for cement is free. The import of cement includes portland cement, white cement, aluminous cement, slag cement, super sulphate cement and similar hydraulic cements, whether or not coloured or in the form of clinkers, under ITC (HS) Code 2523 is free.

Development Council for Cement Industry

Development Council for Cement Industry has been set-up under Section 6 of the Industrial (Development & Regulation) Act,1951. The activity of the Council is funded through the cess collected from Cement Manufacturers in terms of the Cement Cess Rules,1993. The Cement Council promotes development of the cement industry by funding development projects in areas of base level activities of National Council for Cement & Building Materials and R&D, improving productivity by reducing cost, optimum utilisation of raw materials, modernisation of cement plants, improvement of environment, standardisation and quality control progress, bulk supply and distribution of cement, training and upgradation of skill in cement industry.

WORLD REVIEW

The cement production in 2015 was estimated at 4,100 million tonnes. China (2,350 million tonnes) was the largest producer in the world, contributing about 57% to the world output, followed by India (300 million tonnes) 7%, USA (84 million tonnes) 2% , Turkey (71 million tonnes) 1.7%,Vietnam (67 million tonnes) 1.64%, Brazil (65 million tonnes) 1.59%, Russia (62 million tonnes) 1.51% and Japan (55 million tonnes) 1% (Table-3).

FOREIGN TRADE

Exports

Export of cement (total) decreased marginally to 6.22 million tonnes in 2015-16 from 6.29 million tonnes in 2014-15. In 2015-16, exports of portland grey cement were 2.28 million tonnes and those of cement clinker 2.85 million tonnes in the total cement exports. Exports of portland white cement and other cements were 34,351 tonnes and 10,62,661 tonnes, respectively. Exports of cement in 2015-16 were mainly to Sri Lanka (50%), Nepal (35%), Kuwait (4%), Mozambique (3%) and Bangladesh (2%) (Tables - 4 to 8).

Imports

Cement imports in 2015-16 increased substantially to 1.36 million tonnes from 1.10 million tonnes in 2014-15. In 2015-16, imports of portland grey cement were 9.50 lakh tonnes, those of cement clinker 2.36 lakh tonnes, other cements 1.60 lakh tonnes and portland white cement about 13 thousand tonnes and the main suppliers in 2015-16 were Pakistan (64%), Bangladesh and UAE (17% each) (Tables- 9 to 13).

Table – 3: World Production of Cement (By Principal Countries)

(In '000 tonnes)

Country	2013	2014	2015
World: Total (rounded)	**4048000**	**4180000**	**4100000**
Brazil	70000	72000	65300
China	2420000	2480000	2350000
Egypt	50000	50000	55000
Germany	31300	32000	-
India	280000	260000	300000
Indonesia	56000	65000	58000
Iran	72000	65000	58600
Italy	22000	22000	-
Japan	57400	53800	54800
Korea, Rep. of	47300	63200	51700
Mexico	34600	35000	-
Pakistan	31000	32000	-
Russia	66400	68400	62100
Saudi Arabia	57000	55000	61900
Thailand	42000	35000	-
Turkey	71300	75000	71400
USA	77400	83200	84300
Vietnam	58000	60500	67400
Other countries	536000	573000	760000

Source: Mineral Commodity Summaries, 2016 & 2017.

Table – 4: Exports of Cement : Total (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**6287580**	**18468589**	**6222434**	**16588894**
Sri Lanka	2660318	8259754	3126843	10347488
Nepal	1399636	3971056	2151668	3456354
Kuwait	21	567	233569	527302
Maldives	35807	156398	109330	476070
Mozambique	2802	9903	177100	408748
Bangladesh	418018	1098567	137267	355873
Tanzania	4114	17232	100827	223922
Bhutan	80505	307298	38013	172869
Yemen Republic	280	2262	24280	91315
Myanmar	159086	548722	23952	87614
Other countries	1526993	4096830	99585	441339

Table – 5: Exports of Cement (Portland Grey) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**1553248**	**5151075**	**2276302**	**7271078**
Sri Lanka	1203077	3920661	1621666	5971337
Maldives	34989	150835	107724	466867
Nepal	211856	693413	414349	352767
Bhutan	57372	219876	24567	135802
Yemen Republic	-	-	24000	88704
Madagascar	17514	57142	24276	77246
China	-	-	29246	59540
Seychelles	12547	53677	13776	57838
Myanmar	700	2467	6804	24122
Reunion	-	-	4864	20464
Other countries	15193	53004	5030	16391

Table – 6: Exports of Cement (Portland White) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**71246**	**536679**	**34351**	**241477**
Nepal	28757	168457	21488	118974
Nigeria	7145	68092	4257	48072
Oman	6524	46840	4284	33460
South Africa	18694	162203	1530	14046
Uganda	318	3040	351	3627
Philippines	2910	22688	362	3078
Bahrain	405	3027	324	2708
Yemen Republic	280	2251	280	2611
Bhutan	53	947	219	2111
Ethiopia	243	2575	189	2072
Other countries	5917	56559	1067	10718

Table – 7: Exports of Cement Clinker (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**3973987**	**10373003**	**2849120**	**7596024**
Sri Lanka	1083627	3050800	1217041	3348635
Nepal	1024911	2671748	966956	2673361
Kuwait	-	-	233422	516818
Mozambique	-	-	177100	408748
Bangladesh	417926	1097143	137258	355548
Tanzania	-	-	98820	217072
Japan	-	-	8000	46258
Bhutan	2228	4300	10484	27920
Singapore	1021	2055	5	993
Netherlands	-	-	4	541
Other countries	1444274	3546957	30	130

Table – 8: Exports of Cement (Others) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**689099**	**2407832**	**1062661**	**1480315**
Sri Lanka	372018	1275838	288024	1026528
Nepal	134112	437438	748875	311252
Myanmar	158345	545904	17052	62700
Kuwait	21	567	147	10484
Germany	302	5565	460	8605
Maldives	802	5274	1545	8248
Bhutan	20852	82175	2743	7036
Italy	300	5451	321	5858
Madagascar	-	-	1820	5596
France	80	1512	245	4590
Other countries	2267	48108	1429	29418

Table – 9: Imports of Cement:Total (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**1100004**	**4948706**	**1358862**	**6117578**
Pakistan	805735	2799689	867774	3257791
Bangladesh	223143	1073477	233656	1116082
UAE	38934	209935	224815	967552
China	8113	341146	7331	361355
Malaysia	104	725	11570	86771
Netherlands	1882	104434	1436	73103
Germany	7365	128232	3326	52292
France	1698	79595	919	49774
Chinese Taipei/ Taiwan	150	48176	155	46343
Croatia	21	765	1146	41543
Other countries	12859	162532	6734	64972

Table – 10: Imports of Cement (Portland Grey) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**865082**	**3063570**	**950287**	**3645653**
Pakistan	791032	2708406	858272	3187425
Bangladesh	73713	354313	88238	438310
Bhutan	310	754	1818	10813
UAE	27	97	1787	8508
Afghanistan	-	-	172	597
Other countries	-	-	-	-

Table – 11: Imports of Cement (Portland White) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**13187**	**111018**	**12597**	**97780**
Pakistan	9485	75928	9502	70365
UAE	3696	34639	2073	20341
Iran	-	-	921	6578
Bangladesh	-	-	100	463
USA	-	-	1	31
Australia	-	-	++	2
Italy	4	354	-	-
China	++	60	-	-
Egypt	2	37	-	-
Other countries	-	-	-	-

Table – 12: Imports of Cement Clinker (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**48551**	**283635**	**235593**	**1047914**
UAE	32550	161455	220687	937324
Malaysia	104	628	11570	86771
Egypt	11144	103625	2738	19675
Iran	-	-	592	4076
USA	23	4382	5	55
Brazil	-	-	1	13
Pakistan	4730	13545	-	-
Other countries	-	-	-	-

Table – 13: Imports of Cement (Others) (By Countries)

Country	2014-15		2015-16 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**173184**	**1490483**	**160385**	**1326231**
Bangladesh	149430	719164	145318	677309
China	8113	341086	7331	361355
Netherlands	1882	104434	1436	73103
Germany	7365	128232	3326	52292
France	1698	79595	919	49774
Chinese Taipei/ Taiwan	150	48176	155	46343
Croatia	21	765	1146	41543
USA	203	43136	41	13027
Hong Kong	-	-	14	5006
Norway	-	-	400	2326
Other countries	4322	25895	299	4153

FUTURE OUTLOOK

The primacy of Cement Industry would continue as cement remains paramount for the development of infrastructure all over the world and no other material would possibly substitute it in the near future. Infrastructure and industrial activity, real estate business and investment in core sectors mainly drive the demand for cement. Some emerging areas for cement demand are concrete roads, concrete canal lining and rural construction (housing). Over 65% demand for cement arises from Construction Sector.

The Government of India has been laying a massive emphasis on infrastructure development, with 100 smart cities, modernisation of 500 cities, affordable housing for all by 2022, cement concreting of national highways, provision of sanitation facilities, etc. all in the pipeline for development over the course of the next years. These all leads to future growth of Indian Cement Industry.

The country is self-sufficient in terms of cement production. Most of the cement plants in India are operated by state-of-the-art technology and with advanced production facilities. The liberalisation policies for Cement Industry enabled achievement of strong growth in the Cement Sector. The Cement Industry has presently ushered in modifications and upgradation in technology, particularly in the energy conservation front.

The Working Group on Cement Industry constituted by the Planning Commission for the 12th Five-Year Plan period has projected a demand growth at the rate of 10.75% per annum during the plan period at an expected 9% GDP growth rate. The Working Group expects that the installed capacity requirement would be 479.3 million tonnes by 2017 and 1,035.3 million tonnes by 2027. The production is estimated at 407.4 million tonnes (with a capacity utilisation of 85%) in 2016-17.

Based on the demand growth projection, the consumption of cement by the end of the 12th Five Year Plan would be between 366.9 million tonnes and 397.4 million tonnes with assumed growth rates of 9.75% to 10.75% during the Plan period.

Reviewing the technology status of the Indian Cement Industry, the Working Group has observed that although the modern cement plants have incorporated the latest technology, yet there is scope for further improvement in the areas of in-pit crushing and conveying, pipe conveyors, co-processing of waste derived/hazardous combustible wastes as fuel, neurofuzzy expert system, cogeneration of power, multi chamber/dome silos, bulk transport of cement, pelletising and shrink wrapping for packing & despatch.

The Working Group has observed that the Cement Industry's average energy consumption is estimated to be about 725 kcal/kg clinker thermal energy and 80 kWh/t cement electrical energy. It is expected that the Industry's average thermal energy consumption by the end of 12th Plan (Year 2016-17) will come down to about 710 kcal/kg clinker and the average electrical energy consumption will come down to 78 kWh/t cement with continued efforts by all concerned. The Working Group has taken into consideration the following alternate energy sources/fuels having good potential in the present context of Indian economics to either partially or fully substitute coal in cement manufacture in the coming years, namely, pet coke, lignite, natural gas, and bio-mass wastes including fruit of Jatropha curcas, Pongamia and Algae. The Report further states that the Cement Industry in India has the potential to utilise the entire hazardous waste generated in the country with indigenous technological intervention.