22 Cement

The cement industry in India after being delicensed in 1991 has shown remarkable growth. India has emerged as the second largest country in the world after China in the production of cement. Cement is a basic construction material in housing, infrastructure and large projects for social development like irrigation dams, hospitals, roads, etc. It has become synonymous with construction and per capita consumption of cement is accepted as an important index of the country's economic growth. The per capita cement consumption in India is 130 kg against the world average of 355 kg. It is lower than several developing countries like Brazil (191 kg), Thailand (366 kg), etc.

In terms of quality, technology, productivity and efficiency, India compares well with the best in the world. The Indian cement industry plays a key role in the national economy, generating substantial revenue for State and Central Governments as well as employment. About 135,000 persons are employed by large cement plants in the country. Cement is the basic building material in India and is used extensively in urban housing, industrial sector and developing infrastructure.

The performance of the industry and prices of cement are monitored regularly by the Government. The Central Government has removed the 16% Countervailing Duty (CVD) and 4% Additional Duty on cement imports recently to check the rising trend in domestic cement prices.

India exported about 3.42 million tonnes cement valued at Rs. 822 crore including 0.43 million tonnes clinker and 0.15 million tonnes white cement in 2007-08 to Qatar, Nepal, Iraq, Yemen, UAE, Sri Lanka, etc.

In 2007-08, there were 140 large cement plants having total installed capacity of 198.30 million tonnes and about 206 operating mini-cement plants having total estimated capacity of 11.10 million tonnes per year. The total installed capacity for cement in the country was thus about 209.40 million tonnes per year. In 2007-08, the annual installed capacity of large cement plants has risen to 198.30 million tpy from 166.73 million tpy in 2006-07. Production of cement by large plants also rose to 168 million tonnes from 156 million tonnes in 2006-07. The production from mini-cement plants was around 6 million tonnes each in 2006-07 and 2007-08. Besides, three cement plants, having a total capacity of 890,000 tonnes per year, produced white cement. Most of these capacities are modern and based on the energy-efficient dry process technology.

There were as many as 85 plants with a million tonnes or more capacity. There was only one central public sector undertaking in the cement sector, i.e., CCI which had 10 operating units, spread over seven States/Union Territories. Except for Bokajan, Rajban and Tandur units, remaining cement plants are lying closed for about a decade or more. There were six large cement plants owned by various State Government Undertakings like Tamil Nadu Cement, Malabar Cements, J&K Minerals Ltd and Mawmluh Cherra Cement Ltd. The annual installed capacities of large cement plants are given in Table-1. Regionwise and Statewise installed capacities and production of large cement plants are given in Table-2.

In 2007-08, about 31.57 million tonnes new capacity has been added in the private sector.

The total production of cement in 2006-07 was 161.66 million tonnes which reached to 174.32 million tonnes in 2007-08, a growth rate of about 8%. In 2007-08, three white cement plants reported an estimated 660,000 tonnes production. The mini-cement plants were meant to tap scattered limestone reserves mostly in Andhra Pradesh, Gujarat, Rajasthan and Madhya Pradesh. The mini cement plant capacities in the above states are 22.72, 6.3, 5.28 and 6.64 lakh tpy, respectively. Data on capacity, production and growth in cement industry are given in Table-3.

Table - 1 : Companywise Annual Installed Capacities, 2007-08 (Large Cement Plants)

Company	Plant	No. of plants	Annual installed capacity (million tonnes)
ACC Ltd	Chaibasa, Chanda, Jamul, Kymore, Lakheri, Madukkarai, Sindri, Wadi, Gagal I & II, Damodar Cement Works, Tikaria (G),Wadi New, Baragarh Cement Works.	13	22.41
Birla Corp. Ltd	Birla Vikas, Satna, Birla Cement, Chanderia, Durgapur (G), Rae Bareli (G), Durga Hitech (G)	7	5.78
CCI Ltd	Adilabad, Akaltara, Bokajan, Charkhi-Dadri, Kurkunta, Mandhar, Neemuch, Rajban,Tandur, Delhi (G)	10	3.85
Andhra Cements	Vizag (G), Nadikude-Durga Cement	2	1.42
J.K. Group	Nimbahera, Mangrol, Gotan, Lakshmi Cement, J.K. Udaipur Udyog	5	8.45
Century Textiles	Century Cement, Maihar Cement, Manikgarh Cement	3	7.80
India Cements	Sankarnagar, Sankaridurg, Chilamkur Works, Dalavoi, Visaka Cement, Yerraguntla, Raasi Cement	7	9.64
Grasim Industries	Rajashree-Malkhed, Rajashree-Hotgi (G), Vikram Cement, Aditya Cement, Grasim Cement-Raipur, Grasim South, Grasim-Bhatinda (G), Grasim Dadri (G), Grasim Panipat (G)	9	18.05
Tamil Nadu Cement	Alangulam, Ariyalur	2	0.90
Madras Cements	Ramasamyraja Nagar, Jayantipuram, Alathiyur Works I & II	3	6.32
Mehta Group	Saurashtra Cement, Gujarat Sidhee Cement	2	2.36
HMP Cements	Porbandar, Shahabad	2	0.67
Ultra Tech Cement	Ultra Tech-ACW, Ultra Tech-JCW (G), Ultra Tech-HCW, Ultra Tech Gujarat, Ultra Tech-APCW, Jafrabad, Magdalla (G), Ratnagiri (G), Ultra Tech-ARCW (G), Ultra Tech-WBCW (G)	10	18.2
Gujarat Ambuja Group	Ambuja Cement, Gajambuja Cement, Ambuja Cement-Himachal Pradesh, Ambuja Cement Ropar (G); Ambuja Cement Rabriyawas, Ambuja Cement-Bhatinda (G), Maratha Cement; Ambuja Cement Roorkee (G); Ambuja Cement Bhatapara, Ambuja Cement Sankrail (G); Ambuja Cement Magdella (G); Ambuja Cement Farakka (G)	12	18.3
Jaypee Cement Ltd	Jaypee Rewa, Jaypee Bela, Jaypee Sadva Khurd (G), Jaypee Ayodhya (G), Dalla, Chunar (G), Jaypee Panipat (G)	7	9.93
Kesoram Industries	Kesoram Cement, Vasvadatta Cement	2	4.85
Mangalam Cement	Mangalam Cement, Neershree Cement	2	1.50
Mysore Cement	Mysore Cement, Diamond Cement I & II, Diamond Cement-Jhansi (G)	3	2.10
Orient Paper Industries	Orient Cement, Orient Cement-Jalgaon (G)	2	3.40
Penna Cement Industries Ltd	Penna Tadippatri I & II, Penna Ganeshpahad, Penna-Boyareddypalli	3	4.50
Lafarge India Ltd	Arasmeta, Sonadih, Jojobera (G)	3	5.15
Malabar Cements	Malabar Cements, Malabar Cements (G)	2	0.62
Binani Cement	Binani Cement Sirohi, Binani Cement Sikar (G)	2	6.00
Rain Comdt. Ltd	Rain Comdt. Unit I, Rain Comdt. Unit II LN-1	2	1.50

Contd.

Table-1 (Concld.)

Company	Plant	No. of plants	Annual installed capacity (million tonnes)
Cement Manu. Co. Ltd	Cement Manu. Co. Ltd, Megha T&E (P) Ltd (G)	2	1.06
Chettinad Cement	Chettinad-Karur & Chettinad Karikkali	2	1.80
Zuari Cement Ltd	Zuari Cement, Sri Vishnu Cement	2	3.40
Others*	Shree Cement, Prism Cement, Shree Digvijay-Sikka, Indo-Rama Cement (G), Lemos Cement, Kistna, Bagalkot Cement & Ind. Ltd, Dalmia Cement, OCL India Ltd, J&K Ltd, Kalyanpur Cement, KCP Ltd, Mawmluh Cherra, Panyam Cements, Sone Valley, Meghalaya Cements Ltd, Shriram Cements, Sanghi Industries Ltd, My Home Industries.	19	28.34
	Grand Total	**140**	**198.30**

(G): Grinding Unit.
Source: *Cement Manufacturers' Association, New Delhi.*
** In addition, the following plants produced white cement:*
(i) Grasim Industries Ltd (White Cement Division), Kharia Khangar, Jodhpur district, Rajasthan (560,000 tpy);
(ii) J.K. White Cement Works, Gotan, Nagaur district, Rajasthan (300,000 tpy); and
(iii) Travancore Cements Ltd (a Kerala Government Undertaking), Muhamma, Allappuzha district, Kerala (30,000 tpy).

Table - 2 : Regionwise/Statewise Installed Capacities and Production, 2006-07 and 2007-08 (Large Cement Plants)

(In million tonnes)

Region/State	No. of plants	Annual Installed capacity	Production 2006-07	Production 2007-08
Northern Region	**28**	**47.47**	**33.01**	**36.46**
Haryana	3	2.47	Nil	0.05
Punjab	3	4.75	4.65	4.72
Rajasthan	16	32.35	22.14	25.75
Himachal Pradesh	3	6.20	5.15	5.55
Delhi	1	0.50	Nil	Nil
Jammu & Kashmir	1	0.20	0.16	0.16
Uttarakhand	1	1.00	Nil	0.23
Eastern Region	**29**	**28.99**	**22.07**	**23.85**
Assam	1	0.20	0.13	0.13
Meghalaya	4	1.55	0.40	1.27
Bihar	1	1.00	0.59	0.54
Jharkhand	5	5.14	4.36	4.59
Orissa	3	3.76	3.64	3.89
West Bengal	6	5.33	3.52	3.56
Chhattisgarh	9	12.01	9.43	9.87
Southern Region	**46**	**61.84**	**50.15**	**54.23**
Andhra Pradesh	23	29.38	22.92	24.96
Tamil Nadu	13	18.23	16.48	17.92
Karnataka	8	13.62	10.13	10.77
Kerala	2	0.62	0.62	0.57
Western Region	**19**	**31.84**	**27.30**	**28.76**
Gujarat	11	18.74	15.22	15.40
Maharashtra	8	13.10	12.08	13.36
Central Region	**18**	**28.16**	**24.04**	**25.02**
Uttar Pradesh	8	8.27	5.14	5.30
Madhya Pradesh	10	19.89	18.9	19.72
Grand Total	**140**	**198.30**	**155.66**	**168.31**

Figures rounded off.
Source : *Cement Manufacturers' Association, New Delhi.*

Table - 3 : Capacity, Production and Growth in Cement Industry, 2004-05 to 2007-08

(In million tonnes)

Year	Capacity growth			Production growth		
	Annual capacity	Growth	% Growth	Production	Growth	% Growth
2004-05	167.36	4.36	2.67	133.57	10.07	8.15
2005-06	170.90	3.54	2.12	147.81	14.24	10.66
2006-07	177.83	6.93	4.06	161.66	13.85	9.37
2007-08	209.40	31.57	17.75	174.32	12.66	7.83

Source: *Annual Reports of Ministry of Commerce and Industry (Dept. of Industrial Policy & Promotion) 2005-06, 2006-07and 2007-08; Cement Manufacturers' Association.*

Keeping pace with the physical growth of the industry, tremendous strides have been made in technological upgradation and assimilation of latest technology. Upgrading by converting wet process plants to semi-dry and full dry process has resulted in economy of fuel and power consumption. Wet process capacity which accounted for 97% in 1950 was brought down to 3% by 2005. Dry process accounted for 96% and semi-dry process 1 per cent.

A large number of mega plants with capacity of one million tonnes 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 and fuel and to save substantially the raw materials.

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(Part 1);1991 Flyash-based and IS 1489 (Part 2):1991 Calcined clay-based. PPC is suitable for all general construction particularly useful for marine & hydraulic construction and other mass concrete structures. Portland Slag Cement (PSC)-IS 455:1989 (Reaffirmed 2000) is particularly useful for marine works. BIS specifies three grades of OPC (i) IS 269:1989 (Reaffirmed 2004) i.e. 33 grade suitable for all general constructions particularly for masonry and plastering works (ii) IS 8112:1989 (Reaffirmed 2000) i. e. 43 grade is particularly suitable for high strength concrete work, and (iii) IS 12269:1987 (Reaffirmed 2004) 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. Some cement plants have set up dedicated jetties for promoting bulk transportation and export.

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 tonne required for 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 supply complete requirement of cement plants due to fall in production and prioritised supply to power plants. However, limestone reserves have been the primary consideration in location of plants. Presence of clusters of capacity and the high transportation cost make the cement market regional in nature with the producers supplying cement to areas around the location of the plant.

Operating Cost

Power, coal and freight constitute about 15-20% each of the total cement cost while capital cost (interest and depreciation) forms 20-30 percent. 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.

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 percent. Where conditions are favourable, setting up captive wind power farms has become a realistic option for cement plants with operating cost at Re.0.50 per unit (kWh) power excluding capital cost, interest and depreciation. Madras Cements Ltd which has 65 MW wind power capacity, has plans to enhance it to 125 MW. Besides, the company is in the process of setting up a 2 million tpy capacity cement plant in Tamil Nadu with wind power, in addition to its 72 MW coal-based captive power plant.

Coal Distribution

Coal being a low value, bulky product with regional concentration of deposits entails incurrence of freight costs that constitute a substantial part in the final cost of cement. Rail is the predominant form of transport with road transport 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.

Power Availability

New cement plants are power-efficient requiring 90-100 kWh power per tonne as against the average 115 kWh. Some plants like Madras Cement reported as low as 70 kWh consumption per tonne of cement. 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 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 73.13 million tonnes cement in 2006-07 as against 61.19 million tonnes in 2005-06, 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.

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. A new plant costs thrice the cost of expansion).

Environment

About 102 utility thermal power stations, in addition to several captive power plants use bituminous or sub-bituminous coal and produce large volumes fly ash. Fly ash is a fine glass like 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. One tonne of cement can be produced using about 0.2 tonnes of fly ash. It not only reduces the cost of cement using fly ash by 5 to 10% but also saves on transportation & disposal of materials and 30 to 40% of land required for the power projects towards ash handling. 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 is being 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 an environment-friendly measure without sacrificing the quality of OPC.

Reliance Power Ltd (RPL) is understood to have plans for setting up a 20 million tpy cement plant near Satna in Madhya Pradesh. NTPC also is learnt to have plans to manufacture cement near six of its power plants through joint ventures. Grasim Industries Ltd, Ultratech Cement Ltd, Sanghi Cement Ltd, India Cement Ltd, Zuari Cement Ltd and My Home Industries Ltd, among others are learnt to have evinced interest to set up greenfield cement plants in the vicinity of 4,000 MW each ultra power projects in order to utilise the fly ash that would be generated from them.

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

Ready-Mix Concrete Industry

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 and 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, saving time and improving the quality of construction.

POLICY

Foreign Trade Policy (FTP) for 2004-09 was notified on 31.8.2004 and made effective from 1.9.2004. The amended Export and Import Policy incorporated in the FTP and effective from 1.4.2008, freely allows the import of cement clinkers, ordinary portland cements, portland pozzolana cement, portland slag cement, white and coloured cements, aluminous cement, etc. under heading no. 2523. However, the exports of the cements, clinkers, etc. under the said heading are prohibited, i.e. not permitted to be exported, vide Notification dated 11.4.2008.

Development Council for Cement Industry

Development Council for Cement Industry has been set up under Section 6 of the Industrial (Devlopment & 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 providing funds for 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 upgradtion of skill in cement industry.

During 2007-08, the Council received an allocation of Rs 3.50 crore cess for making expenditure on the above activities.

WORLD REVIEW

The cement production in 2007 was estimated at 2,600 million tonnes. China (1,300 million tonnes) was the largest producer in the world, contributing about 50% to the world output, followed by India (174 million tonnes), USA (96 million tonnes) and Japan (70 million tonnes) (Table-4).

In a significant development, Binani Cements is understood to have acquired 40% stake in the Chinese Company - Shandong Rongan Group Co. Ltd - with 0.4 million tpy cement capacity. Binani Cements is to invest $100 million in the company and raise holding to 70% . Pakistan plans to supply 15 million tonnes cement annually to India after quality certification process is completed. Chinese companies are also seeking approval to export cement to India.

Table - 4 : World Production of Cement (By Principal Countries)

(In '000 tonnes)

Country	2005	2006(e)	2007(e)
World : Total (rounded)	**2310000**	**2550000**	**2600000**
Brazil	36700	39500	40000
China	1040000	1200000	1300000
Egypt	29000(e)	29000(e)	29000
France	21300	21000(e)	21000
Germany	30600	33400	34000
India*	145000(e)	155000(e)	160000
Indonesia	37000(e)	34000(e)	35000
Iran	32700	33000(e)	34000
Italy	46400	43200	44000
Japan	68000	69900	70000
Korea, Republic of	51400	55000	55000
Mexico	36000(e)	40600	41000
Russia	48700	54700	59000
Saudi Arabia	26100	27100	28000
Spain	50300	54000(e)	50000
Thailand	37900	39400	40000
Turkey	42800	47500	48000
USA**	101000	99700	96400
Vietnam	29000	32000	32000
Other countries (rounded)	400000(e)	442000(e)	390000

Source: *Mineral Commodity Summaries, 2007 and 2008.*

** India's cement production in 2005-06, 2006-07 and 2007-08 was 147.81 million, 161.66 million and 174.32 million tonnes, respectively.*

*** Includes Puerto Rico*

FOREIGN TRADE

Exports

Exports of cement (total) decreased to 3.42 million tonnes in 2007-08 from 4.82 million tonnes in 2006-07. Portland grey cement had a share of 82% and cement clinker 12% in the total cement exports. Portland white cement and other cements together had a 6% share. Exports of cement in 2007-08 were mainly to Qatar (30%), Nepal (21%), Iraq (20%) and Yemen Republic (12%) (Tables - 5 to 9).

Imports

Cement imports in 2007-08 increased to 6.2 lakh tonnes from 2.12 lakh tonnes in 2006-07. Grey cement had a share of 61% in the total cement imports in 2007-08 followed by cement clinker (28%), other cements 10% and white cement (<1%). Main suppliers in 2007-08 were Pakistan (61%), Bangladesh (9%), Indonesia (8%), China and Japan (6% each) (Tables - 10 to 14).

Table - 5 : Exports of Cement : Total (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**4816159**	**11473982**	**3422078**	**8220944**
Qatar	298173	631744	1020049	2350505
Nepal	766267	1988728	711648	1966611
Iraq	1181936	3208282	668592	1688882
Yemen Republic	630543	1381757	402180	713984
UAE	641479	1356110	104598	242977
Djibouti	2377	8623	48387	204878
Sri Lanka	414087	841558	99620	202336
Oman	84071	139983	49184	89986
Bangladesh	133437	411178	4800	13467
Kuwait	422954	891395	-	-
Other countries	240835	614624	313020	747318

Table - 6 : Exports of Cement (Portland Grey) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**3960772**	**9417378**	**2797357**	**6219820**
Qatar	268987	578671	998589	1983901
Iraq	1141336	3126731	668592	1688882
Nepal	306008	851699	274823	775957
Yemen Republic	603214	1314169	401759	713454
Djibouti	2050	6901	48140	203539
Sri Lanka	361140	727206	98134	197716
UAE	562389	1177227	76886	168232
Oman	84044	139860	15900	39059
Bangladesh	47410	206084	30	63
Kuwait	371795	801094	-	-
Other countries	212399	487736	214504	449017

Table - 7 : Exports of Cement (Portland White) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**143014**	**442198**	**147527**	**781675**
Qatar	1186	5087	21460	366604
Somalia	-	-	40000	123331
Nepal	22871	69395	17068	78422
UAE	24184	91966	18781	65530
South Africa	11038	53865	12365	50502
Nigeria	4972	23464	5437	24108
USA	1148	5410	7875	15033
Kenya	1740	7484	2021	8214
Sri Lanka	39947	88434	1372	4477
Yemen Republic	27329	67588	6	29
Other countries	8599	29505	21142	45425

Table - 8 : Exports of Cement Clinker (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**628144**	**1469353**	**427632**	**1091698**
Nepal	391567	1026538	388552	1026398
Oman	-	-	33000	49995
Bangladesh	84317	200544	4390	11094
Netherlands	-	-	1518	3905
Sri Lanka	13000	25918	114	143
Iraq	25000	42323	-	-
Kuwait	33000	45445	-	-
Mauritius	216	617	-	-
Qatar	28000	47986	-	-
UAE	53000	79842	-	-
Other countries	44	140	58	163

Table - 9 : Exports of Cement (Others) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**84229**	**145053**	**49562**	**127751**
Nepal	45821	41096	31205	85834
Maldives	4879	16680	8281	29007
UAE	1906	7075	8931	9215
Liberia	-	-	240	977
Kenya	361	1556	126	725
Saudi Arabia	588	1284	93	544
Baharain	411	1475	-	-
Iraq	11200	26801	-	-
Kuwait	18159	44856	-	-
Mauritius	65	942	-	-
Other countries	839	3288	686	1449

Table - 10 : Imports of Cement : Total (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**211771**	**654019**	**621474**	**2181608**
Pakistan	1625	6761	379295	1212065
Morocco	-	-	18313	236629
Bangladesh	20216	61622	56768	218097
China	64929	230503	38771	141626
Indonesia	85338	198245	46727	113625
Japan	30100	64123	37616	95017
France	909	22210	993	18734
Netherlands	601	25431	399	14690
UAE	3135	11686	3016	13212
Other countries	4918	33438	5952	38300
Unspecified	-	-	33624	79613

Table - 11 : Imports of Cement (Portland Grey) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**10354**	**30840**	**381586**	**1240441**
Pakistan	1625	6761	340916	1084868
Bangladesh	8358	23060	39834	152616
Bhutan	315	798	586	1871
UAE	56	221	-	-
Unspecified	-	-	250	1086

Table - 12 : Imports of Cement (Portland White) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**995**	**5159**	**2678**	**15265**
UAE	952	4452	1895	8176
Germany	-	-	408	4121
China	-	-	315	1876
UK	40	689	60	1092
Singapore	3	18	-	-

Table - 13 : Imports of Cement Clinker (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**182030**	**450130**	**174015**	**606887**
Morocco	-	-	18313	236629
Indonesia	85338	198215	46727	113625
Japan	30000	61086	37250	86183
China	62101	176668	35627	84287
Malaysia	2592	7965	2667	7469
Pakistan	-	-	51	149
Spain	-	-	6	18
Nepal	150	410	-	-
UAE	1849	5786	-	-
Unspecified	-	-	33374	78527

Table - 14 : Imports of Cement (Others) (By Countries)

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**18392**	**167890**	**63195**	**319015**
Pakistan	-	-	38328	127048
Bangladesh	11858	38562	16934	65481
China	2828	53835	2829	55463
France	909	22210	993	18734
Netherlands	601	25431	399	14690
Japan	100	3037	366	8834
USA	45	2614	728	6600
Germany	322	4902	273	5850
UAE	278	1227	1121	5036
Oman	702	3793	405	2009
Other countries	749	12279	819	9270

FUTURE OUTLOOK

The cement industry is vital for the development of infrastructure all over the world as no other material is likely to be its substitute in the near future. Infrastructure and industrial activity, real estate business and investment in core sectors mainly drive the demand for cement. Some emerging markets for cement demand are

concrete roads, concrete canal lining and rural construction (housing). Over 65% demand for cement arises from construction sector.

The country is self-sufficient in cement. Most of the cement plants in India have the state-of-the-art technology and production facilities. The liberalisation policies for cement industry have helped in achieving the strong growth of the cement sector. Cement industry is going ahead with a modification and upgradation of technology particularly in energy conservation.

The Working Group on Cement Industry constituted by the Planning Commission for the 11th Five-Year Plan period has projected a demand growth at the rate of 11.5% per annum during the plan period at an expected 9% GDP growth rate. The cement capacity during 11th plan period is projected as additional 112 million tpy - 80 million from greenfield plants and 32 million through brownfield expansion and technology upgradation. As per the report of the Working Group, the cement capacity and production by the end of 11th Plan are estimated at 320 million tonnes and 269 million tonnes per annum, respectively, with a capacity utilisation of 90 percent. An investment of Rs.52,400 crore would be required to attain the targeted capacity addition. The Working Group report also seeks regulatory support for creating framework for co-processing of wastes, co-generation of power and enhanced support to R & D activities to align the technology regime with the best of the world. The report also emphasises the importance of bulk transportation of cement, use of ready - mix concrete and reduction of taxes and levies on cement. Transportation of cement in bulk is devoid of seepage, pilferage and is environment- friendly. Only two rail bulk cement terminals (Kalamboli and Bangalore) and three port-based bulk cement terminals (Mumbai, Surat and New Mangalore) have been set up. In India, only 5% production accounts for bulk transport against 70% world over.

The Government has identified following thrust areas for improving demand for cement:

i) Further push to housing development programmes;
ii) Promotion of concrete highways and roads;
iii) Use of ready-mix concrete in large infrastructure projects; and
iv) Construction of concrete roads in rural areas under Prime Minister's Gram Sadak Yojana.

A study on global competitiveness of the Indian cement industry has highlighted certain difficulties faced by the industry. The removal of these difficulties can help the industry to improve its performance further.

The construction of roads would increase the demand for cement further. The project to develop and upgrade road connectivity to all the 12 major ports in the country will also generate demand for cement. Connectivity of the ports through high quality roads to other centres of economic activity is crucial for speedy movement of goods to and from the ports.

Favourable and low interest housing finance schemes and various income tax concessions announced in this context have given fillip to the house building activities. If such stimulation is continued, it will boost up the future demand for cement in the country.

The housing sector, by a rough estimate, can consume over 50 million tonnes cement to help clear the backlog. The rural infrastructure that includes irrigation facilities, storage, market yards & mandies, telecommunications and rural electrification would also demand substantial quantity of cement. As compared to many other sectors of the national economy, the cement industry is thus favourably placed for a bright future.