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.

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. Cement is the basic building material in India and is used extensively in urban housing, industrial sector and developing infrastructure.

India exported about 2.69 million tonnes cement valued at Rs. 666 crore including 1.01 million tonnes clinker and 0.08 million tonnes white cement in 2009-10 to Nepal, Yemen Rep. Qatar, Sri Lanka, Iraq, etc.

In 2009-10, there were 172 large cement plants having total annual installed capacity of 270.77 million tonnes in addition to mini-cement plants having total estimated capacity of 6 million tonnes per annum. The total installed capacity for cement in the country was thus about 276.77 million tonnes per annum. In 2009-10, the annual installed capacity of large cement plants has risen by 51.26 million tpy to 270.77 million tpy from 219.51 million tpy in 2008-09. Production of cement by large plants also rose to an estimated 200.95 million tonnes from 181.61 million tonnes in 2008-09. The production from mini-cement plants was around 4 million tonnes each in 2008-09 and 2009-10. Besides, 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 process technology.

There were as many as 112 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 five large cement plants owned by various State Government Undertakings like Tamil Nadu Cement, Malabar Cements and Mawmluh Cherra Cement Ltd. The Jammu & Kashmir Minerals' cement plant was closed. 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.

The total production of cement in 2008-09 was 185.61million tonnes which reached to about 200.95 million tonnes in 2009-10, a growth of about 8.3% over the preceding year. In 2009-10, the annual installed capacity of three white cement plants was 9.90 lakh tonnes. Out of these, major producer J.K. White Cement Works Ltd produced 3.01 lakh tonnes white cement. The mini-cement plants were meant to tap scattered limestone reserves, mostly in Andhra Pradesh, Gujarat, Rajasthan and Madhya Pradesh.

Data on overall capacity, production and growth in cement industry are given in Table-3.

Table – 1 : Companywise Annual Installed Capacities, 2009-10
(Large Cement Plants)

Company	Plant	No. of plants	Annual installed capacity (million tonnes)
ACC Ltd	Chaibasa, Chanda, Jamul, Kymore, Lakheri, Thondebhavi, Madukkarai, Sindri, Wadi, Gagal I & II, Damodar Cement Works, Tikaria (G),Wadi New, Bargarh Cement Works, Kudithini	16	27.00
Birla Corp. Ltd	Birla Vikas & Satna, Birla Cement & Chanderia, Durgapur (G), Rae Bareli (G), Durga Hitech (G)	5	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, Muddapur, Lakshmi Cement, Lakshmi Cement-Kalol (G), J.K. Udaipur Udyog	7	13.17
Century Textiles	Century Cement, Maihar Cement, Manikgarh Cement	3	7.80
India Cements	Sankarnagar, Sankaridurg, Chilamkur Works, Dalavoi, Visaka Cement, Yerraguntla, Raasi Cement, Vallur(G), Parli(G)	9	14.05
Grasim Industries	Rajashree-Malkhed, Rajashree-Hotgi (G), Vikram Cement, Aditya Cement I & II, Grasim Cement-Raipur, Grasim South, Grasim-Bhatinda (G), Grasim Dadri (G), Grasim Panipat (G) Grasim Cement-Kotputli, Grasim Cement-Aligarh(G)	11	25.65
Tamil Nadu Cement	Alangulam, Ariyalur	2	0.90
Madras Cements	Ramasamyraja Nagar, Jayantipuram, Alathiyur Works I & II, Ariyalur, Uthiramerur(G), Salem(G), Kolaghat(G)	7	12.72
Mehta Group	Saurashtra Cement, Gujarat Sidhee Cement	2	2.70
HMP Cements Ltd	Porbandar, Shahabad	2	0.67
Ultra Tech Cement Ltd	Ultra Tech-ACW, Ultra Tech-JCW (G), Ultra Tech-HCW, Ultra Tech Gujarat, Ultra Tech-APCW I & II, Jafrabad, Magdalla (G),Ratnagiri (G), Ultra Tech-ARCW (G), Ultra Tech-WBCW (G) Ultra Tech-Ginigera (G)	11	23.10
Ambuja Cements Ltd	Ambuja Cement, Gajambuja Cement, Ambuja Cement-Himachal Pradesh (2), 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)	13	22.00
Jaypee Cement Ltd	Jaypee Rewa, Jaypee Bela, Jaypee Sadva Khurd (G), Jaypee Ayodhya (G), Bhilai (Clinker), Dalla, Chunar (G), Jaypee Panipat (G), Jaypee Sidhi, Jaypee Kutch, Jaypee Wanakbori (G), Jaypee Roorkee(G), Jaypee Bagheri, Jaypee Baga	14	17.15

(Contd.)

Table-1 (Concld.)

Company	Plant	No. of plants	Annual installed capacity (million tonnes)
Kesoram Industries	Kesoram Cement, Vasvadatta Cement	2	7.25
Mangalam Cement	Mangalam Cement, Neer Shree Cement	2	2.00
Orient Paper Industries	Orient Cement, Orient Cement-Jalgaon (G)	2	5.00
Penna Cement Industries	Penna Tadippatri I & II, Penna Ganeshpahad, Penna-Boyareddypalli Ltd, Penna -Tandur	4	6.50
Lafarge India (P) Ltd	Arasmeta, Sonadih, Jojobera (G), Mejia (G)	4	6.55
Malabar Cements	Malabar Cements, Malabar Cements (G)	2	0.62
Binani Cement	Binani Cement Sirohi, Binani Cement Sikar (G)	2	6.25
Rain Comdt. Ltd	Rain Comdt. Unit I, Rain Comdt. Unit LN-1, Rain Comdt. Unit LN-2	3	4.00
OCL India Ltd	OCL India-Rajgangpur, OCL India-Kapilas (G)	2	5.35
Dalmia Cements	Dalmia-Dalmiapuram, Dalmia-Kadapa, Dalmia - Ariyalur	3	9.00
Cement Manu. Co. Ltd	Cement Manu. Co. Ltd, Megha T&E (P) Ltd (G)	2	1.06
Chettinad Cement	Chettinad-Karur, Chettinad Karikkali, Chettinad-Ariyalur	3	8.20
Zuari Cement Ltd	Zuari Cement, Sri Vishnu Cement	2	3.40
Heidelberg Cement(I)Ltd,	HCIL - Ammansandra, Damoh, Jhansi (G), Dolvi (G)	4	3.10
Shri Cement	Shri - Beawar, Ras, Khushkhera(G), Suratgarh(G), Roorkee(G)	5	12.00
Others*	Shree Digvijay-Sikka, Khyber Inds. (P) Ltd, Prism Cement, Lemos Cement, Kistna, Bagalkot Cement & Ind. 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.	16	13.37
	Grand Total	**172**	**270.77**

Figures rounded off.

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 (400,000 tpy); and

(iii) Travancore Cements Ltd (a Kerala Government Undertaking), Muhamma, Allappuzha district, Kerala (30,000 tpy).

(G): *Grinding Unit.*

Table – 2 : Regionwise/Statewise Installed Capacities and Production, 2008-09 and 2009-10 (Large Cement Plants) *

(In million tonnes)

Region/State	No. of plants	Annual Installed capacity 2009-10	Production 2008-09	Production 2009-10
Northern Region	**29**	**48.77**	**41.20**	**34.14**
Haryana	3	2.47	1.06	2.03
Punjab	1	1.75	4.58	1.74
Rajasthan	17	38.57	29.38	29.74
Himachal Pradesh	3	1.95	5.37	0.33
Delhi	1	0.50	Nil	Nil
Jammu & Kashmir	2	0.53	0.14	0.16
Uttarakhand	2	3.00	0.65	0.14
Eastern Region	**24**	**27.09**	**26.00**	**21.39**
Assam	1	0.20	0.13	0.15
Meghalaya	4	1.55	1.45	1.54
Bihar	1	1.00	0.60	0.68
Jharkhand	3	3.76	4.61	3.46
Odisha	3	6.35	4.84	4.01
West Bengal	5	4.80	3.82	2.78
Chhattisgarh	7	9.43	10.56	8.77
Southern Region	**54**	**92.11**	**59.90**	**59.29**
Andhra Pradesh	26	44.62	28.15	29.44
Tamil Nadu	18	32.08	19.02	20.86
Karnataka	8	14.79	12.13	8.57
Kerala	2	0.62	0.60	0.42
Western Region	**18**	**28.62**	**28.46**	**20.84**
Gujarat	11	16.82	15.21	11.49
Maharashtra	7	11.80	13.24	9.35
Central Region	**18**	**26.01**	**26.05**	**25.09**
Uttar Pradesh	8	7.83	6.03	5.88
Madhya Pradesh	10	18.18	20.01	19.21
Grand Total	**143**	**222.60***	**181.61**	**160.75***

Source: *Cement Manufacturers' Association, New Delhi.Figures rounded off individually, totals may not add up*
** Excluding ACC Ltd, having annual installed capacity 26.17 million tonnes (production of cement 21.38 million tonnes during 2009) and Ambuja Cements Ltd. having annual installed capacity of 22 million tonnes (production of cement 18.83 million tonnes) in 2009. The 2008-09 data, however, includes ACC Ltd and Ambuja Cements Ltd.*

Table – 3 : Capacity, Production and Growth in Cement Industry, 2006-07 to 2009-10

(In million tonnes)

Year	Capacity growth: Annual capacity	Capacity growth: Growth	Capacity growth: % Growth	Production growth: Production	Production growth: Growth	Production growth: % Growth
2006-07	177.83	6.93	4.06	161.66	13.85	9.37
2007-08	209.40	31.57	17.75	172.31	10.65	6.58
2008-09	230.61	21.21	10.13	185.61	13.30	7.72
2009-10	276.77	46.16	20.02	204.95[e]	19.34	10.42

Source: *Cement Manufacturers' Association, ACC Ltd and Ambuja Cements Ltd.*

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 & 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 Fly ash-based and IS 1489 (Part 2):1991 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 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.

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 93.15 million tonnes cement in 2009-10 as against 86.24 million tonnes in 2008-09, 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 of 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. For producing one tonne of cement about 0.2 tonnes of fly ash can be used. 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 is also 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 2009-14 was announced on 27.08.2009 and came into force w.e.f. 27.08.2009. The Export & Import Policy incorporated in the FTP for cement is free. The import of cement includes porland 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. The export of cement is also free.

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 upgradation of skill in cement industry.

WORLD REVIEW

The cement production in 2009 was estimated at 2,800 million tonnes. China (1,400 million tonnes) was the largest producer in the world, contributing about 50% to the world output, followed by India (180 million tonnes), USA (73 million tonnes) and Japan (60 million tonnes) (Table-4).

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

(In '000 tonnes)

Country	2007	2008	2009
World:Total(rounded)	2770000^{e}	2840000^{e}	2800000
Brazil	46400	51900	53000
China	1350000	1390000	1400000
Egypt	38400	40000	40000
France	22300^{e}	21700	21000
Germany	33400	33600	33000
India**	170000^{e}	170000^{e}	180000
Indonesia	36000^{e}	37000^{e}	37000
Iran	36000^{e}	44400	45000
Italy	47500	43000	43000
Japan	67700	62800	60000
Korea, Republic of	57000	53900	53000
Mexico	40700	47600	45000
Pakistan	26000^{e}	39000^{e}	40000
Russia	59900	53600	55000
Saudi Arabia	30400	31800	32000
Spain	54500^{e}	42100	42000
Thailand	35700	35600^{e}	35000
Turkey	49500	51400	51000
USA*	96500	87600	72800
Vietnam	36400^{e}	37000^{e}	37000
Other countries(rounded)	437000^{e}	459000^{e}	450000

Source: *1. Mineral Commodity Summaries, 2009 & 2010.*
** Includes Puerto Rico.*
*** India's cement production in 2007-08, 2008-09 and 2009-10 was 172.31 million tonnes, 185.61 million tonnes and 204.95$^{(e)}$ million tonnes respectively.*

FOREIGN TRADE

Exports

Exports of cement (total) decreased to 2.69 million tonnes in 2009-10 from 3.26 million tonnes in 2008-09. In 2009-10, exports of portland grey cement were 1.48 million tonnes and those of cement clinker 1.01 million tonnes in the total cement exports. Exports of portland white cement and other cements were 83.2 thousand tonnes and 1.15 lakh tonnes, respectively. Exports of cement in 2009-10 were mainly to Nepal (50%), Yemen Republic (10%), Sri Lanka and Qatar (8% each), & Iraq (7%) (Tables - 5 to 9).

Imports

Cement imports in 2009-10 increased to 2.11 million tonnes from 1.03 million tonnes in 2008-09. In 2009-10, imports of grey cement were 7.3 lakh tonnes, those of cement clinker 1.26 million tonnes, other cements 1.1 lakh tonnes and white cement about 19 thousand tonnes. Main suppliers in 2009-10 were Pakistan (31%), China (27%), Japan (18%), Bangladesh (8%), Indonesia and Rep. of Korea (5% each) (Tables - 10 to 14).

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

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**3260261**	**8809436**	**2689485**	**6657266**
Nepal	721438	1894684	1351941	3416817
Yemen Rep.	373555	988426	272256	599359
Iraq	463703	1312907	175150	474169
Sri Lanka	98379	264150	206250	442859
Qatar	488148	1273007	207289	442424
Oman	74266	222962	91940	213126
UAE	470834	1279074	50636	157719
South Africa	11057	57126	28079	115625
Sudan	144097	381711	31386	92532
Kuwait	204900	511299	–	–
Other countries	209884	624090	274558	702636

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

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**2254216**	**6140203**	**1478108**	**3823614**
Nepal	229597	646417	439989	1388465
Yemen Rep.	373555	988426	251454	559409
Iraq	463703	1312907	175150	474169
Qatar	402421	1058221	171237	387051
Sri Lanka	97053	257980	170657	359325
Oman	74072	221845	91695	211847
Sudan	144097	381711	27117	78639
UAE	152074	435787	283	1349
Kuwait	164700	420468	–	–
Tanzania	43378	117502	–	–
Other countries	109566	298939	150526	363360

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

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**71370**	**334383**	**83241**	**398033**
Nepal	15129	65650	25312	115656
UAE	26174	112765	17584	78911
South Africa	11035	56270	11703	65304
Saudi Arabia	1650	7214	8583	35943
Nigeria	6858	36975	5045	27518
Kenya	1816	9231	3814	17760
Thailand	1674	8668	1893	10168
Chinese Taipei/ Taiwan	48	216	2063	8771
Tanzania	559	2990	1175	6108
Sri Lanka	1197	5253	1288	5991
Other countries	5230	29151	4781	25903

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

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**817860**	**2007273**	**1012735**	**2051773**
Nepal	376825	920696	804457	1635425
Mozambique	–	–	64600	119364
UAE	291650	717486	32700	75832
Qatar	85000	211037	36000	54950
Yemen Republc	–	–	20802	39950
Sri Lanka	96	421	19084	35345
Bangladesh	6361	10163	11243	33513
Egypt	–	–	17335	33292
Belgium	27500	82522	16	412
Kuwait	27500	56364	–	–
Other countries	2928	8584	6498	23690

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

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	**116815**	**327577**	**115401**	**383846**
Nepal	99887	261921	82183	277271
Sri Lanka	33	496	15221	42198
Bangladesh	895	3578	6014	19181
Sudan	–	–	4215	13737
Angola	–	–	2969	10203
Thailand	50	415	2035	7946
Maldives	551	3527	1893	6958
UAE	936	13036	69	1627
Tanzania	1041	4472	50	121
Kuwait	12700	34467	–	–
Other countries	722	5665	752	4604

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

Country	2008-09 Qty (t)	2008-09 Value (Rs.'000)	2009-10 Qty (t)	2009-10 Value (Rs.'000)
All Countries	**1025829**	**3451142**	**2111997**	**5683270**
Pakistan	739164	2513755	652060	1936301
China	97142	273167	568757	1371538
Japan	6	775	390484	868779
Bangladesh	101972	430301	169586	624565
Indonesia	38501	23927	113389	256724
Korea, Rep. of	3	69	97197	225439
Thailand	34990	97182	55264	124941
Chinese Taipei/ Taiwan	–	–	34650	71220
Malaysia	2132	6943	17854	51762
UAE	6526	36700	5983	38778
Other countries	5393	68323	6773	113223

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

Country	2008-09 Qty (t)	2008-09 Value (Rs.'000)	2009-10 Qty (t)	2009-10 Value (Rs.'000)
All Countries	**792429**	**2752299**	**726409**	**2222213**
Pakistan	721353	2457425	640791	1901690
Bangladesh	70230	291649	83232	310394
Bhutan	179	558	2338	6932
Nepal	425	1929	21	3071
UAE	–	–	27	126
Unspecified	242	738	–	–

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

Country	2008-09 Qty (t)	2008-09 Value (Rs.'000)	2009-10 Qty (t)	2009-10 Value (Rs.'000)
All Countries	**6860**	**38752**	**19371**	**77218**
UAE	6526	36700	5836	37276
Japan	–	–	11505	25304
Pakistan	–	–	1663	8323
U K	60	1006	260	5445
Italy	1	10	3	127
China	–	–	4	68
Bhutan	272	1026	–	–
U S A	1	10	–	–
Unspecified	–	–	100	675

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

Country	2008-09 Qty (t)	2008-09 Value (Rs.'000)	2009-10 Qty (t)	2009-10 Value (Rs.'000)
All Countries	**170602**	**323491**	**1257105**	**2799931**
China	94989	196165	558946	1225200
Japan	–	–	378977	843222
Indonesia	38500	23853	113389	256715
Korea, Rep. of	–	–	97197	225390
Thailand	34981	96530	55253	124361
Chinese Taipei/ Taiwan	–	–	34650	71220
Malaysia	2132	6943	17854	51762
Pakistan	–	–	839	2061

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

Country	2008-09 Qty (t)	2008-09 Value (Rs.'000)	2009-10 Qty (t)	2009-10 Value (Rs.'000)
All Countries	**55938**	**336600**	**109112**	**583908**
Bangladesh	31742	138652	86354	314171
China	2153	77002	9807	146270
France	602	14176	1010	29934
Netherlands	479	18960	976	25525
Pakistan	17811	56330	8767	24227
Germany	1248	19337	1161	18593
Nepal	–	–	55	15803
Bhutan	1541	5384	723	2588
Turkey	–	–	100	2049
U K	24	1247	6	1261
Other countries	338	5512	153	3487

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. 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.