CHAPTER 6

PROBLEMS RELATED WITH PRODUCTION AND DEVELOPMENT IN CEMENT INDUSTRY: SPECIALLY IN ACC
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Cement being a high bulk and low value commodity, outward freight accounts for close to one fifth of the total manufacturing cost. In addition, for every tonne of cement produced, close to 1.7 tonnes of raw material (including coal) is transported. In this scenario, the location of the cement plant becomes crucial. While deciding on the plant location, there is a trade-off between proximity to raw material sources and proximity to markets. A split-location cement plant can be a good compromise between the two options. The plant also has to address issues of logistics (evacuation of cement by rail, road or waterways), power availability in the region, and the first strategy is to locate manufacturing facilities near the consuming centres. In this case, outward freight is minimised and marketing flexibility enhanced at the cost of higher raw material assembly costs. The second strategy is to locate the plant close to the mineral deposits, so as to minimise raw material assembly costs. Given that 1.4-1.5 tonnes of limestone are required per tonne of clinker, locating the plant along the limestone deposits is the logical corollary. Occasionally, as in areas like Satna, Rewa, and Raipur, the coal pitheads are also quite close by availability of materials (limestone, coal, slag, etc). The bulk of the cement manufactured is consumed near urban centres. In the manufacture of cement, for every 1 tonne of clinker, about 1.6-1.7 tonnes of limestone and coal need to be assembled. For OPC, another 50 kg of gypsum is required while grinding the clinker down. For PPC, up to another 250 kg of pozzolanic material such as fly ash requires to be assembled. Thus, there can be two broad locational strategies, stemming from the principal objective, which is not merely to minimise unit-manufacturing cost,
but to minimise unit delivered cost as well.

As cement is a low value, high bulk commodity, freight cost becomes a significant factor in determining the landed cost of cement. This has resulted in a very low volume of international trade in cement. World cement trade has averaged just around 6-7% of the total production. Although, world trade in cement is limited because of high freight costs, there are countries, which either import a significant share of their total consumption or export a major share of their total production. Countries, which import a significant share of their consumption, appear to be falling in the developing world category, where the public expenditure on infrastructure projects is very high. The Middle East countries (although not falling in the developing world category) have huge requirements of cement because of construction work in projects in the oil sector. Also in these countries, unfavorable conditions (for example, inadequate cement limestone reserves) have discouraged cement capacity creation. Countries, which export a large share of their domestic production, appear to be having one thing in common.

Countries with high export thrust opt for bulk transportation for exporting cement. For example, by opting for bulk transportation, Greece is in a position to export over 50% of its cement production. Bulk transportation leads to significant advantages such as savings in freight costs and packing costs, avoidance of transit loss, adulteration, pilferage, bursting of bags and damage to cement.

At the ex-factor level, Indian cement is quite competitive with many global cement producing regions. However, a plethora of duties along with infrastructure bottleneck reduces this competitiveness. As cement is primarily a regional commodity, international competitiveness is not really a serious issue. Outward freight on cement is
an important element in the operating cost of a cement plant. It accounts for around onethird of the total variable costs. Most of the cement plants in India are located in andaround the limestone clusters. These clusters are distant from the collieries and themarkets for cement. Cement has an average lead of around 535 km. Thus, cementcompanies have to rely on extensive transportation for moving coal from the coalpitheads to the cement plants and for dispatching cement from the plant to the markets.As both coal and cement are of low value and bulky in nature, freight costs isconsiderably high for cement plants. Cement companies use both road and rail transport totransport cement and to receive coal. Rail dispatches amount for about 33% whileroads carry the balance 66%. The balance 1% is accounted by Sea transportation.

The share of road over rail has only gone up over the years. For coal transportation,thedependence on rail network is still very high and accounts for around 70% of coalmovement although rail transportation is more economical for distances beyond 250-300km; cement companies have started preferring road transportation even for longerdistances because of several reasons. Rising railway traffic coupled with insufficientinvestments by the railways for increased wagon supplies and the fact that the cementindustry is not an important customer of the Railways (cement cargo accounts for just 7-8% of the total railway freight) have resulted in a shortage of wagon supply to the cementindustry. The railways had launched the "Own Your Wagon" scheme-a scheme wherecompanies could buy wagons and lease it to the Railways and the Railways would in turnoperate these wagons and ensure their availability to the owner. But the unfavorable andconditions of this scheme prevented its successful commercialization. The Railways have
also increased their tariff on a regular basis (often higher than the increases in the road sector), making them uneconomical vis-à-vis road tariffs even for longer distances. Cement is crushed, naturally-occurring, limestone that has been heated to high temperatures in a kiln, and is typically used to bind natural or man-made aggregates together to form durable building materials such as concrete. The process that occurs within the kiln produces a product known as clinker which has four main components – alite, belite, aluminate, and ferrites – all of which contribute to the strength and hardening properties of cement once crushed to a fine powder and mixed with water.

Cement producers use Automated Mineralogy to trouble-shoot production problems on cement plants, help improve the quality of their products, and investigate on-site construction issues. Typical mineralogical data that the Built Environment industry needs from cement products include: the proportions of alite vs belite phases on a size-by-size basis; the micro-texture of the alite and belite; nature and amount of trace impurities, such as unburnt lime, clays and silica.

In an attempt to address environmental and economic issues surrounding cement production, manufacturers are now using clinker replacement materials such as blast furnace slag, fly ash, volcanic ash, kaolinite, and various pigments. This practice reduces the overall amount of cement required to produce the end product, which in turn reduces CO2 emissions, and also uses up waste materials that would otherwise be problematic to dispose of. However, careful analysis is required today, more than ever, of these new products, to ensure quality and performance, and FEI is working with cement companies to provide them with the necessary materials characterization capability. FEI's analytical Scanning Electron Microscopes (SEM), and Automated Mineralogy Solutions,
MLA and QEMSCAN, are enabling cement manufacturers to characterize products that are more environmentally friendly than those made in the past.

The Main Problems of the Cement Industry are outlined Below *

1. Cost escalation and right prices:

As in the case of all other industries, there has been rise in the cost of production of cement. But the special point in the case of cement industry is that some of the major cost rises are due to government polices-as, for example price and freight on coal, power and wages covered by wages awards. The shortage of wagons for the movement of cement is another serious problem.

Finally, the cement industry has been a victim of power shortages of varying degrees in different states. It was common knowledge that in the case of levy cement, the price which consumer paid did not cover the cost of production.

2. Variation in production:

The demand for cement has been growing at the rate of 8 to 10 per cent per annum. To meet this demand the government intended to set up mini-plants on the one hand and giant plants on the other. A mini-plant has a capacity of up to 200 tonnes per day. There are two advantages of mini-plants; firstly capital cost of such plants per tonne of output is low: and secondly, they can be located in remote and inaccessible areas.

3. **Unrealistic distribution Policy:**

Another problem related to unrealistic regulation of distribution of cement. Government introduced a permit system of distribution which never worked properly.

The higher free sale prices were meant to cover up the rise in cost and help the cement units to generate additional internal resources: they would also help cement units to increase production to derive maximum benefit from open market sales.

4. **Soaring investment costs and declining profits:**

Cement is a basic industry but investment costs in the industry are growing rapidly. While investment cost had more than doubled, the government expected the installed capacity to go upto 62 million tonnes at the end of the sixth plan-this necessitated an investment of Rs.2, 600 crores to Rs.3, 000 crores in a five year period which was a challenging task by any standard.

5. **Under-utilization of capacity:**

Underutilization of capacity is a recurrent feature of cement industry. Underutilization of particularly marked in the cement plants located in the eastern region. One of the main factors accounting for low capacity utilization in this region has been the demand constraint. Because Underutilization of capacity, the cement plants are not able to reap the benefits of economics of scale. Thus, they are not able to minimise costs of production at their prevailing level of production.

6. **Fear of Nationalism:**

At present all the industries of the country are the apprehensive of being nationalized. This is particularly so when one talks in consideration of the fact that the cement industry
has been languishing for years in the form of marginal or loss making units. It a proof was needed of the veracity of statements, our government should only cost a glance at the recent phenomenon when most of the cement units faced with precarious financial conditions has thrown out of employment thousands of workers in a period of actual unemployment. Surely, mismanagement is not the monopoly of the cement industry in our country; where a variety of other industries thrive.

7. **Inferior quality control:**

Indian cement industry has ignored the quality control factor cement made in India is of inferior quality. In order to meet the challenges of globalization, Indian cement industry must gear it up to adopt ISO 9000 is 14000 series of standards and the total quality management.

8. **Demand constraints:**

The demand for cement was mainly dependent on government spending as the government with a 40 per cent off take was the single largest consumer of cement. Due to financial constraints, the government was forced to cut down on a wide range development of activities. This resulted in a demand constraint. The growth of the housing sector, which has been assisted by lower interest rates, and a favorable tax treatment of home loans, has also helped assist cement demand.

9. **Freight/Logistics problems:**

The importance of freight for the cement industry can not be emphasized enough. While in the last few months, railway have been steadily losing freight to road sector they have been confined to long distance. The outward freight-freight to move finished cement to
market is around Rs. 350-400 a tonne or Rs. 20 a bag and that could go as high as Rs. 800 for long leads. This would only reach the first level of sale and additional costs are involved to take it further.

Another issue, which will hit the industry hard, is that of logistics and Supreme Court judgment on ‘carrying capacity’ for trucks. “Many states are already implementing this and there is already an increase in freight rates and in some cases, it has gone up by 50 percent. Also, the requirement for trucks to carry the same freight has nearly doubled and in many places, the industry is being forced to move to railways”

10. The power shortage:

Power is another important requirement and along with coal forms 40 per cent of the total cost. Power cuts, unsteady and inadequate power supply from state electricity boards have created serious problems for cement units. This is all the more so as the production of cement is a continuous process requiring uninterrupted power supply to operate efficiently.

11. High tax charges:

While the railways have had capacity to meet the requirement, it is expected that in march- the commencement of peak season for the procurement of food grains, the railway would be constrained to provide adequate number of wagons. Effectively we are paying Rs. 70 a tonne for limestone as royalty. VAT is at 12.5 percent without any justification and it should be in 4 percent category. In all aspects, we are way above what a commodity like cement should attract.
12. Modernization:

Out of the total cement production in our country nearly 86 percent is being produced by the dry process technology. The other technologies are wet process or semi-dry process technologies. The modernization program has included conversion of wet process to dry process, energy conservation measure, computer controlled system etc.

It is a common knowledge that to ensure optimum utilization of capacity by restoring health to the existing plants entails a fraction of cost of installing new capacity. Yet, there is no separate provision in the prices structure for the purpose of rehabilitation and modernization of machinery and equipments.

13. Poor quality of coal:

Coal is an important input in the cement industry and accounts for 15 to 20 per cent of cash expenses in the manufacture of cement. On an average 250kg of coal is required to produce one tonne of cement. The quality of coal supplied to cement units is also highly unsatisfactory as only D, E, and F grades of coal are supplied to these units. The ash content in Indian coal is very high and this restricts production.

*To meet the twin problems of coal-----*

(1) Poor quality of coal (due to high ash content)

(2) Shortage of coal

14. Cement technology:

For a long period of time, many cement plants have used the uneconomical wet process technology. Due to high labour and maintenance costs and smaller size, these plants had a
high cost of production. There obsolete technology also resulted in a lot of wastage of coal and electricity. In a recent year, there has been a gradual Shift from wet to modern, fuel efficient dry process plants. Most of the new plants have adopted state-of-the-art technology and have been implementing modernization programmes to improve the performance of existing plants.

**Environmental Problems in Cement and Construction**

The cement industry, as of 2007, produced 5% of the total greenhouse gases in the atmosphere, particularly carbon dioxide. The cement industry, particularly cement kilns, also emit hazardous air pollutants. The burning of hazardous waste in kilns is a major problem for air quality. To significantly cut down these alarmingly huge emission volumes is a task that is nothing short of Herculean, cement companies executives say. As long as the demand for cement and other concrete products increases, greenhouse emissions continually increase as well.

Eighteen of the world’s cement companies held a summit last year in Brussels to discuss the necessary steps to reduce carbon dioxide and other greenhouse emissions. Several proposals were discussed, such as burning waste products together with coal and improving their factories in terms of energy efficiency.

The construction industry, on the other hand, contributes 40% of the total greenhouse gases in the atmosphere. However, it is not only the construction industry per se that emits such huge amounts. Instead, the finished products of construction companies, such as houses, buildings, and railways, are the ones that emit significant amounts of waste
gases. This is because energy used for several building operations such as ventilation, lighting, and cooling produces greenhouse gases, mainly carbon dioxide.

Though 40% greenhouse emission is to say the least a significant amount, advances in building technology and energy efficiency have already been made. Many construction firms are now adapting environment-friendly construction techniques and energy-saving designs for commercial and residential buildings to lessen the amount of greenhouse gases that they generate.*

**Problems Especially in ACC**

During the survey and preparation of this report lots of problems were faced in the form of limitations. These limitations are as follows:

- Cost effectiveness is also one of the major problems in this research to travel in each district daily and visit several shops distributed all over the districts took lots of bus and rickshaw fare. And at the same time no stipend and traveling allowance is being paid.

- ACC is not come out with such a proper advertisement, which is the cause of block the customers’ mind and the customer’s perception about the product.

- Salesmen have not good interaction with dealers. Company executives are not visiting the counters time to time.

- Executive are not properly taking the feedback from the dealers about the services of the salesman and distribution.

* Cement Manufacturers' Association (India) : "Energy, Environment, and Quality in Cement and construction Industry (2010)."
➢ The company is not taking serious step for changing its packaging styles.

➢ The order billing system is not satisfactory.

➢ Current pricing system is not up to the mark as some time price difference is very high than previous prices.

➢ Retailer is facing the problem of changing prices. They are not getting information about current position of cement prices at right time.

➢ Company is not currently providing proper training to retailer to give them the basic knowledge and technique of marketing to increase sales.

➢ Company is not paying attention for its competitive prices to sell ACC cement in market.

➢ A suitable replacement policy is not being formed by our central government with the help of cement- manufactures association, so that old and obsolete plant can be replaced by modern automatic plant.

➢ There are not a better insurance policy based on replacement cost for building, plant & machinery, and motor vehicles etc.

➢ Price of cement is not fixed after providing reasonable amount for replacement of fixed assets.