VIS

Credit Rating Company Limited

PAKISTAN CEMENT SECTOR REPORT

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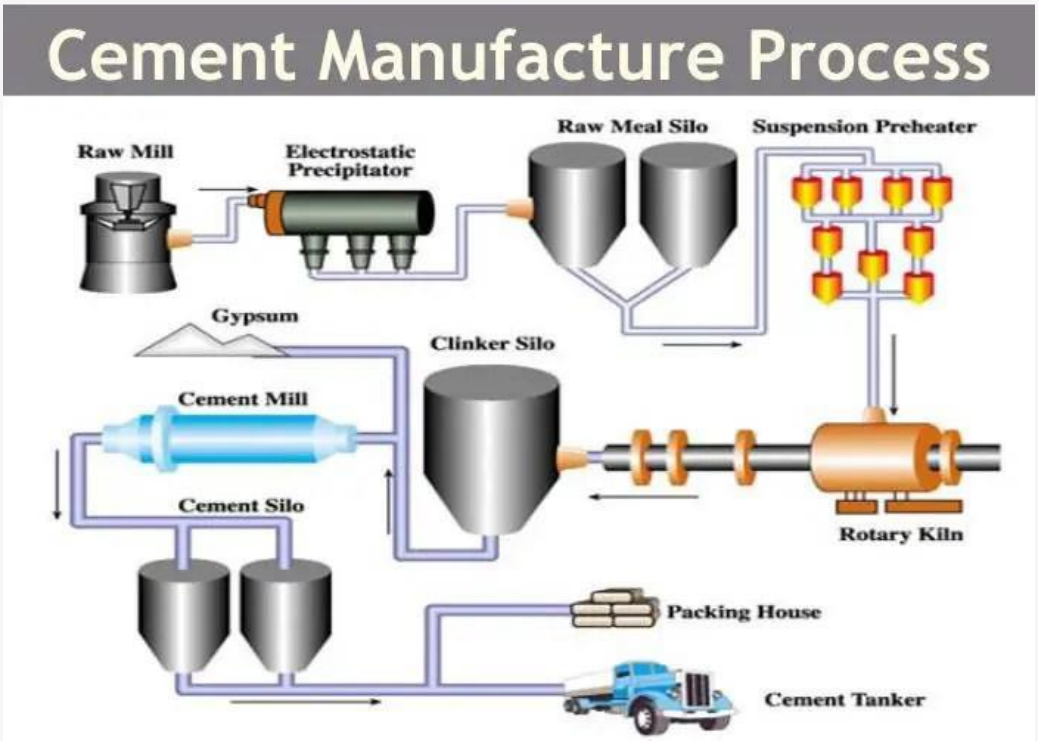
INTRODUCTION

Cement is a grey-colored, finely milled mineral powder with adhesive and cohesive properties that makes it capable of bonding mineral fragment into a compact and rigid mass. Cement manufacturing begins with mining limestone and clay, which are then grounded to a fine powder called raw meal. Raw meal is then heated to a sintering temperature of 1450℃ in a cement kiln. The cooked material is called clinker of 1-25mm in round size. The clinker is mixed with gypsum and ground to a fine powder named cement. It hardens both in the air and water and retains its hardened state once attained. Cement exhibits durability and strength and is extensively used for construction of houses, civil works, and industrial estates. Besides this, it provides noise insulation and helps withstand extreme changes in climatic conditions and chemical attacks. Blended and Portland cement are mainly two types of cement, however, portland cement represents one of the most preferred types of cement as it offers great compressive strength and resistance to shrinkage and cracking. Blended cement includes slag cement, sulphate resistant cement, high aluminum structural cement, rapid hardening cement etc. Dry process is widely used for cement manufacturing. Wet process is the other method.



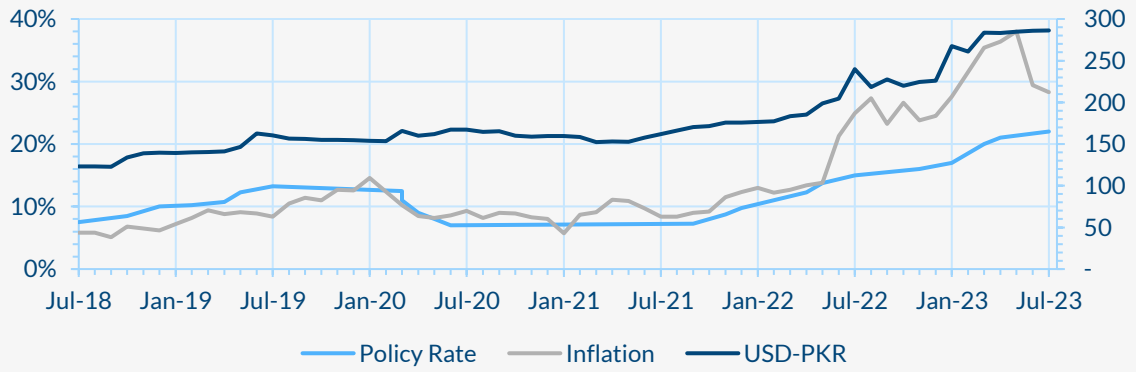
Cement plants are normally located in close proximity to the limestone quarries, which is the main input material. However, cement manufacturers nowadays are also using a variety of alternative materials, including fly ash, slag, and recycled concrete, which not only helps to reduce the demand for limestone, but also improve the sustainability of cement production.

ECONOMIC OVERVIEW

PAKISTAN ECONOMIC OUTLOOK

The Pakistan economy is undergoing severe stress due to a combination of domestic and external factors. GDP growth has fallen to just 0.29% in FY23 down from 5.7% in FY22; however, the same is expected to improve to 3.5% during FY24. Persistently high inflation above 30% continues to erode purchasing power while tight monetary policy is hindering investment and growth. Moreover, import restrictions imposed to preserve foreign exchange reserves have led to shortages and production disruptions across industries. The devastating floods in 2022 damaged agriculture, infrastructure and livelihoods, inflicting losses of over $30 billion as per World Bank estimates.

Measures like ban on luxury imports, subsidy rollbacks and new taxes to rein in the fiscal deficit have been taken, however, structural issues plaguing the economy remain unaddressed. The major challenges include the need for energy reforms, deterioration of social indicators, rising poverty and poor productivity.



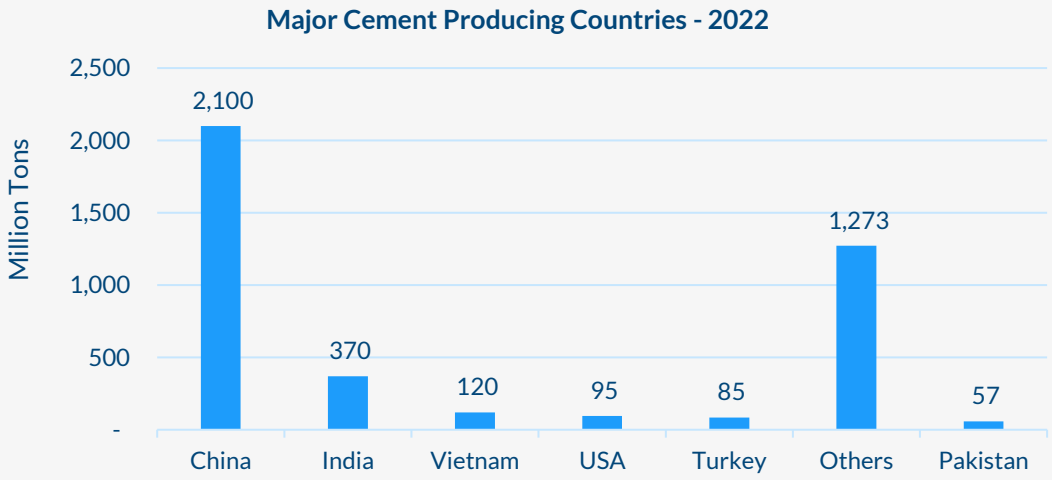
GLOBAL ECONOMIC OUTLOOK

The global economy continues to experience weak growth momentum amidst heightened uncertainty. As per IMF's latest World Economic Outlook, global GDP growth is expected to slow from from 3.4% in 2022 to 2.7% in 2023, before recovering slightly to 2.9% by 2024. Multiple headwinds persist that are dampening economic activity worldwide. Key central banks have sharply raised interest rates to combat inflation thus tightening financial conditions significantly. Geopolitical tensions including the Russia-Ukraine war have aggravated supply chain disruptions, food and energy crises, and security concerns globally. Lockdowns in China to contain fresh Covid-19 outbreaks have also impacted manufacturing and trade flows. Rising costs of living, stratified labor markets and weaker fiscal support are reducing consumer purchasing power and confidence. With high debt levels, governments also have limited space for stimulus measures.

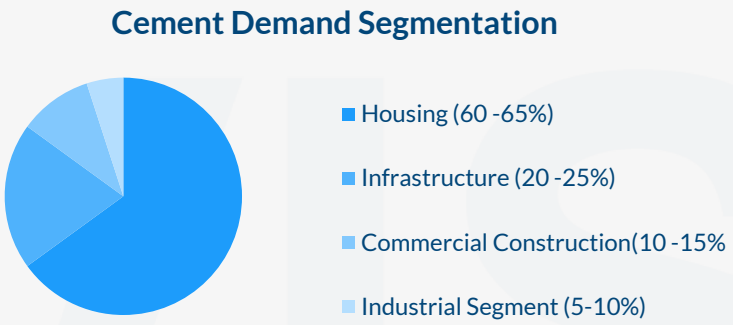
GLOBAL CEMENT PERSPECTIVE

The global cement market was valued at USD 363.4 billion in 2022 and is projected to reach USD 498.23 billion by 2028, growing at a CAGR of 5.4%. The global cement production in 2021 was recorded at 4.37 billion tons whereas the consumption stood at 4.27 billion ton. Global cement consumption fell in 2022 to an estimated 4.1 billion tons, dragged down by China's performance which was hit by prolonged lockdowns, a second-half slowdown in Europe and unprecedented cost inflation following events in Ukraine. Based on the production volumes of 2022, major global market

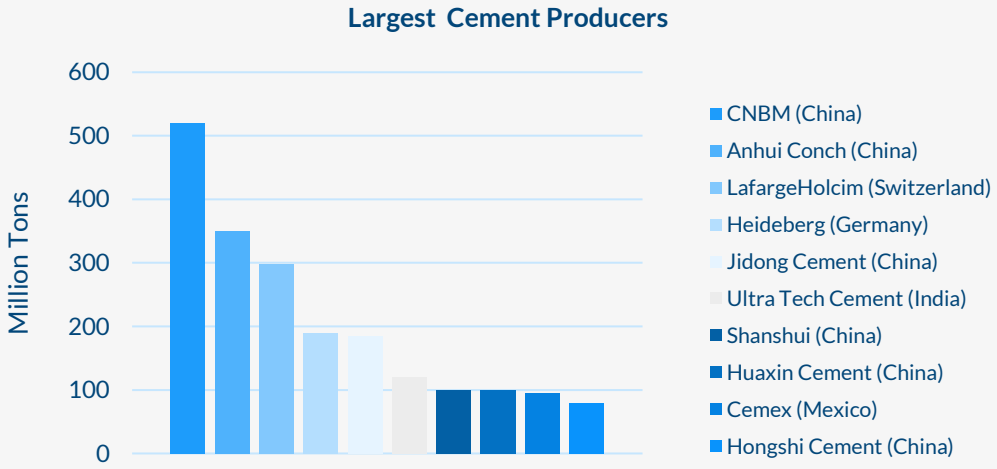
players are China, India, Vietnam, United States and Turkey. Pakistan produced around 45 million tons of cement in the same period. The global cement industry is projected to stabilize in 2023 with the reopening of the Chinese economy, pre-election spending on infrastructure projects in India and increase in public works spending in the Middle East. Further in the long-term, global cement demand is expected to increase steadily at around 3-5% annually until 2030. Most growth will come from developing economies in Asia, Africa, Middle East. Although, China's demand growth has slowed, but still accounts for over 50% of world consumption. India, Southeast Asia, Africa will drive majority of demand growth. On the other hand, developed regions like North America and Europe will see modest growth of around 1-2%.



Main factors contributing to the global cement demand include (i) population growth and rapid urbanization requiring more housing, commercial buildings, and infrastructure; (ii) emerging economies investing heavily in roads, rail, dams etc. to support economic growth; (iii) recovery in construction activity post-pandemic in many countries and (iv) increased governments spending on infrastructure projects.



The global cement market is highly competitive, characterized by the presence of major multinational corporations, regional players, and small-scale manufacturers. Key players in the market have developed strong regional presence, particularly in China and Asia-Pacific, distribution channels and adopting strategies such as new product development, and zero-carbon construction materials to increase their presence in the market. Some of these players are CNBM International Corporation, Anhui Conch Cement Co., Ltd., Jidong Development Group Co., Ltd., LafargeHolcim Ltd. and HeidelbergCement AG.

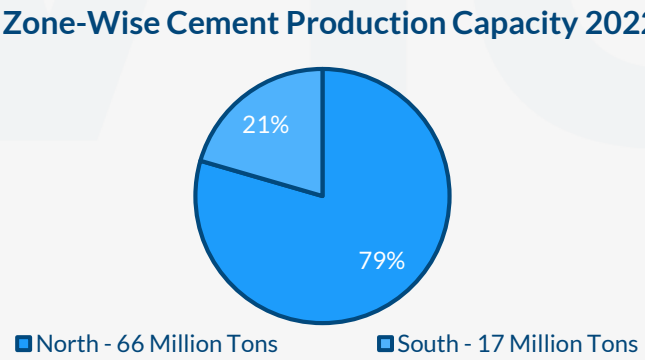


BUSINESS RISK ENVIRONMENT

The factors that influence the cement industry include (i) Economic scenario – Phases of growth in the economy are positively linked to cement sector growth; (ii) Cost structure and competitiveness – Cost advantages are usually due to companies having access to a cheaper power source, a quality limestone reserve, or being close to bigger markets; (iii) Legal, regulatory, and environmental regime – The cement industry is affected by regulatory norms, which is more prominent in developed countries where environmental issues are more stringent adding to costs; (iv) Technological advancement – can lead to increase market share and cost savings; (v) Geographic advantages – nearness to limestone mines or waterways and ease of transportation is an advantage in cost. However, the main challenge facing the cement industry is reducing CO2 emissions at the same time as meeting global demand.

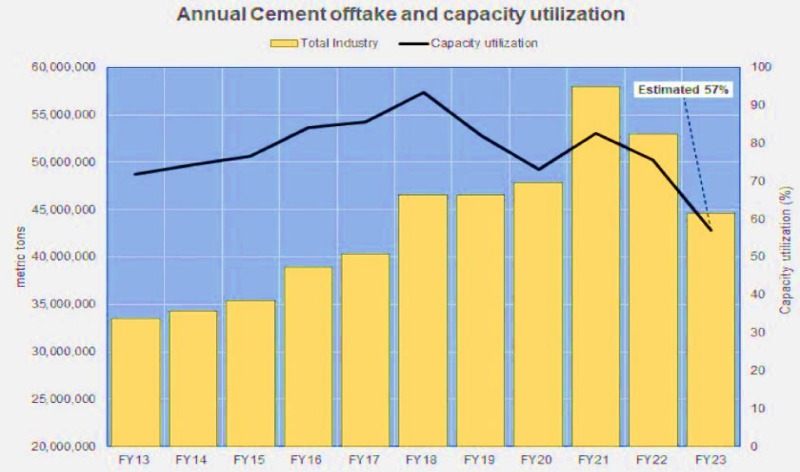
PAKISTAN CEMENT SECTOR

Cement is an essential part of infrastructure development involving construction activities, and linkages with multiple allied sectors such as steel, wood, and tiles. Therefore, the local cement industry with a total market size of Rs. 671bn contributed 0.85% to Pakistan's GDP during FY22. Further, in terms of production, cement industry has a current production capacity of around 83 million tons per year; the same is expected to increase to 99 million tons by end 2023. There are 26 operating plants in the sector with a total production capacity of around 83 million tons per year. Though the cement plants are spread across the country they are divided into two broad zones on the basis of their geographical location namely north and south zones. The Northern Zone consists of 209 units with installed production capacity of 36.2million tons and constitutes of 80% of countries' cement. The Southern Zone, constituting of 10 units, has an installed production capacity of 8.89 million accounts for 20% of country's cement production.



Industry's cement dispatches declined by 16% Y/Y to 44.6m M.Tons in FY23 wherein both the local and export dispatches witnessed a drop of 16% Y/Y and 13% Y/.Y, respectively. The overall demand will stay weaker in near term on account of consumer purchasing power depletion, overall economic slowdown and uncertainty in regulatory framework including monetary policy, taxation and amendments in real estate sector policies. Owing to short shelf life of cement on account of its hardening property in air and water, carrying inventory of finished cement is technically not possible therefore production of cement closely reflects its dispatches/ sales. Along with decline in local offtake the volumetric export sale has also declined on a timeline since FY21. The industry statistics of offtake are presented in the table below:

In million MTons	FY20	FY21	FY22	FY23
Local Consumption	39.97	48.13	47.63	40.01
Export	7.85	9.31	5.25	4.57
Total	**47.81**	**57.44**	**52.88**	**44.58**



Despite decline in the last two years after peaking in FY21, the cement sector is expected to grow at a compound annual growth rate CAGR of 8.9% during the period to 2025. The factors behind this extraordinary expansionary drive-in cement industry mainly include:

a) Continued activity under CPEC related projects:

The prospects of growing cement demand are stemming from CPEC related project which include construction of an integrated road infrastructure, modernization of railways, and development of Gwadar city, seaport and airport. Moreover, the development of special economic zones across the country may also sustain demand for cement going forward.

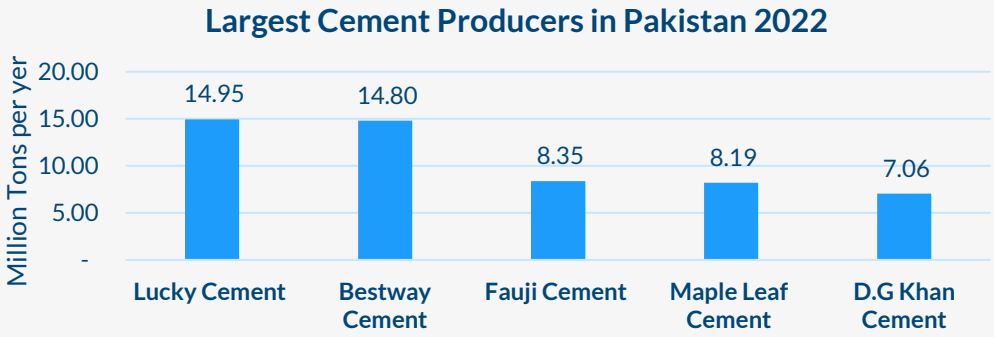
b) Increased focus on development spending by the government:

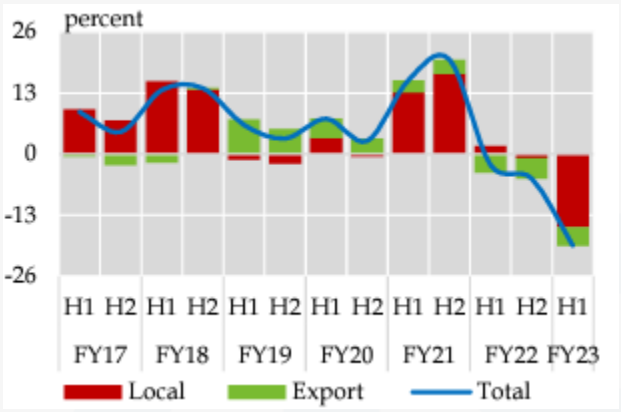
The demand for cement is also likely to remain high as government has planned numerous mega projects. In this regard, notable mega water and power sector projects include Dasu, Diamer Bhasha and Bunji multipurpose projects coupled with major rehabilitation and expansion initiatives on Mangla, Tarbela and Warsak power stations. Moreover, major highway and motorway projects are also underway.

c) Huge construction activities due to housing deficit:

The demand pressures may continue going forward due to persistent housing shortages (bridging this gap would require huge quantity of cement and related construction materials).

The cement industry in Pakistan has acquired the shape of an oligopoly. Top five producers have cumulative share of 64% of the market, which gives them power to influence pricing decisions. Therefore, despite drop in volumetric sales, cement companies have reported good earnings owing to strong and continued pricing power. Recovery in exports and decline in coal prices (-54%) since December 2022 will provide further respite to the industry. Nevertheless, the industry faces some challenges, such as high energy costs, increasing competition, and environmental regulations. To overcome these challenges, Pakistani cement manufacturers are investing in alternative fuel sources, such as coal and biomass, to reduce energy costs and emissions.





SECTOR DYNAMICS

The key success factors in the industry include:

- access to limestone reserves and proximity to coal supplies
- ability to control costs and maintain high-capacity utilization
- developing efficient supply chains and distribution networks
- product differentiation and branding to command premium pricing
- increasing scale of operations through mergers and acquisitions

Financial gains due to the economies of scale, improvement in cost efficiency, and a decline in the debt-to-equity ratio have led to a number of firms diversifying their operations towards other sectors of the economy as well. However, absorption of installed capacities would require the industry to accelerate CAGR in cement sales over the next 3-4 years which is a daunting task in the prevailing economic environment.

On the export front, with influx of cheap Iranian cement in Afghanistan and imposition of anti-dumping duties on Pakistani cements in South Africa (the two main export destinations), exports may remain a challenge, which would require the cement manufacturers to compete with Iranian and Chinese cement manufacturers through improvement in cost efficiencies.

The business risk faced by existing players is on a medium to lower side on account of:

- no or low substitute threat as only bitumen in road and engineering plastics in building offer some element of competition, otherwise no close cement substitutes are available in Pakistan
- customers carry virtually no bargaining power given large share of retail purchases and small share of bulk purchases
- with few large units having close to two third of market share, the market is oligopolistic in nature resulting in high bargaining power resting with the suppliers
- High capital investment, broad distribution network and over supplied market deter new entrants.
- stiff competition such as overcapacity, marginal product differentiation, and high exit barrier in form of huge capital investment are off-set by dominance of few large suppliers in the market resulting in only occasional price war.

RECENT DEVELOPMENTS

Primary focus of development in cement industry is the processes improvement to reduce environmental impact. Use of clinker substitutes is increasing, but clinker-to-cement ratio reduction alone is insufficient under the NZE Scenario, signaling a need for new technologies.

Low-carbon innovation – such as carbon capture and storage or electric kilns – continues, with technologies in material efficiency and cement recycling also emerging.

Technological advancement continues to decrease the thermal energy intensity of clinker; the same is expected to decrease from current levels of about 3.6 GJ/t clinker and electricity intensity of around 100 kWh/t cement in 2022 to less than 3.4 GJ/t clinker and 90 kWh/t cement, respectively, by end-2030 in line with UN sustainability goals.

Low-carbon innovation – such as carbon capture and storage or electric kilns along with technological advancement in material efficiency. In addition, cement recycling is also emerging.

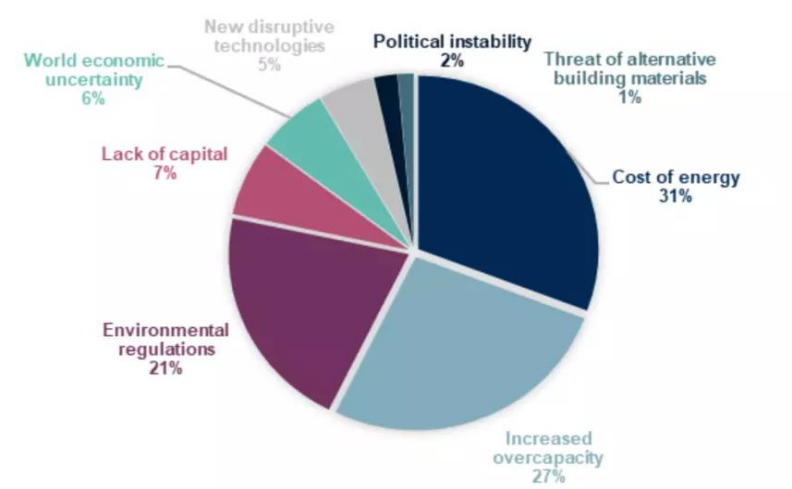
Other trends in modern cement manufacturing are - the use of advanced process control systems and the use of waste heat recovery systems to optimize the cement production process, improving efficiency, reducing waste and to reuse the heat generated during the cement production process to generate electricity or for other purposes.

Technologies are being developed for use of advanced materials for cement production, such as nanomaterials and superabsorbent polymers, which can improve the performance and durability of cement.

SECTOR ISSUES

Cement industry has a significant role in the climate change; hence, has issues of sustainable development. The main environmental challenge facing the cement industry are emissions of carbon dioxide, oxides of nitrogen, Sulphur dioxide, use of resources, especially primary raw materials and fossil fuel and generation of waste as ash, sludge and dust. The cement industry produces around 5% of global man-made carbon dioxide, a major gas contributing to climate change.

In terms of challenges, the rising cost of energy products, reduced PSDP spending on development projects, rising environmental concerns related to manufacturing of cement and competition with cheaper Iranian cement. There is also a strong reliance on the consumption of depleting natural resources, imported coal, exposure to exchange rate volatility, and extensive regulatory requirements. However, government initiatives to spur construction activity and wide gap in housing demand and supply establish a large number of low-cost housing has resulted in an uptick in construction activity.



SECTOR OUTLOOK

The sector outlook can be assessed as stable to negative in the near term. While long term growth potential exists, the current oversupply situation and high input costs are likely to create challenges for the industry in the next 1-2 years. The pricing power of companies may also reduce going forward with new capacities coming online. However, government infrastructure spending and housing schemes may provide some growth stimulus. Overall, the sector is expected to remain profitable but will likely undergo a period of consolidation.

REFERENCES

- All Pakistan Cement Manufacturing Association (APCMA)
- State Bank of Pakistan
- Economic survey of Pakistan 2022-23
- Pakistan Bureau of Statistics
- International Energy Agency (IEA)
- cementequipment.org
- World Cement