Management Discussion and Analysis

Economic overview

Global Economy[1]

In CY 2023, the global economy demonstrated significant resilience, growing at 3.2%, despite grappling with persistent geopolitical turmoil and rising inflation. The year under review was marked with uncertainties as geopolitical challenges disrupted global energy and food markets, leading to volatility in commodity prices. To anchor inflation, central banks worldwide resorted to calibrated interest rate hikes. While these measures impacted global growth, it was also successful in avoiding recession.

In the United States, robust consumer and government spending, coupled with a rebound in international trade, propelled the economy to achieve a growth rate of 2.5%. Conversely, the European Union experienced moderate growth, with internal policies and external geopolitical risks hindering its economic pace.

On the other hand, emerging markets and developing economies (EMDEs) demonstrated significant growth buoyed by diverse economic strategies and foreign investment. However, China, roiled by real estate sector issues and subdued consumer confidence, recorded a sluggish 5.2% growth. Demographic and debt challenges further strained the China's economy.

A strong labour market, strong corporate balance sheets and strategic fiscal policies have played an instrumental role in driving the growth of the global economy. In addition to this, effective monetary policies resulted in inflation declining faster-than-expected in most regions.

Outlook

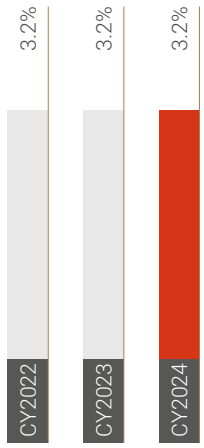
Looking ahead, the global economy is projected to sustain its growth at 3.2% in CY 2024. On the other hand, inflation is expected to decline from 6.8% in CY 2023 to 5.9% in CY 2024, further to 4.5% in CY 2025. It is anticipated that inflation will decline faster in the advanced economies as compared to EMDEs, supported by declining impact of previous energy price shocks and effective monetary policies.[2]

With inflation reaching its target levels, major central banks are aiming to strategically ease monetary policies. This hopes to be a relief for the markets and aims to facilitate a stable transition towards sustained growth without inducing financial instability.

[1]https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024

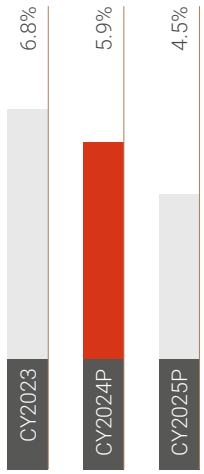
[2]https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024

Global GDP growth rate (in %)



[Source: IMF World Economic Outlook, April 2024]

Global headline inflation forecast (in %)



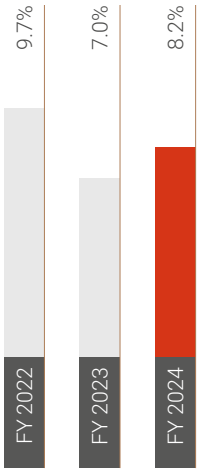
[Source: IMF World Economic Outlook, April 2024]

Indian Economy

India has sustained its growth trajectory by achieving a growth rate of 7% or higher for three consecutive years, emerging as one of the world's fastest-growing major economy. In FY 2023-24, India achieved a notable GDP growth rate of 8.2%, supported by a recovery in consumer demand and business activities.[3] The Government's focus on public capital expenditure (capex) bolstered industrial activities, attracting private investments and improving economic activities nationwide.

Additionally, the Reserve Bank of India (RBI) played an instrumental role in driving the growth of the Indian economy. Effective fiscal management and strategic monetary policies have been able to anchor inflation, contributing to the economic growth of the country. These policies augmented consumer confidence and safeguarded the economy from the global headwinds. Further, the robust domestic demand, driven largely by private consumption and strong performances in services and manufacturing sectors, has enabled the Indian economy to sustain its positive growth trajectory in the year under review. High-frequency economic indicators such as credit growth, GST collections and a robust consistently strong manufacturing PMI above 50 points reflect a dynamic economic environment poised for continued growth and stability.

India GDP growth rate (in %)



[Source: PIB Press Release, May 2024]

Outlook

Looking forward, India is expected to maintain its growth in the upcoming fiscal year, supported by stable domestic demand and private investments. Moreover, with the improvement of global economic conditions and developed nations adopting more accommodative monetary policies, it is anticipated to stimulate private investments and enhance India's exports. A growing young workforce and the implementation of strategic fiscal policies are positioning India on a sustainable path of growth and development.

The Government's enhanced focus on sustainability, robust manufacturing sector, ongoing structural reforms and growing middle economic and young population are driving the growth of the Indian economy. The Government of India is undertaking relentless initiatives to improve infrastructure and connectivity, augment scalability and promote digital economy. India is aiming to accelerate its transition to green energy and adopt economic policies that foster inclusive social development. With the country's optimistic growth outlook, India is well-positioned to overtake Germany and Japan and become the third largest economy globally before 2030.

Industry overview

Rotating Electrical Equipment Industry

The rotating electrical equipment industry, encompassing motors, generators and their components, has shown consistent growth due to increasing demand from various sectors such as power generation, industrial automation and transportation. With increasing emphasis on energy efficiency, coupled with

[3]https://pib.gov.in/PressReleseDetailm.aspx?PRID=2022323

stringent government regulations and rising awareness about sustainability, the demand for high-efficiency motors and generators have increased exponentially. Notably, the adoption of IE3 and IE4 efficiency class motors is particularly observed in developed markets.

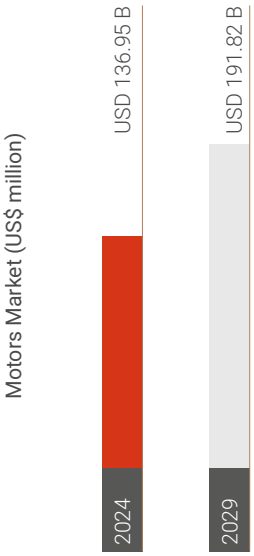
The ongoing trend of Industry 4.0 and smart manufacturing has surged the demand for advanced motors. These motors have integrated sensors and connectivity features to ensure better monitoring and control. There is also a growing trend towards customised and modular motor designs to meet specific industry requirements and further improve flexibility. This customisation is particularly evident in industries such as data centres, mining and specialised manufacturing.

Major segments within this industry

Motors Market

The global electric motors market is undergoing substantial growth, driven by technological advancements, increased industrial automation and a heightened focus on energy efficiency. In 2024, the market was valued at USD 136.95 billion and is projected to reach USD 191.82 billion by 2029, growing at a compound annual growth rate (CAGR) of 6.97%. The demand for motors is propelled by their critical role in energy conversion, making them indispensable in both industrial and consumer applications.

CAGR (CY 2024- 2029): 6.97%



[Source: Mordor Intelligence]

Low Voltage (LV) Motors

Operating at up to 1000 volts, these motors are widely used in commercial and light industrial applications.

Medium Voltage (MV) Motors

Operating between 1001 to 10,000 volts, these motors are used in industries requiring greater power output.

High Voltage (HV) Motors

Operating above 10,000 volts, HV motors are used in heavy industrial operations.

With governments and regulatory bodies worldwide implementing stringent energy consumption standards, the need to innovate and produce highly efficient motors has increased than ever. In addition to this, rapid industrialisation and urbanisation in regions, especially in the Asia-Pacific, are driving the demand for motors. Furthermore, with the paradigm shift towards sustainable practices, a growth in renewable energy installations has been observed, particularly for wind and solar power. This has further propelled the growth of the motors market as high-performance motors are required for energy generation and distribution systems.

Additionally, the shift towards electrification in the automotive industry has been instrumental in driving the growth of the motors market, as electric vehicles (EVs) require efficient and reliable motors. Owing to increased focus on infrastructure development, especially in China and India, the regions are emerging as a promising market for motors. North America and Europe are also showing robust growth, primarily supported by advancements in automotive technologies and growing renewable energy sector.

Generators Market

Also known as the alternator market, the global generators market is crucial for power generation across various industries. In 2023, the market was valued at USD 18.4 billion and is expected to grow to USD 28 billion by 2032, exhibiting a growth rate (CAGR) of 4.6% during 2024-2032. The demand for generators is driven by the need for reliable power supply and the integration of renewable energy sources as well as increased focus on infrastructure development.[4]

[4]https://www.imarcgroup.com/alternator-market

In addition to this, generators are required to provide grid stability and the backup power to integrate renewable energy sources into the grid. Technological advancements in generator design are improving efficiency, reducing emissions and enhancing overall performance.

The generator market observed significant growth in developing regions, particularly in Asia-Pacific and Africa, supported by the growing mining and oil & gas sectors, which require reliable power sources in remote locations.

Diesel Generators (DG) Set market in India

The Indian Diesel Generators (DG) set market is a critical component of the country's power infrastructure, ensuring reliable and uninterrupted power supply across various industries. The market can be segmented, based on power output, into Low Horsepower (LHP, 5-75 kVA), Medium Horsepower (MHP, 82.5-400 kVA) and High Horsepower (HHP, 500 kVA and above).

A significant development in the DG market has been the transition to Central Pollution Control Board (CPCB) IV+ emission standards in July 2023. This transition aligns India's emission standards with European and American economies, mandating a 90% reduction in particulate matter and nitrogen oxide concentrations in generator exhaust. The growth of the DG market is significantly influenced by various end-user industries. Moving forward, this trend is expected to continue, driven by factors such as the surge in data centre projects, telecom sector growth, infrastructure development and various government initiatives.

The market is expected to grow from USD 1.10 billion in 2023 to USD 1.42 billion by 2028, registering a CAGR of 5.20% during the forecast period (2023-2028).[5]

Alternator market for Steam Turbine

Steam Turbine plays a vital role in power generation across various industries, including utility power plants (coal and nuclear), captive power plants and renewable energy power plants. These turbines are extensively used in captive power plants across multiple industries such as steel, cement, sugar, chemicals and paper. In captive power plants, steam turbines up to 30 MW capacity account for 97% of the volume, while on the utility side, the bulk of the demand is for turbines greater than 500 MW, primarily 660 MW and 800 MW units.

Alternator market for Hydro Turbine

Hydro Turbine encompasses small hydro power (SHP) projects up to 25 MW capacity, large hydro projects of greater than 25 MW capacity and pumped hydro storage projects. Hydroelectric power projects with an aggregate capacity of 15 GW are currently under construction in India. It is anticipated that the hydro capacity will increase from 42 GW to 67 GW by FY2032. Additionally, with pumped storage projects (PSPs) gaining importance for providing grid stability and balancing power, PSP capacity will increase from 4.7 GW to around 55 GW by FY2032.[6]

Alternator market for Wind Power

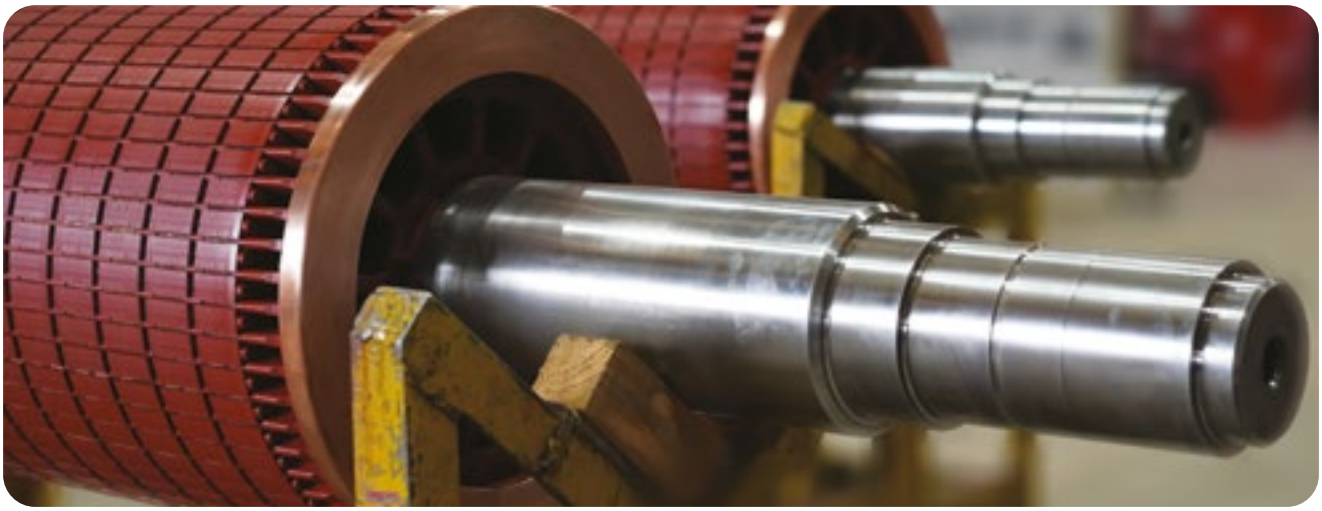
India's wind energy sector is at the cusp of rapid expansion, driven by recent market dynamics and government initiatives. Initiatives such as carve-outs for Wind Renewable Purchase Obligations (RPOs), revamped auction mechanisms and exclusive tenders for wind projects have proven beneficial for the wind energy sector.

The country currently ranks fourth globally in terms of installed wind energy capacity. Furthermore, the Indian government is promoting wind power projects nationwide by attracting private sector investments through various fiscal and financial incentives. These include accelerated depreciation benefits and concessional customs duty exemptions on specific wind turbine components.

The Indian wind turbine market is expected to continue its upward trajectory, with a projected capacity of 5,000 MW and 2,000 turbines by FY2029.[7]

Electrical Laminations Market

The electrical laminations market plays a crucial role as a key component and input market serving the broader



[5]https://www.mordorintelligence.com/industry-reports/india-diesel-generator-market

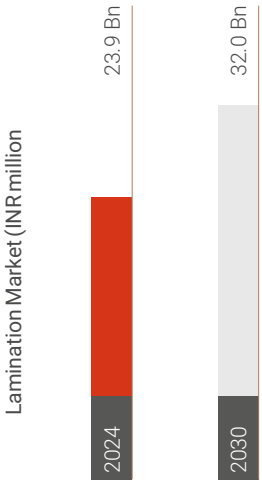
[6]https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2017271

[7]https://gwec.net/wp-content/uploads/2023/08/GWEC-India-Outlook-Aug-2023-1.pdf

rotating electrical equipment industry. Electrical laminations are essential components used in motors, generators and transformers, playing a critical role in the efficient functioning of these devices by minimising energy losses. The Indian electrical laminations market is poised for substantial growth, driven by favourable government policies, the development of electric vehicles (EVs), increased demand from the power sector and the Government's focus on infrastructure development.

The market size of motor laminations is estimated to be USD 23.9 billion in 2024 and is expected to grow at a compound annual growth rate of 4.9% during 2024-2030, reaching USD 32.0 billion by 2030.[8] India's aim to reduce CO2 emissions has increased the demand for electric vehicles and hybrid electric vehicles (HEVs). As electrical laminations are crucial in the traction motors of HEVs, it is expected to boost the market for electrical laminations, owing to government incentives and favourable policies.

Motor Lamination CACR : 4.9%



[Source: P & S Intelligence]

The power sector is a major driver of the electrical laminations market. As India aims to meet its ambitious renewable energy targets, there is a growing need for efficient and reliable motors and generators. This will also significantly boost the demand for electrical laminations. In addition to this, with the expansion of the railway network and metro systems, it will require more trains and metros equipped with highly efficient motors, further propelling the growth of electrical laminations market.

The 'Make in India' and 'Atmanirbhar Bharat' initiatives are also expected to drive the growth of the electrical laminations market, boosting indigenous manufacturing by promoting the development and use of advanced motors and associated technologies. As India is heavily dependent on imports from China and Europe, it results in longer lead times, higher costs and potential supply chain disruptions. With the focus on domestic manufacturing, it is anticipated to reduce reliance and mitigate the problems effectively.

Machined Components Industry

The machined components industry in India is a critical segment of the manufacturing sector, contributing significantly to the country's industrial output and economic growth. Machined components are precision-engineered parts that are essential for various applications across multiple industries. These components are manufactured through highly advanced and skilled labour-required processes such as milling, turning, drilling and grinding.

The market is driven by several factors, including the increasing demand for sophisticated, precise and dimensionally accurate products, the robust growth of the infrastructure sector and the growing emphasis on automation and technological advancements in manufacturing processes

[8]https://www.psmarketresearch.com/market-analysis/motor-lamination-market-report

The off-highway vehicles and construction equipment segment is one of the major contributors to the demand for machined components. Off-highway vehicles require numerous machined casted components such as counterweights, brackets, brake calipers, covers, port blocks, spider planetary covers and trumpets. On the other hand, the growth of international trade and the increased demand of material handling equipment at ports also contribute to the surge in requirement for machined components in this segment.

India has the fourth largest railway system in the world; with the Government focusing on expanding and modernising the railway network to change urban transportation, it is driving the demand for machined components. High-speed rail projects and metro rail networks require a variety of machined casted components, including draft gear bodies, wedge cones, ribbed plates, narrow jaw adapters and axle end caps.

Another important contributor, the windmills segment is also expected to see significant growth. The Government's ambitious renewable energy targets are driving the demand for machined casted products such as traverse top casts, traverse bottom casts, front bracket structures, support brackets, crosses, actuator housings and more.

The industrial segment encompasses pumps, general engineering and industrial machinery. Growth in this segment is driven by the increasing focus on energy-efficient products in the water and wastewater industry, rapid urbanisation and the expansion of infrastructure projects. Automation in the general engineering sector and industrial machinery manufacturing is also boosting the demand for machined-casted components.

Sugar Industry[9]

The sugar industry is a major agro-based sector in India, contributing significantly to the rural economy. According to recent reports, sugar production is projected to reach 32.0 million metric tonnes (MT) in the 2023-2024 season, slightly down from 34.0 million MT in the previous season. This reduction is attributed to the slower closure of mills in key producing states like Maharashtra and Karnataka. The domestic consumption is projected at 28.5 million MT, leading to an expected closing stock of approximately 9.1 million MT by September 30, 2024. This stock level is significantly higher than the 5.6 million MT recorded at the end of the previous year and equates to about 3.8 months of consumption.

A major trend in the industry is the increasing diversion of sugarcane towards ethanol production, driven by government policies aimed at achieving a 20% ethanol blending target. For the Ethanol Supply Year (ESY) 2024, India achieved a blending ratio of 11.96% by March-end. The government has allowed ethanol production from 6.7 lakh MT of B-heavy molasses to support this target. The contribution from grain-based distilleries has also been significant, although challenges remain regarding feedstock availability and infrastructure development to support higher blending levels.

The revenues of integrated sugar mills are likely to expand by 10% in FY 2025, supported by an expected increase in sales volumes along with firm domestic sugar prices and higher distillery volumes after the operationalisation of new capacities. The operating profit margins of the sugar mills are projected to remain comfortable in FY 2025, in line with FY 2024, due to firm sugar realisations and higher cane prices. The outlook for the sugar sector is stable, backed by anticipated improvements in revenues, stable profitability and comfortable debt coverage metrics, along with government policy support, including the ethanol blending program (EBP).

Steel, Cement & Construction Industry

India's Steel, Cement, and Construction industries are interconnected pillars of the nation's economic growth, driving the demand for infrastructure and urban development. The steel industry, for instance, saw a significant rise in crude steel production, reaching 144.043 million tonnes in FY 2023-24, a 13.2% increase from the previous year. This growth is largely attributed to robust demand from the construction and automotive sectors, alongside increased government spending on infrastructure projects. Finished steel production, including alloy and non-alloy steel, also saw a notable increase of 12.7%, reaching 138.825 million tonnes, while steel consumption surged by 13.6% to 136.250 million tonnes.[10]

The cement industry, closely tied to construction, also witnessed substantial growth, driven by increased urbanisation and infrastructure projects. In FY 2023-24, cement volumes increased by 9% year-on-year to 426 million MT. Projections indicate further growth of 8-9%, with volumes likely reaching 460-465 million MT by FY 2025, supported by demand from urban housing and infrastructure sectors. The government's focus on enhancing multimodal connectivity through initiatives like the PM Gati Shakti - National Master Plan is expected to boost cement demand significantly, further fuelling the construction sector.[11]

The construction industry, which now contributes 9% to India's overall GDP and employs over 51 million people, is on a rapid growth trajectory.[12] In FY 2023-24, it became the sixth-largest recipient of Foreign Direct Investments (FDI), further bolstering the sector. The overall construction value in India is projected to reach USD 1.4 trillion by 2025, making it one of the largest construction markets globally.[13] This growth is driven by government spending on infrastructure and a recovery in private investment, with key projects under the National Infrastructure Pipeline (NIP) and the Pradhan Mantri Awas Yojana (PMAY) for affordable housing playing a crucial role. The expansion

[9]https://www.icra.in/CommonService/OpenMediaS3?Key=afcf95be-d33d-43f0-9859-5e486b0a61cc

[10]https://www.jpcindiansteel.nic.in/writereaddata/files/Trend%20Report%20April%202024.pdf

[11]https://www.icra.in/Rating/DownloadResearchSummaryReport?id=5719

[12]https://www.investindia.gov.in/sector/construction

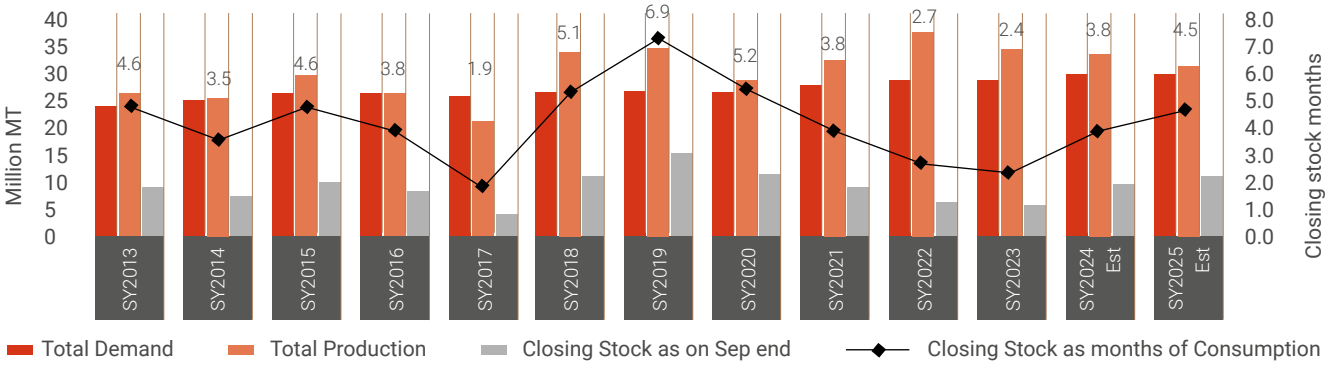
[13]https://media.biltrax.com/indias-construction-industry-in-fy-2023-24-a-zone-wise-analysis-part-1-of-7/#:~:text=According%20to%20reports%2C%20India's%20overall,2024%20totaled%20USD%2033.91%20billion.

of transport networks and urban infrastructure is expected to drive continued demand for construction materials, particularly steel and cement, underscoring the synergistic growth of these industries.

Pumps market

The pump segment in India is a crucial component of various industries, including agriculture, water and wastewater management, oil and gas and power generation. The market has shown robust growth due to increasing industrialisation, urbanisation and government initiatives aimed at improving infrastructure and agricultural productivity. The Indian pump market was valued at USD 1.9 billion in 2023 and is expected to reach USD 2.8 billion by 2032, exhibiting a compound annual growth rate (CAGR) of 4.5% during 2024-2032.[14] Key drivers include the demand for agricultural irrigation, water management and industrial applications, supported by technological advancements and energy-efficient solutions.

Yearly trends in sugar production, consumption and closing stock



[Source: ISMA, ICRA Research; SY: Sugar year (from October 01 to September 30)]

The agricultural sector remains a significant market for pumps, driven by government subsidies and investments in irrigation projects. The increasing focus on water conservation and wastewater management has also led to a rise in demand for energy-efficient pumps. Additionally, the industrial sector's growth, particularly in chemicals, metals, oil and gas and power generation, continues to boost the demand for industrial pumps. The introduction of intelligent pump systems and the growing adoption of solar-powered pumps further create lucrative opportunities for manufacturers, positioning the Indian pump segment for sustained growth.

End-User Industries

Renewable Energy

The renewable energy sector is a pivotal end-user industry for the rotating electrical equipment and machined components markets. In India, the renewable energy sector is experiencing robust growth, supported by favourable government policies, technological advancements and increasing investments in infrastructure.

The country aims to achieve 500 GW of renewable energy capacity by 2030, fulfilling at least half of its energy requirements through renewable sources. This commitment is part of a broader strategy to reduce CO2 emissions by 1 billion tons by 2030, lower carbon intensity below 45% and ultimately achieve Net-Zero emissions by 2070. These targets are driving substantial demand for rotating electrical equipment, such as motors, generators and transformers, as well as machined components.[15]

Wind Energy

The wind energy segment is a major contributor to India's renewable energy capacity. India has a robust domestic industry that supports sector expansion. Favourable governmental initiatives, such as accelerated depreciation benefits, concessional customs duty exemptions and the Generation Based Incentive (GBI) Scheme, have attracted significant private sector investment.

Despite a slowdown in recent years, the Indian government has undertaken several initiatives to revamp the wind energy sector. These steps are expected to drive at least 30 GW of offshore wind capacity additions by 2030.[16] This is expected to increase the demand for machined casted products such as traverse top casts, traverse bottom casts, front bracket structures, support brackets, crosses and actuator housings is expected to rise significantly.

Solar Energy

Solar energy is another critical component of India's renewable energy strategy. The country has made substantial investments in solar power projects, supported by decreasing cost of solar technology and supportive government policies. With the expansion of solar power installations, it is increasing the demand of high-performance motors and generators for energy generation and distribution. Further to this, it has also surged the demand for electrical laminations and machined components as these are essential for the efficient operation of solar power systems.

[14]https://www.imarcgroup.com/india-water-pumps-market

[15]https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1961797

[16]https://jmkresearch.com/can-india-achieve-30-gw-offshore-wind-capacity-target-by-2030/

Power Generation

India's power generation market is characterised by a diverse mix of energy sources, including thermal, hydro, nuclear and renewable energy. The country's installed power generation capacity stood at approximately 428 GW as of 2023, with thermal power contributing the largest share.[17] With the Government aiming to achieve 500 GW of renewable energy capacity by 2030, it is accelerating the growth of the power generation sector.

Thermal Power

Thermal power remains the backbone of India's power generation sector, includes coal, gas and oil-based power plants, with coal being the dominant source. The Indian government has planned approximately 93 GW of thermal capacity additions by FY2032 to meet the growing energy demand. This includes 26 GW of thermal capacity currently under construction, 12 GW that has been bid out and 19 GW under clearance.[18] The expansion of thermal power plants drives the demand for rotating electrical equipment as well as machined components used in turbines and other critical machinery.

Renewable Energy Integration

The integration of renewable energy sources is a key focus area for India's power generation sector. The Government's commitment to reducing carbon emissions and promoting sustainable energy solutions has led to significant investments in renewable energy projects. The development of wind and solar power plants requires advanced rotating electrical equipment, including high-performance motors and generators, to efficiently convert and distribute energy. Furthermore, electrical laminations and machined components play a crucial role in enhancing the efficiency and reliability of these systems. This is expected to surge the demand of rotating electrical equipment and electrical laminations.

Hydro and Pumped Storage Projects

Hydroelectric power is another vital component of India's power generation mix. The country has a substantial hydroelectric capacity, with several large and small hydro projects under development. The development of pumped storage projects (PSPs) is gaining importance for providing grid stability and balancing power. PSPs offer greater inertia and balancing capabilities, making them essential for integrating renewable energy into the grid.

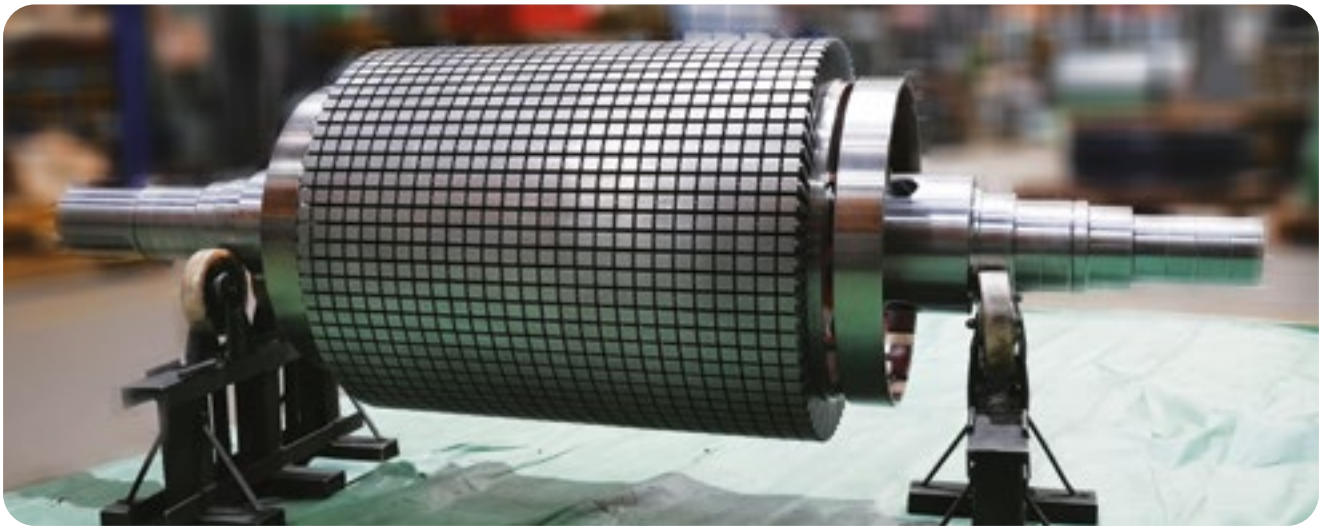
The hydro turbine market in India is expected to grow significantly, with Hydro capacity expected to rise by more than 50%, from 42 GW to 67 GW by 2031-2032. This growth will drive demand for alternators and other components used in hydroelectric power generation.[19]

Nuclear Power

Nuclear power also contributes to India's power generation capacity, with 23 operational nuclear reactors and additional reactors under construction. The expansion of nuclear power plants necessitates the use of highly reliable and efficient rotating electrical equipment and machined components to ensure safe and continuous power generation. With the Government aiming to increase nuclear capacity, it is expected to drive the demand for these critical components.

Railways and Transportation

India has the fourth largest railway system in the world. The railway sector aims to contribute about 1.5% of GDP by building infrastructure to support 45% of the modal freight share of the economy.[20] The Government is focusing on high-speed rails to accelerate economic growth, following the mantra of providing competitive rates, resulting in new traffic on the railways. The rapid urbanisation and growing population in India necessitate the expansion of railway networks and the addition of more passenger trains to meet increasing travel requirements.



[17] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2003930

[18] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2003930

[19] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2017271

[20] https://www.investindia.gov.in/sector/railways

Trains consist of numerous machined casted components for their operations, such as draft gear bodies, wedge cones, ribbed plates, narrow jaw adapters and axle end caps. As the Indian railway sector is expanding, it is driving the demand for these machined casted components.

In addition to conventional railways, India's metro rail sector is one of the fastest-growing sector in the world. The development of India's metro rail system is fundamentally changing the country's urban transportation landscape. The Government's aim to build world-class infrastructure in India includes metro rail networks. Therefore, the metro rail segment is poised for expansion supported by effective governmental policies and robust public demand.

This growth is attributed to several factors:

Government initiatives: The Indian government has launched various programmes to modernise and expand the railway network, including the development of high-speed rail corridors and the expansion of metro systems in major cities.

Technological advancements: The adoption of new technologies in the railway sector, such as electric and hybrid locomotives, requires advanced components and systems, driving demand for high-quality machined parts and electrical equipment.

Urban mobility needs: The rapid urbanisation in India has led to increased demand for efficient public transportation systems, particularly in metropolitan areas, fuelling the growth of metro rail projects.

Focus on energy efficiency: There is a growing emphasis on energy-efficient and environmentally friendly transportation solutions, driving the demand for advanced electrical systems and components in the railway sector.

Make in India initiative: The government's push for local manufacturing under the 'Make in India' programme is encouraging domestic production of railway components and systems, creating opportunities for local manufacturers.

The railways and transportation sector's growth is also reflected in the demand for specific products. For instance, traction motors, which are crucial components in electric locomotives and metro trains, require high-quality electrical laminations and machined components. Similarly, the development of high-speed rail projects such as the Vande Bharat Express has further increased the need for precision-engineered parts and advanced electrical systems.

The sector's expansion is not limited to passenger transportation. The freight segment of Indian Railways is also undergoing significant modernisation, with a focus on increasing capacity and efficiency. This transformation requires upgraded rolling stock and infrastructure, further increasing the demand for machined components and electrical equipment.

Industrial and Automation

India's industrial and automation market encompasses a wide range of applications across sectors such as manufacturing, oil and gas, chemicals, food and beverage, water and wastewater, power generation and mining. The demand for rotating electrical equipment as well as machined components is driven by the need for reliable and efficient machinery to power essential processes such as pumping, mixing, handling and processing materials.

The manufacturing sector in India is a significant driver of demand for industrial and automation equipment. With the Government of India aiming to develop India is a preferred manufacturing hub for the other economies, it has increased the demand for advanced machinery and automation solutions.

In addition to this, the Production Linked Incentive (PLI) scheme, implemented in 2020, has further stimulated manufacturing by offering incentives for increased production, leading to a higher demand for precision-engineered components and high-efficiency motors. The adoption of smart manufacturing practices, including automation and robotics, is transforming the industrial landscape, driving the demand for sophisticated machined components and high-performance electrical equipment.

Automotive and Electric Vehicles

In the automotive sector, motors are integral to a wide array of applications, including thermal management systems, powertrain components, active safety features, power steering systems, seat positioning mechanisms, tensioning devices in seat belts, window regulators, actuation systems in door locks and windshield wiper systems. These crucial components enhance passenger comfort, safety and the overall driving experience. With the automotive industry shifting towards more fuel-efficient and environmentally friendly vehicles, it is increasing the demand for motors.

The electric vehicle segment, in particular, is experiencing rapid growth and is a key driver for the motors market. Approximately 14 million EVs were sold globally in 2023, comprising both battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).[21] In EVs, motors are not only employed for propulsion but also in various auxiliary systems that enhance vehicle performance and improve passenger comfort. The propulsion motors convert electrical energy into mechanical energy, providing the driving force behind the vehicle. Additionally, smaller motors are used extensively across a range of applications, including power steering, HVAC systems and power windows, as well as in innovative technologies such as regenerative braking systems, to help in increasing vehicle's range by converting kinetic energy back into stored electrical energy.

Owing to favourable government policies, the Indian EV market is poised for significant growth. Initiatives such as FAME India (Faster Adoption and Manufacturing of Hybrid & Electric Vehicles) and subsidies for electric two-wheelers and three-wheelers are boosting the adoption of EVs.

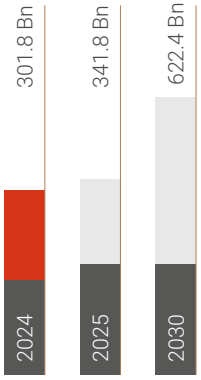
With initiatives such as 'Make in India', it is providing a lucrative opportunity for domestic motor manufacturers to innovate and scale up production. This development is further supported by investments from major automotive players and new startups entering the electric mobility space.

Data Centres

The Indian data centre industry is experiencing rapid growth, driven by increasing digitalisation, cloud adoption and the Government's focus on digital infrastructure development. Additionally, growing internet user base, increased data consumption and the proliferation of digital services are further propelling the industry.

The Indian data centre market is expected to grow significantly in the coming years. According to industry reports, the market size is projected to reach USD 622.4 billion by 2030, growing at a CAGR of about 10.1% during CY 2024 and CY 2030.[22] This growth is anticipated to be driven by increasing adoption of cloud services, implementation of data localisation policies and effective governmental initiatives to promote digital infrastructure.

Data Center Market Size CAGR 10.1%



Market Size in USD

Source: P & A Intelligence

[Source: PS Market Research Report]

The demand for motors in data centres is primarily driven by the need for efficient cooling systems. As data centres consume significant amounts of energy and generate substantial heat, cooling systems are crucial for maintaining optimal operating conditions for servers and other equipment. Motors are used in various cooling applications, such as in computer room air conditioning (CRAC) units, chillers and cooling towers. With the growing focus on energy efficiency, it is leading to the adoption of more advanced and efficient motor technologies.

Furthermore, generators play a vital role in ensuring uninterrupted power supply to data centers. They serve as backup power sources during grid failures or maintenance periods, preventing costly downtime and data loss. As data centers enhances its capacities, it is surging the demand for larger and more sophisticated generator systems. This provides a substantial opportunity for manufacturers of high-capacity generators and associated components to capitalise on the growth prospects.

Mining

India produces a diverse range of minerals, including coal, iron ore, bauxite, limestone and various other metallic and non-metallic minerals. Owing to increased demand in domestic and international markets, the Indian mining sector is at the cusp of transformation.

High-capacity motors are used in heavy machinery such as excavators, conveyors and crushers, which are critical for efficient mining operations. Generators provide backup power to ensure uninterrupted operations, while transformers are used to regulate voltage levels for different mining equipment. On the other hand, machined components are integral to the mining industry. Components such as gearboxes, shafts, bearings and housings are essential for the smooth operation of mining equipment.

The Indian government's focus on infrastructure projects is driving the demand for minerals. This, in turn, boosts the demand for mining equipment and machined components. Favourable government policies, such as the introduction of the National Mineral Policy and various incentives for mining activities, are encouraging investment in the mining sector. These policies aim to increase mineral production and ensure sustainable mining practices, further driving the demand for mining equipment.

[21]1https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars

[22]https://www.psmarketresearch.com/market-analysis/data-center-market

Opportunities and Challenges

Opportunities

Renewable Energy Expansion: The growing awareness and the paradigm shift towards renewable energy sources presents a lucrative opportunity for manufacturers of motors, generators, transformers and machined components. With the aim to achieve 500GW of renewable energy installed capacity by 2030, an increased demand for the use of advanced motors and generators is being observed. This is creating a robust market for electrical laminations and machined parts.

Hybrid & Electric Vehicles (EV): The rapid adoption of electric vehicles (EVs) globally and in India is a critical driver for the rotating electrical equipment market. Motors are essential for EV propulsion and auxiliary systems, while electrical laminations are crucial for high-speed electric motors and high-frequency transformers. This presents a significant growth opportunity for companies involved in the production of these components, as the demand for efficient and high-performance electrical equipment increases with the expansion of the EV market.

Infrastructure Development: The Government of India has embarked on an ambitious journey to revolutionise the country's infrastructure landscape. This has proven beneficial for the rotating electrical equipment and machined components. Government's initiatives, such as the Smart Cities Mission and the National Infrastructure Pipeline (NIP), are expected to create significant opportunities for manufacturers to supply advanced electrical systems and precision-engineered parts.

Industrial Automation: The increasing adoption of automation and smart manufacturing practices in various industries has increased the demand for high-efficiency motors and advanced machined components.

Data Centers: The rapid growth of the data centre industry in India, driven by digitalisation, cloud adoption and government initiatives, presents a significant opportunity for manufacturers of motors, generators and electrical laminations.

Mining Sector: The demand for durable and high-performance equipment in harsh mining environments has surged the requirement for advanced electrical systems and precision-engineered parts.

Agricultural Demand for Pumps: The agricultural pump segment in India presents a significant growth opportunity, driven by increasing demand for irrigation solutions and government initiatives like the PM-KUSUM scheme. This scheme aims to promote the use of solar pumps, offering financial support to farmers and enhancing agricultural productivity and sustainability.

Challenges

Supply Chain Disruptions: The dependence on imported raw materials and components, particularly from countries such as China and Europe, poses a risk of supply chain disruptions. Persistent geopolitical challenges, trade restrictions and logistical challenges can impact the availability and cost of critical inputs, affecting production schedules and profitability.

Technological Adaptation: The need to continuously innovate and adapt to new technologies, such as IoT, AI and advanced materials, requires significant investment in research and development. Companies must adopt advanced technologies to remain competitive; this can be extremely challenging, especially for smaller manufacturers with limited resources.

Cost Pressures: The market is highly competitive, coupled with the consistent need for cost-effective solutions. This puts pressure on manufacturers to optimise production processes and reduce costs without compromising on the quality.

Operational Highlights

In FY24, your company achieved significant milestones and demonstrated robust operational performance across its various business segments. The Company continued to expand its manufacturing capabilities, enhance its technological expertise and proactively adopt sustainability practices.

The Company made strategic investments in automation and robotics to improve operational efficiency and reduce human error. The integration of IT and SAP systems with shop floor activities enhanced supply chain visibility and predictive analytics. Furthermore, the Company continued to invest in the development of high-efficiency motors and generators, catering to the growing demand from the renewable energy, automotive and industrial automation sectors.

Financial Performance

(₹ in crore)

Particulars	FY 2023-24	FY 2022-23	Y-o-Y change
Revenue from operations	1201.60	1,100.17	9.22%
EBITDA	177.72	151.39	17.39%
PAT	90.20	58.83	53.32%

Key Ratios

Particulars	FY 2023-24	FY 2022-23	Y-o-Y change	Reasons for variance more than 25%
Inventory Turnover (No. of times)	4.72	4.30	9.77%	
Debtors Turnover (No. of times)	6.13	5.70	7.54%	
Interest Coverage Ratio (in times)	4.64	3.97	16.88%	
Current Ratio (in times)	1.25	1.20	4.17%	
Debt Equity Ratio (in times)	1.29	0.87	48.28%	Due to increase in term loans and working capital limits for expansion.
Operating Profit Margin (%)	14.79	13.76	7.48%	
Net Profit Margin (%)	7.51	5.35	2.16%	
Return on Equity(%)	24.04	19.04	5%	
Debt Service Coverage Ratio (in times)	2.01	2.90	(30.69)%	Due to increase in Term loans.
Trade Payables Turnover Ratio (in times)	3.85	3.40	13.24%	

Outlook

The company plans to enhance its operational footprint by consolidating its recently acquired subsidiary, Bagadia Chaitra Industries Private Limited, into a state-of-the-art facility in Bengaluru. This move not only aims to streamline operations but also to cater effectively to the growing demand in the South Indian market. The Company is exploring opportunities for vertically integrated facilities in key North and East Indian markets, which will facilitate efficient material flow and optimize resource utilization. By focusing on modular expansions and operational improvements, the company is set to unlock additional productivity and enhance profit margins, ensuring a solid foundation for future growth.

In addition to expanding its manufacturing capabilities, the Company is committed to leveraging technology and sustainable practices to drive operational efficiencies. The company is investing in advanced automation and digitalisation initiatives, including the integration of IT and SAP systems, to enhance process performance and reduce waste. These technological upgrades are expected to result in zero-defect products and improved supply chain visibility By aligning its operations with sustainable practices and focusing on quality and efficiency, the Company aims to strengthen its market position and deliver long-term value to its stakeholders.

Risk management

The Company's Risk Management framework assists in identifying the risks and mitigating them through mitigation and responses.

Risk management at the Company is based on the following pillars:

1. Compliance Risk Management
2. Process Risk Management
3. Enterprise Risk Management (ERM)

Compliance risk management includes a mechanism of reporting and assurances with respect to adherence with laws and regulations prevailing in the country. Process risk management involves review of business related operational and financial processes and controls through a risk-control matrix. Identification and mitigation initiatives of other enterprise risks are overseen on a continuous basis by the Management and business teams.

The Company's ERM program has the following objectives:

- Proactively manage risks and drive timely mitigation.
- Optimize costs and the effort needed to manage risks.

- Build necessary resilience via crises management or business continuity plans.
- Improve compliance with good corporate governance guidelines and practices, as well as laws and regulations

The ERM program covers financial risks, commercial and operational risks, sectoral risks, sustainability and ESG risks, information and cybersecurity risks, crisis interruption and business continuity risks that can unfavourably impact the Company's objectives and goals. Significant process or compliance risks are escalated as enterprise level risks. Severity and frequency/likelihood have been defined, and a formal monitoring and governance structure has been set up.

The Company currently manages the following material risks:

COMMERCIAL RISKS

Growth risks:

The Company operates in an organically growing but niche segment. Therefore, there is always a risk of future costs and investments outpacing revenue growth opportunities. Delays in harnessing growth opportunities in modern tech-enabled businesses or regions can also impact the future growth prospects of the Company.

To secure its growth aspirations, the company has been meticulously focusing on meeting customer expectations, securing talent and the enabling infrastructure in a timely manner.

The Company is actively pursuing modern technology-enabled business opportunities in the Electric Vehicles and other sectors. Europe is increasingly emerging as a source of opportunity for the Company and the Company management, supported by the Commercial team constantly monitor the emerging landscape to capitalize on the opportunities and mitigate potential threats.

Customer concentration:

The Company's overdependence on a particular customer, user segment or region can pose a business risk in case the said customer undergoing a business crisis or preferring to shift to another supplier. In addition to focusing on long-term customer relations, the Company manages this risk by increasing its value proposition via forward and backward integration and by diversifying its geography and industry customer base.

Competition:

Many competitors vying for the same business may lead to revenue and margin erosion. The Company, through its successful pursuit of forward and backward integrations, has been able to insulate itself from standalone competitors across the highly staggered value chain and in the process develop stickiness with clients. This form of differentiation has been a constant endeavour to stay competitive both globally and in India.

OPERATIONAL RISKS

Geopolitical risks:

Multiple geopolitical risks events including the war in Ukraine and Middle East and the economic and political developments in the United States and China have been negatively impacting demand for several industries and increasing input costs. The company is constantly assessing these unfolding events and scenarios for any risk and potential opportunity to its business or supply chain.

HR and People risk:

Any erosion in commitment, competence, and compassion of employees towards the Company's stated vision of value creation can incapacitate the Company's abilities and reputation. While readily available skilled machine operators are a challenge, securing second-in-line for key roles is important to future growth. The company is invested in multiple development programs to upskill and re-skill people. In line with its vision and goals, the Company constantly endeavours to secure a skilled talent pool, impart the right technical trainings, and plan second-in-line for all critical roles.

Health and Safety risks:

Occupational hazards may endanger the safety of our employees and communities around our manufacturing locations. Increased automation with extra focus on workmen safety has helped manage and improve health and safety performance. Employees and workmen get training on a range of topics, including health and safety induction programme for workers and job-specific training on the use of PPEs.

INFORMATION AND CYBER-SECURITY

Digitisation, Information and Cybersecurity risks:

The Company has been embarking on digitization initiatives both on the office place & shop floor. Notable initiatives include extended use of cloud-based solutions for banking and other office applications, automation & robotics and IOT device connectivity in manufacturing plants, as well as increasing leverage of SAP systems. While these digitization initiatives favourably affect the achievement of desired efficiencies, they also bring with them potential risks if not correctly implemented. The Company is focused on regularly training its staff on the new IT protocols or controls to be followed, while parallelly implementing information and cybersecurity safeguards.

SECTORAL RISKS

Technology risks

Being in the business of engineered goods with a significantly higher level of customization, the Company's business is susceptible to technological/product process obsolescence.

The Company deploys a twin-pronged approach to stay ahead of the technological curve. First being steady addition of capacities and strategic investments that imbibes the best-in-class global technologies and processes available at that point in time. The second level of this approach is to undertake periodic modernization of its legacy facilities by way of maintenance capex.

Economic risks

The Company's business is in a capital-intensive sector that is inextricably linked with the overall economic, infrastructural, and industrial growth of the country/region. Geographic and customer segment diversification, including in the area of few non-capital goods continue to be key response strategies deployed by the Company.

FINANCIAL RISKS

Commodity and Forex volatility:

The recent geopolitical events have made both the foreign exchange, commodity, and input costs very volatile. The Company insulates itself against these risks through its agreements and contracts. Additionally, where possible, hedging strategies are deployed to manage open exposures from commodity price increases or foreign exchange volatility.

Liquidity risk

The Company's business is in a capital-intensive sector involving a longer cycle of product development that often includes proof of concept components as well. The Company maintains credit lines and seeks access to capital or debt in alignment with its business and growth aspirations. Besides striving to ensure a strong balance sheet, the Company always follows a prudent working capital management regime.

SUSTAINABILITY AND ESG

ESG Risks

While the Company operations do not pose a significant environment risk, the Company is mindful of reducing its carbon footprint in its inhouse operations through steady rationalization of energy and water consumption and continues to adhere to the principle of 4Rs (reduce, reuse, recycle and recover) along with investing in energy-efficient capital equipment. However, the Company carbon footprint allocation to upstream raw material and other products is likely to be significant.

Additionally, Europe starting Jan 1, 2026, may impose tariffs (via Carbon Border Adjustment Mechanism) on Company exports of its products to Europe. The Company is closely monitoring these developments so that it can determine the right strategy to respond to any burden generated from upstream iron and steel manufacturing industries. Following-through on Environment, Social and Governance (ESG) commitments to regulators, customers and investors enables the Company to secure its reputation and future business opportunities.

CRISIS MANAGEMENT, BUSINESS INTERRUPTION AND BUSINESS CONTINUITY

In the past, the Company effectively managed the COVID-19 pandemic through a combination of careful planning and resilience. High severity and high velocity (High velocity risks have extremely low time to affect) risks and crisis events are factored for development of BCP or contingency plans.

Human resource

The Company acknowledges the importance of its workforce in maintaining competitiveness in the engineering sector. Pitti Engineering is committed to nurturing a supportive environment, offering structured career progression opportunities and comprehensive training programmes. The Company also ensures that the hardwork of each employee that contributes to the accomplishment of organisational goals is properly recognised.

The Company provides comprehensive health benefits and a holistic work environment that supports both personal and professional development. As of 31st March 2024, the Company supports a dedicated workforce of 1502 employees.

The Company fosters employee engagement by encouraging open communication, collaboration and participation in decision-making processes. Regular feedback mechanisms and team-building activities are implemented to ensure that employees feel valued and motivated, contributing to a positive workplace culture.

Internal control system and adequacy

The Company has a robust and effective internal control mechanism in place, one that is commensurate with the size, nature and complexities of its business. Internal control mechanism, which is benchmarked with evolving best practices at regular intervals, ensures Company's adherences to all applicable regulations in letter and spirit. It also protects Company's various assets from unauthorised use while also ensuring accuracy of financial reporting.

The Company's robust Management Information System, spanning all critical functions, forms an important pivot of internal controls. The leadership team, including all the functional/ unit heads, serves as the first ring fence. Periodic internal audits and the second ring fence formed by an independent internal auditor, reviews control mechanism and its efficacy. The internal audit is entrusted to an independent Chartered Accountants firm, M/s. Laxminiwas & Co., Chartered Accountants.

The Audit Committee periodically reviews the efficacy of control mechanism, offering improvement suggestions, as and when required. Internal control on financial reporting is attested by the Company's statutory auditors.

Cautionary statement

Statements in this Management Discussion and Analysis report that describe the Company's objectives, projections, estimates, expectations, or predictions may constitute 'Forward-looking statements' within the meaning of the relevant laws and regulations. These statements are predicated on a number of expectations and assumptions about the future. Since the Company's operations are impacted by several internal and external factors outside of its control, actual results could significantly differ from those stated or inferred. The Company disclaims any obligation to update publicly any forward-looking statements in light of new information, future developments, or other factors. The risks listed here are not exhaustive, therefore readers are advised to be cautious. Readers are urged to use their best judgement when determining the risks connected to the Company.