



INDUSTRY REPORT ON

MARKET POTENTIAL ASSESSMENT OF POWER TRANSMISSION PRODUCTS ACROSS INDUSTRY & AUTOMATION, MOBILITY, AND WIND SOLUTIONS

Final Report

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DISCLAIMER

The market research process for this study has been undertaken through secondary/ desktop research as well as primary research, which involves discussing the status of the market with leading participants and experts. The research methodology used is the Expert Opinion Methodology. Quantitative market information was sourced from interviews through primary research and from trusted portals. Therefore, the information is subject to fluctuations due to possible changes in the business and market climate. Frost & Sullivan's estimates and assumptions are based on varying levels of quantitative and qualitative analyses, including industry journals, company reports, and publicly available information.

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ABBREVIATIONS

Title	Abbreviations
CAGR	Compound Annual Growth Rate
CY	Calendar Year (January to December)
FY	Financial Year (April to March)
GDP	Gross Domestic Product
GVA	Gross Value Added
IMF	International Monetary Fund
IIP	Index of Industrial Production
MoSPI	Ministry of Statistics and Programme Implementation
Bn	Billion
Mn	Million
PMP	Phased Manufacturing Plan
PLI	Production Linked Incentive
EU	European Union
FDI	Foreign Direct Investment
GST	Goods and Services Tax
F&S	Frost and Sullivan
CAPEX	Capital Expenditure

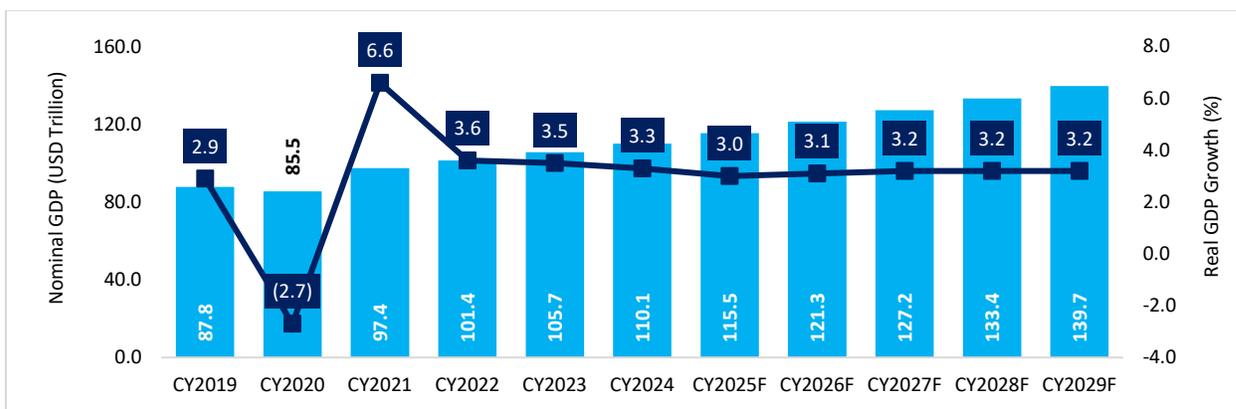
Chapter 1: Global Macro-Economic Overview



1.1. Macro-economic Trends of the Global Economy and Outlook of Global GDP Trends

Global economic growth saw a robust rebound in 2021, with real GDP expanding by 6.6%, driven by strong post-pandemic demand recovery and fiscal stimulus. Growth, however, moderated to 3.6% in 2022 and 3.5% in 2023, as the Russo-Ukrainian war intensified inflationary pressures, disrupted supply chains, and prompted aggressive monetary tightening.

Exhibit 1.1: Nominal GDP (in USD Trillion) and Real GDP Growth (%), Global, Calendar Year (CY)2019-CY2029F

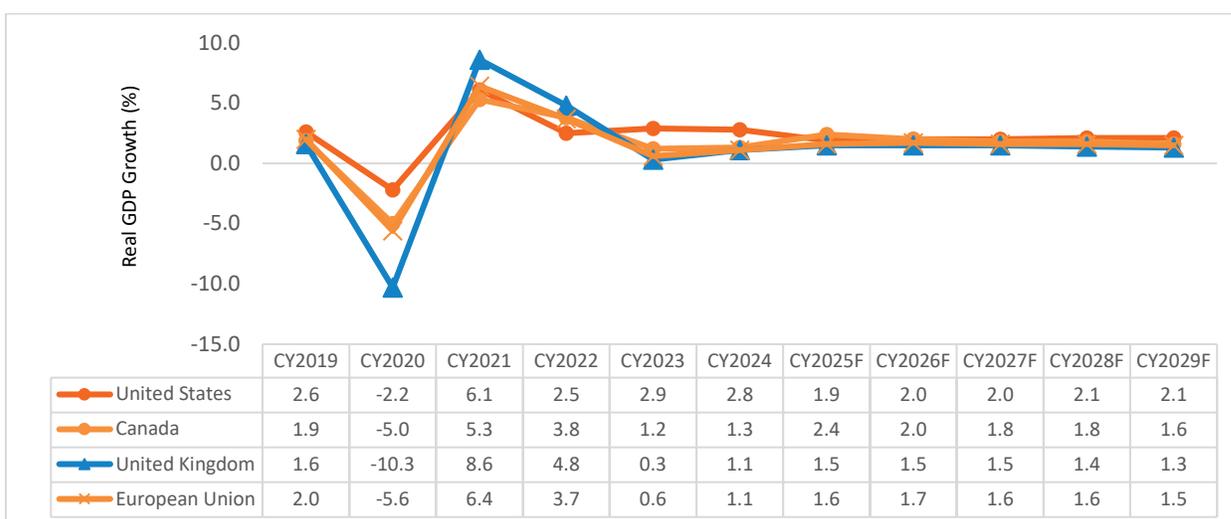


Source: International Monetary Fund (IMF): World Economic Outlook (WEO), Frost & Sullivan

The global economy is expected to grow by 3.0% in CY2025F and 3.1% in CY2026F. Economic activity remains broad-based, with contributions from domestic consumption, services, and investment in several large emerging markets. From 2025 to 2029, global nominal GDP is projected to reach approximately USD 140 trillion, with real GDP growth averaging 3.2% annually. While legal challenges to the tariff regime create uncertainty, the CY2025E growth forecast has inched up to 3.0%, aided by pre-tariff front-loading. Nonetheless, elevated costs, fragile supply chains, and weakening demand highlight continued downside risks for global trade and growth.

1.2. Outlook on Key Advanced Economies

Exhibit 1.2: Real GDP Growth (%), Key Advanced Economies, CY2019-CY2029F

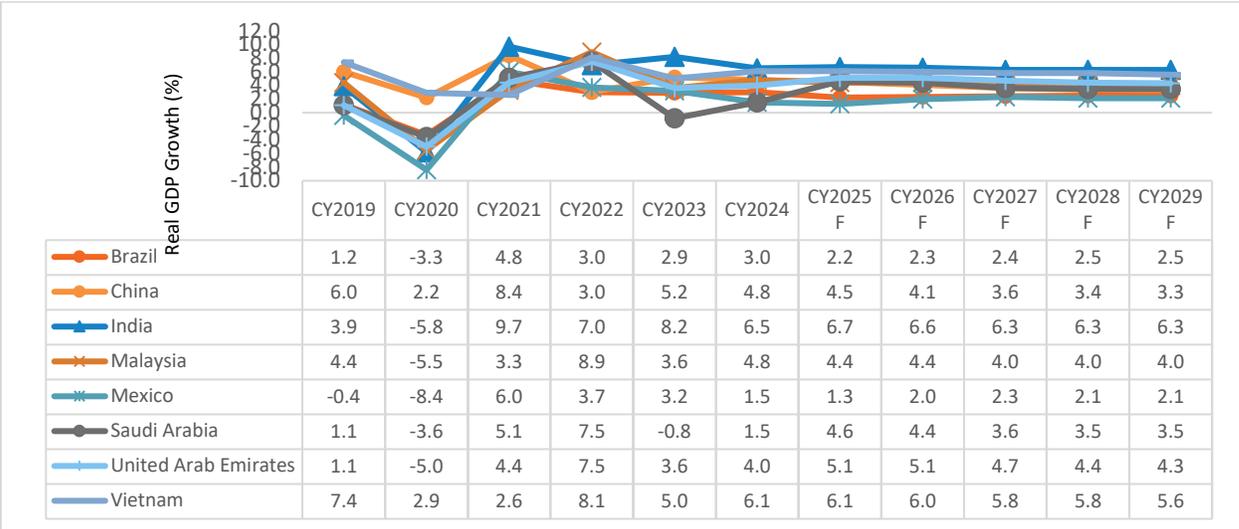


Source: IMF: WEO, Frost & Sullivan

The U.S. maintained solid growth at 2.9% in 2023, easing slightly to 2.8% in 2024, and is projected to average ~2.0% through 2029. Canada's growth rate increased by 1.2% in 2023, rose to 1.3% in 2024, peaked near 2.4% in 2025, and then stabilized at 1.6% by 2029. The U.K., after strong post-pandemic rebounds, expanded 0.3% in 2023 and is expected to improve to 1.1% in 2024 and 1.3% by 2029. The EU recorded 0.6% growth in 2023, rising to 1.1% in 2024 and sustaining 1.5 -1.7% through 2029.

1.3. Outlook on Key Emerging Markets

Exhibit 1.3: Real GDP Growth (%), Key Emerging Markets, CY2019-CY2029F



Source: IMF: WEO, Frost & Sullivan

Brazil’s economy is projected to slow to 2.2% in 2025 and stabilize at 2.5% by 2029. China’s growth, after rebounding to 5.2% in 2023, is expected to ease to 3.3% by 2029. Malaysia’s growth recovered to 4.8% in 2024 and is set to stabilize around 4.0% from 2027. Mexico slowed to 1.5% in 2024 but should improve to 2.3% by 2027. Saudi Arabia’s GDP is expected to recover to 4.6% in 2025 before normalizing to 3.5% by 2029, while the UAE is projected to reach 5.1% in 2025 and soften to 4.3% by 2029. Vietnam strengthened to 6.1% in 2024, with growth tapering slightly to 5.6% by 2029. India remains the standout performer, driven by domestic demand and reforms. Rising from the 9th-largest economy in 2010 (USD 1,676 billion) to the 5th-largest in 2024 (USD 3,889 billion), India is on track to become the 3rd-largest by 2029 at USD 6,307 billion. This momentum is supported by a strong demographic base (68% working-age population), robust capital expenditure (18.8% CAGR), and growth in sectors such as technology, infrastructure, and defense. India’s ambition of achieving USD 2 trillion in exports by 2030 further underscores its emerging global leadership.

1.4. Global Manufacturing Shift and Diversification Away from China and Europe

The global manufacturing landscape is undergoing a marked shift as businesses diversify from China, driven by demographic, economic, and geopolitical factors. China's population aged 65 and older is projected to rise to 17.4% by 2029, leading to a shrinking labor force, reduced productivity, and heightened fiscal pressures for pension and public healthcare reforms. Geopolitical tensions over Taiwan and the South China Sea amplify trade risks. At the same time, high corporate debt, particularly in the real estate sector, and falling property prices dampen economic growth and investor confidence. Financial

inefficiencies further exacerbate the issue, as concentrated loans to state enterprises and inconsistent government interventions undermine economic stability.

Many European businesses are struggling with rising energy costs and weakening consumer spending as households allocate more of their budgets to energy costs. Energy-intensive industries are under pressure, disrupting operations and profitability. This disparity in energy prices is driving some industries to consider relocating to India, potentially boosting India's manufacturing sector. Trade relations with key markets such as the EU, the U.S., and Japan are expected to wane, prompting companies to explore alternative manufacturing destinations.

India's manufacturing share of GDP has strengthened to ~17%, driven by proactive policy measures, expanding domestic capacity, and growing global demand for India-made products. India is steadily shifting from a purely services- and consumption-led economy to a more balanced model that combines consumption and manufacturing, enhancing long-term economic resilience.

1.4.1. India's Strategic Advantage: Emerging as a Key Beneficiary of the China+1 and EU+1

Strategic Position in Global Supply Chains: India is emerging as a key player in the global China+1 and Europe+1 strategies. Global manufacturers are increasingly shifting sourcing and production to India to derisk supply chains, especially in industrial power transmission. India's cost competitiveness, strong engineering base, and expanding vendor ecosystem are enabling global OEMs to localize manufacturing and scale exports.

Focus on High-Value Industries: The India Semiconductor Mission, with INR 760 billion in funding and INR 1.5 trillion in private investments, showcases India's focus on high-value industries. Supporting policies like the Design Linked Incentive scheme and the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors are driving growth in aerospace, electrical machinery, and pharmaceuticals. Production-Linked Incentive (PLI) programs are driving growth in the aerospace, electrical machinery, and pharmaceutical sectors.

Geopolitical Challenges and Opportunities: Geopolitical tensions involving Russia have disrupted supply chains across industries, including automotive and steel. Rising raw material costs have pressured profitability. However, India's diversification of energy imports and renewable energy investments under Atmanirbhar Bharat are enhancing resilience and creating opportunities in export-driven sectors.

Policy and Workforce Strengths: Initiatives such as Make in India, cost-competitive labor, a large and young workforce, and a rapidly upskilling talent pool are transforming India into a reliable manufacturing hub.

Future-Ready Economy: With a diversified economy, political stability, strategic policies, and sustainability-focused practices, India is well-positioned to meet global market demands. Its emphasis on ease of doing business and robust manufacturing capabilities offers significant opportunities for global investors, cementing its place in global supply chains. Additionally, India's strategic geographic location offers natural trade advantages with the Middle East, ASEAN, and the African market.

Strong Domestic Market: India's strong and rapidly expanding domestic market offers a significant strategic advantage for global manufacturers. With a large, diverse, and growing demand base across industrial and consumer sectors, companies can scale faster and ensure stable capacity utilization.

Chapter 2: Domestic Macro-Economic Overview



2.1. Macro-economic Overview of the Indian Economy

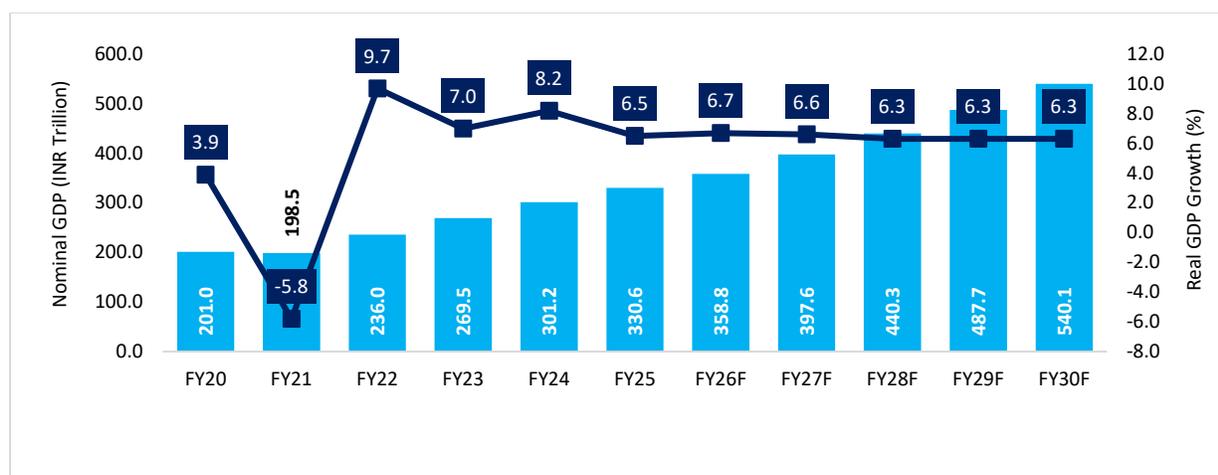
Indian economic growth in FY25 outperformed many other major economies and was the least impacted by the inflationary pressures globally. The government has been promoting structural reforms, such as a focus on disinvestment and higher FDI limits, while also working on a national logistics policy to promote India's economic growth post-pandemic.

In CY2019, the Indian government set a target of becoming a USD 5 trillion economy and a global powerhouse by FY25. As a result of the COVID-19 pandemic, the government revised the original timeline. India crossed the USD 3 trillion mark in FY2022 and crossed the USD 4 trillion mark in May 2025. In a realistic scenario, India needs another 2-3 years to cross the USD 5 trillion mark.

The Union Budget FY2026 outlines a total expenditure of INR 50.65 lakh crore with a capital outlay of INR 11.21 lakh crore (3.1% of GDP) and a fiscal deficit target of 4.4% of GDP. The Budget identifies four engines of growth: Agriculture, MSMEs, Investment, and Exports. Key macroeconomic announcements include enhanced support for the manufacturing sector through PLI schemes, infrastructure investments under PM Gati Shakti, and targeted incentives for MSMEs such as credit facilitation and compliance simplification. Additional allocations toward energy efficiency programs and appliance market development are also expected to drive demand for components used in cooling and refrigeration systems. A National Manufacturing Mission and measures for the toy, leather, and food processing sectors aim to boost "Make in India."

2.2. Real and Nominal GDP Growth in India: GDP Growth Trends

Exhibit 2.1: Nominal GDP (in INR Trillion) and Real GDP Growth (%), India, Fiscal Year (FY) 2020 to FY2030F



Source: Mospi, IMF, Frost & Sullivan.

India's real GDP displayed resilience, with a strong rebound of 9.7% in FY2021-22 following a sharp contraction of 5.8% in FY2020-21 due to COVID-19. It maintained steady growth at 7.0% and 8.2% in FY2022-23 and FY2023-24, respectively. Nominal GDP surged by 46.9% from FY2019-20 to FY2023-24, reaching INR 301.2 trillion, reflecting rising economic activity. Projections indicate sustained growth momentum with nominal GDP projected to reach INR 540.1 trillion by FY2029-30, driven by a robust consumer base, competitive labor costs, and government-led CAPEX. Structural reforms, increasing

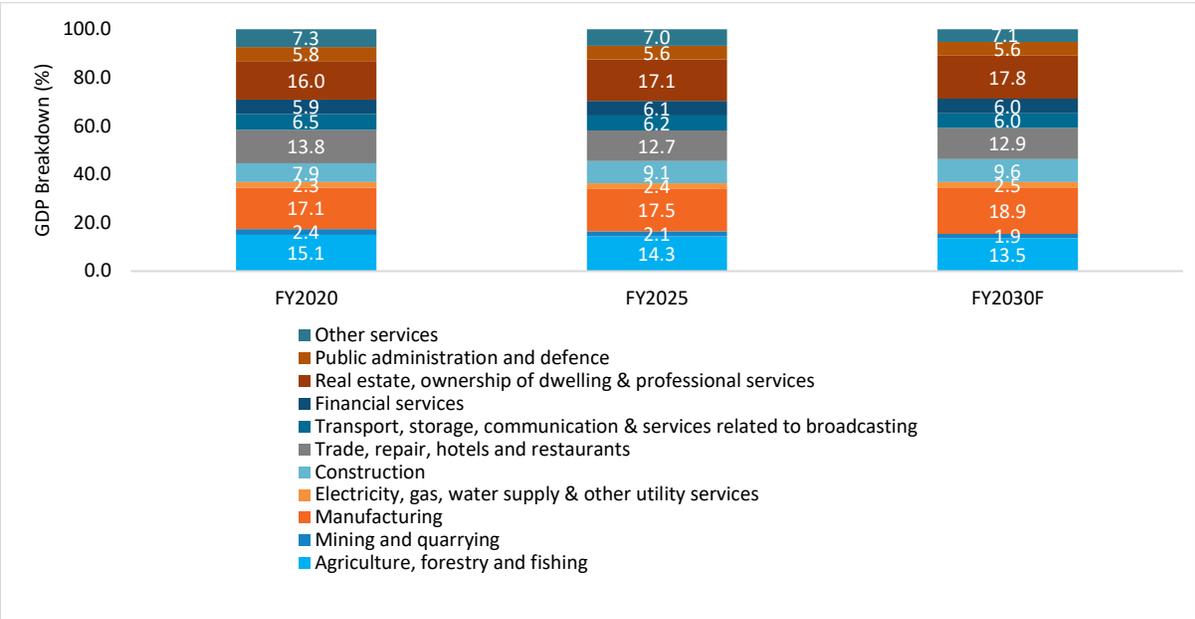
digitalization, and expanding global trade integration further position India as a key player in the global economy, underscoring its potential to exceed USD 7.0 trillion in nominal GDP within the next decade.

2.3. GDP Breakdown by Key Sectors

Manufacturing

India's sectoral GDP composition reflects a dynamic shift towards a combination of industrialization and services-led growth. India's manufacturing sector has accounted for 17%-18% of the total Gross Value Added (GVA) over the past decade. Over the medium term, India's manufacturing share is expected to rise from its current ~17% of GDP to 20–21% by FY2030, supported by PLI schemes across 14+ sectors, including pharmaceuticals, textiles, medical devices, auto components, and white goods. This growth will also be reinforced by expanding industrial corridors, rising export competitiveness, and increased private-sector capex. Additionally, stronger domestic supply chains and logistics reforms are enabling faster scale-up of manufacturing across key industries.

Exhibit 2.2: GDP breakdown by key sectors (%), India, FY2019-20, FY2024-25 & FY2029-30F

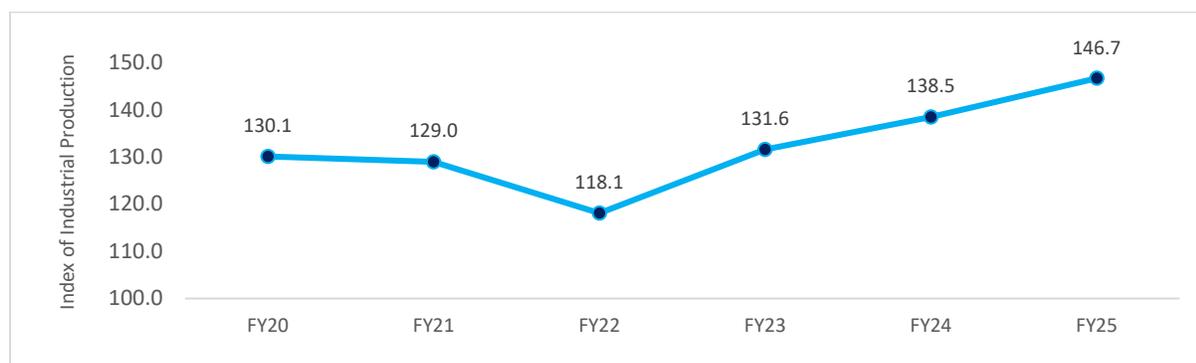


Source: Ministry of Statistics and Programme Implementation (MOSPI) – India, Frost & Sullivan

India's manufacturing sector has steadily expanded its economic contribution over the last several years, and the data reflect a clear shift towards higher value-added, capital-intensive industries. For example, machinery and equipment showed a robust rise from INR 5.3 trillion in FY2018 to INR 7.5 trillion in FY2024, growing at a CAGR of ~6.0%, reflecting increasing investments in automation, industrial modernization, and infrastructure development. This growth signals that Indian manufacturers are increasingly focusing on improving productivity and technology adoption rather than just volume growth. Similarly, metal products and other manufacturing goods have seen substantial gains, driven by both domestic infrastructure demand and export opportunities.

2.4. Industrial Activity Growth – Increase in IIP

Exhibit 2.3: Index of Industrial Production (IIP), India, FY2019-20 to FY2024-25



Source: MOSPI – India, Frost & Sullivan.

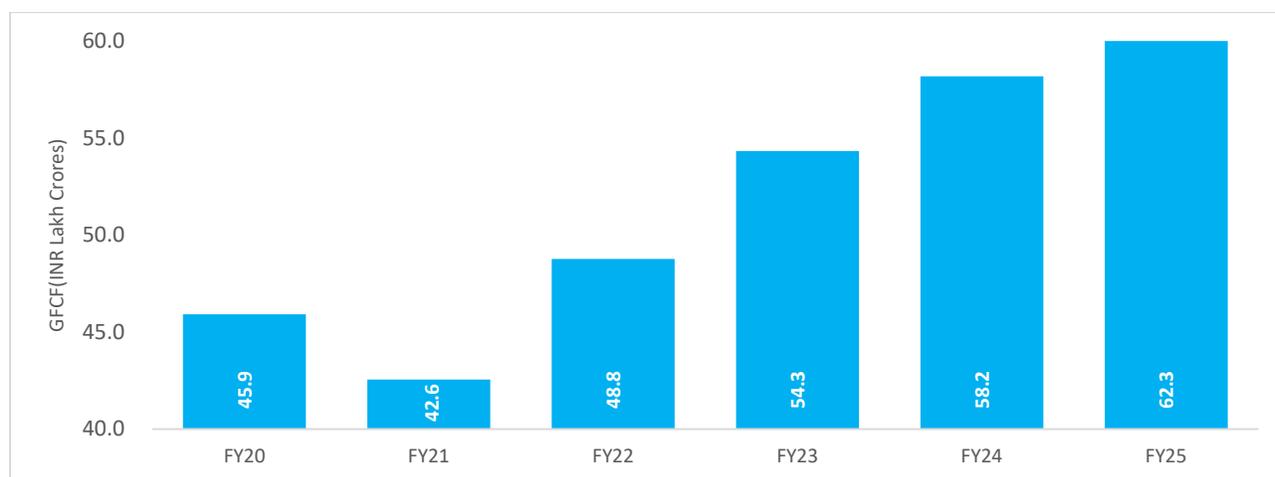
Between FY2019-20 and FY2024-25, India's IIP grew at a steady CAGR of 2.4%, driven by initiatives like the PLI scheme, Make in India, and Atmanirbhar Bharat, which boosted domestic manufacturing and innovation. Key sectors such as automotive, electronics, and pharmaceuticals have thrived on strong consumer demand and export opportunities, highlighting India's evolving industrial ecosystem and its growing role in global manufacturing and trade. Macro factors like GDP growth, inflation, and landmark policies, along with micro drivers such as skilled labor, infrastructure, and technological advancements, have bolstered industrial activity. Improved logistics and targeted resource policies further strengthen India's growth-oriented industrial framework, paving the way for sustained economic expansion.

2.5. Historic Trends and Outlook of Gross Fixed Capital Formation

Gross Fixed Capital Formation (GFCF) in India has shown a significant upward trend over the past decade. At constant 2011-12 prices, GFCF increased from ₹32.78 lakh crore in 2014-15 to ₹54.35 lakh crore in 2022-23. The government's capital expenditure increased 28.2% YoY in 2023-24, reaching ₹9.5 lakh crore, 2.8 times the level of FY20. India's gross fixed capital formation (GFCF) climbed to 30.8% of GDP in FY24, up from an average of 28.9% between FY15-19 (pre-pandemic).

Gross Fixed Capital Formation (GFCF) has recorded a 7.1% growth rate during FY 2024-25. The government's strong capex push, together with household investment in real estate (dwellings, other buildings, and services), has contributed to the improvement in GFCF. In summary, while the private sector has been the predominant contributor to India's GFCF, recent government initiatives in capital expenditure have significantly bolstered overall investment levels. This collaborative dynamic between government spending and private investment is pivotal for sustaining and enhancing India's economic growth trajectory.

Exhibit 2.4: Gross Fixed Capital Formation (in INR Trillion), India, FY2020 to FY2025



Note: Gross Fixed Capital Formation at Constant (2011-12) Prices (Rs. Crore) Source: pib.gov.in, mospi.gov.in, Frost & Sullivan

2.6. India – Preferred Destination for Global Manufacturing Hub

The manufacturing sector remains a key pillar of India’s economy, contributing approximately 17% to GDP and employing more than 27 million people. The National Manufacturing Mission was announced in the Union Budget for FY 2025–26 to strengthen Atmanirbhar Bharat and increase the manufacturing share of GDP to 25 percent. Key initiatives include GST implementation, corporate tax reduction, FDI liberalization, and extensive measures to ease doing business. Aligned with the vision of ‘Atmanirbhar Bharat’, the government has launched Production Linked Incentive (PLI) schemes across 15 strategic sectors, with an outlay of INR 2.13 trillion, to boost domestic manufacturing, promote exports, and integrate Indian industries into global value chains. Complementing this, the Phased Manufacturing Program (PMP) focuses on reducing import dependence initially in electronics and telecom by progressively incentivizing local value addition through duty rationalization, tax benefits, and innovation-linked support. In FY25, India’s manufacturing sector demonstrated strong resilience and adaptability, leveraging domestic demand, exports, and policy support. With continued investments in technology, sustainability, and infrastructure, the industry is well-positioned for robust growth in the coming years.

2.6.1. India's competitiveness among the leading manufacturing economies

China’s Shifting Role in Global Manufacturing

China, the world’s second-largest economy, accounts for nearly 32% of global manufacturing output. However, it has gradually begun losing its dominance due to structural challenges. Between 2019 and 2022, China’s workforce declined by 41 million, and its aging population is projected to exceed 400 million by 2035, threatening its labor-intensive industries. Average daily wages in 2021 stood at USD 46 in China, compared to USD 7.7 in India, pushing global manufacturers to explore alternative destinations such as India, Vietnam, Thailand, and Bangladesh. In addition, U.S.-China trade tensions and the global China + 1 strategy have accelerated supply chain diversification. Companies like Apple and Foxconn are already expanding operations in India, a trend expected to intensify.

India's Competitive Edge:

India's economic momentum is being powered by domestic consumption, public and private investment, and policy reforms. With its young workforce, cost advantage, and supportive government initiatives, India is emerging as a preferred global manufacturing destination.

- **Global Ranking and Growth Potential** - India is the fifth-largest manufacturing economy, rapidly advancing under the Make in India initiative. It is projected to rank among the top three manufacturing nations by 2030, alongside China and the U.S.
- **Cost Competitiveness** - With significantly lower labor costs than China and Mexico, India remains attractive for labor-intensive sectors like textiles, electronics, and automotive, sustaining a strong cost edge.
- **Demographic Advantage:** India is expected to add over 140 million new middle- and high-income earners by FY2030, expanding the consuming class to nearly 800 million people. This surge will fuel domestic consumption and accelerate economic diversification across multiple sectors.
- **Skilled Workforce and Technology Adoption** - India's large skilled workforce and rising adoption of Industry 4.0 technologies - IoT, AI, and robotics are enhancing productivity and global competitiveness.
- **Sectoral Strengths** - India is a global leader in mobile manufacturing, automotive, renewables, and pharmaceuticals, emerging as a key player across diverse industrial sectors.
- **Global Value Chain Integration** - Trade partnerships and infrastructure initiatives like Gati Shakti and the Dedicated Freight Corridors are strengthening logistics and deepening India's integration into global value chains.
- **Monetary Policy Easing** - Monetary policy has eased, with the RBI cutting repo rates by 25 bps and adopting an accommodative stance, with further cuts expected to support credit growth and industrial activity.
- **Strategic Trade Agreements / Foreign Trade Policy** - India is advancing trade deals such as the India-UAE CEPA and the Australia ECTA to boost exports amid rising tariff barriers, while ongoing UK-EU negotiations and the updated Foreign Trade Policy enhance global market access.

2.7. Impact of Global Geopolitical Situation on India's Manufacturing Sector

India's manufacturing sector is facing several challenges due to the Russia-Ukraine conflict and unrest in the Middle East. Supply chain disruptions, rising raw material costs, and shifting global trade dynamics are affecting India's manufacturing sector. The Russia-Ukraine war disrupted global energy and commodity supply chains, causing shortages of natural gas, steel inputs, and critical metals, and driving sharp volatility in input costs across the automotive, chemicals, and steel industries. India has benefited from discounted Russian crude and is strengthening local sourcing and manufacturing resilience to reduce dependency on imports. Instability in the Middle East has affected the global energy market, impacting India's manufacturing costs. Rising raw material costs have also impacted India's manufacturing sector. The geopolitical uncertainties have accelerated India's push to become more self-reliant and less dependent

on global trade. The country is also focusing on diversification and localization, with a priority on domestic capabilities in critical industries such as defense, semiconductors, and electric vehicles.

US tariffs on imports from India have significantly altered bilateral trade dynamics. From August 2025, the US increased reciprocal tariffs on many Indian exports to up to ~50%, one of the highest rates imposed by the US on any partner, partly tied to disagreements over energy imports such as Russian oil. This tariff pressure has led to a partial decline in India's exports to the US across broader categories, prompting exporters to rethink market strategies and diversify sales beyond the US while navigating increased compliance and cost burdens. At the same time, resilient demand for tariff-exempt categories such as electronics, pharmaceuticals, and specific engineering goods has helped sustain overall outbound shipments. For Indian manufacturers, higher U.S. import duties pose cost-competitiveness challenges in traditional sectors but also create opportunities, as global buyers re-evaluate supply chains for resilience and diversification. Indian suppliers with strong engineering standards, quality certifications, and competitive pricing are increasingly being considered in non-tariff-impacted segments, such as renewable energy components and industrial equipment. Ongoing dialogue between India and the US aims to address market access, compliance issues, and tariff relief options, underscoring the importance of strategic engagement in stabilising trade flows.

Chapter 3: Overview of Global Industrial and Automation Solutions

Market - *Industrial Solutions Split by Gearboxes (>15k Nm) and Gear Motors (< 15k Nm)*



**Overview of Global Industrial and
Automation Solutions Market**

3.1. Global Industrial and Automation Solutions Market – Overview

Industrial Solutions Market

The industrial solutions domain encompasses the mechanical systems that transmit, transform, or control power in machinery and equipment. At its core are gearboxes and gear motors, which convert high-speed, low-torque motor output into controlled torque for various industrial operations. Gearboxes act as reducers, adjusting speed and torque, while gear motors combine both in a compact, efficient unit. These systems form the backbone of industries such as cement, steel, mining, power, food & beverage, chemicals, pharmaceuticals, textiles, and material handling. Common types include helical, bevel, planetary, spur, worm, and cycloidal gear units, chosen for specific torque and precision needs. They are essential for conveyors, mixers, crushers, cranes, and turbines, where reliability and consistent motion are critical.

Automation Solutions Market

The automation solutions market comprises the electrical and control layers of modern industrial systems that drive, regulate, and optimize motion and energy use. It includes electric motors, variable frequency drives (VFDs), servo motors and drives, and precision motion systems that make machines smarter and more efficient. Electric motors convert electrical energy into motion, while VFDs adjust speed and torque by controlling frequency and voltage. Servo systems enable precise, feedback-driven motion in robotics, CNC, and automated assembly. Precision drives/actuators deliver micrometer-level accuracy for sectors such as semiconductors, packaging, aerospace, and medical devices.

Together, these domains form the mechanical-electrical continuum of modern industry: the electro-mechanical segment represents the muscle, while automation is the brain and nervous system. Their integration defines a new era of smart manufacturing, where gearboxes, motors, and drives seamlessly integrate and communicate with high-level automation to deliver energy-efficient, data-driven, and reliable industrial performance across applications from heavy engineering to precision robotics.

3.1.1. Industrial Solutions Market – Gearboxes and Gear Motors

Gearbox: (>15k Nm) - Heavy Duty Gearboxes

A gearbox is a mechanical device that transmits power from a motor to a machine by adjusting speed and torque through one or more sets of gears. It acts as a speed reducer, converting the high-speed, low-torque output of an electric motor into lower-speed, higher-torque motion suitable for heavy-duty industrial applications. Typically, gearboxes handle torque levels above 15K Nm, making them ideal for large-scale systems such as conveyors, crushers, turbines, and heavy machinery.

Gearbox Type	Description
Worm Gearbox	High torque, compact design with self-locking capability; offers high reduction ratios (5:1–100:1) but lower efficiency due to friction losses.
Bevel Gearbox	Right-angle power transmission; compact and durable; suitable for moderate torque and high load capacity.
Helical Gearbox	High efficiency and smooth power transmission; capable of handling high torque with low noise. Ideal for continuous duty industrial applications
Planetary Gearbox	Compact, high-torque solution with multiple gear stages; offers reduction ratios per stage typically between 3:1 and 10:1

Gear Motors:($<15k Nm$) - Low and medium Duty Gearboxes

A gear motor is an integrated unit that combines an electric motor and a gearbox into a compact assembly. It provides controlled speed and torque in a space-efficient design, suitable for lighter or medium-duty operations requiring precise motion and efficiency. Gear motors generally operate below 15K Nm torque, serving applications such as conveyors, mixers, packaging equipment, and automated machinery.

Gear Motor Type	Description	Key Application Areas
Worm Gear Motor	Compact, cost-effective unit combining a worm gearbox and motor; offers high torque and self-locking but lower efficiency.	Conveyors, packaging machinery, lifts, small automation setups, textile machinery, and robotics.
Bevel Gear Motor	Right-angle motor with efficient torque transfer and compact form for directional motion.	Material-handling conveyors, cranes, hoists, pumps, marine equipment, and agricultural machinery
Helical Gear Motor	Inline and parallel shaft motor-gearbox design ensures smooth, quiet, and efficient continuous-duty performance	Mixers, agitators, compressors, pumps, automation systems, and material-handling conveyors.
Planetary Gear Motor	Compact, high-torque motor using planetary gear stages for precision and high reduction ratios.	Robotics, medical devices, electric vehicles, precision automation, and heavy-duty equipment

3.1.2. Integrated Motion Control Solutions: Synergy of Motors, Drives, and Gear Systems

Automation solutions integrate electric motors, variable frequency drives (VFDs), servo motors, and precision drives with gearboxes and gear motors to deliver controlled motion, torque, and speed across industrial applications.

Electric motors serve as the prime movers, converting electrical energy into mechanical power. When paired with gearboxes, they achieve the desired torque-speed balance required by specific processes.

VFDs and servo drives regulate this motion electronically, adjusting voltage and frequency to control motor speed, direction, and acceleration.

In gear motors, the motor and gearbox are built as a compact, factory-aligned unit that ensures smooth power transmission, minimal maintenance, and efficient space utilization. Servo and precision drives use planetary or harmonic gearboxes for high torque density, low backlash, and exceptional positional accuracy, which are vital for robotics, CNCs, and precision assembly.

This integrated system enables energy-efficient, precise, and reliable motion control, forming the backbone of automation in industries.

Bonfiglioli operates state-of-the-art manufacturing facilities designed around Industry 4.0 principles, integrating advanced automation, digitally connected production systems, and real-time data analytics to enhance efficiency, quality, and reliability. These capabilities are supported by an efficient and localized supply chain network, enabling faster sourcing, reduced lead times, improved cost competitiveness, and greater resilience to supply disruptions, while ensuring consistent delivery of mission-critical products across end-user industries.

The close integration of Bonfiglioli’s India manufacturing operations with the Group’s global R&D ecosystem enables faster product development through stronger design manufacturing alignment and early supplier engagement. This accelerates time-to-market, enhances responsiveness to India-specific customer requirements, and strengthens their positioning as a specialized solutions provider in India.

Industry	Application Examples	Integrated Function
Automotive & EVs	Robotic arms, welding lines, paint shops, assembly conveyor systems	Servo drives + gearboxes for precision torque and position control
Food & Beverage	Conveyors, packaging, bottling, labeling systems	Gear motors + VFDs for variable speed and hygiene-grade automation
Pharmaceuticals	Tablet pressing, filling, and inspection machines	Servo motors + precision gear units for accurate dosing and repeatability
Material Handling & Logistics	Automated storage/retrieval systems, sorters, conveyors, lifts	Induction motors + helical gearboxes with VFDs for smooth, load-adaptive motion
Textile & Paper	Winders, rollers, tension control systems	VFDs + inline gear motors for speed regulation and web tension management
Machine Tools & Robotics	CNC spindles, gantries, robotic joints	Servo + harmonic drives for high precision, dynamic feedback, and motion synchronization
Water & Wastewater / Process Industries	Pumps, agitators, aerators	Induction motors + worm/helical gearboxes with VFDs for flow and process control

Key Player’s offerings:

- **SEW-EURODRIVE** – Their **MOVI-C platform** integrates electric motors, MOVIGEAR® mechatronic drives, and MOVIDRIVE® inverters with DriveRadar® predictive analytics. Used across logistics, F&B, and process industries.
- **Nord Drivesystems** – Offers **IE5+ DuoDrive** (gearbox + motor + inverter in one housing) and **NORDAC ON/Link** decentralized drives with Ethernet connectivity and cloud diagnostics.
- **Bonfiglioli** – Combines its **EVOX** gearmotors with wide range of frequency inverters and servo motors/drives, catering to robotics, conveyors, and packaging automation.
- **ABB, Siemens, WEG, and Nidec** – Provide complete “motor + gearbox + VFD” packages under smart drive ecosystems, with embedded condition monitoring and energy management.
- **Sumitomo and Rossi** – Focus on high-torque gear motors with integrated drive compatibility for heavy industries, offering digital monitoring add-ons.
- **Flender** – Specialises in large, high-torque industrial gearboxes for wind, mining, cement, and power sectors, increasingly complemented by condition monitoring and digital service solutions.

These manufacturers increasingly position their offerings not as discrete components but as **modular automation building blocks**, easily networked within Industry 4.0 architectures.

The convergence of power electronics, digital control, and mechanical engineering has redefined gear motors as smart, energy-optimized motion systems. Companies like SEW-EURODRIVE, Nord, and Bonfiglioli are leading the transition. By 2030, nearly two-thirds of all new gear motors sold are expected to come with integrated automation electronics transforming what was once a simple gearbox into the nerve center of intelligent industrial motion.

3.2. Key Industry Trends for the Global Industrial and Automation Solutions Market

A. Shift Toward Advanced Gearbox Types & High-Efficiency Gear Motors

Planetary units are gaining traction for their torque density and compactness, while helical and helical-bevel gearboxes remain the backbone of heavy-duty applications. Harmonic and cycloidal drives are expanding in robotics and semiconductors due to low backlash. Worm gearboxes are losing relevance in high-efficiency environments. Across segments, OEMs are moving toward IE4/IE5 gear motors with integrated smart drives to reduce energy use and lifecycle costs.

B. Rise of Integrated Mechatronic & Automation-Ready Systems

Gearboxes, motors, drives, and sensors are increasingly offered as compact, pre-engineered mechatronic units. Built-in VFDs/servo controllers enable plug-and-play automation, shorter commissioning, and dynamic torque-speed optimization. These integrated systems deliver higher efficiency, lower downtime, and broad adoption across automotive, F&B, logistics, water, and other industries.

C. R&D as a Core Differentiator

Manufacturers are focusing on high-efficiency designs, advanced materials, and compact architectures. Digital twins and AI-driven simulation are improving gearbox sizing and thermal/duty-cycle performance. Smart sensors and IoT-enabled diagnostics support predictive maintenance. Co-engineering across mechanical, electrical, and software teams is enhancing precision and Industry 4.0 compatibility.

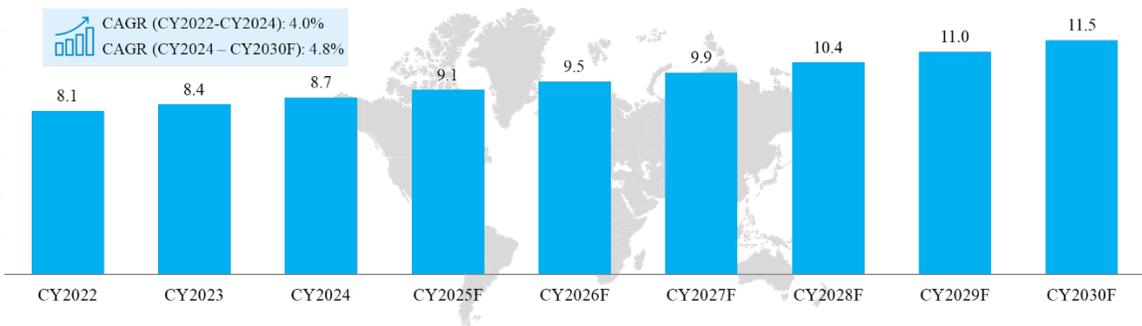
The sector is moving from standalone mechanical components to intelligent, digitally connected motion ecosystems. Companies prioritizing smart integration, energy-optimized designs, and R&D-led innovation will define the next wave of industrial automation.

3.3. Industrial Gearboxes Market (>15k Nm) – Global Market Overview

The global industrial gearboxes market has experienced consistent growth in recent years, driven by the expansion of industrial automation, infrastructure modernization, and the increasing demand for reliable power transmission across the manufacturing and process industries. Gearboxes remain essential for ensuring smooth, reliable, and efficient power transmission in a wide range of industrial applications.

Demand is being driven by industries’ growing focus on productivity, energy efficiency, and equipment reliability, prompting upgrades from conventional mechanical systems to more advanced, low-maintenance gear solutions. The trend toward smart factories and automated production lines is further expanding the role of gearboxes in connected high-performance systems.

Exhibit 3.1: Global market size for Gearboxes (Value in USD Bn), CY2024 – CY2030E

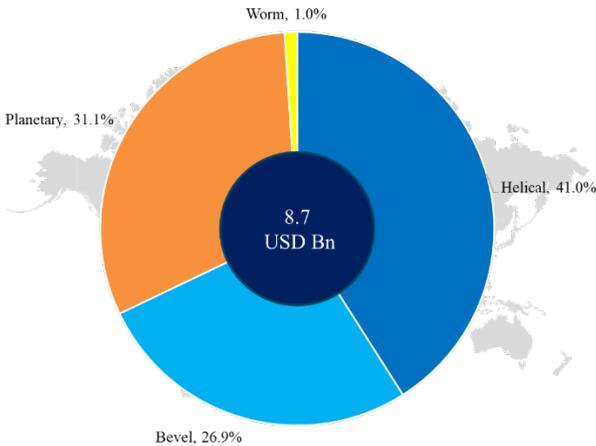


From CY2022 to CY2024, the global market expanded at a CAGR of 4.0%, growing from approximately USD 8.1 billion in CY2022 to an estimated USD 8.7 billion in CY2024. Demand for industrial gearboxes remained resilient, particularly in core and energy-intensive sectors such as power generation, cement, mining, metals, and oil & gas. These industries relied on robust and reliable mechanical transmission systems to maintain operational continuity, plant safety, and production efficiency, even amid severe workforce and supply chain constraints. The global industrial gearboxes market is projected to grow from USD 8.7 billion in CY2024 to USD 11.5 billion by CY2030, reflecting a CAGR of around 4.8% during the period. The growth will be driven by rising automation and manufacturing modernization, supported by the growth of renewable energy, infrastructure revival, and tightening efficiency regulations.

3.3.1. Global Industrial Gearboxes Market: Segmentation by Product Type

The global industrial gearbox market is dominated by helical gearboxes (41.0%), followed by bevel (26.9%), planetary (31.1%), and worm (1.0%) types. Helical and bevel gearboxes lead due to their efficiency and versatility, while planetary units are the fastest growing owing to their efficiency and high torque density.

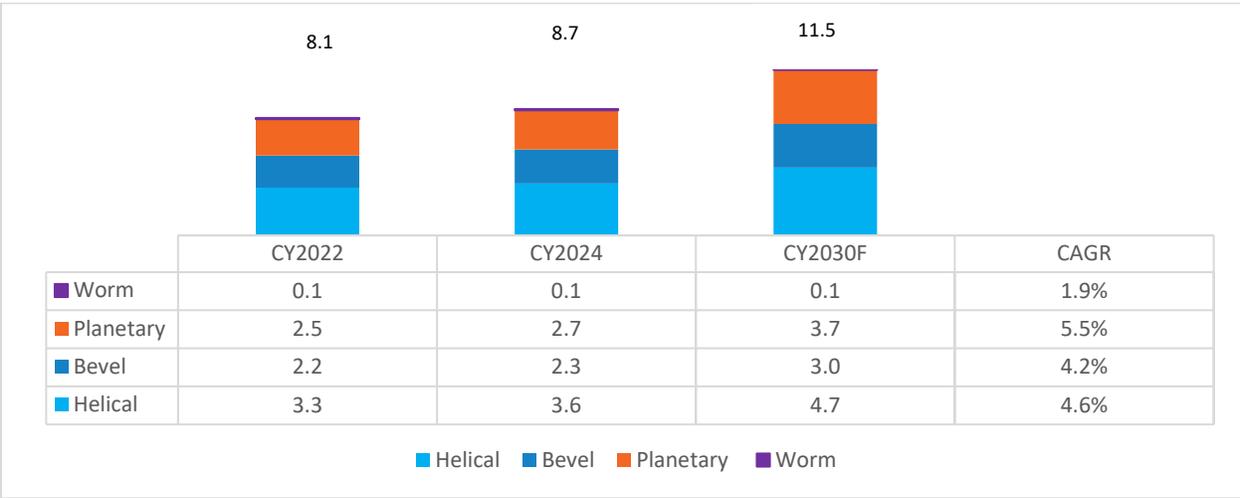
Exhibit 3.2: Global Industrial Gearboxes , Productwise Contribution , CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

The global industrial gearbox market is undergoing a clear transition toward high-efficiency, automation-ready designs, with helical and planetary gearboxes leading the way. Both segments are projected to grow at a higher rate, driven by increasing adoption of automated production systems, as well as process and material-handling applications that demand high torque density and precise motion control. Bevel gearboxes also maintain steady growth at about 4.2% CAGR, supported by their widespread use in conveyors, packaging machinery, and general manufacturing setups where smooth, reliable power transmission is essential.

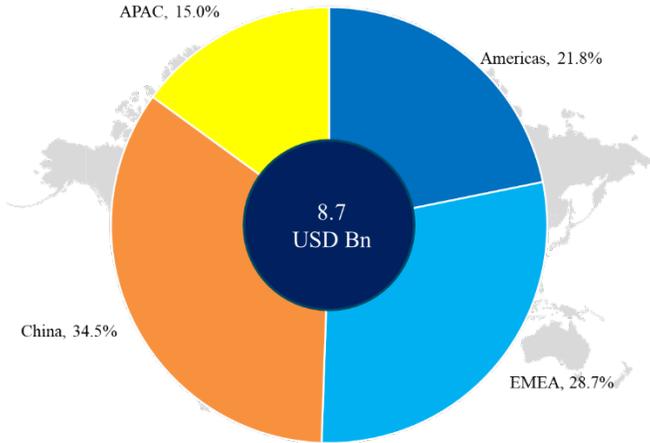
Exhibit 3.3: Global Industrial Gearboxes, Market Split by Product Type, CY2022 - CY2024-
CY2030F, USD Billion



In contrast, worm gearboxes are growing more slowly, at 1.9% CAGR, as industries gradually migrate toward more efficient and compact alternatives, such as helical-bevel and planetary configurations.

3.3.2. Global Industrial Gearboxes Market: Segmentation by Regions

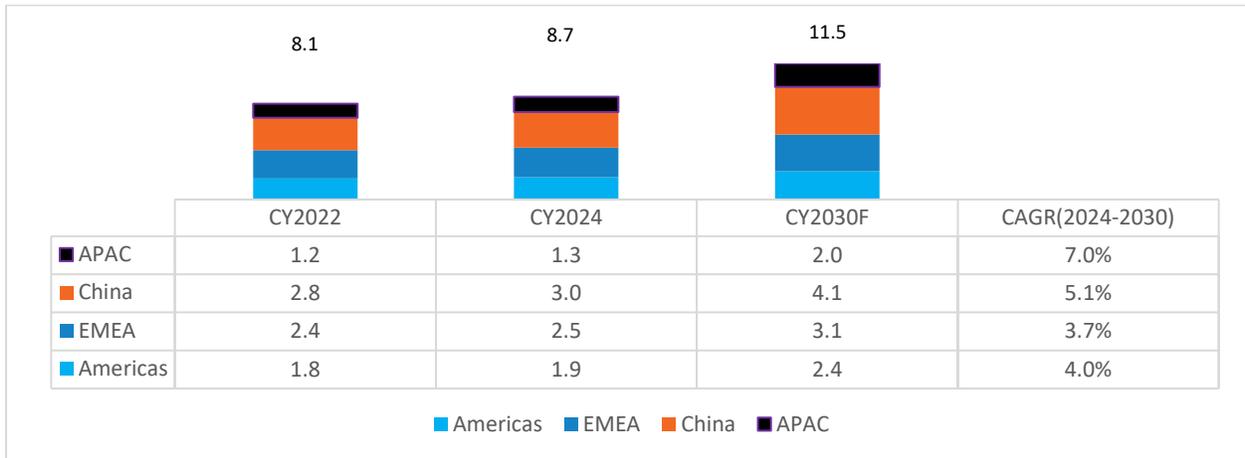
Exhibit 3.4: Global Industrial Gearboxes , Regionwise Contribution , CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

APAC includes India, South East Asia, Australia, Newzealand, Japan, Korea

Exhibit 3.5: Global Industrial Gearboxes, Market Split by Regions, CY2022 - CY2024- CY2030F, USD Billion

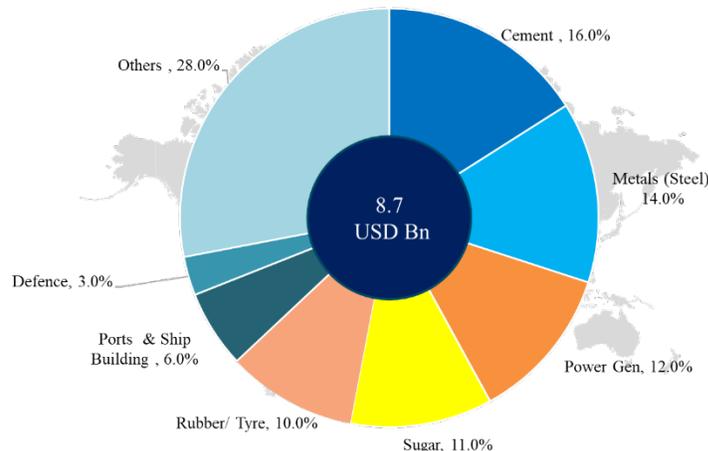


APAC includes India, South East Asia, Australia, Newzealand, Japan, and Korea

China and the broader APAC region together account for nearly 49.5% of global demand, powered by rapid manufacturing expansion, automation upgrades, infrastructure development, and renewable energy deployment. Meanwhile, the Americas and EMEA maintain stable, mature growth supported by industrial retrofits and energy transition investments, though market saturation limits acceleration. APAC (excluding China) stands out as the fastest-growing region, expanding at a 7.0% CAGR, backed by substantial investments in process industries and infrastructure build-outs in India and Southeast Asia. The Americas are witnessing a steady revival, led by reshoring, automation, and retrofitting of legacy systems with high-efficiency planetary drives. EMEA sustains demand through energy-efficiency mandates and decarbonization goals, with strong adoption of digital monitoring and twin technologies. China remains a manufacturing powerhouse, expanding precision gearbox production under Made in China 2025 and driving large-scale factory automation.

3.3.3. Global Industrial Gearboxes Market: Segmentation by End-user Segments

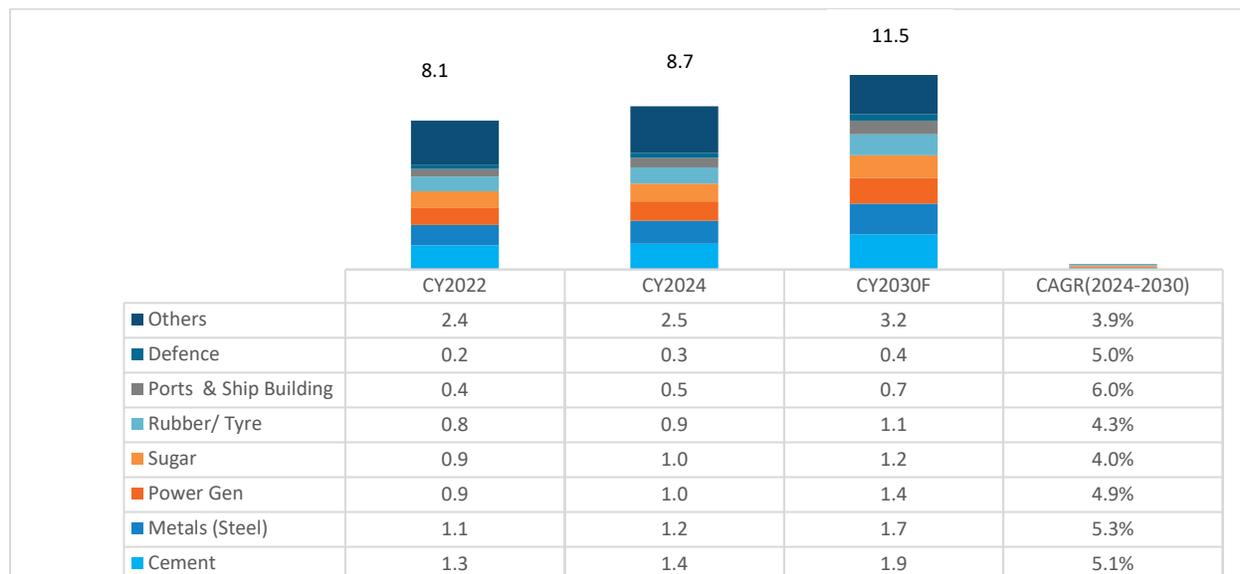
Exhibit 3.6: Global Industrial Gearboxes, End-user Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

Others include Mining, Chemicals, Plastics, pulp and paper, oil and gas, automotive, and Water treatment, among others.

Exhibit 3.7: Global Industrial Gearboxes, Market Split by End-user Segments, CY2022 - CY2024- CY2030F, USD Billion



Others include Mining, chemicals, Plastics, Pulp & paper, Oil & Gas, Automotive, Water treatment, etc.

Metals (Steel) and Cement remain the two dominant industries, together accounting for over 30% of total demand by 2030. Growth in these sectors is being driven by rising infrastructure development, modernization of steel mills, and capacity expansion in grinding and kiln systems. Ports & Shipbuilding is the fastest-growing segment (6.0% CAGR), powered by port automation, cargo-handling upgrades, and shipyard modernization. Defence and Power Generation also show healthy growth of around 5.0% CAGR, led by naval programs, renewable integration, and retrofitting of thermal assets. Meanwhile, Rubber/Tyre, Sugar, and Others (covering food, paper, and textile) contribute stable replacement-driven demand. These sectors reflect lower cyclicity but steady modernization through digital monitoring and compact planetary gearbox integration.

3.3.4. Global Industrial Gearboxes – New and Replacement Demand

The global industrial gearboxes market is broadly characterized by two primary demand segments - new installation demand and replacement or refurbishment demand each driven by distinct market forces and regional trends.

New demand, which accounts for around 45-50% of total market volume, is being propelled by rapid industrial expansion and automation initiatives across emerging economies. Growth in new manufacturing facilities, renewable energy installations, and infrastructure development projects is generating substantial opportunities for high-performance gearboxes. Moreover, increasing investments in process industries (Cement, Steel) and wind energy are expanding their use of compact planetary and helical gearboxes for efficient motion control. New demand is particularly strong in Asia-Pacific and China, where industrialization, capital investments, and production capacity expansions continue at scale, while

India is seeing consistent traction driven by domestic manufacturing growth and government-led initiatives like Make in India.

In contrast, replacement demand represents the larger share of the market approximately 50-55% driven by the aging machinery base in developed economies and the shift toward energy-efficient, low-maintenance solutions. Mature industrial regions such as Europe and North America are witnessing increasing gearbox retrofits as end users upgrade to higher efficiency, digitally monitored systems compliant with evolving regulatory standards. The focus is increasingly on replacing legacy mechanical drives with modern gear systems that offer improved efficiency, integrated monitoring, and longer service life. Predictive maintenance and energy optimization are becoming key motivators for replacement, particularly in sectors such as metals, mining, cement, power generation, and heavy process industries.

Overall, while replacement demand currently dominates the market, new installation demand is expanding faster, particularly in developing regions where automation and capacity additions are accelerating.

Aftermarket opportunity:

The global gearbox aftermarket offers a strong recurring revenue stream driven by a massive installed base and continuous replacement, repair, and refurbishment needs. Industries such as cement, mining, steel, wind, and logistics rely heavily on service uptime, creating steady demand for spares, rebuilds, and efficiency upgrades. Digital diagnostics, condition monitoring, and predictive maintenance are emerging as high-value add-ons. OEMs that combine faster service response, reliable spares, and upgrade kits are best positioned to capture this growing aftermarket opportunity. At a global level, aftermarket (spares, service, refurbishment, upgrades) contributes 20-25% of total gearbox industry revenues.

3.4. Global Industrial Gearboxes Market – Key Growth Drivers

- i. **Rising Industrial Automation and Modernization:** Increasing automation in cement, mining, metals, and power generation is boosting demand for heavy-duty gearboxes capable of delivering high torque and precision in harsh operating conditions.
- ii. **Expansion of Renewable Energy Projects:** Strong investments in biogas and green hydrogen, are driving the use of robust planetary and helical gearboxes designed for continuous, high-load applications.
- iii. **Infrastructure and Process Industry Revival:** Ongoing infrastructure build-outs, urbanization, and capacity expansions in process sectors (cement, steel, chemicals) are generating sustained demand for large-frame gearboxes.
- iv. **Energy-Efficiency and Reliability Mandates:** Industries are upgrading to high-efficiency, low-noise, and long-life gear systems, aligning with global energy-saving regulations and sustainability commitments.
- v. **Retrofit and Maintenance Replacement Cycles:** A vast installed base of aging heavy machinery is fueling replacement demand, particularly in developed markets focusing on efficiency upgrades and predictive maintenance.

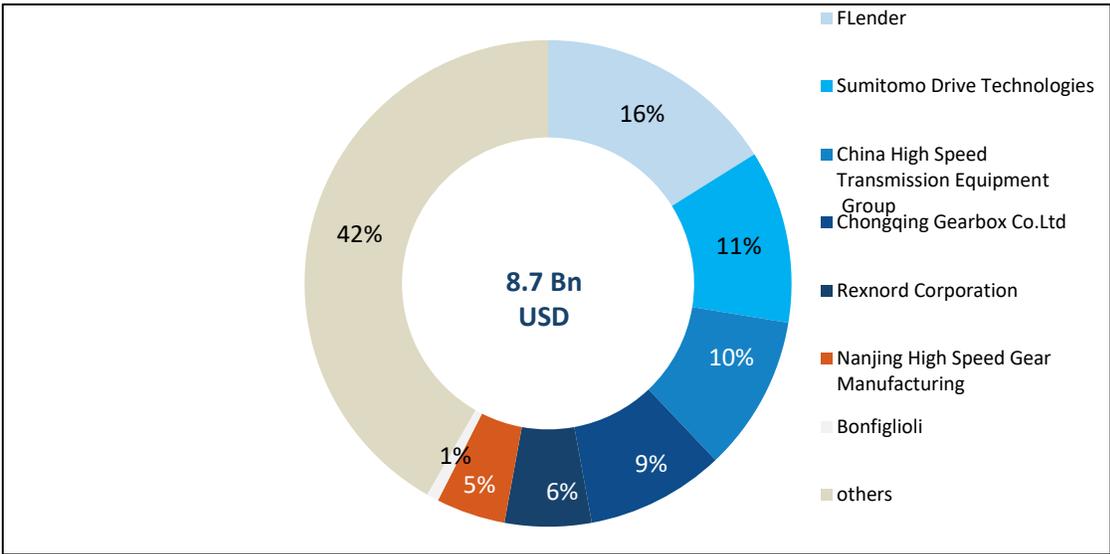
- vi. **Growth of Material Handling and Port Equipment:** Expansion of logistics, mining conveyors, cranes, and port mechanization projects is creating robust demand for high-torque gearboxes with superior load-bearing capacity.
- vii. **Regional Industrialization Momentum (Asia-Pacific):** Rapid industrial growth in China, India, and Southeast Asia, supported by government incentives and manufacturing localization, is driving large-scale gearbox installations.

3.5. Global Industrial Gearboxes Market – Threats and Challenges

- i. **Volatility in Raw Material Prices:** Fluctuations in the cost of steel, aluminum, and specialty alloys impact manufacturing margins, especially for medium and small-scale gearbox producers operating under tight pricing pressures.
- ii. **Competition from Low-Cost Manufacturers:** Aggressive pricing and rapid scaling by Chinese and regional manufacturers are intensifying market competition, compressing margins for established OEMs in Europe and North America.
- iii. **Regulatory Pressure on Efficiency and Noise Levels:** Stringent energy-efficiency and noise-control regulations, particularly in the EU and developed markets, are increasing compliance costs and redesign requirements for OEMs.
- iv. **Slow Capital Spending in Core Industries:** Periodic downturns in cement, mining, and steel sectors, coupled with global economic uncertainties, delay CAPEX decisions, directly impacting large gearbox orders.
- v. **Supply Chain Disruptions and Lead Time Constraints:** Dependence on imported components, bearings, and precision gears exposes manufacturers to logistical delays and cost escalations, particularly in post-pandemic trade environments.

3.6. Competitive Landscape

Exhibit 3.8: Global Industrial Gearboxes (>15k Nm), Market Share of Key Players by Value, CY2024



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

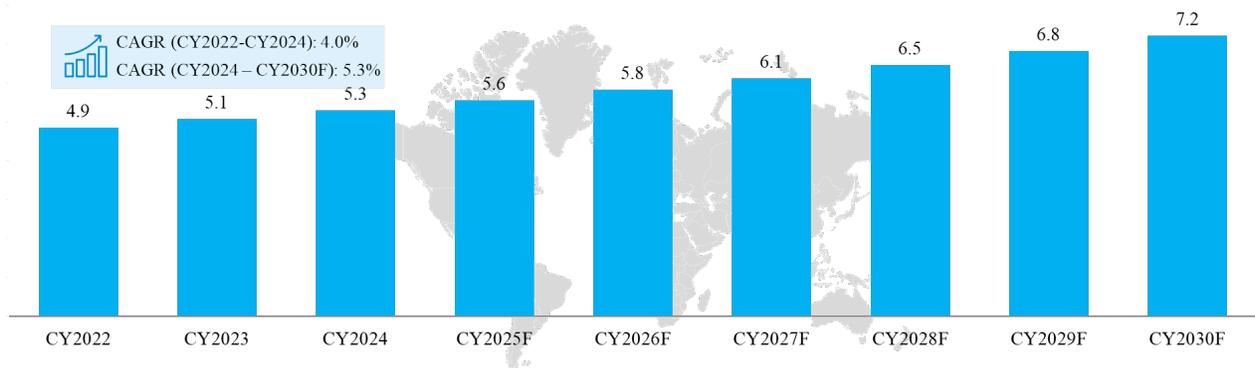
others - DB Santasalo, RENK, Elecon, premium, Shanthi Gears, WIKOV, CMD, Regal Bloit, Motovario, Timken, SEW Euro Drive, Indian+Chinese Players (~20 players)

The global heavy-duty gearbox market remains moderately fragmented, with a handful of large players leading the space and a long tail of regional and specialised manufacturers filling the rest. Flender continues to anchor the market with its strong position in industrial drive systems. Sumitomo Drive Technologies follows with deep strengths across heavy-industry applications through its Paramax and Hansen portfolios. China High Speed Transmission Group is driven by robust domestic demand and growing export momentum, while Rexnord maintains a solid foothold in North America’s process-industry sectors. Nanjing High Speed Gear Manufacturing benefits from China’s ongoing infrastructure expansion, and Bonfiglioli maintains a focused presence in planetary drives, wind applications, and select material-handling segments. The rest of the market caters to both Greenfield and brownfield (replacement) requirements, underscoring a fragmented long tail where opportunities for consolidation and service-driven differentiation remain strong.

3.7. Industrial Gear Motors (<15k Nm) – Global Market Overview

The global gear motors market is rapidly evolving as industries shift toward electrified, automated, and modular motion systems. Gearboxes with torque capacity below 15 kNm are typically classified as gear motors. Unlike standalone gearboxes, gear motors integrate power and transmission into a compact unit, reducing maintenance and improving efficiency. Growth is driven by rising adoption in EVs, robotics, intralogistics, Packaging and smart manufacturing, where precision and torque density are vital. The trend toward variable-speed and servo-driven systems is further enhancing energy optimization and control flexibility. Overall, gear motors are becoming the core enablers of intelligent motion, blending mechanical reliability with digital intelligence.

Exhibit 3.8: Global market size for Gear Motors (Value in USD Bn), CY2024 – CY2030E



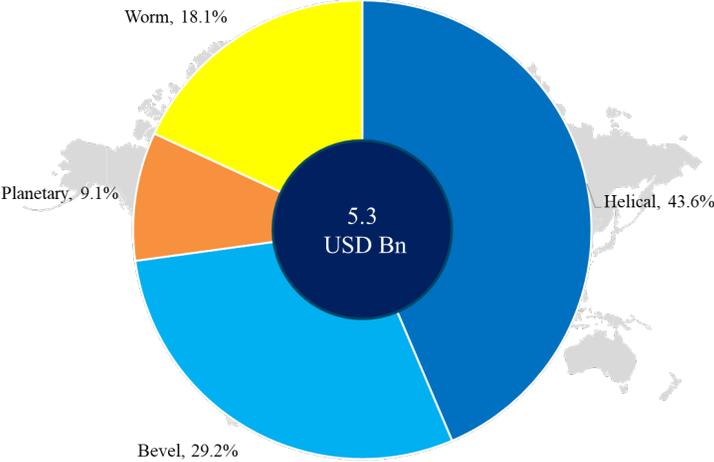
From CY2022 to CY2024, the global gear motors market expanded steadily at an estimated CAGR of around 4.0%, growing from approximately USD 4.9 billion in CY2022 to about USD 5.3 billion in CY2024.

Growth was supported by resilient demand across material handling, food & beverage, packaging, and process industries, where integrated drive systems offered compactness, high torque efficiency, and simplified installation. Between CY2024 and CY2030, the market is projected to rise from USD 5.3 billion to nearly USD 7.2 billion, reflecting a stronger CAGR of roughly 5.3% slightly faster than standalone gearboxes. The acceleration will be driven by the widespread adoption of automation and robotics across assembly lines, intralogistics, and motion-control systems.

3.7.1. Global Industrial Gear Motors Market: Segmentation by Product Type

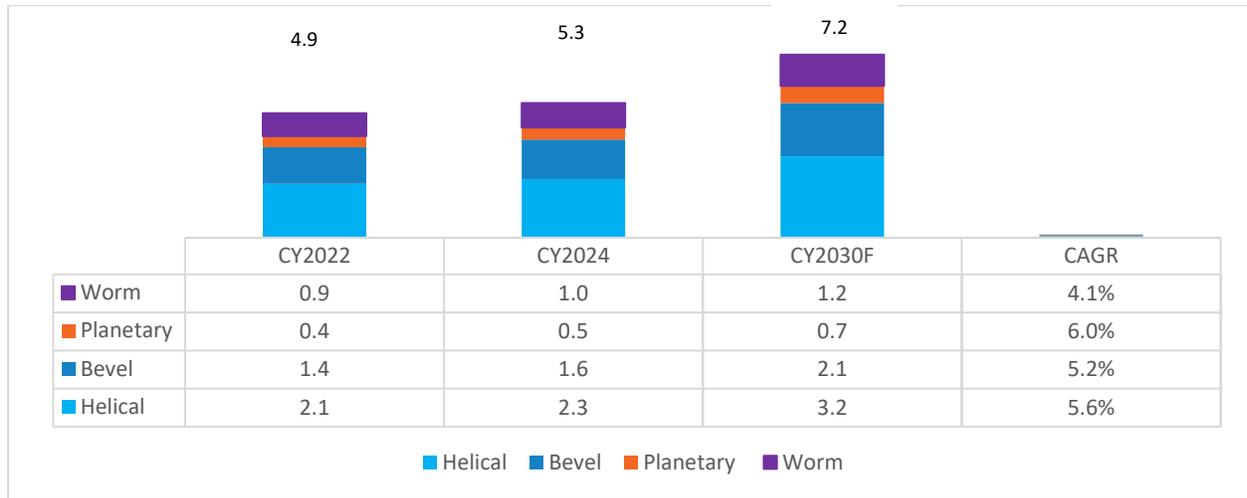
The global industrial gear motors market, valued at approximately USD 5.3 billion, is primarily driven by helical gear motors, which account for the largest share of around 43.6% and are projected to grow at a CAGR of 5.6%. Their strong presence across material handling, conveyors, and process automation stems from high efficiency, smooth torque transmission, and reliable performance in continuous-duty operations. Bevel gear motors, accounting for roughly 29.2% of the market and expanding at 5.2% CAGR, are increasingly used in packaging, food processing, and automotive assembly systems, where space-saving right-angle drives and flexible mounting options are essential.

Exhibit 3.9: Global Industrial Gear Motors, Product-wise Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

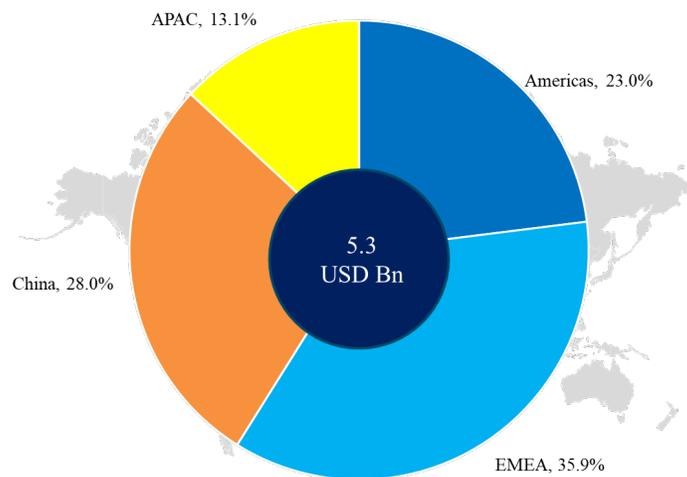
Exhibit 3.10: Global Industrial Gear Motors, Market Split by Product Type, CY2022 - CY2024-
CY2030F, USD Billion



Planetary gear motors, with an estimated 9.1% share (excluding precision drives), are emerging as the preferred choice for robotics, EV components, and renewable energy systems, growing at 6.0% CAGR due to their compact design, high torque density, and precision control capabilities. In contrast, worm gear motors maintain a smaller yet stable share of around 18.1%, growing modestly at 4.1% CAGR, and remain relevant for low-speed, cost-sensitive applications such as small conveyors and mixers.

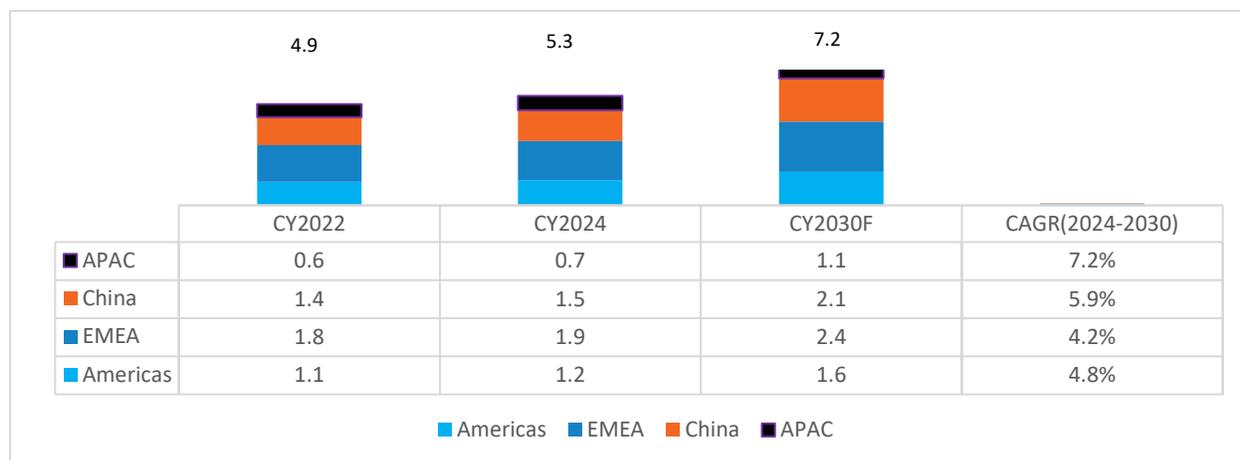
3.7.2. Global Industrial Gear Motors Market: Segmentation by Regions

Exhibit 3.11: Global Industrial Gear Motors, Region-wise Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

Exhibit 3.12: Global Industrial Gear Motors , Market Split by Regions ,CY2022 - CY2024- CY2030F, USD Billion

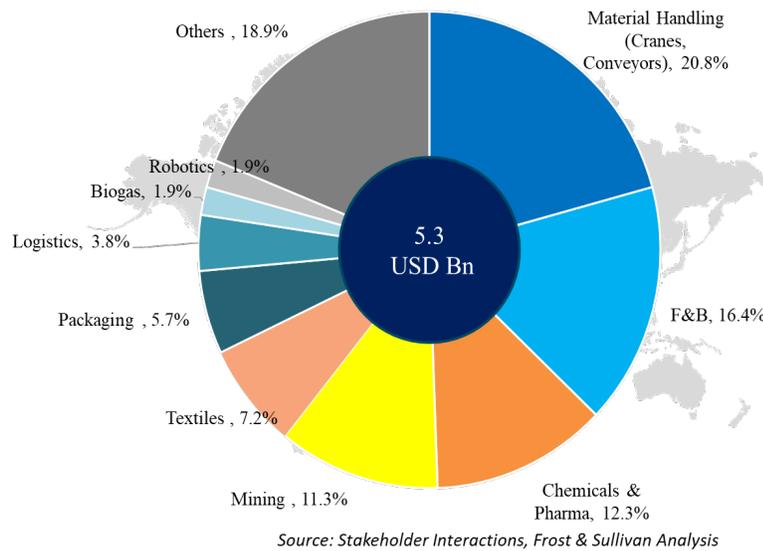


The Asia-Pacific region (excluding China), however, is emerging as the fastest-growing market with a 7.2% CAGR, powered by India, Vietnam, and Indonesia, where large-scale manufacturing expansions, intralogistics automation, and renewable projects are accelerating adoption of integrated gear motor systems. EMEA, representing a mature yet stable demand base, is projected to grow at a 4.2% CAGR, supported by retrofit and modernization programs in process industries and compliance with stringent IE4/IE5 energy-efficiency mandates. Meanwhile, the Americas are expected to record a 4.8% CAGR, underpinned by industrial reshoring, modernization of factory automation, and revival in material handling and packaging segments. Overall, the market is shifting from mature replacement-led economies to emerging, automation-intensive growth hubs in Asia, with China and broader APAC together accounting for over half of global demand by 2030, reflecting the region’s dominance in the next phase of industrial electrification and smart manufacturing.

3.7.3. Global Industrial Gear Motors Market: Segmentation by End-user Segments

Material handling, including cranes and conveyors, continues to dominate demand and is projected to grow at a 5.2% CAGR, supported by rapid intralogistics automation, e-commerce expansion, and innovative warehousing systems. The food & beverage, as well as packaging, sectors are emerging as key volume drivers, benefiting from increasing automation in filling, sorting, and packaging operations, where hygiene, reliability, and continuous performance are critical.

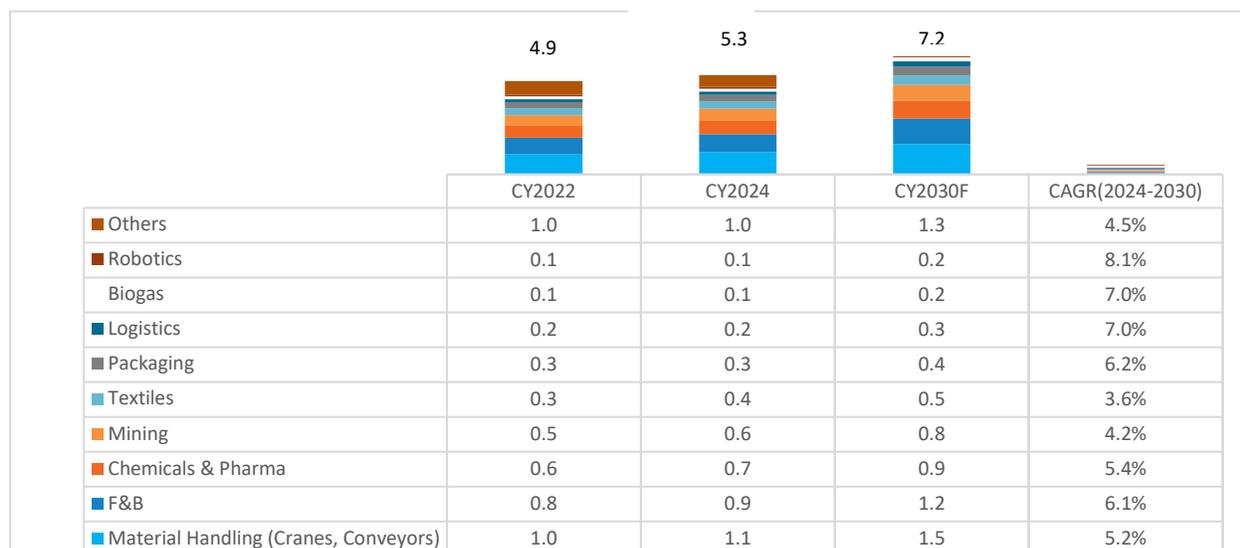
Exhibit 3.13: Global Industrial Gear Motors, End-user Contribution, CY 2024



Others include Cement, General Manufacturing, Construction, Pulp & paper, Glass, Agro Equipments etc.

Chemicals and pharmaceuticals are expected to maintain steady growth at a 5.4% CAGR, driven by the shift toward process automation, energy-efficient agitators, and compliance with safety standards. Meanwhile, traditional segments such as mining and textiles remain stable, with replacement-led demand for rugged gear motors used in conveyors, hoists, and spinning lines. The logistics sector, growing at 7.0% CAGR, is rapidly expanding due to the adoption of automated storage and retrieval systems (ASRS) and last-mile warehouse automation. As mines adopt electric conveyors, crushers, and haulage systems, demand is rising for high-torque, energy-efficient gear motors integrated with variable frequency drives and digital monitoring. Emerging mining projects in Africa, China, Latin America, and Southeast Asia are generating strong installation opportunities.

Exhibit 3.14: Global Industrial Gear Motors, Market Split by End-user Segments ,CY2022 - CY2024-
CY2030F, USD Billion



Others include Cement, General Manufacturing, Construction, Pulp & paper, Glass, Agro Equipments etc.

Emerging areas such as robotics (8.1% CAGR) and biogas (7.0% CAGR) represent the fastest-growing frontiers. Robotics applications increasingly demand compact, high-torque planetary gear motors for precise motion, while the biogas sector is witnessing a growing adoption of gear motors in agitator and feed systems, aligning with the global shift towards clean energy. Overall, while material handling and F&B remain the core base, the market’s momentum is clearly tilting toward automation-heavy, digitally integrated, and renewable-linked applications, positioning gear motors as essential enablers of the next wave of industrial efficiency.

3.7.4. Global Industrial Gear Motors – New and Replacement Demand

The global industrial gear motors market is split between new installations (~55%) and replacement demand (~45%), reflecting the twin forces of industrial expansion and modernization. New demand is accelerating rapidly, driven by battery manufacturing, warehouse automation, renewable energy projects, and robotics-led production lines. Gear motors are increasingly preferred for their compact footprint, high torque density, and seamless digital integration, enabling efficient motion control in smart factories (Robots), packaging, intralogistics, and process automation. Emerging applications such as solar trackers, e-mobility components, and compact conveyors are adding further momentum. The surge is most visible in the Asia-Pacific region, especially in India, China, and Southeast Asia, where industrial electrification, new capacity creation, and government-led manufacturing programs are reshaping demand patterns.

Meanwhile, replacement demand remains strong in Europe, North America, and Japan, where industries are upgrading to IE4/IE5 high-efficiency, sensor-enabled gear motors to reduce energy consumption, downtime, and maintenance costs. These retrofits support predictive maintenance, energy optimization, and decarbonization goals, ensuring operational reliability while meeting sustainability mandates. Overall, while replacement demand provides a steady revenue base, it is the automation-driven wave of new

installations and technology-intensive projects that is now setting the pace for the global gear motors market.

Aftermarket Opportunity:

The gear motor aftermarket is expanding steadily due to high usage intensity, frequent wear-part replacements, and the need for quick turnaround in conveyors, packaging lines, logistics, and F&B plants. Motor failures, gearbox wear, and efficiency losses drive strong demand for spares, rewind/rebuild services, and retrofit kits. As industries shift toward IE4/IE5 motors and smart drives, upgrade and energy-efficiency retrofits become a significant opportunity. OEM service networks, availability of genuine parts, and rapid on-site support significantly influence aftermarket capture. At a global level, aftermarket contributes 15-20% of total gear motors industry revenues.

3.8. Global Industrial Gear Motors Market – Key Growth Drivers

- i. **Expansion of Automation and Robotics Across Industries** - Sectors such as automotive, food & beverage, packaging, and electronics are increasingly adopting robotic and semi-automated production lines to enhance productivity and consistency. Gear motors play a pivotal role in enabling compact motion control and torque transmission in these systems. The emergence of collaborative robots (cobots), automated guided vehicles (AGVs), and precision conveyors has opened new demand pockets for modular, low-noise, and high-efficiency gear motor assemblies.
- ii. **Electrification and Renewable Energy Adoption** - The global transition toward clean energy and electrified systems is expanding gear motor applications into non-traditional segments. In renewable space, gear motors are increasingly used in solar tracking systems, wind turbine pitch/yaw drives, and battery production equipment. Electric vehicle (EV) manufacturing plants, battery gigafactories, and charging infrastructure require compact, high-torque gear motors for automating assembly lines and handling components.
- iii. **Energy-Efficiency Regulations and Technology Upgrades** -Stringent global energy-efficiency norms are compelling end-users to migrate toward IE4 and IE5 class high-efficiency motors, often paired with precision-engineered gearboxes. This regulatory push is particularly strong in the European Union, North America, and advanced Asian economies. High-efficiency gear motors not only reduce energy losses but also improve reliability and operational uptime, offering measurable lifecycle cost benefits.
- iv. **Growth of Logistics, Warehousing, and E-Commerce Infrastructure** - The rapid expansion of warehousing, intralogistics, and distribution centers is significantly boosting demand for gear motors. Automated storage and retrieval systems (AS/RS), conveyors, and sorting units rely heavily on compact, high-precision gear motors for continuous operation. The post-pandemic surge in e-commerce and omni-channel logistics, particularly in the Asia-Pacific and European regions, has sustained high demand for geared drive systems in the logistics and packaging value chain.

- v. **Strong Demand from Emerging Markets and Infrastructure Development** - Developing economies, particularly India, Southeast Asia, Eastern Europe, and Latin America, are witnessing a surge in industrial investments. These capital-intensive sectors heavily depend on high-torque gear motors for mixers, conveyors, and rotating equipment. Large-scale government-backed infrastructure and smart manufacturing are fueling local assembly and adoption, further expanding the market base.

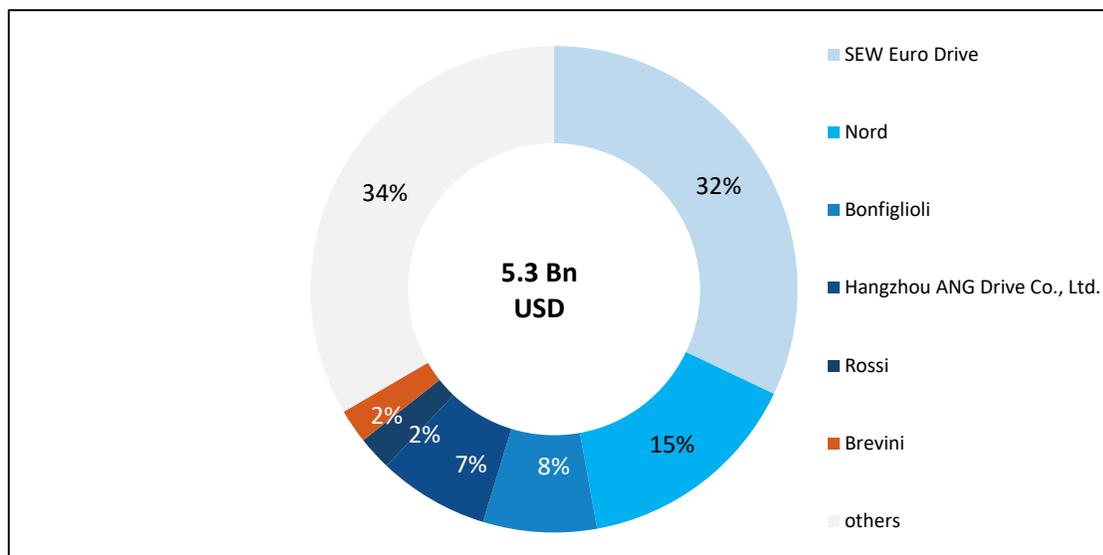
3.9. Global Industrial Gear Motors Market – Threats and Challenges

Despite promising growth, the industrial gear motors market faces multiple structural and competitive challenges that limit profitability and the pace of transformation.

- i. **Price Erosion and Commoditization** - High competition has led to price-based sourcing, squeezing margins for global manufacturers. The surge of regional, low-cost Asian suppliers has commoditized standard gear motors, forcing established players to emphasize modularity and service-based differentiation.
- ii. **Raw Material and Supply-Chain Volatility** - Frequent fluctuations in steel, copper, and rare-earth material prices, coupled with logistics bottlenecks, continue to disrupt production costs and timelines. Smaller firms face reduced agility due to limited inventories and supplier diversity.
- iii. **Technological Substitution by Direct-Drive and Servo Systems** - In precision automation, servo and direct-drive systems are replacing geared solutions due to higher efficiency, lower maintenance, and compact design. This threatens the relevance of traditional mechanical gear motors in robotics and electronics assembly.
- iv. **Non-Uniform Efficiency Standards** - Diverse energy-efficiency norms (IE3–IE5) across countries complicate certification and export compliance. Global players must develop multiple variants to meet regional mandates, which increases costs and time-to-market.
- v. **Skill and Capability Gaps** - Smart gear motors require expertise in mechatronics, digital controls, and analytics, but the shortage of skilled engineers slows technology adoption, particularly in emerging markets.
- vi. **Long Replacement Cycles** - Industrial gear motors often operate 10–15 years, delaying replacement-driven demand. End-users prefer maintenance over replacement, creating cyclic and unpredictable revenue streams.

3.10. Competitive Landscape (Standard Gear Motor)

Exhibit 3.8: Global Industrial Gear Motors(<15k Nm), Market Share of Key Players by Value, CY2024



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

others – Kaitsu, Power Build, IC Bauer, Premium, Reggiana, Sumitomo, REMI, Motovario Gear Solutions, Magtorq, and Indian+Chinese+European Players (~25 players)

The global industrial gear motors market exhibits a moderately consolidated landscape, with clear dominance by European manufacturers. These manufacturers can leverage strong R&D capabilities and established brand equity, even as competition from Asian entrants continues to rise. SEW-EURODRIVE leads the market with an estimated 32.0% share, leveraging its extensive modular product range, rapid delivery capabilities, and global service network. Its strong positioning across automation, logistics, and heavy industrial applications reinforces its status as the benchmark for performance and reliability. Nord Drivesystems, which holds approximately 15.0%, benefits from its specialization in high-efficiency drives for food processing, warehousing, and conveyor systems. Bonfiglioli follows with a share of around 8.0%, supported by its expanding footprint in Asia and Europe, where it delivers compact, energy-efficient gearmotor systems for material handling, packaging, and e-mobility applications. Among Asian manufacturers, Hangzhou ANG Drive Co., Ltd. has emerged as a notable player with a 7.0% share, reflecting China's growing strength in modular and cost-competitive gearmotor solutions. Rossi and Brevini, each at 2.0%, continue to serve niche industrial and heavy-duty applications, particularly in cranes, mining, and process lines. The remaining 34.0% of the market is fragmented among regional manufacturers and local system integrators offering low-cost alternatives.

Chapter 4: Overview of India Industrial and Automation Solutions Market

- *Industrial Solutions Split by Gearboxes (>15k Nm) and Gear Motors (< 15k Nm)*



**Overview of India Industrial and
Automation Solutions Market**

4.1. Overview of India Industrial and Automation Solutions Market

India's industrial motion and automation components market is entering a new phase of maturity, driven by a manufacturing revival, localization, and the need for greater efficiency across sectors. Gearboxes remain the mechanical nucleus of India's industrial base, evolving toward compact, high-torque, and low-maintenance designs that serve the cement, steel, mining, power, water treatment, plastics, solid waste management, Ports & Ship building, Rubber, and renewable energy sectors. Manufacturers are focusing on improved gear geometry, surface hardening, and lubrication technologies to deliver higher efficiency and reliability. Gear motors are gaining wider adoption for modular and space-optimized motion systems in packaging, assembly, and intralogistics, supporting India's transition to flexible, smart factories. On the automation front, demand for electric motors, variable-frequency drives, servo motors & drives, sensors, control panels, and precision drives is accelerating as industries embrace digitally synchronized production and energy-efficient operations. Domestic manufacturers are enhancing backward integration and upgrading product design, while global OEMs are expanding local assembly under "Make in India" and PLI-linked initiatives. Together, these components form the backbone of India's next-generation industrial ecosystem, where mechanical reliability meets electronic precision to deliver intelligent, sustainable growth.

4.2. Key Industry Trends for the India Industrial and Automation Solutions Market

India's industrial and automation solutions market is expanding rapidly, driven by the country's manufacturing upcycle, localization thrust, and energy efficiency mandates. Rising investments in infrastructure, renewables, and intralogistics, coupled with digitalization and PLI-driven domestic production, are redefining the demand landscape for gearboxes, gear motors, and automation components.

A. Evolving Demand for Advanced Gearboxes and Gear Motors in India

- Indian users are increasingly shifting from conventional worm to helical, bevel-helical, and planetary gearboxes, driven by higher efficiency, better torque density, and lower lifecycle energy costs across key end-use sectors.
- Domestic manufacturers are scaling design capabilities and forging alliances for precision-cut gears and surface-hardened components, reducing import reliance and improving durability in harsh Indian operating conditions.
- Demand is being pulled by high-growth verticals like renewables (wind, solar trackers), intralogistics, packaging, and EV drivetrain manufacturing, where compact, modular gear motors with high protection class ratings (IP65+) are increasingly preferred.
- The move toward IE3/IE4-compliant gear motors is accelerating, supported by energy-audit norms and cost-of-ownership awareness, leading OEMs to integrate VFD-ready motors in new installations.
- High-performance industrial users are increasingly adopting condition-monitoring-enabled gearboxes and digitally connected gear motors, reflecting the shift toward smart, predictive, and reliability-focused motion systems across advanced manufacturing environments.

B. Growing Need for Integrated Solutions

- Indian plants are steadily adopting motor–drive gearbox integrated modules, reducing assembly time and improving process synchronization. Indian OEMs are localizing the fusion of “mechanical + electrical” in partnership with global automation majors.
- Demand for electric motors, variable frequency drives, servo drives, sensors, and control panels is rising in tandem, enabling synchronized motion and process intelligence in automated lines.
- Integrated drive solutions are delivering tangible savings in India’s energy-intensive sectors like textiles, metals, water treatment, and F&B with smoother start/stop cycles, lower current surges, and reduced maintenance frequency.
- Global leaders like Bonfiglioli are expanding India assembly and component localization, while domestic brands are investing in design IP and automation-ready product lines.
- The market is moving from product supply to platform integration, where every gearbox, motor, and drive becomes a data-ready asset, contributing to predictive maintenance, energy benchmarking, and smart factory performance.

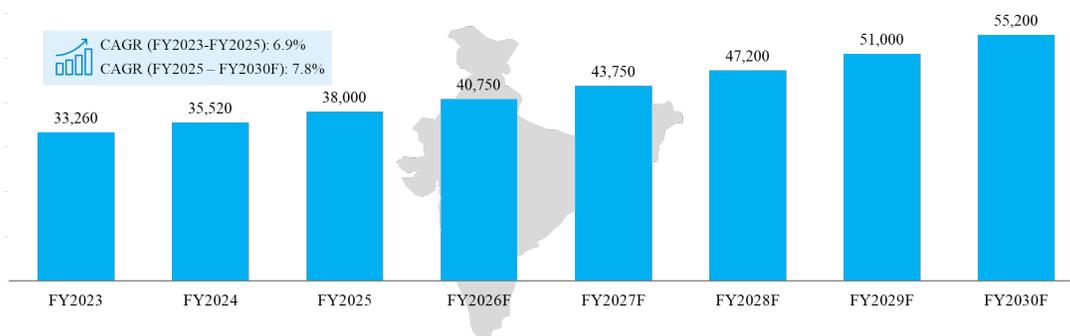
4.3. India Industrial Gearboxes Market (>15k Nm) – End-User Market Outlook (2025–2030)

End-user Segments	Key Growth Drivers	Expected CAGR (2025-2030)
Cement	40,000–50,000 crore capex pipeline in clinker capacity, WHRS systems, and new integrated plants across East & Central India	6.0 -8.0%
Metals & Steel	Over 1.2–1.5 lakh crore investments in steel capacity (300 MTPA roadmap), rolling mill modernization, pellet plants	7.0 -9.0%
Plastics & Polymer	Steady investments in compounding/extrusion lines driven by packaging, FMCG, auto components; new industrial parks (Tamil Nadu, Gujarat)	6.0 -8.0%
Rubber & Tyre	New tyre plants announced 7,000–10,000 crore by global & domestic players; capacity expansion for exports	8.0 -9.0%
Ports & Shipbuilding	Major port mechanization, berths, cranes & logistics parks under Sagarmala (6 lakh crore program) + shipyard upgrades	12.0 -14.0%
Defence & Heavy Engineering	Naval expansion, submarine & shipbuilding programs, missile-handling systems; Make in India defence capex crossing 1 lakh crore	10.0 -12.0%
Sugar	Strong investments (12,000–15,000 crore) driven by ethanol blending (20% EBP), new distilleries, high-capacity mills	5.0 - 7.0%
Power Generation	Selective upgrades in coal-handling systems, ash-handling, biomass co-firing; limited new thermal but ₹10,000+ crore in auxiliaries	4.0 -6.0%

4.4. Industrial Gearboxes Market (>15k Nm) – India Market Overview

The Indian industrial gearbox market has experienced steady growth in recent years, driven by the country's ongoing wave of industrial automation, infrastructure upgrades, and expansion of manufacturing capacity. Gearboxes continue to play a critical role in enabling reliable and efficient power transmission across India's core industries, including cement, steel, mining, power generation, and renewables, where uptime and performance are mission-critical. Growth is being accelerated by the modernization of process plants and the adoption of energy-efficient technologies that reduce operational costs and downtime.

Exhibit 4.1: India market size for Gearboxes (Value in INR Mn), FY2025– FY2030F



Source: Desk Research, Frost & Sullivan Analysis

From FY2023 to FY2025, the Indian market expanded at a CAGR of 6.9%, growing from approximately INR 33,260 million in FY2023 to an estimated INR 38,000 million in FY2025. From FY2023 to FY2025, India's industrial gearboxes market experienced steady growth, supported by sustained investments in the cement, steel, power, and mining sectors. Demand remained strong as industries prioritized uptime, reliability, and efficiency amid rising production and modernization. The Indian industrial gearboxes market is projected to grow from INR 38,000 million in FY2025 to INR 55,200 million by FY2030, reflecting a CAGR of around 7.8% during the period. Looking ahead, the market is expected to strengthen through FY2030, driven by automation, brownfield expansions, and the shift toward energy-efficient and low-maintenance systems. The rising adoption of renewables, the material handling and process industries, and government-led industrial capital expenditures and efficiency mandates will further sustain this growth momentum.

Demand for heavy duty gearboxes is expected to grow as OEMs supplying machinery to steel, cement, sugar, rubber, plastics, and power generation industries scale equipment capacity and duty requirements. This trend is already reflected in increasing interest from existing low- and medium-duty gearbox customers upgrading to higher-capacity solutions. As a result, the heavy-duty gearbox market is projected to reach approximately INR 55,200 million by FY2030.

4.4.1. India Industrial Gearboxes Market: Segmentation by Product Type

Exhibit 4.2: India Industrial Gearboxes, Product-wise Contribution, FY2025

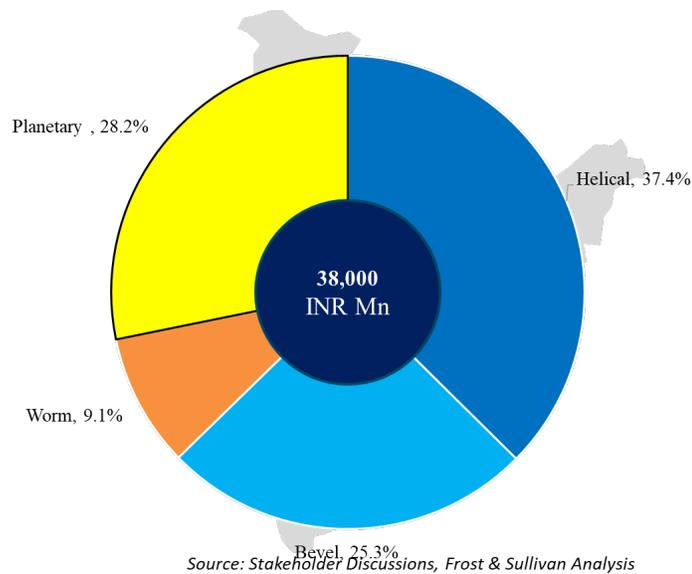
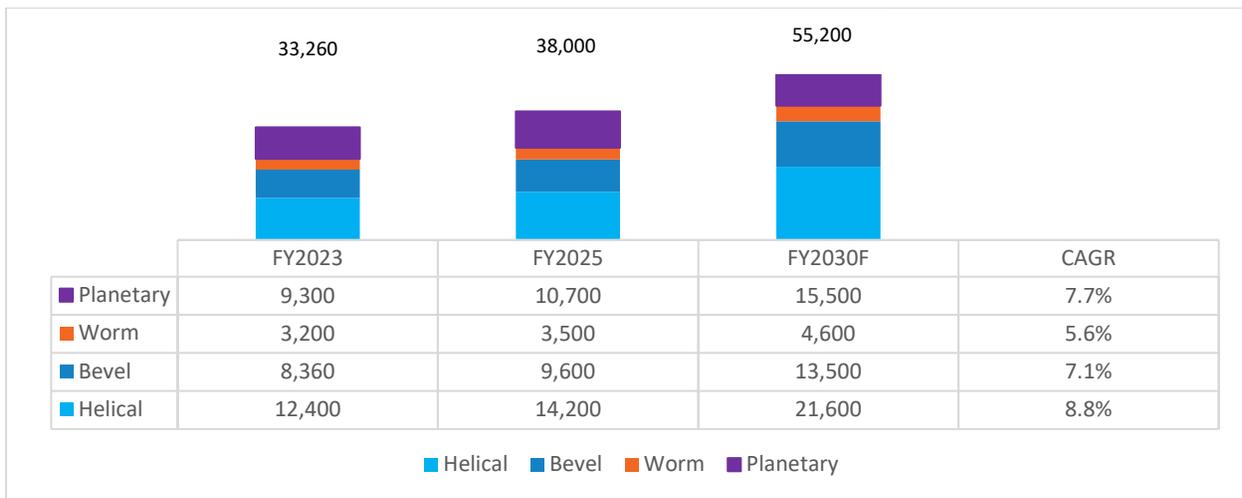


Exhibit 4.3: India Industrial Gearboxes, Market Split by Product Type, FY2023 - FY2025- FY2030F, INR Million



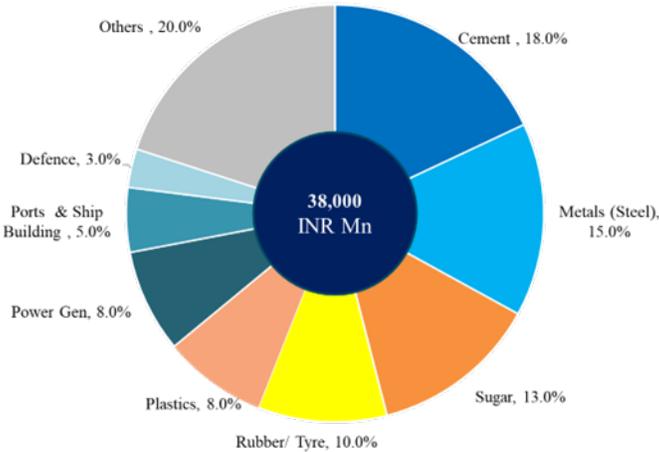
Helical gearboxes are expected to grow at a much higher rate in the forecast period. It continues to meet India's industrial demand due to its reliability, load-handling strength, and efficiency across various sectors, including cement, steel, and material handling. Their wide adaptability keeps them the preferred standard for new installations. Bevel and planetary gearboxes are gaining share as industries adopt automated, space-efficient systems. This marks a shift from conventional heavy-duty designs to precision-engineered, modular, and maintenance-friendly architecture. Planetary gearboxes are gaining strong

traction in heavy-duty applications such as mining, steel, cement, and wind energy, where compactness, high torque density, and load-distribution efficiency are critical. Their multi-planet gear arrangement enables exceptional power transmission within limited space, making them ideal for applications such as bucket elevators, kilns, mixers, and crushers.

Historically, the Indian market was largely dominated by conventional worm gearboxes with solid input and output shafts connected via couplings, belt pulleys, or chain sprockets, resulting in bulky set up and lower system efficiency.

4.4.2. India Industrial Gearboxes Market: Segmentation by End-user Markets

Exhibit 4.4: India Industrial Gearboxes, End-user Contribution, FY 2025

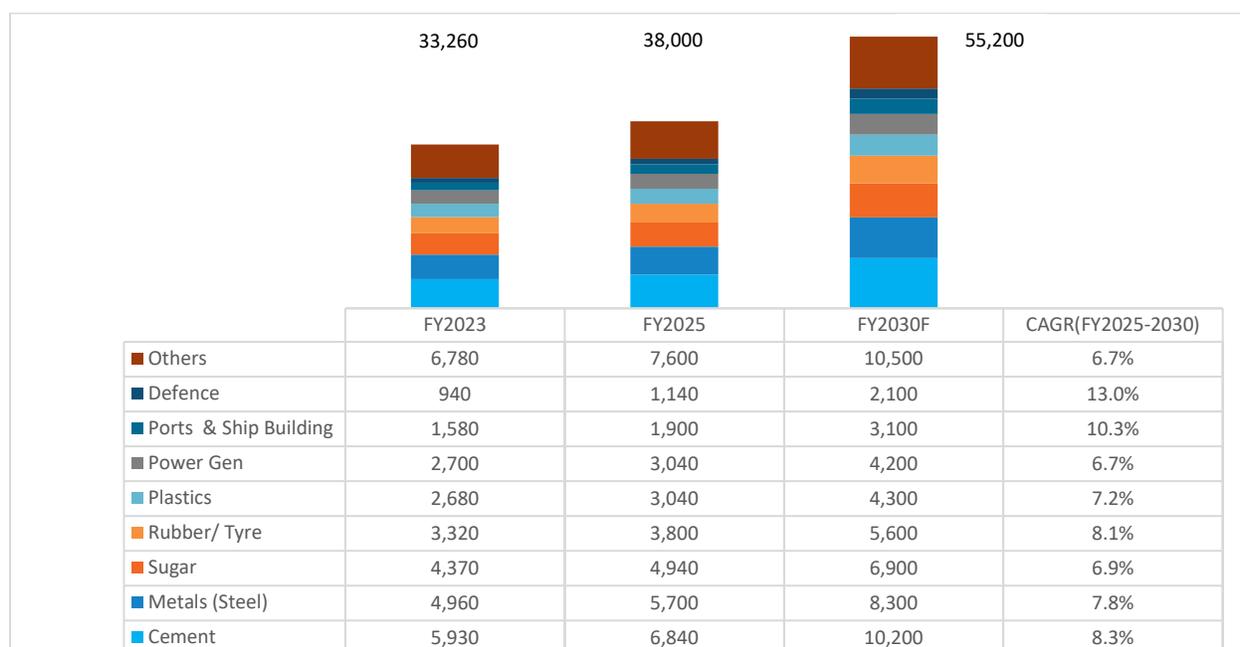


Source: Stakeholder Interactions, Frost & Sullivan Analysis

The Indian industrial gearbox market, valued at approximately INR 38,000 million, remains heavily concentrated in core process industries such as cement, steel, and sugar, which together account for a dominant share of overall demand. The cement and steel sectors continue to anchor the market due to sustained capital investment cycles, modernization of production lines, and high torque requirements for crushers, conveyors, and mills. These sectors also reflect significant replacement demand, as plants transition from aging worm gear systems to high-efficiency helical and bevel gear solutions. The sugar and rubber/tyre industries are emerging as stable mid-sized contributors, driven by capacity expansions in India’s agro-processing belt and rising demand for torque-intensive, corrosion-resistant gear units. The plastics and power generation sectors sustain steady demand through continuous operations that depend on durable and low-maintenance drive systems.

Notably, high-growth momentum is visible in defense and ports & shipbuilding, where gearboxes are being adopted for heavy-duty cranes, marine drives, and propulsion systems. These applications require precision, compact design, and reliability in harsh environments, factors that favor planetary and bevel-helical configurations. The defense sector is expected to post the fastest growth, supported by India’s indigenization programs and the 'Make in India' defense manufacturing push.

Exhibit 4.5: India Industrial Gearboxes, Market Split by End-user Segments, FY2023 - FY2025-
FY2030F, INR Million



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Others include Mining, chemicals, pulp and paper, oil and gas, Automotive, and Water treatment, among others.

Overall, the end-user landscape reflects a dual dynamic: mature heavy industries continue to provide a stable base through replacement and modernization projects, while newer high-performance segments, such as defense, marine, and renewables, are reshaping the market toward specialized, precision-engineered gearboxes with higher efficiency, compactness, and digital monitoring integration.

4.4.3. India Industrial Gearboxes – New and Replacement Demand

India's industrial gearbox market is driven by both new capacity creation and replacement-led modernization. New installations stem from ongoing investments in cement, steel, power, renewables, and intralogistics, aligned with India's manufacturing and infrastructure expansion. Rising automation in material handling, process plants, and renewable energy systems is driving demand for helical, bevel-helical, and planetary gearboxes, which are designed for compactness, high torque density, and improved energy efficiency.

At the same time, replacement accounts for a steady and growing share, particularly in mature sectors such as cement, mining, and heavy engineering, where older worm and spur drives are being phased out. Energy-efficiency mandates, asset aging, and downtime reduction imperatives are driving upgrades to high-performance, low-maintenance gear systems. Users are increasingly preferring drop-in replacements that offer enhanced sealing, improved thermal performance, and compatibility with digital monitoring.

Overall, new installations account for approximately 55% of India's gearbox demand, while replacements contribute about 45%, indicating a shift from growth driven by expansion to modernization and lifecycle optimization. Gearboxes are no longer viewed as static mechanical components, but as intelligent, monitored assets that form the backbone of India's next-generation industrial reliability and efficiency.

4.5. India Industrial Gearboxes Market – Key Growth Drivers

- i. **Manufacturing & Industrial Expansion:** Rapid capacity additions in steel, cement, power, and water infrastructure are driving demand for new gearboxes in conveyors, crushers, and pumps. The Make in India push and brownfield expansions are creating sustained domestic demand.
- ii. **Automation & Industry 4.0 Adoption:** Factories are shifting toward precision, uptime, and digital control, spurring demand for high-efficiency, low-noise, automation-ready gearboxes. Integration with servo systems and motion control platforms is becoming mainstream.
- iii. **Localization & Supply Chain Maturity:** Global OEMs are partnering with Indian suppliers to localize gearbox production. Government incentives, PLI schemes, and reduced import dependence are strengthening the domestic ecosystem.
- iv. **Renewable Energy Expansion:** Rapid growth in wind and solar sectors is boosting demand for precision planetary and helical gear systems. Localization in renewable component manufacturing adds further momentum.
- v. **Investments in Food, Pharma & Ethanol Production:** Strong capex in food processing, pharmaceuticals, grain handling, and ethanol distillation plants is creating sustained demand for gearboxes used in conveyors, dryers, mixers, agitators, and centrifuges.
- vi. **Export Momentum & Global Sourcing:** India's cost competitiveness, improving quality standards, and robust machining capabilities are boosting gearbox exports to the Middle East, Africa, Europe, and Southeast Asia. Several Indian manufacturers are emerging as global sourcing partners for industrial gearboxes and components.
- vii. **Investments in Ports & Infrastructure Build-Out:** Significant capex in ports, inland waterways, multimodal logistics parks, and large warehousing hubs is driving demand for high-capacity gearboxes used in ship unloaders, stacker-reclaimers, conveyors, cranes, and bulk-handling systems. The broader infrastructure build-out roads, metros, airports, and freight corridors is further accelerating demand for robust, heavy-duty power-transmission solutions.

4.6. India Industrial Gearboxes Market – Threats and Challenges

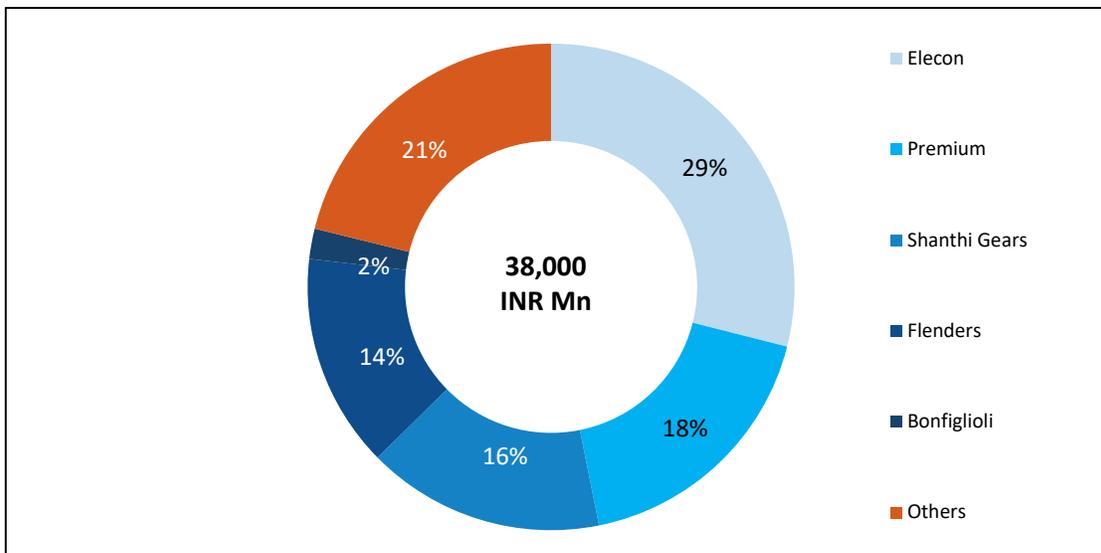
- i. **Price Competition & Margin Pressure:** Growing competition from both domestic and imported players continues to influence pricing. As mid-range gearboxes become increasingly standardized, manufacturers are experiencing gradual margin pressure and reduced room for discretionary R&D investments.
- ii. **Technological & Quality Gaps:** Indian gearbox makers still lag global peers in design precision, material strength, and thermal efficiency. This constrains participation in high-torque and automation-driven applications, limiting export readiness.
- iii. **Volatile Raw Material & Component Costs:** Heavy reliance on imported alloy steel, bearings, and precision castings exposes manufacturers to cost swings and supply chain risks, impacting profitability and delivery timelines.

- iv. **Shift Toward Compact Gear Motors:** Integrated gear motors and compact drive systems are replacing large standalone gearboxes in MHE, intralogistics, and automation. This shift poses a threat to the demand for heavy-duty gearbox categories unless OEMs adapt their product lines accordingly.
- v. **Cyclical Demand:** Gearbox demand fluctuates with investment cycles in core sectors like cement, steel, and power. Project delays or policy slowdowns often lead to uneven order flows, which in turn impact OEM capacity utilization and cash stability.
- vi. **Low Digitalization & Skill Shortages:** Limited adoption of sensorized, condition-monitoring-enabled gearboxes and a shortage of mechatronics-skilled labor hinder India’s transition toward Industry 4.0-ready drive systems.

4.7. Competitive Landscape- Gearboxes

The Indian gearbox market is relatively consolidated, with around 30 active players competing across diverse end-user industries. Leading players include Elecon, Premium Transmission, Shanthi Gears, and Flender, together accounting for nearly 77.0% of the market share. Other notable participants, such as Vulcan, Walchandnagar, DB Santasolo, Timken, New Allenberry Works, SEW, and Top Gear Transmission, a few of which manufacture for captive consumption. Overall, India’s gearbox market combines global technology leadership and domestic cost competitiveness, with players balancing product innovation, service integration, and market-specific customization.

Exhibit 4.6: India Industrial GearBoxes(>15k Nm), Market Share of Key Players by Value, FY2025



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Others – Nord, Vulcan, Walchandnagar, SEW Euro Drive, Top Gear Transmission, Reggiana riduttori, Triveni (Captive)

India’s leading gearbox players continue to hold a strong competitive advantage due to their deep local manufacturing footprint, fully integrated machining and heat-treatment capabilities, and long-standing

relationships across core industrial sectors. Companies with domestic production facilities can offer shorter lead times, competitive cost structures, localized engineering support, and easier customization, which remain critical differentiators in applications such as power, cement, steel, material handling, and process industries.

Their ability to design, machine, assemble, and test gearboxes in India ensures better quality control, faster aftermarket response, and greater flexibility for large, custom-built, or high-torque applications. Additionally, strong domestic vendor ecosystems and well-established service networks position these players favourably against global imports, helping them maintain leadership despite intensifying price competition and growing interest from foreign brands.

The segment has notable entry barriers, including high capital requirements for precision manufacturing, long OEM qualification cycles, strict reliability standards, and the need for a strong service network. This further strengthens the position of players with established local manufacturing and proven engineering capabilities.

Bonfiglioli manufactures a wide range of mission-critical and highly precision-engineered gear motors, gearboxes, and drive systems used across diverse end-user markets, across Industry & Automation, Off-Highway Mobility, and Wind Industries. Bonfiglioli India benefits from the Bonfiglioli Group’s global brand equity, built on deep technical expertise and engineering excellence in mechanical and electromechanical power transmission and industrial automation drives.

4.8. India Industrial Gear Motors Market (<15k Nm) – End-User Market Outlook (2025–2030)

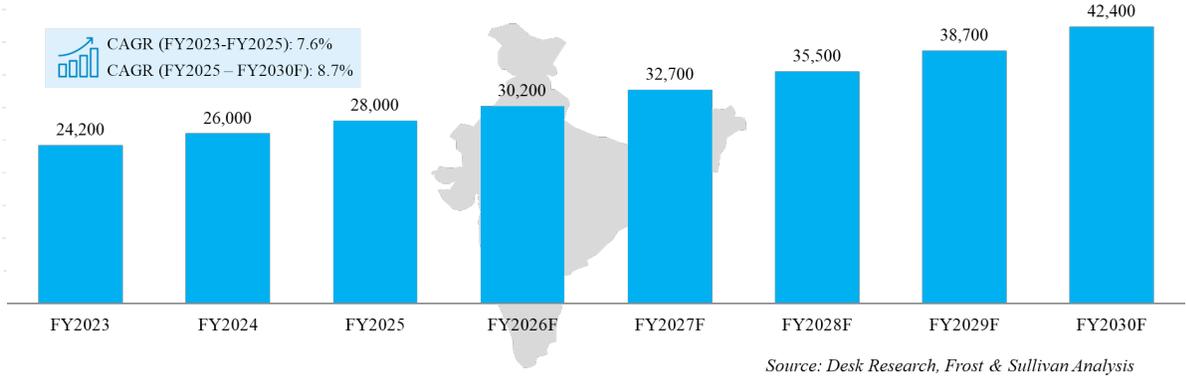
End-user Segments	Key Growth Drivers	Expected CAGR (2025-2030)
Material Handling	Rapid expansion of warehouses, ports, airports, steel & cement plants; automation of conveyors, stackers, reclaimers, cranes; strong demand from bulk handling and intralogistics	7.0 -9.0%
Food & Beverage (F&B)	Capacity additions in dairy, beverages, grain processing, sugar, edible oils; ethanol blending (20% EBP), cold-chain expansion, hygiene-driven plant modernization	6.0 -8.0%
Chemicals & Pharma	Specialty chemicals capacity build-up, CDMO investments, bulk drug parks, process automation, compliance-driven upgrades (safety, precision, reliability)	7.0 -9.0%
Mining	Coal evacuation projects, mine mechanization, conveyorization, crusher & beneficiation plants; minerals critical to energy transition (iron ore, bauxite, lithium-related infra)	6.0 -8.0%
Textiles	Modernization of spinning, weaving, processing; PLI-led man-made fibre investments; technical textiles and export-oriented capacity expansion	5.0 -7.0%

Packaging	Growth in flexible packaging, corrugation, and rigid plastics driven by FMCG, e-commerce, pharma; higher automation in filling, palletizing, and conveying	7.0 -9.0%
Logistics & Warehousing	Grade-A warehousing, cold storage, MMLPs, airport cargo terminals; strong push for mechanized handling, sortation, and energy-efficient drives	10.0 -12.0%
Robotics & Factory Automation	Adoption of industrial robots, AGVs/AMRs, smart factories; OEM-led automation in auto, electronics, metals, and consumer goods	12.0 -15.0%
Biogas / Waste-to-Energy	CBG targets, SATAT scheme, agri-waste utilization, municipal waste processing; rising investments in digesters, compressors, and gas-handling systems	14.0 -16.0%

4.9. Industrial Gear Motors (<15k Nm) – India Market Overview

India’s gear motor market is becoming the backbone of its automation-driven manufacturing revolution. Compact, efficient, and digitally enabled gear motors are replacing legacy drive systems across factories, warehouses, and process plants. As industries embrace robotics, motion control, and energy-efficient operations, gear motors are evolving from mechanical components to intelligent motion hubs. With growing localization and smart integration, they now represent the fusion of power, precision, and data that defines India’s next-generation industrial ecosystem.

Exhibit 4.7: India market size for Gear Motors (Value in INR Mn), FY2025 – FY2030F

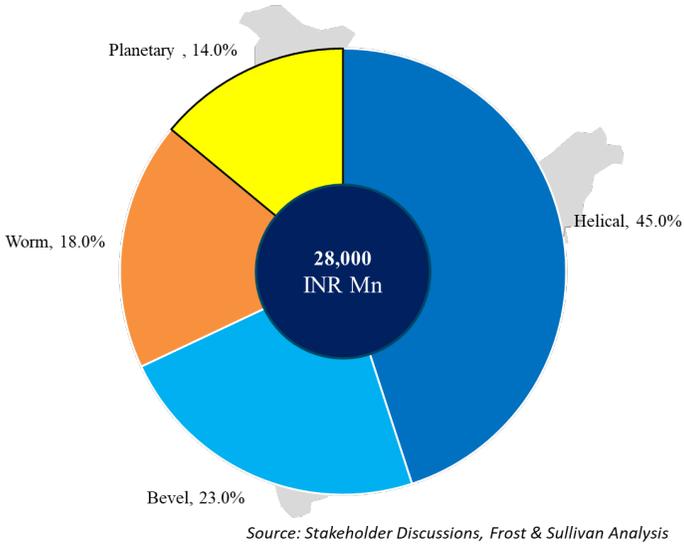


From FY2023 to FY2025, the Indian gear motors market expanded steadily at an estimated CAGR of around 7.6%, growing from INR 24,200 million in FY2023 to about INR 28,000 million in FY2025. Growth was supported by resilient demand and investment across the key end-user industries. Between FY2025 and FY2030, the market is projected to rise from INR 28,000 million to INR 42,400 million, reflecting a stronger CAGR of 8.7%, which is faster than standalone gearboxes.

4.9.1. India Industrial Gear Motors Market: Segmentation by Product Type

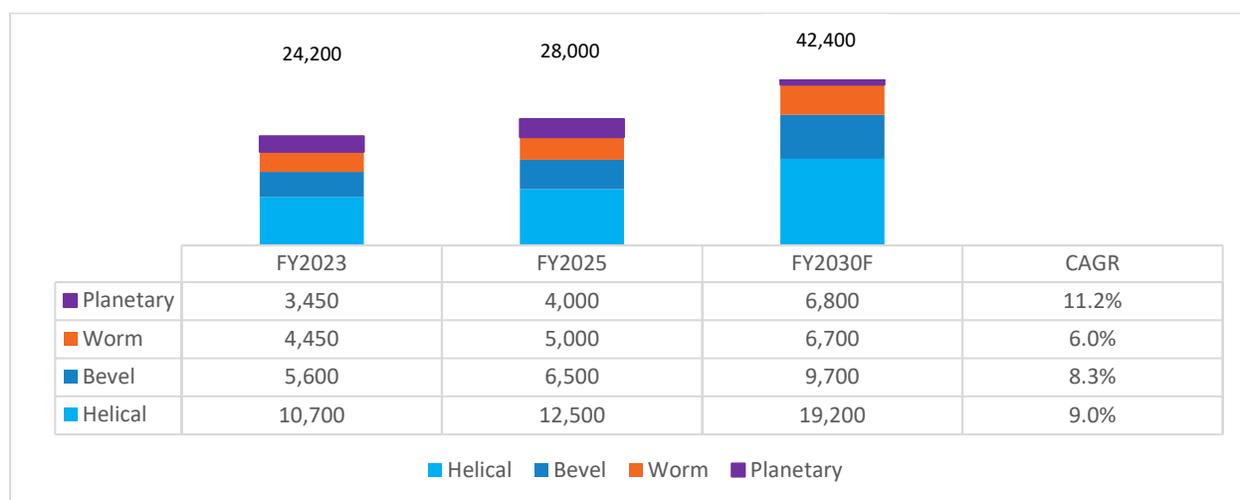
India’s industrial gear motors market is dominated by helical gear motors, reflecting their superior efficiency, compact design, and versatility across manufacturing and process industries. These drives are increasingly preferred in conveyors, automated assembly lines, and energy-efficient systems. Bevel gear motors constitute the next significant segment, gaining traction in cranes, lifting equipment, and heavy-duty material-handling applications, supported by rising infrastructure and logistics investments.

. Exhibit 4.8: India Industrial Gear Motors, Product-wise Contribution, FY 2025



Bonfiglioli introduced hollow shaft worm gear motors and inline helical gear motors in India in 2000, leveraging BSPA’s established global manufacturing. Their direct shaft-mount design enables compact, efficient installations, driving strong adoption in the Indian market.

Exhibit 4.9: India Industrial Gear Motors, Market Split by Product Type, FY2023 - FY2025-
FY2030F, INR Million



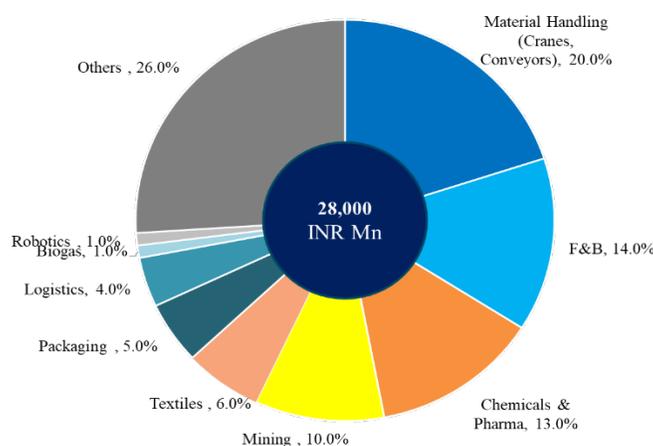
Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Worm gear motors continue to serve value-driven applications that demand simple, low-speed, and compact solutions. However, their relative share is gradually declining as the shift toward higher-efficiency designs occurs. Planetary gear motors, although smaller in overall volume, are rapidly gaining popularity in robotics, packaging, and precision motion systems where high torque and space optimization are crucial. Bonfiglioli was one of India’s leading planetary gearbox manufacturers by revenue in CY 2024.

4.9.2. India Industrial Gear Motors Market: Segmentation by End-user Markets

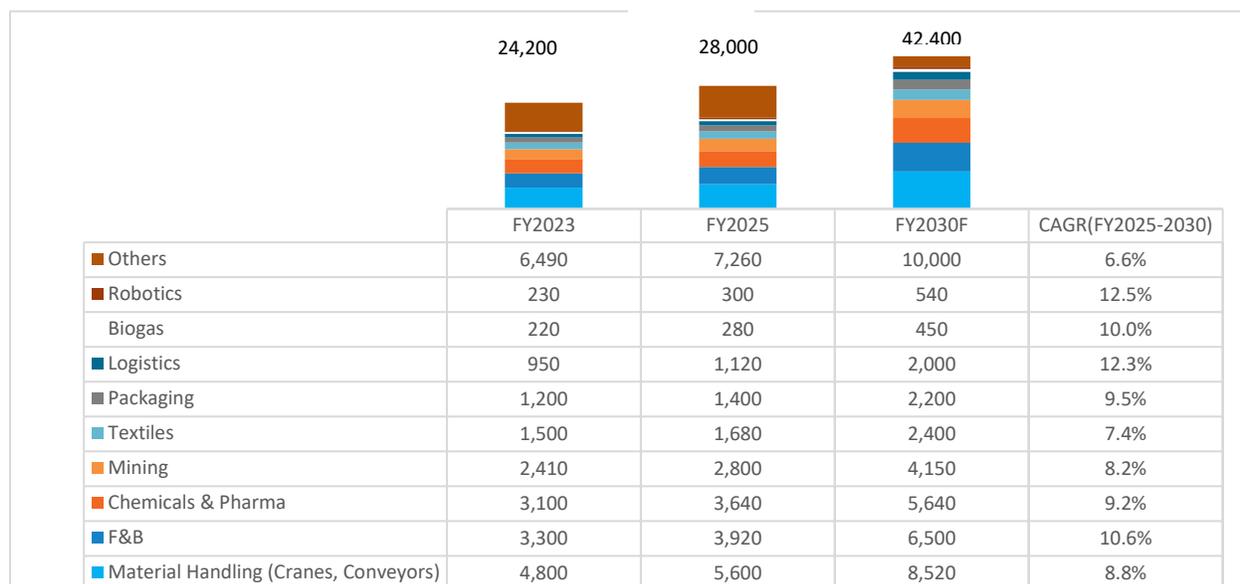
India’s industrial gear motor market is entering a phase of sustained growth, driven by twin forces of manufacturing expansion and automation adoption.

Exhibit 4.10: India Industrial Gear Motors, End-user Contribution, FY 2025



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Exhibit 4.11: India Industrial Gear Motors, Market Split by End-user Segments, FY2023 - FY2025-
FY2030F, INR Million



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Others include Cement, General Manufacturing, Construction, pulp and paper, Glass, agro equipment, etc.

Material handling and conveyor applications continue to dominate demand and expand further, reflecting the rapid mechanization of factories. The food and beverage (F&B) and chemicals & pharmaceuticals sectors are emerging as key growth engines, driven by regulatory modernization, hygiene standards, and process automation. India's transformation is shaping the next wave of demand into automation and sustainability. High-growth niches, such as robotics and logistics, reflect the nation's shift toward smart manufacturing, AGV-driven warehousing, and decentralized motion systems that rely heavily on compact, high-torque gear motors. Biogas and renewable energy-linked installations are also increasing, with gear motors being increasingly used in feed mixers, agitators, and waste-processing systems as industries shift toward circular economy models. Meanwhile, packaging and textiles are undergoing steady modernization, driven by the replacement of older equipment, as SMEs upgrade to energy-efficient drives. Although mining and other heavy industries maintain a stable baseline demand, their growth is more replacement-oriented, focusing on durability, uptime, and localized service support. With over INR 50,000 crore being invested in warehousing and logistics infrastructure under programs such as Gati Shakti and the National Logistics Policy. The food and beverage and chemicals & pharmaceuticals sectors are emerging as key growth engines, backed by INR 40,000–45,000 crore of ongoing capacity expansions driven by regulatory modernization, hygiene standards, and process automation. Biogas and renewable-linked installations are also rising rapidly, supported by INR 25,000 crore+ in green energy and waste-to-energy projects.

Major OEMs in India source gear motors for a wide range of applications, including conveyors and automated storage systems, packaging machinery, textile equipment, crushers, mixers, and renewable-energy tracking systems. Leading equipment manufacturers such as Godrej Conveyors, Daifuku India,

Electromech, AGI Milltec, Lohia, Propel, Metso, Terex, L&T, GMM Pfaudler, Hailstone, Schwing Stetter, Tetra Pak India, Nichrome, Bosch Packaging, and Macpower rely on gear-motor suppliers for critical motion functions across their machinery portfolios.

In sectors such as material handling, food processing, process equipment, intralogistics, and heavy engineering, OEMs prefer partners that offer reliable torque delivery, integrated designs, strong customization capabilities, and responsive local service support. With automation accelerating across Indian factories and warehouses, these OEMs increasingly favour gear-motor solutions that blend mechanical robustness with electronic controls, enabling more efficient, modular, and high-uptime equipment for the Indian market.

4.9.3. India Industrial Gear Motors – New and Replacement Demand

The twin forces of automation-driven expansion and energy-efficiency-led replacement shape India's gear motor market. New installations are primarily driven by the surge in intralogistics, warehouse automation, packaging, food and beverage (F&B), and process line upgrades, where synchronized motion control and compact, integrated drives are critical. The ongoing shift toward robot-assisted manufacturing, conveyORIZED assembly, and decentralized drive systems is fueling demand for modular helical and parallel-shaft gear motors that deliver high torque with minimal noise, footprint, and energy consumption.

At the same time, replacement demand is accelerating as users retire legacy belt-coupled or worm-driven setups in favor of integrated motor-gear units that offer variable speed and digital control compatibility. The rising focus on OEE (Overall Equipment Effectiveness), downtime reduction, and motor efficiency compliance (IE3/IE4 standards) is prompting modernization across various sectors, including automotive, FMCG, pharmaceuticals, and light engineering.

Overall, new installations account for around 60% of India's gear motor demand, while replacements contribute the remaining 40%, reflecting an inflection point where mechanical reliability merges with digital intelligence. Gear motors are evolving from simple power units to smart motion devices, driving India's transition toward connected, energy-optimized, and service-ready manufacturing ecosystems.

4.10. India Industrial Gear Motors Market – Key Growth Drivers

- i. **Expansion of Intralogistics and Warehouse Automation:** The rise of e-commerce, 3PL, and manufacturing logistics hubs has accelerated demand for gear motors in conveyors, sorters, stackers, and AGVs. Compact, high-torque gear motors enable space-efficient drive solutions in automated warehouses and distribution centers.
- ii. **Shift Toward Smart and Decentralized Drives:** Industries are moving from centralized motor-gearbox assemblies to integrated gear-motor units with built-in variable-speed drives and digital interfaces. This enhances energy efficiency, simplifies wiring complexity, and enables localized control in modern plant layouts.
- iii. **Energy-Efficiency Mandates and IE3/IE4 Adoption:** Government and corporate sustainability targets are driving the replacement of outdated drive systems with premium-efficiency gear

motors. Compliance with IE3/IE4 standards and lower lifecycle energy costs make energy-efficient units a preferred choice for both new and retrofit projects.

- iv. **Rising Automation in Light Manufacturing:** Gear motors are increasingly used in packaging, automotive components, and light engineering for precision motion, synchronized conveyors, and compact drive integration. The growing adoption of servo-assisted and modular gear motors is enabling faster and more flexible production lines. Increased use of robotics, dosing systems, and synchronized conveyors expands the demand base across SMEs
- v. **Surge in Investments Across F&B, Pharma, and Chemicals:** New greenfield and brownfield projects in process industries are driving demand for hygienic, corrosion-resistant, and explosion-proof gear motors for mixers, conveyors, and dosing systems, creating a specialized, high-value segment within the market.
- vi. **Localization and Make-in-India Manufacturing Push:** Global players such as Bonfiglioli, Nord, SEW-Eurodrive, and Indian OEMs are localizing production and assembly, improving cost competitiveness and service responsiveness. Proximity manufacturing reduces import dependence and accelerates adoption in mid-tier industries.
- vii. **Infrastructure and Industrial Corridor Development:** New manufacturing clusters, logistics parks, and industrial corridors across states such as Tamil Nadu, Gujarat, and Maharashtra are expanding the addressable market for gear-motor applications in material handling, power plants, and utilities.

4.11. India Industrial Gear Motors Market – Threats and Challenges

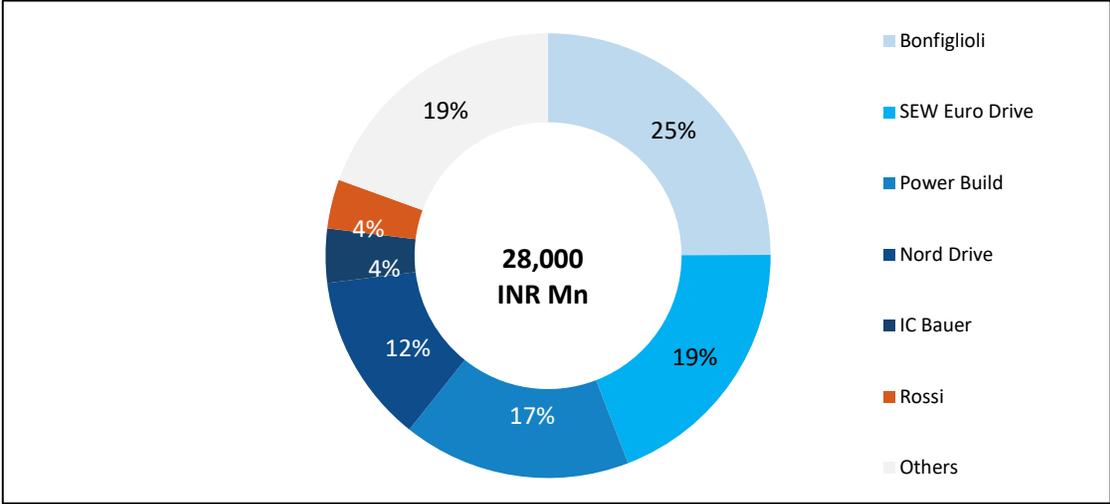
- i. **Declining demand for worm gear technology** - Technological inefficiencies are expected to result in the replacement of worm gear technology by the helical/ bevel-helical, planetary units, and other competing substitute technologies. Technology is highly mature but is hindered by various technical limitations, resulting in lower adoption rates.
- ii. **Adoption of Gearless Solutions** - Gearless direct drive solutions offer higher power transmission efficiency and reduce maintenance costs significantly. This trend is likely to affect the sales of gear motors negatively. In the short term, gearless solutions are likely to be adopted for low-power applications up to 1kW.
- iii. **Import Dependence:** Gear motors depend heavily on imported servo drives, control electronics, and precision gear components, as local manufacturing capabilities for these high-spec parts remain limited. This dependency exposes the market to currency volatility, lead-time issues, and global supply disruptions.

4.12. Competitive Landscape – Gear Motors

The Indian gear motors market is relatively consolidated, with around 14 active players competing across diverse end-user industries. Leading players include Bonfiglioli, SEW-Eurodrive, Power Build, and Nord Drive Systems, together accounting for nearly 73.0% of the market share. Other notable participants, such as Premium transmission, Rotomag, Top Gear Transmission, Brevini, and Kavitsu, cater to niche applications and customized product needs.

These companies achieved their market position due to their broad product portfolios, Strong regional and global presence, brand equity, strong customer support, a strong customer base with a high retention rate, and the capacity to design solutions to meet unique customer needs. The country's diversified end-user segments, comprising companies across different tiers with varying requirements, enable gear motor manufacturers to carve out a niche at the product, industry, or regional level.

Exhibit 4.12: India Industrial Gear Motors(<15k Nm), Market Share of Key Players by Value, FY2025



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Others – Top Gear Transmission, Rotomag, Brevini, Kavitsu, MGM Varvel, Laxmi Hydraulics, Premium transmission, Shanthi Gears, Importers representing other global brands

Global players dominate through technology leadership, service depth, and strong OEM partnerships, while domestic manufacturers focus on cost-effective, niche, and application-specific designs. Bonfiglioli is one of India’s largest technology-led mechanical and electro-mechanical power transmissions and industrial drive solutions providers by revenue for the nine months ended September 30, 2025. Bonfiglioli held a 25.0% market share in low and medium-duty gear motors (below 15 kNm) in India based on revenue for CY2024. Bonfiglioli’s leadership in India is driven by its ability to deliver comprehensive drive solutions tailored to major OEM requirements, supported by a strong dealer and distribution network that ensures broad market reach. Its robust service and aftermarket infrastructure, including rapid-response support and localized inventory, strengthens customer confidence, especially in high-uptime industries.

The company benefits from a diverse end-user footprint spanning material handling, packaging, logistics automation, renewables, metals, food processing, and general industrial machinery. Local assembly capabilities, a broad product portfolio (including helical, planetary, and precision solutions), and strong engineering collaboration with OEMs enable faster customization and shorter lead times. With its brand reputation, technical expertise, and stable pan-India presence, Bonfiglioli remains one of the most preferred partners in the industrial gear motor and drive solutions market.

Chapter 5: Overview of Global Mobility Solutions (Drives) used in Off-highway Applications



**Overview of Global Mobility Solutions
(Drives) used in Off-highway Applications**

5.1. Global Mobility Solutions (Drives) used in Off-highway Applications – Overview

The off-highway drive solutions market, covering construction, agriculture, mining, material handling, and forestry equipment, comprises mechanical, hydraulic, and increasingly electrified drive systems that transmit power from the engine or battery to motion and work functions. These include axles, hydrostatic transmissions, planetary drives (wheel, track, slew, winch), and emerging e-axle and central drive systems. Key suppliers include Bonfiglioli, PMP, Dana, Comer Industries, SUNGBO, Bosch Rexroth, Kawasaki, and Nachi, which offer integrated mechanical-to-electric drive portfolios. OEM integration partnerships and modular e-drive platforms are strengthening as end-users demand lower fuel consumption, reduced noise, and digital monitoring.

Regionally, Europe and North America remain technology and innovation hubs, driven by stringent emission regulations and advanced OEM ecosystems. In contrast, the Asia-Pacific, particularly China and India, leads in volume growth, supported by rapid infrastructure development and agricultural mechanization. The sector benefits from a resilient aftermarket base, underpinned by the wear-intensive operating conditions of drivetrain assemblies and the long service lifecycles of off-highway machinery, which collectively ensure recurring demand for replacement, repair, and service components.

5.2. Overview of Drive Types Used in Off-Highway and Agricultural Equipment

Drive Type	Drives under this Category	Key Function/ Description	Key Application Areas
Propulsion Drives	Track drives, wheel drives, travel drum and Roller Drives	Enable machine movement by converting engine or motor output into tractive force; designed for high torque, smooth propulsion, and speed control. Typically planetary gear-based and integrated with hydraulic or electric motors.	Excavators, crawler dozers, loaders, telehandlers, harvesters, forestry equipment, road rollers, compactors
Rotational / Positioning Drives	Swing drives, slew drives, Cutter drives	Provide controlled rotational motion and precise positioning of upper structures or attachments; ensure torque stability, smooth slewing, and accurate load positioning.	Excavators, cranes, drilling rigs, material-handling booms, forestry harvesters
Load Handling Drives	Hoist drives, winch drives, skip/mixer aux drives	Enable lifting, lowering, and controlled movement of loads; designed for high load capacity, safety, and precise speed control under variable duty cycles.	Cranes, telehandlers, forklifts, aerial work platforms, mining and drilling equipment
Material Processing Drives	Drum mixer drives, auger drives, conveyor drives	Power material handling, mixing, and processing functions; optimized for continuous or cyclic duty, torque consistency, sealing, and durability. Predominantly hydraulic, with electric variants emerging.	Transit mixers, self-loading mixers, batching plants, drilling equipment, conveyors

Travel and swing drives form the mobility and maneuvering core of most off-highway machines, while drum drives cater to continuous rotational applications in construction equipment. Together, they represent the functional backbone of off-highway drive systems, with growing integration of electro-hydraulic and electric drive technologies for higher efficiency and sustainability.

Drive systems such as travel, swing, and drum drives typically account for a relatively small portion of total equipment cost, yet they are fundamental to overall equipment functionality and reliability. In heavy equipment, including excavators, cranes, and mining machinery, travel drives contribute approximately 3-5%, swing drives around 1-2%, and drum or hoist drives about 2-4% of total equipment cost, resulting in a combined drive system cost of roughly 6-10% of the overall machine value. Despite their limited cost share, these drives are mission-critical because they enable all primary motion functions, including movement, rotation, lifting, and load control. The performance, safety, and uptime of the entire machine are directly dependent on the reliability and torque-handling capability of these systems. In practice, a failure in any of these relatively low-cost drive components can immobilize the entire equipment, resulting in significant productivity losses, safety risks, and downstream damage.

5.3. Industry Trends in Mobility (Drive) Solutions for Off-Highway Applications

A) Electrification and Hybridization of Drive Systems

Off-highway drive technology is gradually evolving from purely conventional hydraulic power transmission toward electro-hydraulic and hybrid drive architectures. Compact and mid-sized machines such as mini-excavators, wheel loaders, and road rollers are leading this transition. The integration of electric motors within travel and drum drives reduces energy loss, fuel consumption, and noise, while enhancing controllability.

B) Importance of Co-engineering and Customization

In the off-highway equipment segment, co-engineering and customization are foundational requirements rather than emerging trends. An estimated 60-80% of drive systems are application-specific and jointly designed with OEMs, tailored for use cases such as drum drives in concrete mixers or swing drives in compact excavators. This collaborative development approach ensures optimal system fit, faster validation cycles, and deep integration across mechanical, hydraulic, and control architectures, resulting in higher reliability, superior machine performance, and strong OEM lock-in.

C) Integrated and Modular Drive Platforms

OEMs demand modular drive units that combine gearbox, hydraulic or electric motor, and braking systems within compact housing. Such units simplify assembly, improve efficiency, and enable cross-application use (e.g., the same drive platform can be adapted for dozers or pavers). Major players are investing in modular drive architectures to serve multiple vehicle categories.

D) Efficiency and Compact Design Optimization

The need for higher torque in smaller envelopes is pushing advances in planetary gear design, materials engineering, and lubrication systems. Compact, high-efficiency drives reduce overall equipment weight

and improve fuel economy, which is vital for agricultural and road construction machinery that operate for extended periods and experience variable loads.

E) Electromobility in Industrial Drives

The growth of industrial trucks, forklifts is driving demand for compact electric wheel drives and hub motors with precise speed and braking control. These drives feature regenerative braking, low noise, and zero local emissions, aligning sustainability and automation goals in warehouses and manufacturing plants.

F) R&D as a Competitive Differentiator

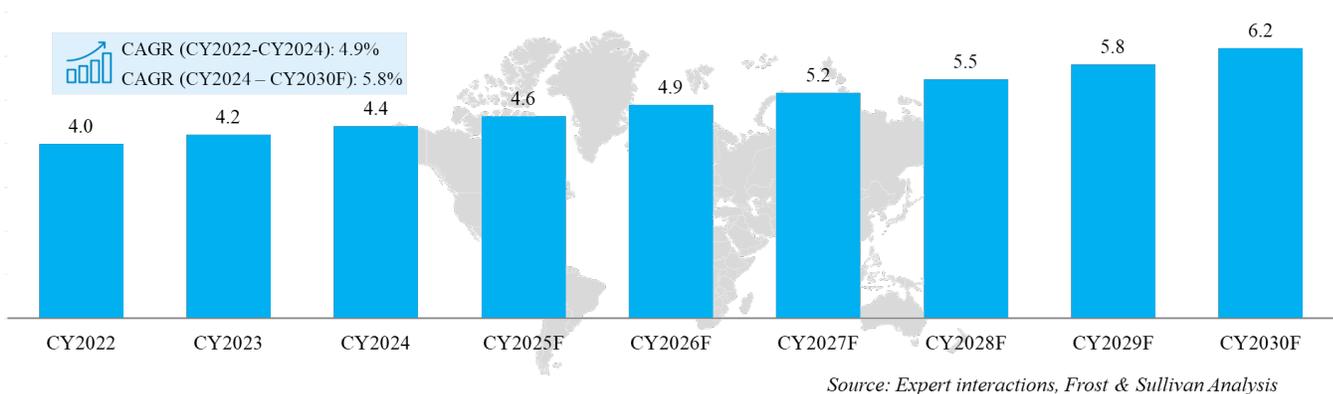
Continuous research and development in drive systems focuses on improving torque density, enhancing material durability, integrating electro-hydraulics, and reducing noise. Investments in simulation, testing rigs, and field validation enable manufacturers to tailor drives for extreme duty cycles in mining, excavation, and concrete-handling applications. Companies with strong R&D programs are best positioned to meet evolving emission norms and OEM performance expectations.

5.4. Global Off-Highway Mobility Solutions (Drives) – End-User Market Outlook (2024–2030E)

End-user Segments	Key Growth Drivers	Expected Value CAGR
Construction Equipment (Excavators, Loaders, Dozers)	Global infrastructure investment, urbanisation, fleet renewal, and mechanisation in developing regions.	4.0 -5.0%
Mining Equipment (Haul Trucks, Drills, Loaders)	Rising commodity demand, increasing automation, and remote-operation growth globally.	5.5 -6.5%
Agriculture Equipment (Tractors, Harvesters, Sprayers)	Mechanisation in emerging markets, precision farming, and electrification trends globally.	4.0 -5.0%
Road Construction Machinery (Pavers, Compactors, Rollers)	Global road/airport infrastructure projects, resurfacing, urban development, fleet refresh.	4.5 -5.5%
Concrete & Mixer Equipment (Transit Mixers, Self-Loading Mixers)	Global growth in ready-mix concrete, urban construction, rental fleets, and more rigid emission/noise norms.	5.0 -6.0%
Material Handling Equipment (Telehandlers, Forklifts, Compact Loaders in Off-Highway Use)	Global warehousing & logistics growth, smart factory trend, and electrification of material-handling vehicles.	5.5 -6.0%

5.5. Global off-Highway Mobility Solutions (Drives) – Market Size and Forecast

Exhibit 5.1: Global Off-Highway market size for Mobility solutions (Drives) , (Value in USD Bn),
CY2024 – CY2030E

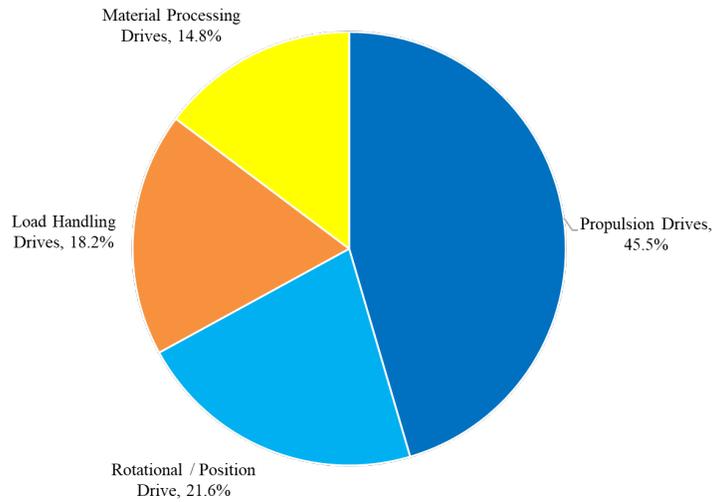


From CY2022 to CY2024, the global market expanded at a CAGR of 4.9%, growing from approximately USD 4.0 billion in CY2022 to an estimated USD 4.4 billion in CY2024. Demand for Mobility Solutions (Drives) used in Off-Highway applications is driven by High equipment utilization in core sectors (mining, construction, roads, agriculture), strong replacement cycles due to wear-intensive operations, compliance-driven upgrades, and OEM demand for reliable, rugged, high-torque drivetrain systems. The market is projected to grow from USD 4.4 billion in CY2024 to USD 6.2 billion by CY2030, reflecting a CAGR of around 5.8% during the period. The future growth is driven by the Electrification of off-highway equipment, demand for energy-efficient and digitally monitored drives, the expansion of infrastructure and mining projects, and the OEM push towards integrated drive systems.

5.5.1. Global off-Highway Mobility Solutions (Drives) Market: Segmentation by Product Type

Mobility drives the backbone of motion control in off-highway machinery, translating hydraulic or electric power into precise movement and torque. Driven by rising demand for excavators, cranes, and construction/mining machinery, the global market for these drive systems has evolved into a multi-billion-dollar segment dominated by planetary gear solutions.

Exhibit 5.2: Global Off-Highway Mobility solutions (Drives), Product-wise Contribution, CY 2024

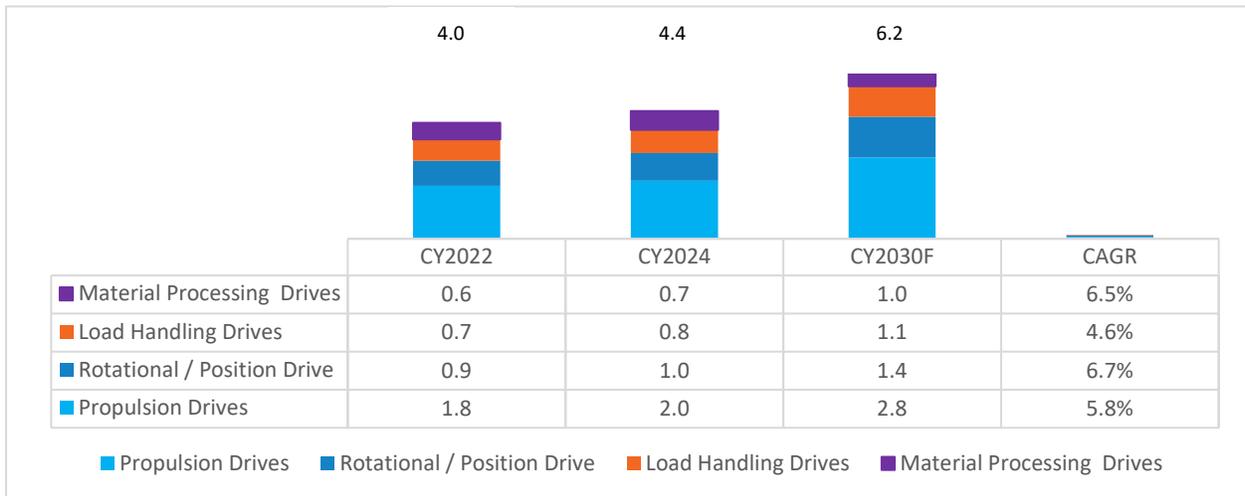


Source: Stakeholder Interactions, Frost & Sullivan Analysis

Note:

- 1) Propulsion Drives include Track, Wheel, and Roller Drives
- 2) Rotational/ Position Drives include Swing and Cutter Drives
- 3) Load Handling Drives include Hoist, skip/mixer aux drives
- 4) Material Processing drives include Mixer Drum, auger/conveyor drives.

Exhibit 5.3: Global Off-Highway Mobility solutions (Drives), Market Split by Product Type, CY2022 - CY2030F, USD Billion

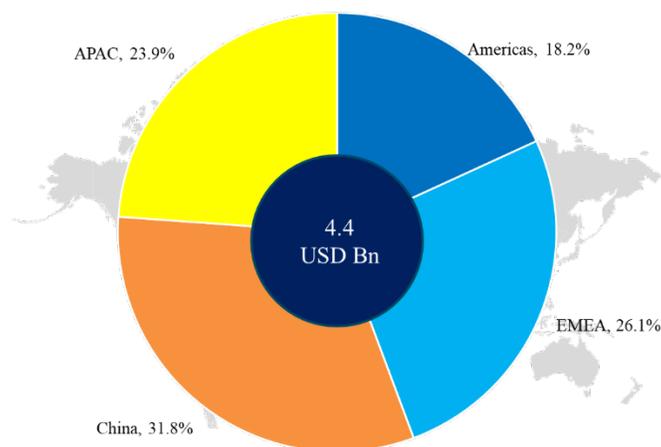


Propulsion drives remain the largest value pool, encompassing track, wheel, and roller drives, and contribute nearly half of the total market as OEMs prioritize higher torque density, improved efficiency, and enhanced duty-cycle performance. Rotational/position drives, which include swing and cutter drives,

are smaller today but show the fastest growth driven by precision motion control, digital sensors, and automation in excavators, mining, and material-handling equipment. Load-handling drives spanning hoist, skip, and mixer auxiliary drives grow moderately as adoption remains functional rather than innovation-led, while material-processing drives, comprising mixer drum and auger/conveyor drives, accelerate on the back of rising infrastructure and aggregate demand.

5.5.2. Global off-Highway Mobility Solutions (Drives) Market: Segmentation by Regions

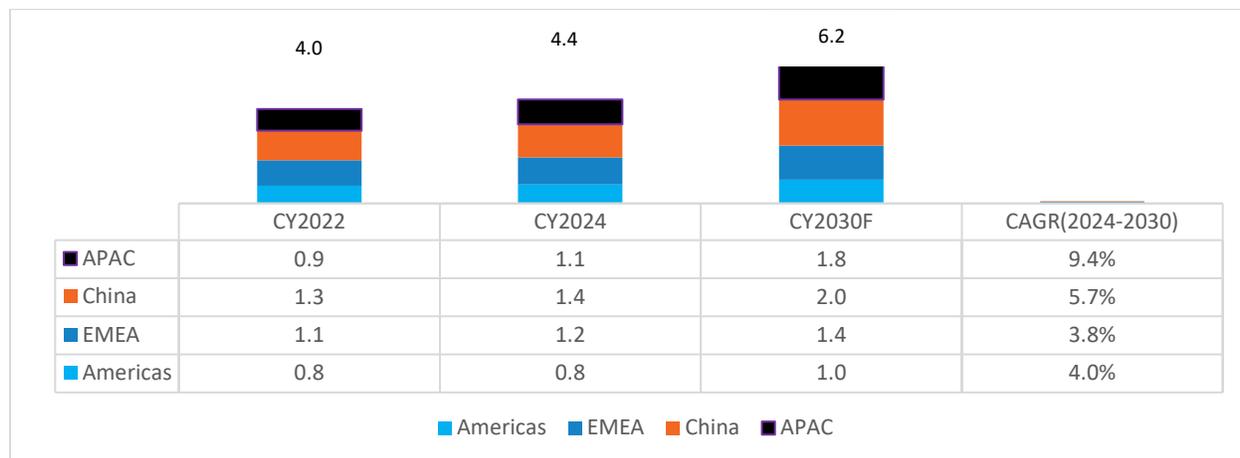
Exhibit 5.4: Global Off-Highway Mobility Solutions (Drives), Region-wise Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

APAC includes India, South East Asia (Excl. China), Australia, New Zealand, Japan, and Korea

Exhibit 5.5: Global Off-Highway Mobility Solutions (Drives), Market Split by Regions, CY2022 - CY2030F, USD Billion



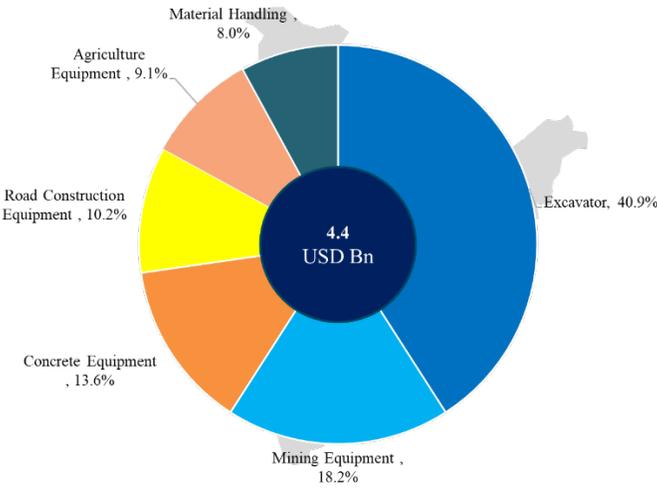
APAC includes India, South East Asia (Excl. China), , Australia, New Zealand, Japan, and Korea

APAC(Excluding China) emerges as the fastest-growing region with a strong 9.4% CAGR, driven by infrastructure expansion, mining revival, and rapid mechanization across India, Southeast Asia, and

Australia. China remains the largest single-country market, supported by continued investment in construction machinery and domestic OEM dominance. The EMEA region grows at a slower rate of 3.8%, reflecting equipment replacement cycles rather than new fleet expansion. In comparison, the Americas maintain steady growth at 4.0%, led by agriculture, rental fleets, and mining projects. By 2030, APAC, led by China and India, is expected to account for ~55% of global off-highway equipment consumption. China remains the largest demand center, driven by mining and infrastructure renewal, while India is the fastest-growing market, supported by infrastructure expansion and rising mechanization. Southeast Asia (Indonesia, Vietnam) and Australia add steady demand through mining, plantations, and earthmoving activities, reinforcing Asia’s position as the global demand hub. The growth narrative clearly shifts eastward, due to increasing investments. For drive suppliers, this means localization, co-engineering, and supply-chain footprint in Asia will be essential to win in the next cycle.

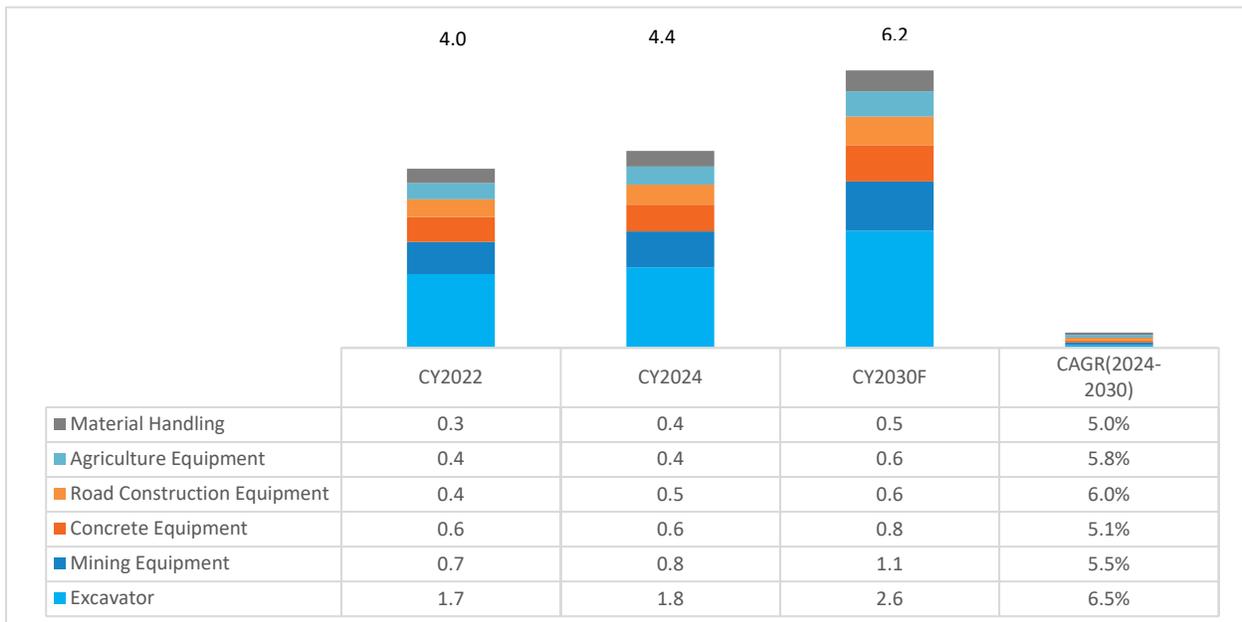
5.5.3. Global off-Highway Mobility Solutions (Drives) Market: Segmentation by End-user Segments

Exhibit 5.6: Global Off-Highway Mobility Solutions (Drives), End-user Contribution, CY 2024



Construction and earthmoving equipment accounts for the largest share due to the high volumes of excavators, loaders, and compact equipment. Road construction equipment contributes a substantial and growing portion, driven by sustained investments in highways, metro corridors, and pavement rehabilitation projects. Concrete equipment, notably transit mixers and batching plants, accounts for a significant share as markets shift toward mechanized RMC operations. Material handling equipment also holds a sizeable slice, supported by expanding warehousing, logistics hubs, and industrial automation.

Exhibit 5.7: Global Off-Highway Mobility Solutions (Drives), Market Split by End-user Segments, CY2022 - CY2024- CY2030F, USD Billion



The off-highway drives market is expected to grow strongly from CY2022 to CY2030F, led by excavators, which remain the largest segment, expanding from USD 1.7B to USD 2.6B at the highest CAGR of 6.5%, driven by sustained construction and mining activity worldwide. Mining equipment is expected to experience healthy growth, supported by rising commodity extraction and increased utilization of heavy-duty fleets. Concrete equipment and road construction machinery grow steadily, fueled by global infrastructure pipelines, RMC expansion, and pavement modernization. Agriculture equipment shows consistent improvement (5.8% CAGR) due to mechanization across emerging markets. Overall, the mix indicates a clear shift toward high-volume construction machinery and stable demand across mining, road building, and agri mechanization, driving broad-based growth in the drives market through 2030.

5.5.4. Global off-Highway Mobility Solutions (Drives) Market – New and Replacement Demand

Globally, demand for off-highway drives is split between new equipment installations and replacement/retrofit cycles, with the mix varying significantly by region and equipment type. In 2024, new demand accounts for 55–58% of total drive consumption, supported by expanding construction activity, mining investments, fleet mechanization, and ongoing infrastructure programmes across APAC and China. This is especially evident in excavators, loaders, mining dumpers, and road construction equipment, where OEM production volumes directly drive demand for propulsion, rotational, and load-handling drives.

Replacement demand accounts for the remaining 42–45%, driven by the aging fleet, high utilization rates, and stricter uptime requirements, particularly in mature markets such as the Americas and EMEA. In these regions, the large installed base ensures a predictable replacement cycle of 5–7 years for propulsion and position drives and 3–5 years for load-handling and material-processing drives. By 2030, the mix will gradually shift to ~60% new demand, driven by APAC-led machine population growth, while replacement demand will remain a stable, high-margin revenue pool. Across all regions, increased electrification, higher

torque density, and digitalisation of drive systems will further accelerate replacement needs as fleets transition toward more efficient and intelligent drive architecture.

5.6. Global off-Highway Mobility Solutions (Drives) Market– Key Growth Drivers

- i. **Infrastructure & Construction Upswing:** Global infrastructure expansion - roads, highways, metros, bridges continue to uplift demand for concrete mixers, compactors, pavers, and road-building machinery, expanding consumption of propulsion, rotation, and drum/auger drives
- ii. **Rise of RMC & Modern Concrete Ecosystems:** The shift from site-mixed to Ready-Mix Concrete (RMC) accelerates adoption of transit mixers, batching plants, and boom pumps, driving strong demand for mixer drum drives, conveyor/auger drives, and auxiliary handling drives.
- iii. **Pavement Modernisation & Asphalt Recycling:** Mechanised paving, milling, soil stabilisation, and asphalt recycling create consistent pull for high-torque propulsion drives, precision cutter drives, and swing/position drives.
- iv. **Mechanisation in Global Agriculture:** Labour scarcity, improved farm incomes, and precision agri trends are boosting sales of tractors, harvesters, sprayers, and balers, driving growth in axle drives, PTO/auxiliary drives, and rotational/position drives.
- v. **Expansion of Warehousing & Logistics:** Global warehousing, e-commerce logistics, and industrial automation are accelerating the adoption of forklifts, telehandlers, reach stackers, and skid-steers. This expands demand for hoist drives, fork tilt drives, lift/auxiliary drives, and precision position drives, making material handling one of the fastest-growing off-highway subsegments.
- vi. **Mining, Aggregates & Quarrying Growth:** Rising commodity extraction drives high utilisation of large mining fleets, boosting both new installations and replacement cycles for propulsion, swing, and load-handling drives.

5.7. Global off-Highway Mobility Solutions (Drives) Market– Threats and Challenges

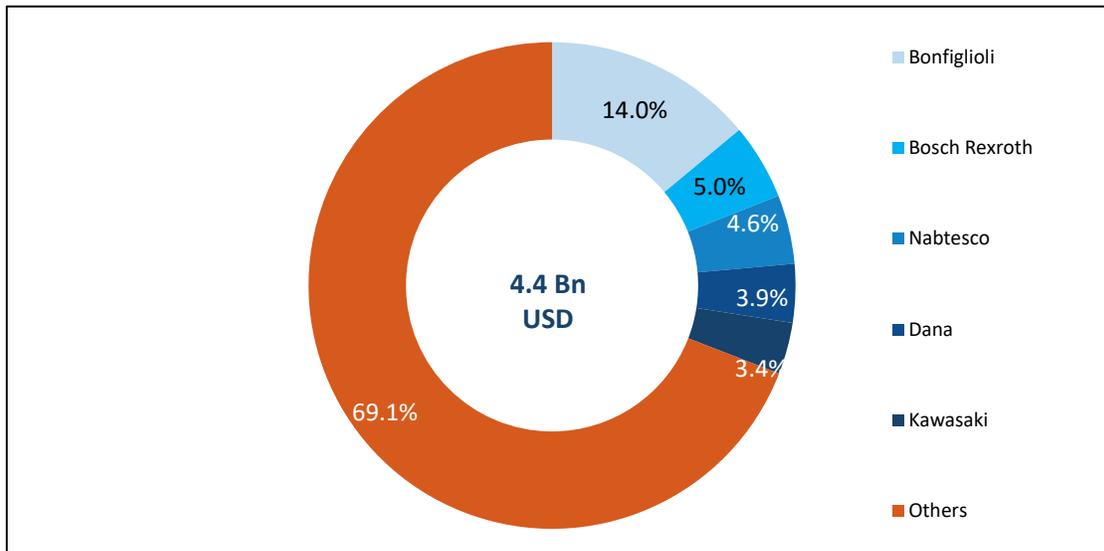
- i. **High Cyclicity of Construction & Mining Markets:** The construction and mining markets are heavily exposed to economic cycles, commodity volatility, infrastructure funding delays, and election-linked spending slowdowns. Any slump in construction or mining activity leads to immediate drops in new drive demand.
- ii. **Rising Shift Toward Electrification & Motorisation for compact machines:** The move toward electric drives and integrated motor-drive units represents a long-term transition rather than an immediate threat to hydrostatic and mechanical drive suppliers. Adoption will be gradual, and suppliers with strong electrification and system-integration capabilities are likely to benefit, particularly through hybrid and electromechanical solutions.
- iii. **OEM Backward Integration Risk:** Large global OEMs are selectively developing in-house propulsion, swing, and auxiliary drive capabilities to improve cost control, supply security, and IP ownership. While this creates pressure on Tier-1 suppliers in specific high-volume or strategically critical segments, most OEMs continue to rely on external partners for complex, customized, and heavy-duty drive solutions. The drive units are procured mainly from specialist drive suppliers.
- iv. **Margin Pressure from Low-Cost Asian Competitors:** Chinese, Korean, and Turkish manufacturers continue to expand aggressively through competitive pricing, particularly in material handling, concrete, and small excavator segments. However, the impact on suppliers with strong R&D, co-engineering, and application-specific design capabilities remains limited, as OEMs prioritize

performance reliability, system integration, and lifecycle support over upfront cost in critical drive applications.

- v. **High Wear, Harsh Duty Cycles & Reliability Expectations:** Off-highway drives operate in extreme load, shock, temperature, and dust conditions. Failures lead to expensive downtime, forcing suppliers to maintain high design margins and testing costs, which in turn reduces profitability.

5.8. Competitive Landscape

Exhibit 5.8: Global Off-Highway Mobility Solutions (Drives), Market Share of Key Players by Value, CY2024



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

others include captive players, Nachi, KYB, PMP, Comer Industries etc.

The market shows moderate concentration with a pronounced fragmented tail, as the top two players - Bonfiglioli account for over 14.0% of total market share, underscoring the importance of deep OEM integration and in-house strategies in critical applications. Bosch Rexroth (5.0%), Nabtesco (4.6%), Dana (3.9%), and Kawasaki (3.4%) form a competitive mid-tier, primarily focused on specific platforms or regional OEM relationships rather than broad dominance. The sizeable “Others” segment (69.1%) indicates a highly fragmented supplier base, driven by regional players and application-specific solutions, resulting in sustained price competition outside Tier-1 OEM programs. Overall, scale, co-engineering capability, and long-term OEM partnerships remain the key differentiators for consolidating market share. A significant force reshaping the lower half of the market is the rapid rise of Chinese drive manufacturers, with 20-25+ active players, including Doosan’s Chinese supply chain partners, Bonny, XCMG Transmission, Linde Hydraulics China, Bosonic, and several hydraulic motor makers in Zhejiang, Jiangsu, and Shandong. These companies compete aggressively on price, dominate the local excavator (5-20 ton) and loader segments, and increasingly supply global OEMs through cost-competitive, high-volume platforms. While individual shares are small, collectively, Chinese players contribute 20-25% of the global “Others” segment.

Chapter 6: Overview of India Mobility Solutions (Drives) used in Off-highway Applications



**Overview of India Mobility Solutions
(Drives) used in Off-highway Applications**

6.1. Overview of India Off-Highway Mobility Solutions (Drives) Market

India's off-highway drives market is accelerating on the back of a strong infrastructure cycle, expanding mining activity, and rising mechanization across agriculture and material handling. Massive public capital expenditure on highways, metros, ports, airports, and industrial corridors continues to drive demand for excavators, loaders, compactors, and cranes, prompting OEMs to develop more rugged and energy-efficient drive systems. Growth in mining of coal, iron ore, and other minerals is increasing demand for heavy-duty, high-torque travel, track, and slew drives that can withstand severe duty cycles. In agriculture, harvesters and self-propelled sprayers are increasingly adopting more sophisticated transmissions, hydrostatic systems, and emerging electric-drive architectures. Meanwhile, India's warehousing and logistics expansion is driving demand for material-handling equipment, particularly forklifts, telehandlers, and compact loaders, making these applications among the fastest-growing for drive systems. Localization is reshaping the value chain as Indian suppliers increasingly produce planetary drives, axles, gear systems, and electro-hydraulic modules at competitive cost.

6.2. Key Industry Trends for the India Off-Highway Mobility Solutions (Drives) Market

India's off-highway drive market is entering a technology upgrade cycle as OEMs shift from basic hydraulics to smarter, more efficient, and digitally optimized drive architectures. Localization, digital integration, and TCO-driven fleet decisions are pushing suppliers to redesign products for greater efficiency, reliability, and serviceability.

- i. **Infrastructure & Mining Supercycle** - Record investments in highways, metros, bridges, ports, and mining are driving unprecedented demand for excavators, graders, and dumpers, directly increasing demand for rugged, high-torque drives and transmissions.
- ii. **Electrification & Hybridization Momentum** - OEMs are piloting electric forklifts, hybrid excavators, and battery-electric compact equipment. This pushes the industry toward electric drives, inverter-motor modules, hybrid transmissions, and electro-mechanical drive units.
- iii. **Localization of Drivetrain Components** - Under "Make in India," OEMs are localizing gearboxes, hydrostatic drives, planetary drives, and motor-gear assemblies to strengthen supply chains, reduce import dependency, and prepare for global platform sourcing.
- iv. **Shift to High-Efficiency, Low-Maintenance Drives** - India's dusty, heat-heavy environment is pushing adoption of high-torque-density motors, improved gear geometry, better cooling systems, and low-wear materials to reduce failures and maintenance costs.

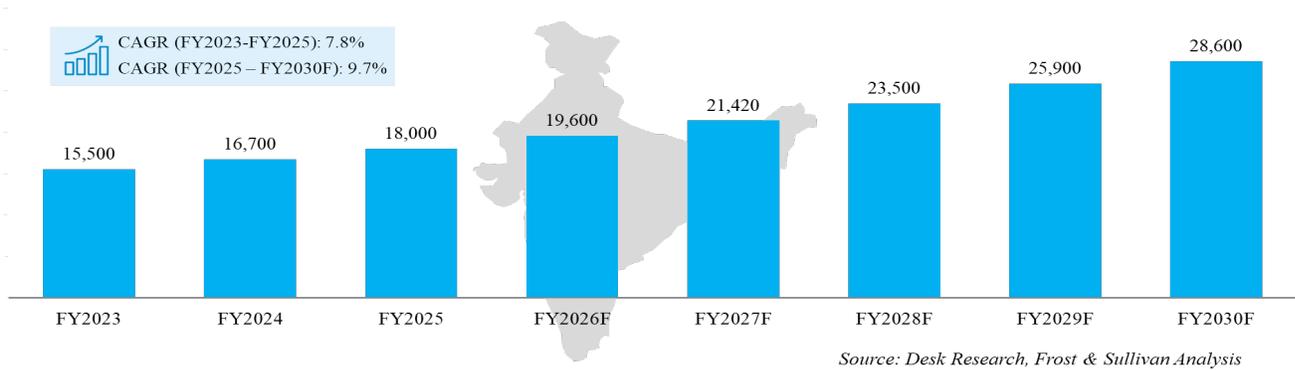
6.3. India Off-Highway Mobility Solutions (Drives) – End-User Market Outlook (2025–2030)

End-user Segments	Key Growth Drivers	Expected CAGR (2025-2030)
Construction Equipment (Excavators, Loaders, Dozers)	Driven by the ₹111 lakh crore NIP and PM Gati Shakti, ongoing highway, metro, airport, and industrial corridor expansion keeps demand strong for earthmoving equipment and associated drive systems.	10.0-12.0%
Mining Equipment (Haul Trucks, Drills, Loaders)	Coal India’s multi-thousand-crore annual capital expenditure and mine auctions, which generate over INR 41,000 crore in new investment, are strengthening demand for heavy mining equipment.	7.0-8.0%
Agriculture Equipment (Tractors, Harvesters, Sprayers)	The agricultural equipment segment is driven by SMAM mechanization support, large agricultural budget allocations, the INR 1 lakh crore AIF, and PMKSY’s INR 6,520 crore expansion, all of which are boosting machinery demand.	8.0-10.0%
Road Construction Machinery (Pavers, Compactors, Rollers)	National highway expansion, city road upgrades, resurfacing cycles, runway works, and fleet modernization drive steady demand for paving and compaction drives. The government has identified 434 projects under the PM Gati Shakti initiative with an outlay of Rs. 11.17 lakh crore to improve multimodal connectivity and logistics infrastructure.	8.0-9.0%
Concrete & Mixer Equipment (Transit Mixers, Self-Loading Mixers)	Urban real estate, metro, and industrial construction push strong demand for mixer drives as RMC usage expands across Tier 1–3 cities. Under the Pradhan Mantri Awas Yojana (PMAY-U 2.0), the Government has approved a INR 10 lakh crore investment for urban housing, with INR 2.30 lakh crore of direct government assistance over five years.	9.0-10.0%
Material Handling Equipment (Telehandlers, Forklifts, Compact Loaders in OHW Use)	Warehousing, 3PL, cold chain, and FMCG/pharma logistics are driving the rapid adoption of forklifts, telehandlers, and compact loaders equipped with modern drive modules.	10.0-12.0%

Bonfiglioli plan to further strengthen our Off-Highway and Mobility Solutions vertical by focusing on equipment segments expected to benefit from sustained growth across India’s infrastructure, mining, agriculture, housing, and logistics sectors. India’s off-highway drive market is anticipated to enter a technology upgrade and localisation phase, with OEMs transitioning toward more efficient, digitally optimised, and locally sourced drive architectures.

6.4. India Off-Highway Mobility Solutions (Drives) – Market Size and Forecast

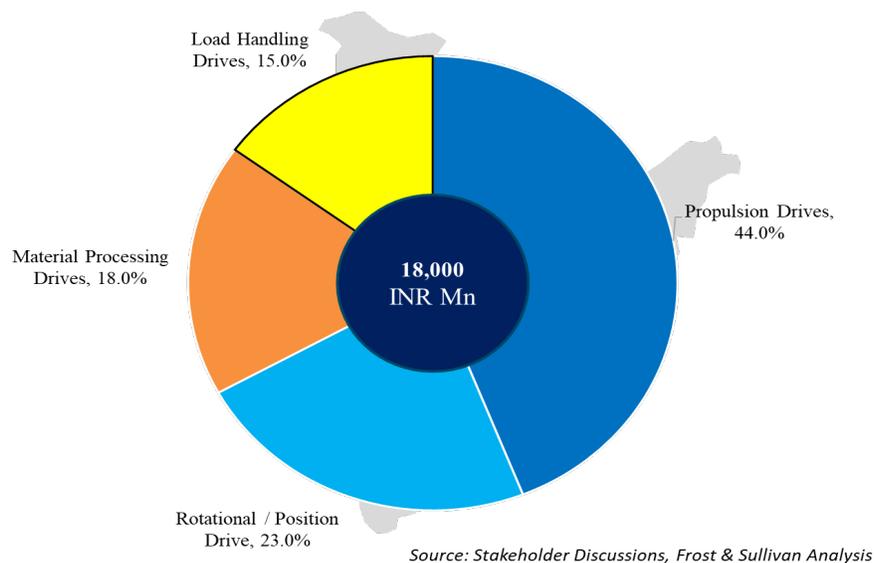
Exhibit 6.1: India Off-Highway market size for Mobility solutions (Drives), (Value in INR Mn), FY2023 – FY2030E



India’s drive market grew at a 7.8% CAGR from FY2023 to FY2025 and is expected to accelerate further, reaching a 9.7% CAGR through FY2030. Excavators, concrete equipment, and material-handling machinery lead growth. Rising fleet utilization and rental penetration are driving up replacement cycles, while localization and the emergence of hybrid/electric platforms are enhancing long-term resilience and technology adoption.

6.4.1. India Off-Highway Mobility Solutions (Drives) Market: Segmentation by Product Type

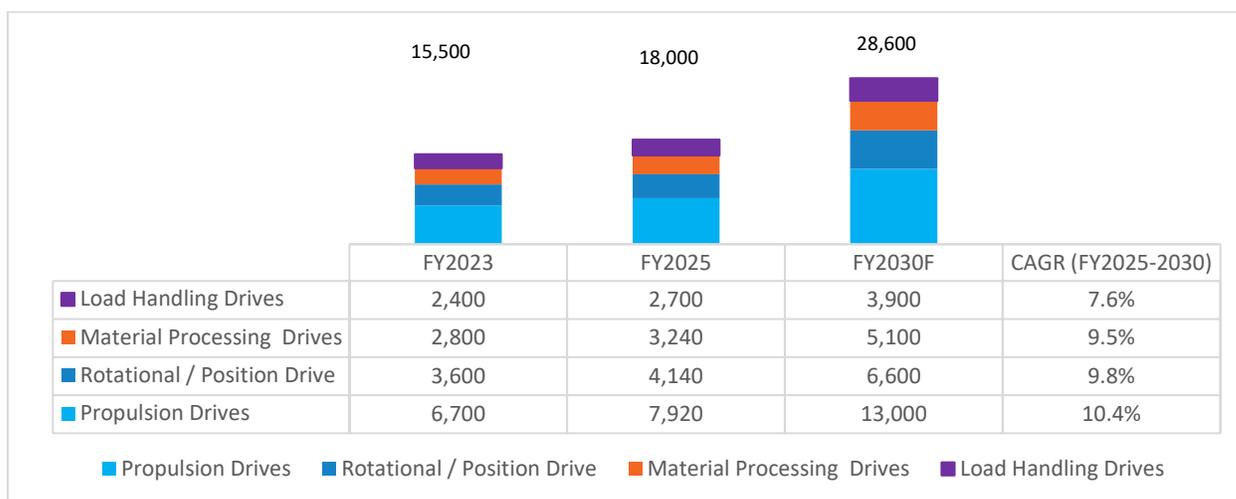
Exhibit 6.2: India Off-Highway Mobility solutions (Drives), Product-wise Contribution, FY 2025



Note:

- Propulsion Drives include Track, Wheel, and Roller Drives
- Rotational/ Position Drives include Swing and Cutter Drives
- Load Handling Drives include Hoist, skip/mixer aux drives
- Material Processing drives include Mixer Drum, auger/conveyor drives.

Exhibit 6.3: India Off-Highway Mobility solutions (Drives), Market Split by Product Type, FY2023 - FY2025- FY2030F, INR Million



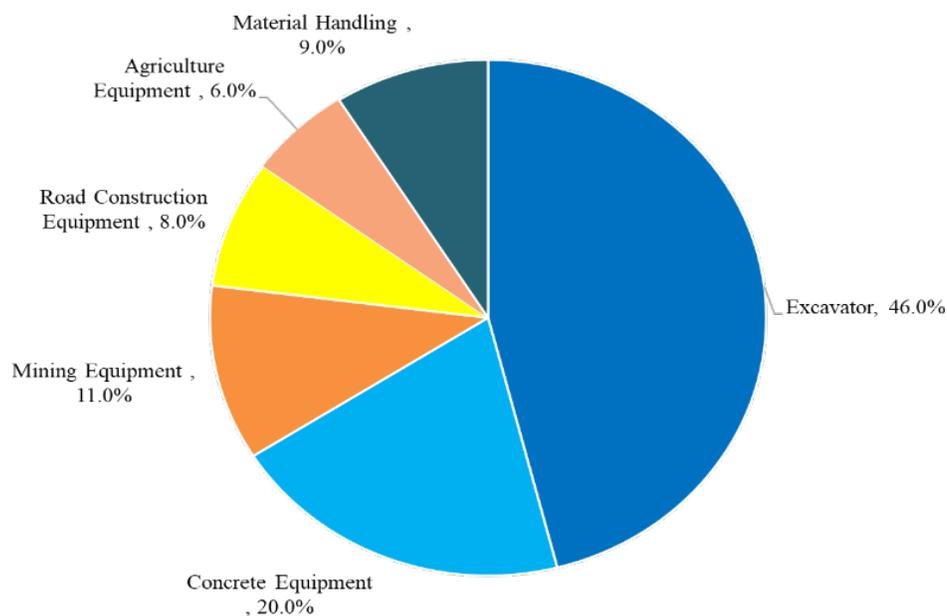
Propulsion/travel drives are the largest value pool due to their heavy use in excavators, loaders, concrete machinery, and mining equipment. Track and slew drives together account for a substantial share, aligned with India’s crawler-equipment- and excavator-heavy demand profile. Wheel drives grow steadily, supported by increasing adoption in forklifts, telehandlers, and compact loaders.

Propulsion drives remain the most significant and fastest-growing category, increasing from INR 6,700 million in CY2022 to INR 13,000 million by CY2030, driven by strong demand for excavators, loaders, and material handling equipment. Rotational/position drives also show robust growth, driven by higher utilization of slew and swing systems in excavators, cranes, and compact equipment. Material processing drives expand at a healthy pace as concrete equipment, crushers, batching plants, and construction machinery see higher throughput across infrastructure projects.

6.4.2. India off-Highway Mobility Solutions (Drives) Market: Segmentation by user Segments

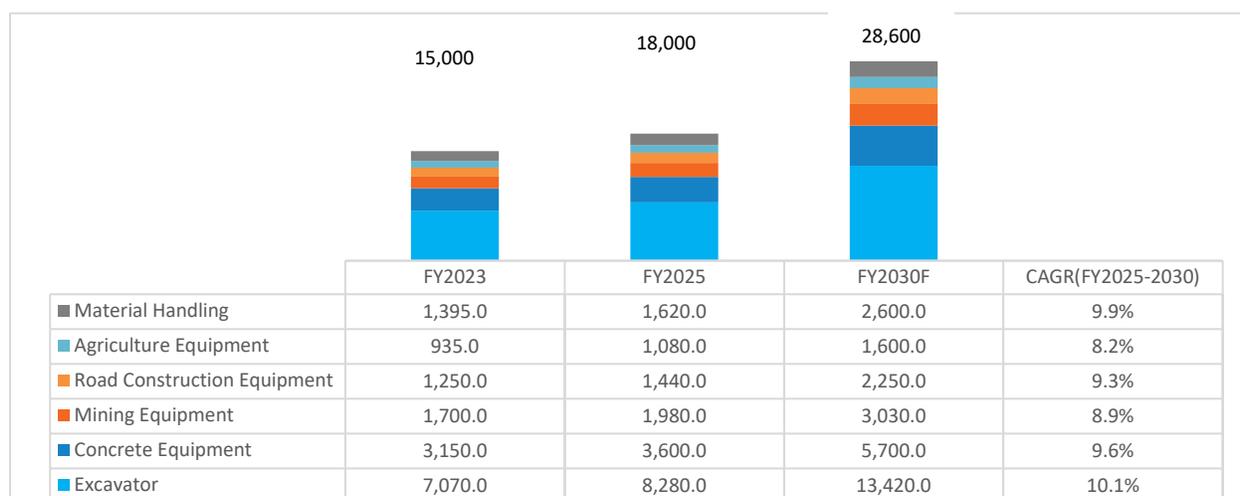
Excavators remain the dominant segment owing to high drivetrain intensity and widespread use across infrastructure and mining projects. Concrete equipment, material handling, and mining are major contributors, followed by agriculture and road equipment, which provide smaller but steady shares due to lower drivetrain complexity.

Exhibit 6.4: India Off-Highway Mobility Solutions (Drives), End-user Contribution, FY 2025



Source: Stakeholder Interactions, Frost & Sullivan Analysis

Exhibit 6.5: India Off-Highway Mobility Solutions (Drives), Market Split by End-user Segments, FY2023 - FY2025- FY2030F, INR Million



Excavators remain the largest demand driver, growing from INR 7,070 Mn in FY2023 to INR 13,420 Mn by FY2030, supported by strong infrastructure and mining activity. Concrete equipment and road construction machinery also show robust growth, driven by rapid urban development, RMC adoption, and national highway expansion. Material handling is one of the fastest-growing segments, with a 9.9% CAGR, fuelled by India's warehousing and logistics boom. Mining equipment continues to expand steadily as coal production targets and private participation increase.

Bonfiglioli continues to strengthen market access and deepen customer relationships while maintaining a strong focus on cost effectiveness. This is driven by prioritising high-growth business verticals particularly agriculture and concrete equipment and targeting rapidly expanding OEMs as key customers.

6.4.3. India off-Highway Mobility Solutions (Drives) Market – New and Replacement Demand

India's drives market remains predominantly driven by new equipment additions (90%), reflecting strong capex activity across infrastructure-linked sectors. Replacement demand is structurally lower today (10%) but is expected to rise as utilization increases and the installed base matures. However, ongoing OEM focus on higher durability and lifecycle optimization is likely to temper replacement intensity over time.

6.5. India Off-Highway Mobility Solutions (Drives) Market– Key Growth Drivers

- i. **Infrastructure Capex Boom** - India's record investments in large-scale infrastructure spanning NIP and PM Gati Shakti, along with massive allocations under Bharatmala, Sagarmala, Dedicated Freight Corridors, Smart Cities Mission, and metro rail expansions, are driving sustained demand for excavators, loaders, compactors, and cranes, significantly boosting the need for high-torque and high-reliability drive systems across construction and material-handling applications.
- ii. **Mining Expansion & Mechanisation** - Rising coal and mineral extraction targets, including India's goal of ~1.5 billion tonnes of coal production by 2030, ongoing mechanization efforts to improve productivity, and expanded commercial coal mine auctions that have attracted over INR 41,400 crore in capital investment, are creating strong demand for heavy-duty drives, planetary gear systems, and long-duty-cycle transmissions in mining equipment.
- iii. **Shift Toward Hybrid/Electric Drive Systems** - Urban construction, warehouses, mines, and emission-sensitive zones are adopting hybrid and electric equipment. This is increasing demand for electric drives, motor-inverter assemblies, and electro-hydraulic drive platforms.
- iv. **Global Platform Sourcing by OEMs** - International OEMs are using India as an export base for drive systems because Indian suppliers can deliver planetary drives, gearboxes, axles, and e-drive components at globally competitive cost.
- v. **China+1 Manufacturing Shift** - Global OEMs and Tier-1 suppliers are diversifying away from China. India is benefiting from rising exports of drivetrains, gear systems, and precision-machined components.
- vi. **Strong Growth in Emerging Markets** - Africa, the Middle East, Southeast Asia, and Latin America are investing heavily in infrastructure and mining, creating export demand for India-made track drives, slew drives, wheel drives, and rugged planetary gear modules.

6.6. India Off-Highway Mobility Solutions (Drives) Market– Threats and Challenges

- i. **Fragmented OEM Demand & Customisation Pressure:** India's off-highway market is highly fragmented, with OEM demand distributed across numerous small and mid-sized manufacturers operating in construction, mining, agriculture, and material handling. The resulting variation in drive requirements increases engineering complexity and limits suppliers' economies of scale.
- ii. **Rental Market Affecting Purchasing Cycles:** A significant portion of Construction and Material handling equipment in India is operated on a rental basis. Rental companies tend to delay

replacements during downturns, which directly impacts demand for new drives and pushes the market toward low-cost replacements and reconditioned units.

- iii. **Intense Competition from Low-Cost Asian Suppliers:** Chinese and Southeast Asian manufacturers continue to offer cheaper planetary, track, and slew drives. For many price-sensitive Indian OEMs, procurement decisions are increasingly driven by upfront cost considerations, encouraging the adoption of lower-priced imported drive solutions over higher-specification alternatives
- iv. **Supply Chain Gaps for High-Precision Machining:** India excels in general machining but still lacks the scale required for ultra-precision manufacturing, which is necessary for high-torque, compact, and low-noise planetary drives and e-drive gear modules. This limits India's ability to compete globally in premium categories.

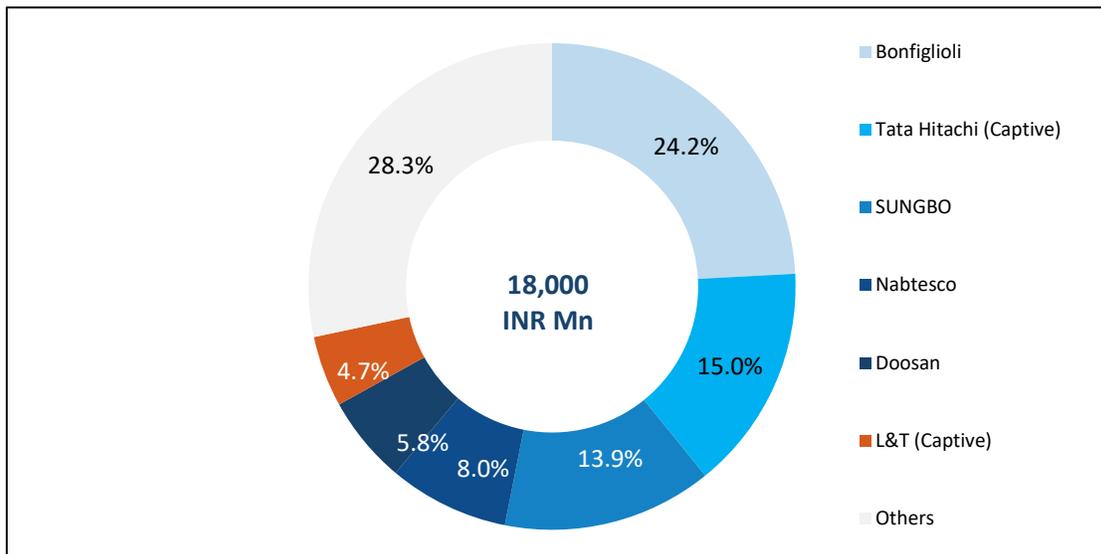
6.7. Competitive Landscape

Bonfiglioli leads the Indian off-highway drives market with a substantial 24.2% share, supported by broad application coverage across excavators, concrete equipment, mining machinery, and material-handling platforms, strong localization, deep OEM partnerships, and one of the largest service footprints in the country. Tata Hitachi (15.0%) and L&T (4.7%) maintain captive strength, limiting supplier entry into major platforms. SUNGBO (13.9%) competes strongly in compact/mid-size excavators, Nabtesco (8.0%) remains a preferred travel drive partner for Japanese/Korean OEMs, and Doosan (5.8%) retains a niche through captive integration. The lower end is fragmented and dominated by Chinese, Korean, and local suppliers, particularly across the 5–20 ton excavator and loader segments.

Barriers to entry in India's off-highway drives market remain moderate to high, owing to fragmented OEM demand, application-specific engineering requirements, and limited scope for platform standardization. New suppliers must navigate lengthy OEM qualification and field-validation processes, meet stringent reliability requirements in demanding operating environments, and address strong price sensitivity. Established incumbent relationships and the requirement for a robust service and aftermarket network further restrict new market entry. Bonfiglioli held approximately a 30.0% market share in India's off-highway mobility segment among non-captive players, by revenue, in CY2024.

As of September 30, 2025, Under the Off-Highway Mobility industry, Bonfiglioli is among the few suppliers globally (and largest in India) whose gearbox solutions used across propulsion, swing, and load-handling applications span a wide torque range from 1,000 Nm to 3,000 kNm, enabling coverage across diverse off-highway equipment applications such as excavators, concrete mixers, mining equipment, road construction machinery, agriculture, and material handling

Exhibit 6.6: India Off-Highway Mobility Solutions (Drives), Market Share of Key Players by Value, FY2025



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

Others include KYB, PMP, Kawasaki, etc.

6.8. Analysis of BTL’s OEM (Off-Highway Mobility Solutions (Drives) Customers

Bonfiglioli partnered with OEMs that are growing at high single- to double-digit rates across construction, mining, concrete, and material-handling segments. As a key supplier of planetary, travel/track, slew, and wheel drives, Bonfiglioli supports the fastest-growing equipment platforms in India.

Bonfiglioli is a key supplier to several leading OEMs, supported by its strong localization and co-engineering capabilities, proven product reliability, and broad application coverage, positioning it as a preferred partner for OEMs scaling rapidly amid India’s infrastructure and mechanization growth. By delivering high-torque, high-efficiency, and application-specific drive solutions, Bonfiglioli continues to anchor the growth of India’s leading off-highway equipment manufacturers.

Chapter 7: Overview of Global Wind Solutions Market



7.1. Global Wind Solutions (Drives) Market – Overview

The global wind energy market has grown rapidly over the past decade, and this expansion has directly increased demand for high-reliability drive systems used inside modern wind turbines. As turbine capacities move from 2-3 MW to 6-15 MW, the mechanical and control requirements for these drives have intensified, pushing manufacturers to deliver higher torque density, improved durability, and smarter control integration. Global OEMs such as Vestas, Siemens Gamesa, GE, Goldwind, and Envision increasingly rely on precision-drive suppliers capable of meeting strict offshore and onshore performance standards. The market is also being shaped by the shift toward larger rotor diameters, which requires more robust drive assemblies to manage higher loads and extreme weather conditions. Across regions, Europe and China remain the largest consumers of these drive components, with offshore installations contributing significantly to premium drive demand. Suppliers are moving toward modular, low-maintenance designs to reduce downtime and O&M costs for turbine operators. Digital monitoring, condition-based lubrication, and integrated sensors are becoming standard features as wind farms demand higher availability and predictive maintenance. With global wind installations expected to rise steadily, the drive systems market is positioned for sustained growth, especially in high-capacity turbines and offshore environments.

7.2. Overview of Yaw and Pitch Drives Used in Wind Energy (Turbines)

Wind turbines use several types of drives, each performing a specific control or power-transmission function. The yaw drive rotates the nacelle to face the wind, while the pitch drive adjusts blade angles to regulate power and protect the turbine. The main gearbox drive train transfers torque and steps up rotor speed for the generator. Additional systems, such as hydraulic brake drives and lubrication/cooling drive units, support safe stopping and maintain thermal and mechanical stability. In offshore floating turbines, azimuth drives are also used to orient the platform. Modern wind turbines rely on the main gearbox drive train, hydraulic brake drives, and lubrication/cooling drive systems, each playing distinct roles in transmitting torque, ensuring safety, and maintaining thermal stability.

Yaw and pitch drives are critical motion-control components that enable modern wind turbines to operate efficiently across varying wind speeds and directions. Globally, demand for Yaw and Pitch drives continues to rise in line with the rapid expansion of onshore and offshore wind installations, especially large multi-MW and next-gen 10-15 MW turbines. Yaw and Pitch Drives together typically account for ~3% of the total wind turbine cost.

Drive Type	Key Function/ Description	Key Application Areas
Yaw Drive	A rotational drive system that turns the entire nacelle to face the wind direction for maximum energy capture.	<ul style="list-style-type: none">Aligning the turbine with the wind directionReducing yaw misalignment lossesEnsuring optimal aerodynamic performanceStabilizing nacelle rotation under varying winds

Pitch Drive	Drive mechanism that adjusts the angle of each rotor blade to regulate power output and rotor speed.	<ul style="list-style-type: none"> • Controlling blade pitch during high winds • Increasing/decreasing aerodynamic lift • Ensuring safe shutdown during storms • Optimizing energy production under fluctuating wind speeds
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Lower-quality yaw and pitch drives degrade a turbine’s ability to optimally face the wind or adjust blade angles, reducing annual energy production by 2-6% and increasing fatigue loads on blades and bearings. As turbine capacity increases, the mechanical loads rise disproportionately, demanding stronger, faster, and more precise drive systems. Yaw and pitch drives must support higher torque and incorporate improved redundancy and faster actuation to manage larger rotors.

7.3. Global Industry Trends for the Drives used in the Wind Energy Segment

A) Shift Toward Larger Turbines

Wind turbines are getting bigger in rotor diameter and hub height, which significantly increases torque loads on pitch and yaw drives. This pushes OEMs to adopt stronger, higher-capacity drive systems. Manufacturers must enhance reliability as turbines operate in more demanding conditions.

B) Offshore Growth Demanding Extreme Reliability

Offshore projects expose drive systems to harsh conditions like salt corrosion, high humidity, and dynamic mechanical stress. This forces the adoption of more durable, sealed, and corrosion-resistant drive designs. Offshore growth is driving a premium segment of high-reliability, low-maintenance drives.

C) R&D as a Competitive Differentiator

As turbines scale rapidly, R&D investment in stronger gears, smarter controls, and optimized materials is becoming essential. Manufacturers that innovate faster gain preferred-supplier status with major turbine OEMs. R&D now defines long-term competitiveness in the drive ecosystem.

D) Growing Need for Co-Engineering

Turbine OEMs increasingly require suppliers to co-engineer pitch and yaw systems around specific load profiles, duty cycles, and site conditions. This includes precise torque sizing, interface alignment, control integration, and performance optimisation at the design stage. Co-engineering reduces reliability risks, accelerates commissioning, and improves lifecycle performance as turbine ratings increase. For suppliers, early design lock-in creates high switching costs, deeper OEM dependence, and long-term, platform-level partnerships rather than transactional supply.

7.4. Global End-user Market (Wind Turbines) Growth – Overview

Onshore

In Asia Pacific, China and India are driving the most significant expansion, with rapid adoption of 3-6 MW turbines and broad repowering of older sub-3 MW fleets. Europe’s onshore market is mature but continues to upgrade to 5-7 MW turbines, with land constraints pushing hybrid projects and repowering. North America is supported by strong project pipelines in the US Midwest and Texas, where developers

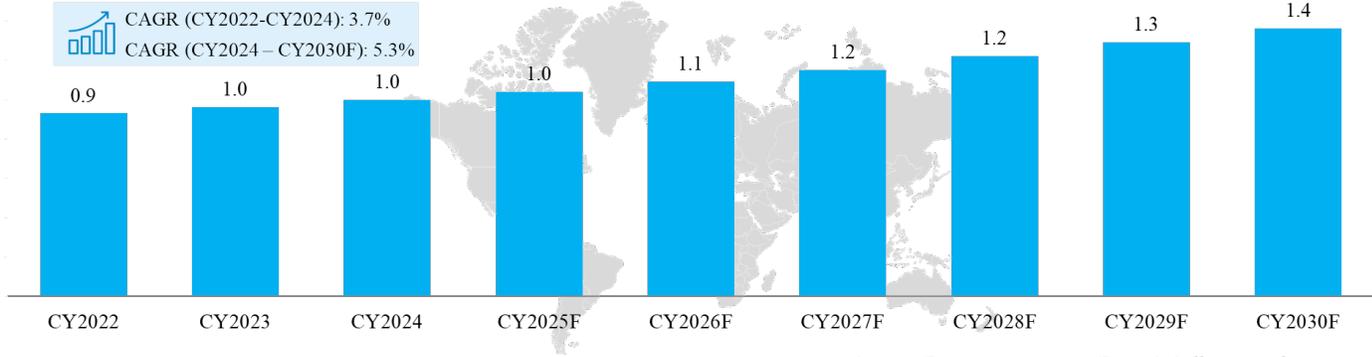
are shifting toward 4-6 MW turbines, aided by policy incentives. Latin America sees vigorous activity led by Brazil, Chile, and Colombia, with 4-5 MW turbines becoming the standard for new installations. The Middle East & Africa are witnessing increased interest from Egypt, Morocco, and Saudi Arabia, where 3-5 MW turbines dominate amid ongoing grid integration challenges.

Offshore

Asia Pacific, led by China, is witnessing the fastest offshore build-out, deploying 8-12 MW turbines and piloting 15 MW units along rapidly developing coastal zones. Europe remains the global technology leader with large-scale 12-15 MW installations in the North Sea and growing floating wind pilots in the UK, Norway, and Spain. North America’s offshore sector is still at an early stage but progressing, with significant projects on the US East Coast adopting 12-15 MW turbines and actively localising supply chains. Latin America’s offshore market is nascent, with early policy frameworks and feasibility studies exploring 10-14 MW turbine potential. Offshore development in the Middle East & Africa is at a very early stage, constrained by environmental and grid limitations, but long-term opportunities exist for future 10+ MW projects.

7.5. Global Wind Turbine Drives – Market Size and Forecast

Exhibit 7.1: Global Wind Turbine Drives Market (Value in USD Bn), CY2024 – CY2030E



Source: Expert interactions, Frost & Sullivan Analysis

From CY2022 to CY2024, the global market expanded at a CAGR of 3.7%, growing from approximately USD 0.9 billion in CY2022 to an estimated USD 1.0 billion in CY2024. This period marks a stabilization phase in which the market recovered from earlier supply-chain disruptions and delayed turbine orders. Steady installations, moderate repowering, and early adoption of larger turbines supported a smooth, predictable growth cycle.

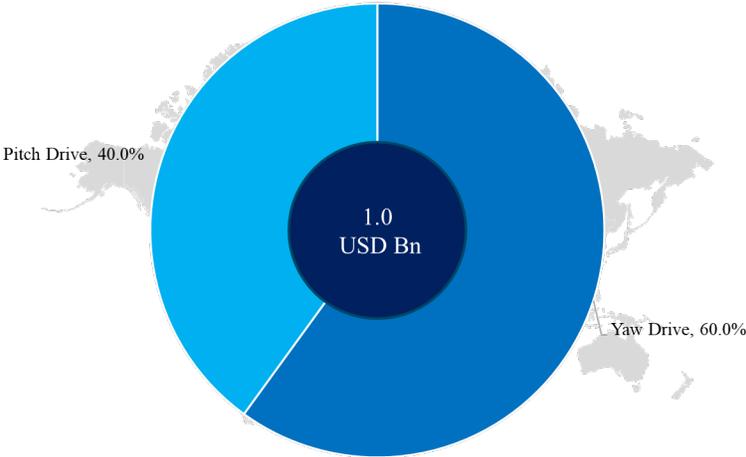
The market is projected to grow from USD 1.0 billion in CY2024 to USD 1.4 billion by CY2030, reflecting a CAGR of around 5.3% during the period. From 2024 onward, the industry shifts into a faster expansion

mode driven by rising installations, larger turbine platforms, and more substantial renewable commitments across major regions. Growth becomes increasingly technology-intensive as countries adopt hybrid models, offshore projects, and digital O&M to maximize output.

7.5.1. Global Wind Turbine Drives Market: Segmentation by Product Type

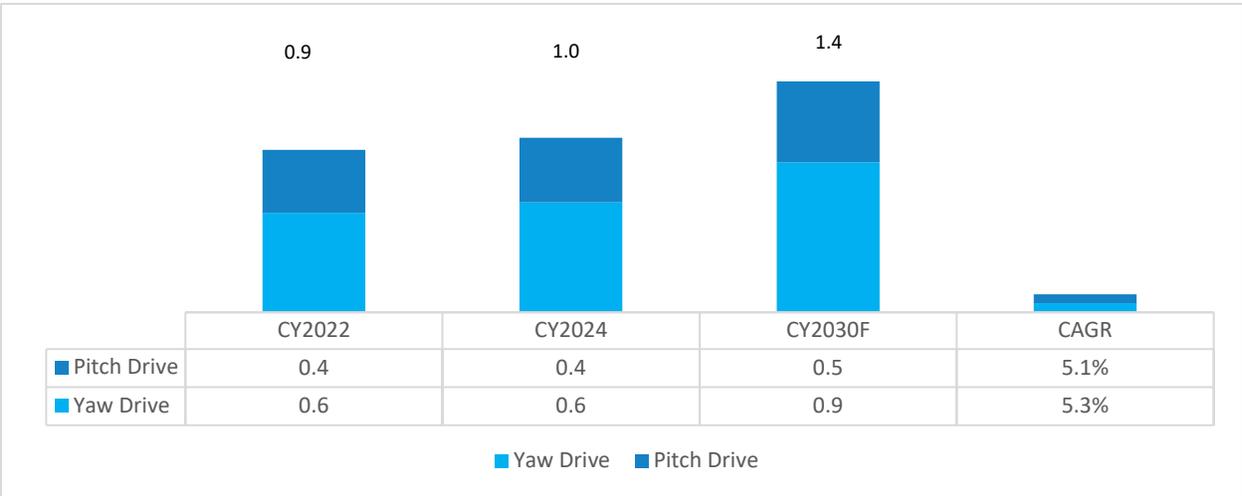
The global wind-drive market is strengthening as turbine sizes increase, and more countries accelerate their renewable expansion. Yaw systems are increasingly important because modern turbines require stronger orientation control to handle variable wind conditions and larger rotor diameters. Pitch drives are also becoming more critical as OEMs focus on improving energy capture, reducing mechanical stress, and enabling more innovative blade-control strategies.

Exhibit 7.2: Global Wind Turbine Drives Market, Product-wise Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

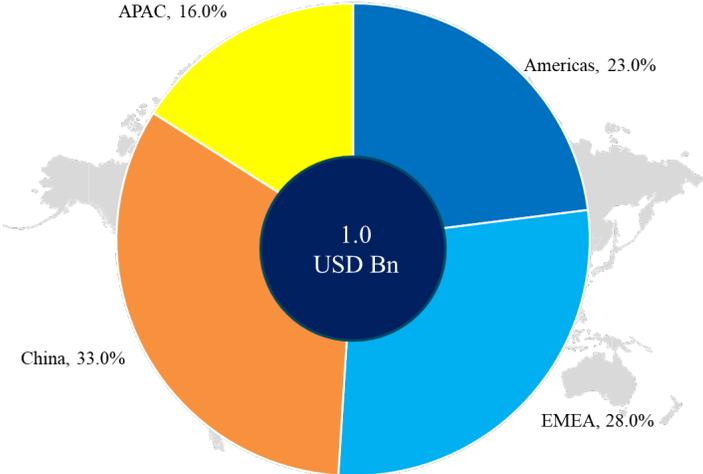
Exhibit 7.3: Global Wind Turbine Drives, Market Split by Product Type, CY2022 - CY2024- CY2030F, USD Billion



Growth is supported by widespread repowering in mature markets, rapid scale-up in Asia, and stronger hybrid and offshore pipelines globally. Advances in digital monitoring and predictive maintenance are further driving demand for higher-quality mechanical systems. Overall, the industry is entering a phase in which both yaw and pitch solutions must deliver greater reliability, improved performance, and seamless integration with next-generation turbine designs.

7.5.2. Global Wind Turbine Drives Market: Segmentation by Regions

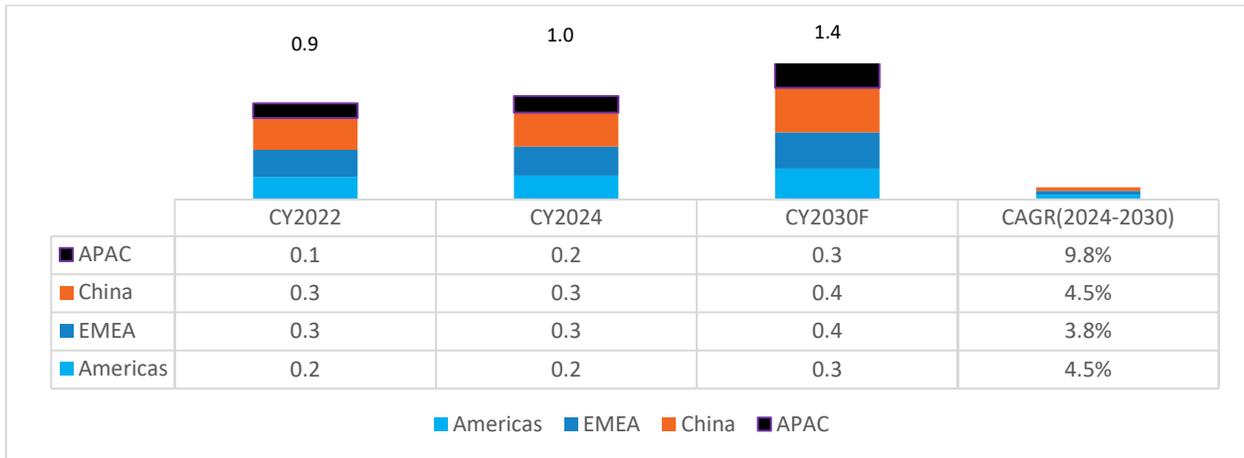
Exhibit 7.4: Global Wind Turbine Drives Market, Region-wise Contribution, CY 2024



Source: Stakeholder Interactions, Frost & Sullivan Analysis

APAC includes India, South East Asia, Australia, New Zealand, Japan, and Korea

Exhibit 7.5: Global Wind Turbine Drives, Market Split by Regions, CY2022 - CY2024- CY2030F, USD Billion



APAC includes India, South East Asia, Australia, New Zealand, Japan, and Korea

Growth in China is accelerating as the country continues large-scale wind build-out, deploys multi-MW turbines, and deepens localization to cut costs and strengthen its supply chain. EMEA is expanding through steady repowering cycles, strong offshore pipelines, and supportive EU energy-transition policies that prioritise hybrid and large-turbine projects. The Americas are growing on the back of the US wind boom, driven by long-term incentives, utility PPAs, and rising grid-stability requirements across key states. APAC (excluding China) is the fastest-growing region, with Vietnam, Australia, and Southeast Asia establishing new wind corridors, and India emerging as the most significant driver due to rising annual installations, hybrid/RTC projects, and a substantial shift toward 3-5 MW turbines. Together, these factors signal a global market transitioning toward higher volumes, larger turbine platforms, and deeper decarbonization commitments across all major regions.

7.5.3. Global Wind Turbine Drives – New vs Replacement Demand

Today, new installations dominate demand for yaw and pitch drives, primarily due to substantial onshore additions in the Asia-Pacific region and steady offshore expansion in Europe and the US. Around 90% of global drive demand currently comes from new turbines, with replacement demand contributing ~10%, mainly from ageing fleets in Europe and North America. By 2030-2035, global fleets installed between 2005-2015 will enter mid- and end-of-life phases, pushing replacement demand toward ~15% of total drive consumption. Offshore turbines, which operate under harsher conditions, will experience higher replacement intensity, particularly for pitch drives due to blade-control stresses. Meanwhile, new turbine demand will remain large, driven by larger 10-15 MW offshore machines and rapid additions across APAC. Still, the share of replacement demand will rise as the global installed base expands.

7.6. Global Wind Turbine Drives – Key Growth Drivers

- i. **Larger Turbine Sizes Requiring Higher-Load Drives:** Global turbines are moving from 3-5 MW onshore to 12-15 MW offshore, increasing torque, load, and durability requirements. This shift directly boosts demand for advanced yaw and pitch drives engineered for heavier, more complex duty cycles. Manufacturers now compete for reliability under extreme mechanical stress.

- ii. **Rapid Growth of Offshore Wind Installations:** Offshore wind is expanding fastest due to stronger policies, higher yield, and large-scale energy targets. Offshore turbines require more sophisticated drives due to harsh marine conditions, corrosion exposure, and constant load variations, making them a premium demand segment. Drive suppliers to benefit from higher-value, higher-spec systems.
- iii. **Repowering and Replacement Demand in Ageing Fleets:** Thousands of ageing onshore turbines in Europe, North America, and China are reaching mid-life or end-of-life phases. Replacements for pitch motors, yaw drives, brakes, and gear components are driving a rapidly growing aftermarket. Repowering projects further add demand for modern, higher-capacity drive systems.
- iv. **Increasing Focus on Efficiency and Availability:** Wind farms aim for higher uptime as margins tighten, and OEMs commit to 97-99% availability contracts. Yaw and pitch drives with lower failure rates, smart torque control, and predictive maintenance features are becoming essential. This pushes demand for intelligent, sensor-integrated systems
- v. **Localization & Supply-Chain Investment in Emerging Markets:** Countries like India, Brazil, and Vietnam are localizing wind-turbine components, including drives, to cut import dependency. OEMs and Tier-1 suppliers are investing in regional manufacturing, machining, and assembly capabilities. This expansion boosts demand for driving across both new and repowered projects.
- vi. **Strong Policy Push & Capex Commitments in Wind Energy:** Global government targets (net-zero, offshore tenders, renewable auctions) are accelerating wind project pipelines. Increased capex flows from utilities, IPPs, and funds directly translate into higher orders for pitch-and-yaw drive systems. As annual wind additions rise, drive demand scales proportionally.

7.7. Global Wind Turbine Drives – Threats and Challenges

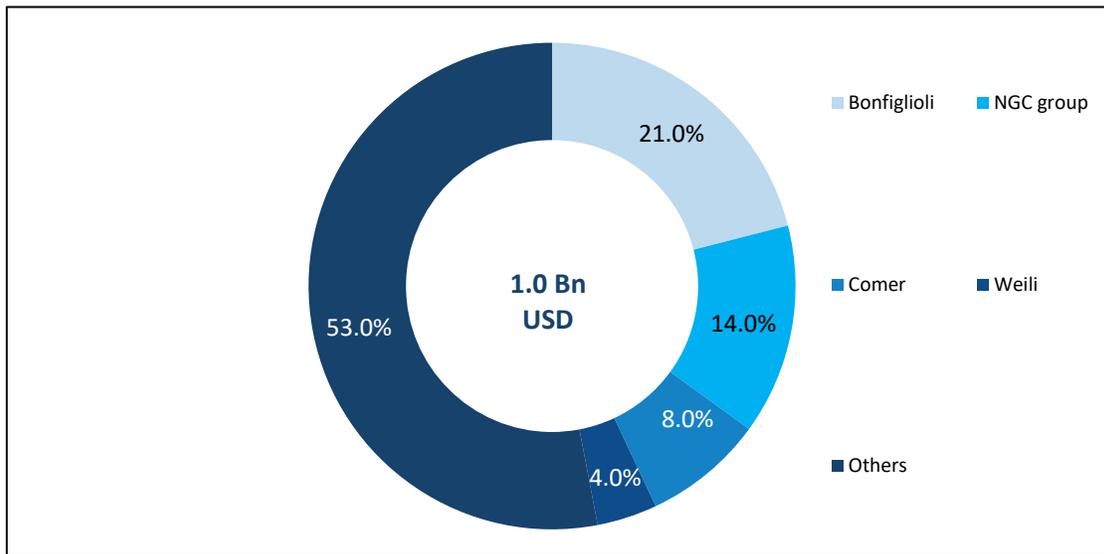
- i. **Increasing Mechanical Loads from Larger Turbines:** As turbines scale from 5 MW to 15 MW, yaw and pitch drives face extreme torque, vibration, and load fluctuations. This accelerates wear and demands far stronger materials and designs. Many existing drive suppliers struggle to match the reliability requirements of next-gen turbines.
- ii. **High Maintenance Costs and Difficult Access:** Yaw and pitch drives require periodic inspection, lubrication, and component replacements. For offshore installations, accessing turbines is costly and weather-dependent. Minor drive issues can escalate due to delayed maintenance, increasing lifecycle costs.
- iii. **Supply Chain Constraints and Component Shortages:** Critical components like bearings, gear assemblies, and high-precision motors face long lead times. Turbine OEMs expect higher volumes, but many drive suppliers lack scalable manufacturing. This mismatch increases project risks and delays
- iv. **Cost Pressure from OEMs and Developers:** As LCOE (Levelized Cost of Energy) targets fall, OEMs demand cheaper drive systems without compromising durability. This creates margin pressure on drive manufacturers and forces constant redesign and innovation. Balancing price, performance, and lifespan is becoming increasingly complex.
- v. **Capital-Intensive Upgrades:** Next-gen 12-15 MW turbines require redesigned yaw & pitch systems - larger gearboxes, higher-grade materials, advanced controls. Manufacturers must

invest in new tooling and production capabilities. For smaller drive suppliers, the financial burden may be too high to stay competitive

- vi. **Policy and Regulatory Uncertainty:** Shifting policy frameworks, particularly in key markets such as the U.S., present an additional challenge. Changes to incentive structures, including the potential shortening or uncertainty around IRA tax credit timelines under the current administration, can delay project decisions, disrupt OEM order visibility, and impact near-term demand for wind components, including yaw and pitch drives

7.8. Competitive Landscape

Exhibit 5.8: Global Wind Turbine Drives, Market Share of Key Players by Value, CY2024



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

others - Sumec, Winergy, Eickhoff, local suppliers

The market remains highly concentrated, with the top three players accounting for ~43% of total market share, reflecting substantial entry barriers stemming from technological complexity, lengthy validation cycles, and deep OEM relationships. Bonfiglioli (21%) is the leader with broad platform coverage and early OEM integration, while NGC Group (14%) maintains a selective presence across key OEM programs. Comer (8%) operates as a niche player focused primarily on yaw and pitch drives rather than full drivetrain solutions. The sizeable “Others” segment (53%) indicates a fragmented long tail of regional and application-specific suppliers.

In the Wind Industry vertical, Bonfiglioli has established proven capabilities to design, manufacture, and supply fully integrated yaw and pitch drive systems for wind turbines at scale.

Chapter 8: Overview of India Wind Solutions Market



Overview of India Wind Solutions Market

8.1. India Wind Solutions (Drives) Market – Overview

India's wind turbine drives market is expanding steadily as the country accelerates toward 107 GW of cumulative wind capacity by 2030, creating sustained demand for high-precision yaw and pitch systems. Most existing wind farms, particularly in Tamil Nadu and Gujarat, are aging, driving strong aftermarket demand for replacement and retrofit drive units. At the same time, the shift toward larger 3-5 MW onshore turbines is increasing torque loads and pushing OEMs to adopt more robust, higher-capacity drive solutions. Local manufacturing is strengthening, supported by Make in India and supply-chain localisation efforts, though India still relies on imported components for critical gear and electronics. The announcement of India's first offshore wind zones is further expected to push demand for next-generation, corrosion-resistant, high-reliability drive systems.

8.2. Industry Trends for the Drives used in the Wind Energy Segment

India's wind-turbine drive market is entering a new phase of growth as the country accelerates onshore expansion and prepares for its first offshore projects. With turbine ratings increasing and older fleets nearing repowering age, the demand for advanced yaw and pitch drives is rising across both new installations and replacement cycles. Localization mandates, supply-chain strengthening, and digitalization are further reshaping how drive systems are designed, sourced, and maintained in India.

OEMs are shifting to 3-5 MW turbines with larger rotors, higher hub heights, and more advanced drive systems, thereby enabling substantially improved energy capture at moderate-wind sites. These machines deliver higher CUF, improved reliability, and lower cost per MW compared to older 1.5 -2 MW models.

- i. **Scaling Turbine Sizes and Drives** - India's move to higher-capacity turbines (5 MW+ onshore, for future offshore) is increasing demand for more robust yaw and pitch drives that can handle heavier loads and larger blade movement.
- ii. **Domestic Manufacturing Push** - With new norms requiring localization of key wind-turbine components and drives, Indian manufacturers are increasingly investing in in-country production of yaw and pitch systems to meet both new and replacement demand.
- iii. **Shift Toward Higher-Torque Drive Systems** - India's wind market is moving from sub-2 MW to 3-6 MW turbines, driving demand for higher-torque yaw and pitch drives. Larger rotors require stronger, more precise gearing and load-management systems, giving an advantage to suppliers with advanced high-torque engineering capabilities.
- iv. **Digitalisation & Smart Drive Systems** - To improve reliability and reduce downtime, Indian developers are embracing drives with embedded sensors, predictive maintenance, and real-time monitoring, especially for challenging wind zones.
- v. **Offshore Readiness in Focus** - While onshore dominates, India's planned offshore wind expansion is driving demand for high-specification yaw/pitch drives capable of corrosive marine conditions, larger turbines, and longer operational life spans.

8.3. India End-user Market (Wind Turbines) Growth – Overview

Onshore Wind – India's onshore wind market is expected to grow at ~15.0% CAGR through 2030, supported by a rising installation pace that could touch 8-10+ GW annually. Growth in India's wind sector

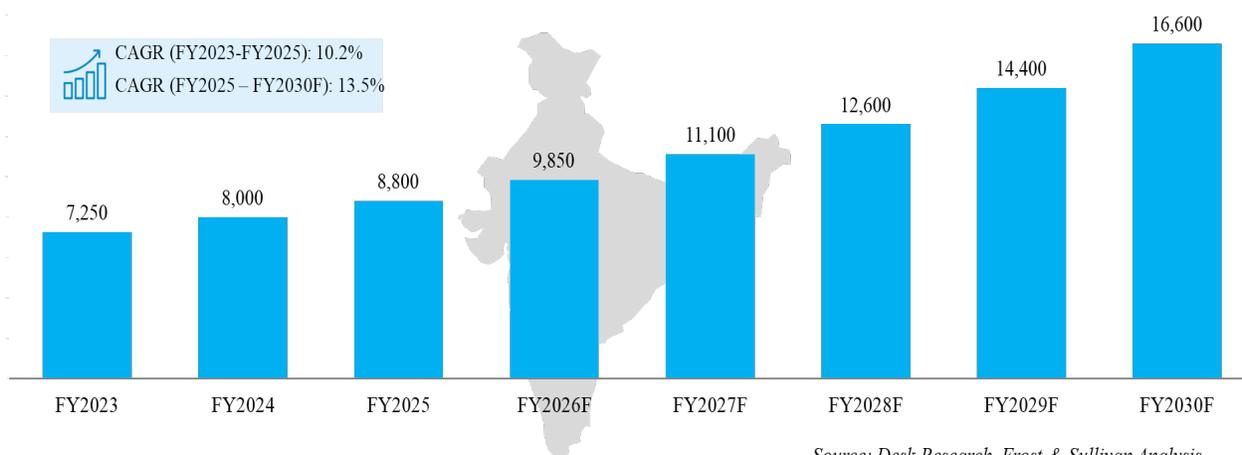
is being driven by strong SECI auctions, Hybrid and RTC procurements, and supportive state policies that ensure a stable project pipeline. The rapid shift toward 3-5 MW turbines is improving CUF, enhancing low-wind performance, and reducing cost per MW. A significant 12-14 GW repowering opportunity is also emerging as older sub-1 MW turbines approach the end of life, offering a substantial boost in generation potential from existing sites.

At the technology and infrastructure level, advancements in hub heights, larger rotor diameters, and high-torque drive systems are enabling projects to perform efficiently across diverse wind regimes. Transmission upgrades under the Green Energy Corridor are easing evacuation constraints and improving bankability. Meanwhile, growing investments from ReNew, Adani, Tata Power, Sembcorp, and global IPPs are accelerating deployment and strengthening India’s overall onshore wind momentum.

Offshore Wind – India’s offshore wind segment remains in a pre-commercial phase (2024-2029) but carries high-growth potential post-2030, driven by strong policy support. The government is pushing early development through viability gap funding, clear offshore policies, and the demarcation of priority zones in Gujarat and Tamil Nadu. The first wave is expected to deploy 12-15 MW turbines, aligned with global offshore standards, attracting growing interest from European, Korean, and Japanese developers. Major upgrades are planned for ports such as Pipavav and Tuticorin, along with subsea cable manufacturing and installation vessel infrastructure. Offshore wind is also firmly embedded in India’s long-term renewable-energy ambitions, positioning it as a major contributor to future RTC and deep-decarbonisation goals once commercial projects take off.

8.4. India Wind Turbine Drives Market – Market Size and Forecast

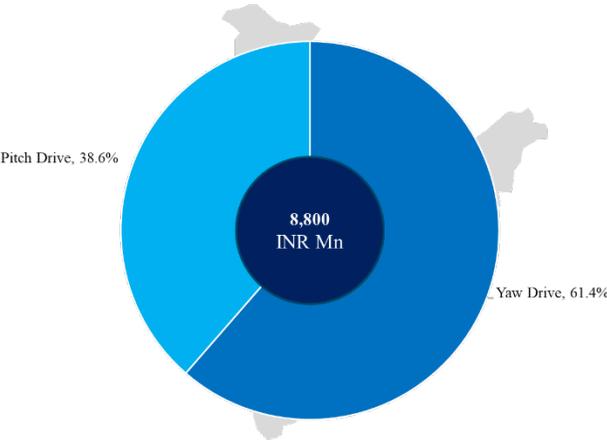
Exhibit 8.1: India Wind Turbine Drives Market (Value in INR Mn), FY2023 – FY2030E



India’s wind sector is entering an intense phase of growth, moving from slow, policy-driven expansion to a more sustained, predictable buildout. Annual installations are rising steadily and are set to approach a scale that places India among the top global wind markets. The continuous climb in yearly additions also reflects better transmission readiness under national grid programs and smoother land allocation in key wind corridors. Notably, the trend signals that larger 3-5 MW turbines and improved CUF models will dominate future installations. Overall, India’s transition into a high-investment, high-visibility growth cycle has substantial implications for OEMs, component suppliers, and domestic manufacturing capacity.

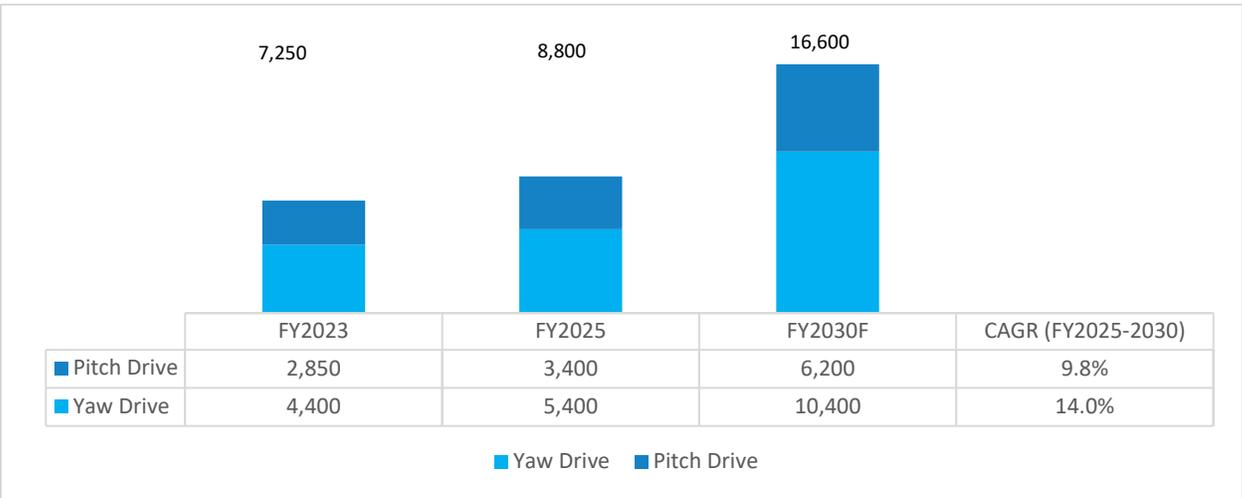
8.4.1. India Wind Turbine Drives Market: Segmentation by Product Type

Exhibit 8.2: India Wind Turbine Drives Market, Product-wise Contribution, FY 2025



Source: Stakeholder Discussions, Frost & Sullivan Analysis

Exhibit 8.3: India Wind Turbine Drives Market, Market Split by Product Type, FY2023 - FY2025- FY2030F, INR Million



Yaw drives form the larger share of India’s wind-drive value pool. Dominance reflects the higher unit requirement of yaw systems per turbine and the shift to larger 3-5 MW machines that demand stronger

orientation stability. Pitch drives account for a smaller but essential share, supported by the steady move toward advanced blade-control technologies.

This chart highlights strong momentum in both yaw and pitch drives, with growth accelerating sharply beyond FY2025. Yaw drives show the fastest scale-up, nearly doubling by FY2030 as India deploys larger rotor diameters and higher hub-height turbines. Pitch drives also rise significantly with improved CUF targets and OEM upgrades, signalling a broader technology upgrade cycle across India's wind fleet.

Bonfiglioli is among the earliest companies to establish domestic manufacturing of wind-turbine pitch and yaw drives in India, beginning in 2006 at its Chennai (Tamil Nadu) facility. In line with India's market growth, Bonfiglioli expanded its drive capacities and became the first in the country to manufacture pitch drives for 1–5 MW wind turbines.

8.4.2. India Wind Turbine Drives – New vs Replacement Demand

India's wind-turbine drive market today is still dominated by new installations, which account for roughly 90% of demand, driven by capacity additions across Tamil Nadu, Gujarat, and Karnataka, as well as the growing use of 3-5 MW class turbines. Replacement demand accounts for the 10%, primarily from ageing 1-1.5 MW turbines that need upgraded yaw and pitch systems. Over the next 5-7 years, this balance will shift as India enters a structured repowering cycle, with thousands of older turbines approaching end-of-life in legacy wind corridors. New installations will continue, but replacement demand may rise to 15%, driven by higher generation potential from newer turbines and OEMs promoting upgrades to meet reliability and performance requirements.

The aftermarket opportunity will expand steadily as the installed base ages and turbine owners focus on uptime and lifecycle cost optimisation. Demand for gearbox refurbishment, yaw and pitch drive servicing, condition monitoring, and spare parts will rise, particularly for legacy turbines operating beyond their original design life. This creates a growing, annuity-like revenue stream for OEMs and service providers, complementing both new installations and replacement demand.

8.5. India Wind Turbine Drives – Key Growth Drivers

- i. **Rising Domestic Wind Capacity Addition** - India's push toward 100+ GW of wind capacity by 2030 is accelerating installations in Tamil Nadu, Gujarat, Karnataka, and Rajasthan. Annual tendering activity has picked up again, bringing stability to the sector. MNRE's commitment to tender at least 10 GW of new wind capacity annually until FY28, along with India's target of achieving 5 mtpa of green hydrogen capacity by FY30, creates a strong and sustained demand outlook for wind installations. This directly increases demand for critical turbine components such as yaw, pitch, and gear systems.
- ii. **Shift to Larger Multi-MW Turbines** - OEMs are upgrading from 1.5-2 MW machines to 3-5 MW turbines to deliver higher output in India's moderate-wind corridors. These larger units are now being deployed across coastal and inland belts. Bigger turbines require stronger mechanical systems, increasing the value per installation.
- iii. **Localisation of Manufacturing** - Government policies encourage domestic production of key turbine components. Localization lowers import costs, improves lead times, and strengthens

India's wind energy supply chain. This creates opportunities for global and local suppliers to expand capacity.

- iv. **Growth of Wind Solar Storage Hybrids** - Hybrid parks in Gujarat and Rajasthan are making wind power more commercially attractive. These projects require a consistent share of wind generation to deliver round-the-clock renewable power. As more hybrids are built, the country needs more turbines, lifting component demand. Wind-solar hybrids provide steadier RTC power, improve transmission utilization, and achieve higher CUF than standalone projects.
- v. **Repowering Potential in India's First-Generation Wind Farms** - India has 12-14 GW of early turbines, mostly under 1 MW, concentrated in Tamil Nadu and Gujarat. These older machines are due for replacement with modern, high-efficiency units. Repowering unlocks fresh demand for new mechanical assemblies, spares, and replacement components.
- vi. **Rising Offshore Wind Investments** - India is preparing large offshore projects with strong policy backing. Global developers are exploring early investments ahead of upcoming tenders. This new segment will drive demand for larger turbines and new component capacity.

8.6. India Wind Turbine Drives – Threats and Challenges

- i. **Policy Uncertainty & Slow Tender Execution:** Frequent delays in SECI auctions, shifting tariff caps, and slow PPA signing create planning uncertainty. Developers hesitate to place large turbine orders when timelines are unclear. This directly affects demand for wind components and slows capacity addition.
- ii. **Cost Pressure on OEMs and Suppliers:** Aggressive tariff expectations push developers to demand lower turbine prices. OEMs pass this pressure onto component suppliers, squeezing margins for gear systems and mechanical assemblies. Competitive pricing affects technology upgrades and long-term reliability.
- iii. **Import Dependence for critical Components:** India still relies on imports for specific precision systems, bearings, and specialized gear components. Currency fluctuations and logistics delays increase supply risk for OEMs. Local suppliers struggle to scale quickly enough to bridge these gaps.
- iv. **Limited Aftermarket Capabilities in Remote Sites:** Wind farms in remote regions often lack strong service networks and skilled technicians. Downtime remains high for complex mechanical components, impacting fleet performance. This weak service ecosystem raises overall lifecycle costs.

8.7. Competitive Landscape

Bonfiglioli commanding a dominant 68.3% share, driven by strong OEM alignment, deeper localization, and long-term presence in India's wind ecosystem. Bonfiglioli's dominance in India's wind turbine drives segment is underpinned by advanced engineering capabilities, global technology leadership, and robust local manufacturing infrastructure. The company benefits from its global parent's strong R&D ecosystem, providing access to proven planetary technologies, modular platform designs, and continuous product innovation. Its India operations further strengthen this leadership through end-to-end local manufacturing, including precision machining, assembly, and testing capabilities explicitly tailored for yaw

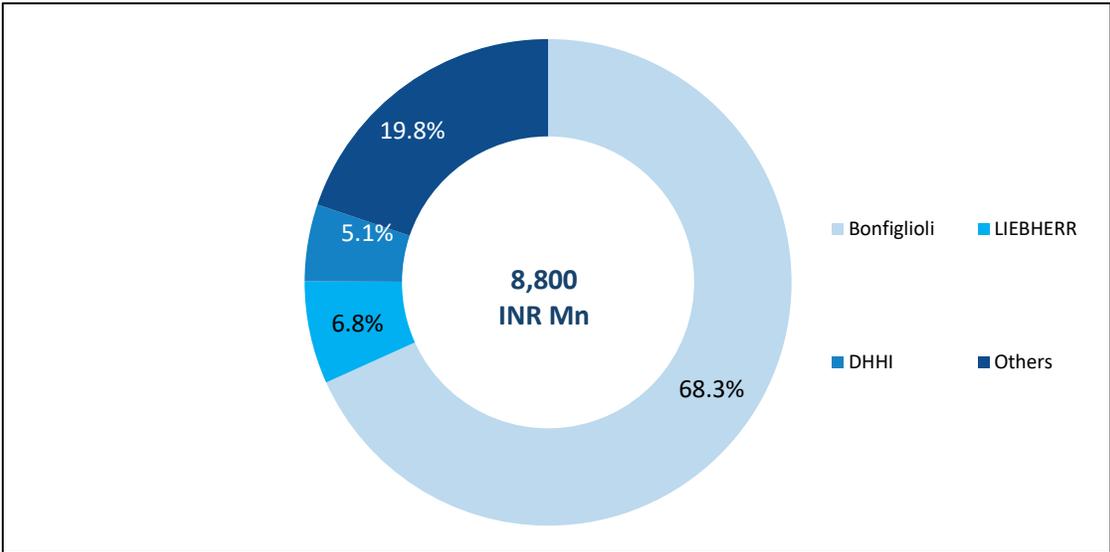
and pitch drive applications. This combination of global expertise and localized execution has been central to establishing Bonfiglioli as a dominant supplier in the Indian market.

Bonfiglioli manufactures yaw and pitch drives for wind turbines with capacities ranging from 225 kW to 5 MW. The company has established, proven capabilities to design, manufacture, and supply fully integrated yaw and pitch drive systems at scale for wind turbine applications. Bonfiglioli specialize in manufacturing yaw and pitch drives for wind turbines and have a market leading share of approximately 70.0% among domestic manufacturers in terms of sales value in CY2024

The next tier, Liebherr (6.8%) and DHHI (5.1%), represents niche or selective supply linked to specific turbine platforms, indicating limited penetration. A sizable 19.8% “Others” reflects fragmented sourcing from smaller global suppliers, local gear makers, and retrofit-focused vendors. At the same time, the rest compete in smaller, opportunity-driven pockets, with growth heavily dependent on localization, new OEM tie-ups, and repowering cycles.

Bonfiglioli’s India R&D Centre houses testing facilities supporting products across all three business verticals, and as of September 30, 2025, it was **the only** test laboratory in India equipped to test yaw and pitch drives for wind turbines.

Exhibit 8.4: India Wind Turbine Drives, Market Share of Key Players by Value, FY2025



Source: Secondary source, F&S Primary Research, Frost & Sullivan Analysis

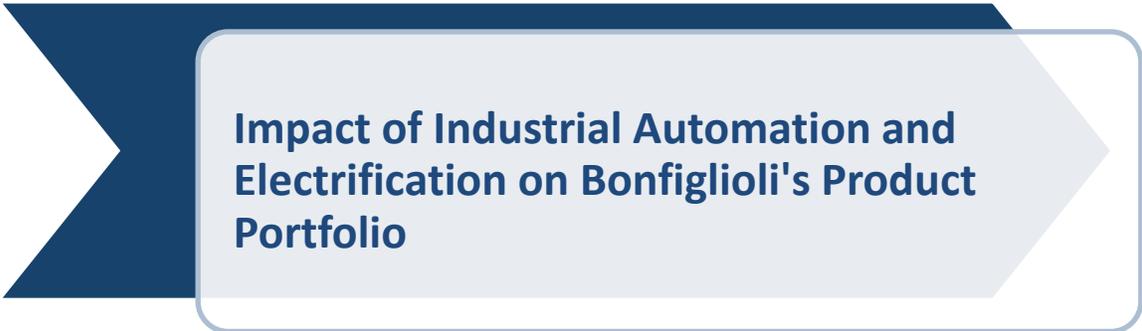
Others include Weili, Chongqing etc.

Note: All market share calculations include domestic + export revenues

8.8. Analysis of BTL's Key Wind OEM Customers

Bonfiglioli holds a firm strategic position in the drives component market. OEMs like Suzlon, rely heavily on specialized suppliers, allowing Bonfiglioli to secure deep, recurring partnerships across multiple turbine platforms. Even global players such as Nordex source a significant portion of their component needs externally, creating a substantial addressable opportunity for Bonfiglioli's gear and drive solutions. In India, this shift in OEM sourcing aligns strongly with Bonfiglioli's strengths: localization, platform compatibility, and a deep service network. Bonfiglioli's brand strength often gives it a preferred vendor edge. Overall, the sourcing behavior of major OEMs strongly reinforces Bonfiglioli's ability to maintain a strong market share, cross-platform adoption, and long-term renewal prospects.

Chapter 9: Impact of Industrial Automation and Electrification on Bonfiglioli's Product Portfolio



Impact of Industrial Automation and Electrification on Bonfiglioli's Product Portfolio

9.1. Impact & Outlook of Industrial Automation & Electrification

Industrial automation and electrification are fundamentally reshaping Bonfiglioli's end-user landscape, expanding both the depth and breadth of its addressable market. As factories move from manual or semi-automatic systems to digitally coordinated, energy-efficient, and sensor-rich operations, the demand for intelligent gearboxes, high-efficiency gearmotors, servo solutions, and integrated drive packages is accelerating across discrete, process, and infrastructure sectors. At the same time, electrification is unlocking entirely new pockets of growth, including renewables, e-mobility platforms, and modern intralogistics, where high-torque density, precision, and reliability are non-negotiable. Together, these shifts are not only increasing the "content per machine" but also positioning Bonfiglioli at the centre of the next decade's manufacturing and energy-transition cycles.

A. Discrete manufacturing (automotive, F&B, packaging, logistics, warehousing)

The rapid adoption of automated material handling, conveyors, AGVs/AMRs, robotic cells, and high-speed packaging lines is driving demand for compact, energy-efficient gearmotors, servo drives, and precision gearboxes. As OEMs and factories move from basic motors to integrated mechatronic and drive packages with diagnostics and communication, Bonfiglioli's value per machine and stickiness with OEMs improve. Over the next 5-7 years, this segment will likely see the fastest growth in automation intensity, supporting above-market growth for Bonfiglioli.

B. Process industries (cement, steel, mining, sugar, chemicals, water/wastewater)

The electrification of drives (replacing hydraulic/mechanical systems) and a greater focus on energy efficiency, uptime, and safety are driving upgrades from older, over-dimensioned gearboxes to optimized, high-efficiency helical / bevel / planetary gearboxes paired with VFDs. Digital monitoring of large-torque drives (kilns, mills, conveyors, crushers, clarifiers) opens the door to condition-based maintenance and service revenue opportunities. Here, automation will focus on more brownfield-led retrofits and modernization, with steady, resilient growth.

C. Renewables & clean energy (solar trackers, biomass, e-mobility, intralogistics for batteries)

Energy transition and electrification directly expand Bonfiglioli's served market by enabling tracker drives for solar and electric drivetrains in mobile machinery and e-mobility platforms. These applications demand high-torque density, reliability, and harsh-environment performance, areas where advanced planetary and specialized drives are critical. This segment will likely deliver higher structural growth and margins and increasingly shape Bonfiglioli's technology roadmap.

D. Infrastructure & intralogistics (airports, ports, metros, parcel & e-commerce hubs)

Automation of baggage handling, automated storage and retrieval systems (ASRS), sorters, and port cranes is pushing the adoption of standardized, modular gearmotors and drive packages with safety, redundancy, and remote monitoring. The electrification of cranes and handling equipment (from diesel to electric) further boosts gear, drive, and control opportunities. This is a strong medium to long-term growth pocket, linked to capex cycles but backed by logistics formalization and e-commerce growth.

Industrial automation and electrification are structurally expanding Bonfiglioli's opportunity across almost all its end-user segments, but the depth of impact varies by industry. As industries shift toward higher efficiency, digitization, and cleaner powertrains, the demand for integrated gearmotor drive control solutions is accelerating, strengthening Bonfiglioli's position as a preferred mechatronics partner.

Bonfiglioli intends to strengthen their Industry & Automation vertical by deepening their presence across end-user industries where capacity expansion and modernisation are expected to remain strong between Fiscal 2025 and Fiscal 2030. These include cement, metals and steel, plastics and polymers, rubber and tyres, ports and shipbuilding, defence and heavy engineering, sugar, and power generation. India's industrial and automation solutions market is expected to grow, driven by a manufacturing upcycle, localisation initiatives, and energy efficiency mandates, with end users increasingly adopting efficient, digitally enabled gearboxes and gear motors.

9.2. Changes in OEM Solutions in response to Automation and Electrification Trends

OEMs are moving from building machines that "operate" to building machines that think, sense, predict, and optimize. Automation and electrification are pushing them toward solutions in which Bonfiglioli's strengths, integrated mechatronics, planetary expertise, servo systems, and ruggedized gearmotors, become central to their product roadmap.

1. Shift Toward Integrated Electro-Mechanical Powertrains - OEMs are replacing traditional mechanical assemblies with fully integrated gearbox motor drive systems. Instead of sourcing components separately, machinery builders now prefer "single package" mechatronic units that ensure efficiency, torque accuracy, and seamless communication with PLCs. Packaging OEMs such as Nichrome, Uflex Automation, and Mamata Machinery are migrating from induction motors and basic gearboxes to compact helical bevel gearmotors with built-in VFDs for faster cycle times and lower energy consumption.

2. Adoption of High-Efficiency & Electrified Designs - To meet global energy norms and customer expectations, OEMs are redesigning machines around IE3/IE4 motors, high-efficiency bevel drives, and advanced planetary stages. Electrification is accelerating the replacement of hydraulic systems with electro-mechanical drives in mobile equipment. Construction & off-highway OEMs (JCB, CAT India suppliers) are shifting from hydraulic slewing to electric slew drives and planetary stages for precision control.

3. Software-Defined Motion: Higher Automation, Better Precision - OEM designs now embed servo drives, encoders, torque sensors, and real-time communication protocols to enable high-speed, synchronized motion. Machines are being engineered for multi-axis coordination, faster changeovers, and error-free repeatability. Example: F&B and Pharma machine builders (Bosch, IMA, Indian OEMs such as ACG Pampac) are redesigning fillers, blister packers, and cartonators with servo-driven axes, increasing the demand for planetary gearheads, precision gearmotors, and high-performance servo drives. Intralogistics system integrators (Daifuku, Godrej Körber, Addverb) now specify servo-based ASRS, shuttle systems, and AMR wheel drives.

4. Built-In Digital Diagnostics & Predictive Maintenance - OEMs add vibration sensors, temperature probes, IoT gateways, and condition-monitoring modules directly into machinery. This reduces downtime

at end-user sites and enables recurring service revenues. Cement and steel OEMs designing conveyors, bucket elevators, kilns, and mills are integrating smart gearboxes with sensor ports and connectivity to support condition monitoring, opening the scope for intelligent planetary and large helical drives.

5. New Designs Driven by Renewables & Energy Transition - In wind, solar, and e-mobility, OEMs are developing technologies that require high-torque density, compact planetary systems, and rugged gear units capable of variable-speed control. Wind turbine OEMs (Suzlon, Vestas, and Inox) are using advanced planetary stages for yaw and pitch drives. EV drivetrain integrators are adopting high-precision planetary and bevel gearheads for e-axles, battery production machinery, and testing systems.

9.3. Electromobility: A Strategic Future Growth Engine for Bonfiglioli

1. Global Shift Toward Electric Drivetrains in Off-Highway Equipment

Electromobility is emerging as one of the most strategic long-term growth platforms for Bonfiglioli, driven by the rapid global shift from hydraulic and diesel-powered systems to electric drivetrains and precision-controlled motion. Compact construction and agricultural equipment, such as mini-excavators, skid steers, compact loaders, concrete machinery, and orchard/utility tractors, are increasingly adopting electro-mechanical wheel drives, track drives, and slew drives to meet zero-emission mandates, improve controllability, reduce hydraulic leakage risks, and lower total cost of ownership. JCB, Volvo CE, Bobcat, Komatsu, Tata Hitachi, Mahindra, and Escorts are already rolling out or developing electric variants of compact platforms, creating a fast-expanding addressable market for high-torque planetary drives integrated with high-efficiency motors and inverters, a domain where Bonfiglioli commands strong global credibility.

2. Fastest Electrification in Warehousing & Intralogistics Equipment

The steepest adoption curve is evident in warehousing and automated intralogistics, as companies move toward cleaner, quieter, and more digitally coordinated equipment. Electric pallet trucks, forklifts, stackers, reach trucks, tow tractors, AGVs, AMRs, and shuttle systems are becoming the default choice for modern warehouses, 3PL hubs, e-commerce fulfillment centers, and manufacturing plants. These vehicles require compact yet high-performance gearmotors, precision planetary units, electric wheel drives, and integrated motor-drive modules with features such as regenerative braking, safe torque off (STO), and precise speed control. Godrej Material Handling, KION, Toyota MHE, Jungheinrich, Addverb, GreyOrange, Falcon Autotech, and global automation integrators are scaling up electric fleets, directly boosting demand for custom steering drives, lift-drive assemblies, hub drives, and servo-based wheel modules.

3. Integrated E-Drive Systems Creating Higher Value per Machine

A critical structural shift is the OEM preference for fully integrated electro-mechanical propulsion packs rather than discrete components. Modern electric equipment increasingly demands complete systems combining a gearbox, motor, inverter, safety controls, and software, optimized for torque curve, duty cycle, thermal limits, and battery efficiency. This allows Bonfiglioli to move from being a component supplier to a high-value system integrator, increasing customer stickiness and raising the share of wallet

per machine. Integrated e-drive platforms also create aftermarket and service revenue through software updates, diagnostics, and long-term lifecycle contracts.

4. Strong Alignment with Sustainability Mandates & Automation Trends

Globally, tightening emissions regulations (EU Stage V, zero-emission site targets), sustainability commitments, and the push toward automated, noise-free operations are accelerating electrification across industrial mobility applications. Warehouses are shifting to fully electric fleets, construction sites are adopting low-noise equipment, and agriculture is moving toward battery-powered utility machines. These shifts directly favour Bonfiglioli's strengths: planetary drive excellence, servo expertise, compact mechatronic integration, and rugged design for harsh duty cycles. The convergence of electrification and automation solidifies electromobility as a high-growth, high-margin strategic segment.

With global OEM roadmaps tilting toward electric and semi-autonomous equipment, electromobility is set to become one of the most attractive, technology-intensive growth areas for Bonfiglioli. By leveraging its expertise in planetary drives, integrated motor-drive solutions, servo platforms, and intelligent mechatronics, Bonfiglioli can significantly expand its presence in new-age applications from electric construction machinery to warehouse robotics, establishing long-term leadership in the next wave of industrial mobility.

Chapter 10: Competitive Benchmarking of Key Players in India



**Competitive Benchmarking of Key Players
in India**

10.1. Operational Benchmarking and Profiling of Key Players

10.1.1. Industrial & Automation Solutions – Key Profiles

In India, a diverse set of players is emerging across the Industrial & Automation Solutions space, especially in gearboxes and gear motors. Each player is carving out a unique value proposition, whether through product specialization, segment presence, service depth, or application expertise, to sustain and scale in a fast-evolving market. The gearbox segment continues to be dominated by large domestic manufacturers with strong industrial roots, wide installed bases, and deep sectoral relationships. In contrast, the gear motor segment is led mainly by global players, backed by advanced technology, precision engineering, and strong OEM partnerships. Together, this mix of domestic strength and global capability is reshaping India's industrial ecosystem and driving the market toward greater reliability, efficiency, and automation readiness.

Bonfiglioli Group

Key Facts	Brief Profile
<p>Founded: 1956 Global HQ: Bologna, Italy India HQ: Chennai, Tamil Nadu (Bonfiglioli Transmissions Ltd., established 1999)</p>	<p>Bonfiglioli is a global leader in power transmission and automation solutions, offering a comprehensive portfolio of gearboxes, gear motors, servo solutions, and integrated drive systems. In India, the company combines strong local manufacturing with global R&D and engineering expertise.</p> <p>Manufacturing facilities: 1) Thirumudivakkam, Chennai 2) Mannur, Chennai 3) Pune (assembly & distribution)</p> <p>Manufacturing capabilities: Full-cycle manufacturing of helical, bevel, worm, and planetary gearboxes; gear motors; precision servo gear units; mechatronics; and custom drive assemblies.</p> <p>Product offerings: Helical, Parallel Shaft & Helical-Bevel Gearboxes; Worm Gearboxes; Planetary Gearboxes; Industrial Gear Motors; Servo Motors & Servo Gear Units; Drive & Automation Solutions.</p> <p>Industries served: Material Handling, Logistics & Warehousing, Metals, Cement, Food & Beverage, Packaging, Textiles, Plastics & Rubber, Wastewater, Mining, Biogas, Robotics, Chemicals, Pharma, Ports.</p> <p>Geographic presence: Strong India footprint across major industrial clusters (Pune, Ahmedabad, Chennai, Coimbatore, NCR, Hyderabad, Kolkata). Global presence in 80+ countries with 20+ production sites.</p> <p>Distribution & aftermarket: Robust distributor network across India; authorized service partners; spares, repairs, rebuilds, retrofits, application engineering, and onsite servicing.</p> <p>Domestic & export contribution: India is a strategically important market; the majority of revenue is domestic. Exports include selected industrial gearbox components to Europe, the US, the Middle East, and APAC.</p> <p>Key clients: Schwing Stetter, Tata Steel, Suzlon and other leading OEMs in conveyors, AGVs, and factory automation</p>

Bonfiglioli SpA headquartered in Italy, is one of the largest technologically advanced players globally in the mechanical and electro-mechanical power transmissions and industrial drive solutions industry with a revenue of Euro 1,190.9 million (₹106.94 billion) for the year ended December 31, 2024.

SEW-Eurodrive India Private Ltd

Key Facts	Brief Profile
<p>Founded: 1931 Global HQ: Bruchsal, Germany</p>	<p>SEW-EURODRIVE is one of the world's largest suppliers of gearmotors, drive electronics, and automation solutions, known for modular and integrated drive platforms.</p> <p>Capacity: 17 global manufacturing plants; India operations include assembly, manufacturing, and service.</p> <p>Manufacturing facilities (India):</p> <ul style="list-style-type: none"> • Pune (assembly & manufacturing) • Vadodara (service) <p>Manufacturing capabilities: Gearmotor assembly; helical, bevel, servo units; VFDs and inverters.</p> <p>Product offerings: Helical, Parallel Shaft & Helical-Bevel Gearboxes; Planetary Gear Units; Gearmotors; Servo Motors & Gear Units; VFDs; Decentralized Drives.</p> <p>Industries served: Automotive, Food & Beverage, Packaging, Logistics, Warehousing, Steel, Cement, Water, Pharma, Airports, General Manufacturing.</p> <p>Geographic presence: Operations in 50+ countries with strong presence in Europe, USA, China, Brazil, India, and APAC.</p> <p>Distribution & aftermarket: Large global service network; India has 8+ sales & service centers offering AMC, field service, retrofits.</p> <p>Domestic & export contribution: Global revenues ~80% exports; India business largely domestic with growing exports.</p> <p>Key clients: Amazon, BMW, Volkswagen, Nestlé, Coca-Cola, Tata Motors, Renault-Nissan, DHL, Indian airports, leading logistics OEMs.</p>

Elecon Engineering Company Ltd

Key Facts	Brief Profile
<p>Founded: 1951 HQ: Anand, Gujarat, India</p>	<p>Elecon Engineering is one of Asia's largest manufacturers of industrial gearboxes, with a strong focus on heavy-duty and high-torque applications.</p> <p>Capacity: Full-cycle manufacturing from casting to testing; gearboxes up to 2,000 kNm+.</p> <p>Manufacturing facilities: Integrated manufacturing campus at Anand, Gujarat.</p> <p>Product offerings: Helical, Bevel, Planetary, Worm Gearboxes; Geared Motors; Customized Heavy Industrial Gear Units; Material Handling Equipment.</p> <p>Industries served: Mining, Cement, Steel, Power, Fertilizer, Ports, Paper, Plastics, Rubber, Material Handling.</p> <p>Geographic presence: Strong India presence with exports to 60+ countries across Middle East, Africa, Southeast Asia, and Europe.</p> <p>Distribution & aftermarket: Extensive dealer network; field services; refurbishment, spares, and revamp services.</p> <p>Domestic & export contribution: ~70–75% domestic; ~25–30% exports.</p> <p>Key clients: NTPC, Tata Steel, JSW, UltraTech Cement, ACC, Adani, L&T, BHEL, Vedanta.</p>

NORD Drivesystems Private Ltd

Key Facts	Brief Profile
<p>Founded: 1965 Global HQ: Bargteheide, Germany</p>	<p>NORD DRIVESYSTEMS supplies gearmotors, industrial gear units, motors, VFDs, and decentralized drive electronics with a strong focus on intralogistics and process industries.</p> <p>Capacity: Global manufacturing footprint; India operations focused on assembly and testing.</p> <p>Manufacturing facilities (India): Pune (assembly & testing)</p> <p>Product offerings: Helical, Parallel Shaft & Helical-Bevel Gearboxes; Worm Gearboxes; Industrial Gear Units; Gearmotors; Motors; VFDs; Drive Electronics.</p> <p>Industries served: Intralogistics, Food & Beverage, Pharma, Water, Steel, Cement, Chemicals, Packaging, Warehousing, Airport Handling.</p> <p>Geographic presence: Operations in 98 countries with manufacturing across Germany, USA, Italy, Poland, and India.</p> <p>Distribution & aftermarket: Extensive global distribution; India hubs in Pune, Ahmedabad, Chennai, and Delhi.</p> <p>Domestic & export contribution: Global exports >70%; India's business is primarily domestic with moderate exports.</p> <p>Key clients: Amazon, Flipkart, Schaeffler, Krones, GEA, Britannia, ITC Foods, airport baggage OEMs, conveyor manufacturers.</p>

Premium Transmission Ltd

Key Facts	Brief Profile
<p>Founded: 1961 HQ: Pune, Maharashtra, India</p>	<p>Premium Transmission is a leading Indian manufacturer of industrial gearboxes and power transmission solutions, with strong exposure in the heavy industry sector.</p> <p>Manufacturing facilities: Pune, Aurangabad, Kolkata.</p> <p>Manufacturing capabilities: Gearboxes, geared motors, fluid couplings, heat treatment.</p> <p>Product offerings: Helical, Bevel, Worm Gearboxes; Geared Motors; Fluid Couplings; Customized Industrial Gearboxes.</p> <p>Industries served: Cement, Steel, Power, Sugar, Mining, Chemicals, Marine, Water, Material Handling.</p> <p>Geographic presence: India (Pune, Aurangabad, Kolkata); exports to Middle East, Africa, SEA, Europe</p> <p>Distribution & aftermarket: Pan-India channel partners; strong aftermarket support, including spares, repairs, and field engineering.</p> <p>Domestic & export contribution: ~65–70% domestic; ~30–35% exports.</p> <p>Key clients: Aditya Birla Group, UltraTech Cement, JSW Steel, L&T, Indian Railways, sugar mills, conveyor and mixer OEMs.</p>

Shanthi Gears Ltd

Key Facts	Brief Profile
<p>Founded: 1969 HQ: Coimbatore, Tamil Nadu, India Group: Murugappa Group</p>	<p>Shanthi Gears is a well-established Indian manufacturer of industrial gearboxes and precision gears, serving OEM and replacement markets.</p> <p>Manufacturing Facilities:</p> <p>Shanthi Gears has advanced, integrated manufacturing facilities near Coimbatore, India, featuring state-of-the-art CNC machinery, in-house heat treatment (including India's largest pit-type carburizing plant), grinding, and assembly for producing diverse standard and custom gears, gearboxes, and geared motors.</p> <p>Manufacturing capabilities: CNC machining, gear grinding, heat treatment, precision gears, and custom gearbox manufacturing.</p> <p>Product offerings: Helical, Bevel, Worm Gearboxes; Custom Engineered Gearboxes; Precision Gears.</p> <p>Industries served: Steel, Cement, Sugar, Defence, Railways, Mining, Paper, OEM Machinery.</p> <p>Geographic presence: India-focused; exports to Middle East, Africa, SEA;</p> <p>Distribution & aftermarket: Pan-India dealer network with strong custom gearbox support.</p> <p>Domestic & export contribution: ~80–85% domestic; ~15–20% exports.</p> <p>Key clients: L&T, BHEL, Ashok Leyland, ISRO (components), cement plants, sugar mills, steel mills.</p>

Flender Drive Private Limited

Key Facts	Brief Profile
<p>Founded: 1899 Global HQ: Bocholt, Germany Ownership: Formerly Siemens; acquired by Carlyle in 2021</p>	<p>Flender is a global leader in heavy industrial gear units and wind turbine gearboxes, supplying mission-critical, high-power applications.</p> <p>Capacity: 13 production plants globally; IGUs up to multi-MW range.</p> <p>Manufacturing facilities (India): 13 production Plants globally. Key plants are in Germany, China, India (Kharagpur). IGUs up to multi-MW range; wind turbine gearbox manufacturing.</p> <p>Product offerings: Helical & Bevel-Helical Industrial Gear Units; Planetary Gear Units; Couplings; Wind Turbine Gearboxes (Winergy).</p> <p>Industries served: Cement, Steel, Mining, Marine, Oil & Gas, Power, Pulp & Paper, Ports, Material Handling.</p> <p>Geographic presence: 30+ countries; strong Europe, China, India (Kharagpur), USA presence</p> <p>Distribution & aftermarket: Global lifecycle services including condition monitoring and spares; India service hubs in Chennai, Kharagpur, and Pune.</p> <p>Domestic & export contribution: ~70% exports (wind + industrial); ~30% domestic.</p> <p>Key clients: Siemens, GE, Vestas, LafargeHolcim, Tata Steel, ArcelorMittal, Reliance, major mining OEMs.</p>

10.1.2. Mobility Solutions (Drives) used in off-highway applications - Key Profiles

In India, a focused yet highly competitive set of players is emerging across off-highway mobility drives, particularly in wheel, track, and slew drives. The segment is led by global drivetrain specialists such as Bonfiglioli, Comer Industries, Dana, SUNGBO, and PMP Drive Systems, who dominate through advanced technologies, proven reliability, and strong linkages with construction, mining, and agricultural OEMs. Alongside them, a growing base of domestic and regional manufacturers competes through cost-effective designs, agile customization, and faster turnarounds suited to Indian duty conditions. Together, this blend of global capability and domestic adaptability is shaping a competitive market that is steadily moving toward higher efficiency, electrification readiness, and application-specific engineered drive solutions.

Bonfiglioli Transmissions Ltd

Key Facts	Brief Profile
<p>Founded: 1956 Global HQ: Bologna, Italy India HQ: Chennai, Tamil Nadu (Bonfiglioli Transmissions Ltd., established 1999)</p>	<p>Bonfiglioli India's Mobility Solutions business focuses on power transmission and drive solutions for off-highway and mobile equipment applications, delivering high-torque, compact, and duty-critical systems designed for harsh operating environments. The business leverages global product platforms with localized application engineering and assembly to serve India's growing off-highway equipment market.</p> <p>Manufacturing facilities: Localized assembly and customization supported by Bonfiglioli India manufacturing locations in Chennai and Pune, integrated with global production and engineering centers for critical components.</p> <p>Manufacturing capabilities: Assembly and testing of planetary travel drives, slew drives, winch drives, and high-torque mobile gear systems; customization for torque, speed, duty cycle, and mounting interfaces; validation for thermal performance, vibration resistance, and lifecycle durability under severe operating conditions.</p> <p>Product offerings: Travel drives; slew drives; winch and hoisting drives; high-torque planetary gearboxes for mobile equipment; integrated drive solutions compatible with hydraulic and electric architectures.</p> <p>Industries served: Construction equipment, mining and bulk material handling, agriculture and forestry machinery, ports and terminal equipment, road construction machinery, and specialized off-highway vehicles.</p> <p>Geographic presence: Strong India presence across key off-highway OEM clusters including Pune, Chennai, Ahmedabad, NCR, and Coimbatore, supported by Bonfiglioli's global footprint across multiple countries and production sites.</p> <p>Distribution & aftermarket: OEM-focused sales model with early-stage design collaboration; aftermarket support including spares, repairs, rebuilds, retrofits, field service, and application engineering support for platform upgrades.</p> <p>Domestic & export contribution: India primarily serves domestic off-highway OEM demand, with selective export of mobility drive assemblies and components supporting global OEM platforms and international programs.</p> <p>Key clients: Leading domestic and global OEMs in construction equipment, mining machinery, agricultural equipment, port handling equipment, and specialized off-highway vehicle platforms.</p>

Bonfiglioli is the largest manufacturer of gearboxes (gear motors below 15 kNm), and drives catering to OEMs and end-users in the Industry & Automation, Off-Highway Mobility, and Wind sectors, based on revenue from operations for 9 months ending September 30, 2025.

As of September 30, 2025, Bonfiglioli had manufactured and supplied over 10,500 SKUs and the only major gearbox suppliers with a comprehensive portfolio serving Industry & Automation, Off-Highway Mobility, and Wind end-markets.

SUNGBO Industrial Co.

Key Facts	Brief Profile
<p>Parent: Sungbo Industrial Co., South Korea</p> <p>India operations since: 2010</p>	<p>SUNGBO India operates as the Indian arm of Korea-based Sungbo Industrial, focusing on planetary drive solutions for construction and mining equipment with strong OEM integration.</p> <p>Manufacturing capabilities: Local assembly and machining of planetary drives; heavy-duty models sourced from Korea. Indian facility supports customization, application engineering, and testing.</p> <p>Product offerings: Planetary Track Drives, Wheel Drives, Slew Drives, Undercarriage Drives.</p> <p>Industries/segments served: Construction Equipment (excavators, drillers), Mining, Road Machinery, Industrial Mobility.</p> <p>Geographic presence: India operations centered in Chennai; parent operations across Korea and Southeast Asia.</p> <p>Distribution & aftermarket: Limited independent distribution; predominantly OEM-focused, with service support routed through OEM networks.</p> <p>Domestic & export contribution: Primarily domestic supply with selective exports to Korea and Southeast Asia.</p> <p>Key clients: Volvo, Hyundai Construction Equipment suppliers, local excavator attachment OEMs, road machinery integrators.</p>

Note: Financials NA for Sungbo India

DANA India

Key Facts	Brief Profile
<p>Global founding: 1904</p> <p>India operations since: 1990s</p> <p>India HQ: Pune, Maharashtra</p>	<p>DANA India is part of Dana Incorporated's global off-highway drivetrain business and serves as a major manufacturing and export hub for heavy-duty planetary drive systems.</p> <p>Manufacturing capabilities: Major manufacturing hub for planetary drives, axles, and transaxles, supported by precision machining, heat treatment, and complete drive-module assembly. India also functions as a global export base.</p> <p>Product offerings: Wheel Drives, Track Drives, Transaxles, Electric Propulsion Systems, Axles, Torque Hub Drives.</p> <p>Industries / segments served: Construction, Mining, Agriculture, Material Handling, Electric Off-Highway Equipment.</p> <p>Geographic presence: Strong presence in Pune and Chennai, integrated into Dana's global network across the US, Italy, China, and Brazil.</p> <p>Distribution & aftermarket: Strong OEM-backed service ecosystem with extensive global aftermarket and parts support.</p> <p>Domestic & export contribution: High export orientation (India as a global torque-hub manufacturing base) along with premium domestic supplies.</p> <p>Key clients: Caterpillar, JCB, John Deere, Tata Hitachi, CNH, Volvo CE, major mining and construction OEMs.</p>

Comer Industries

Key Facts	Brief Profile
<p>Founded: 1970</p> <p>India presence since: 2000s</p> <p>India HQ: Bangalore</p>	<p>Comer Industries is a global supplier of drivetrain and powertrain solutions with strong exposure to agriculture and off-highway machinery.</p> <p>Manufacturing capabilities: Assembly and customization of planetary drives, agricultural drives, and industrial powertrains, supported by CNC machining and quality-certified testing.</p> <p>Product offerings: Planetary Drives (Wheel, Track, Slew), Axles, Transaxles, Powertrain Components.</p> <p>Industries / segments served: Agriculture (tractors, harvesters), Construction Equipment, Forestry Machinery, Industrial Vehicles.</p> <p>Geographic presence: India operations in Pune; global headquarters in Italy with strong presence across Europe, the US, and Brazil.</p> <p>Distribution & aftermarket: OEM-centric distribution; service through partner workshops; established agricultural and industrial vehicle aftermarket channels.</p> <p>Domestic & export contribution: Mix of domestic and export shipments; India acts as a hybrid sourcing and customization base.</p> <p>Key clients: Ajax, Stetter, CAT, Escorts, Mahindra, TAFE, global tractor OEMs and forestry equipment manufacturers.</p>

PMP Drive Systems

Key Facts	Brief Profile
<p>Founded: 1950 (Italy)</p> <p>India operations since: 2008</p> <p>India HQ: Pune, Maharashtra</p>	<p>PMP Drive Systems is a specialist in planetary drive solutions for mobile and off-highway applications, with strong capabilities in compact and high-load duty cycles.</p> <p>Manufacturing capabilities: Indian plant manufactures planetary gearboxes, track drives, slew drives, and wheel drives, supported by advanced machining and testing for off-highway duty cycles.</p> <p>Product offerings: Track Drives, Wheel Drives, Slew Drives, Planetary Gearboxes for Mobile Machines.</p> <p>Industries / segments served: Construction, Road Machinery, Mining, Concrete Equipment, Industrial Mobile Equipment.</p> <p>Geographic presence: India facility in Pune; global presence anchored by Italy HQ with additional factories across Europe and China.</p> <p>Distribution & aftermarket: OEM-focused support with dedicated service teams; aftermarket through selective partners for construction and concrete machinery.</p> <p>Domestic & export contribution: Higher domestic supply share with growing exports from India plant.</p> <p>Key clients: Schwing Stetter, SANY India, Putzmeister suppliers, road machinery OEMs, compact equipment integrators.</p>

10.1.3. Wind Solutions (Drives) for Wind Turbines - Key Profiles

In India, the wind drivetrain ecosystem is shaped by a concentrated yet highly competitive set of players specializing in yaw and pitch drives, main gearboxes, and large-diameter power transmission components. The market is led by global wind powertrain majors such as ZF Wind Power, Bonfiglioli, and Liebherr, who dominate through advanced planetary technologies, large-torque engineering capabilities, and deep relationships with leading turbine OEMs. These players bring global validation, long operating histories, and high reliability essential for utility-scale wind turbines operating in harsh environments.

Bonfiglioli Transmissions Ltd

Key Facts	Brief Profile
<p>Founded: 1956 Global HQ: Bologna, Italy India HQ: Chennai, Tamil Nadu (Bonfiglioli Transmissions Ltd., established 1999)</p>	<p>Bonfiglioli India's Wind Solutions business focuses on power transmission and drive systems for wind turbine applications, supporting onshore wind installations with high-reliability, high-torque solutions engineered for long operating lifecycles and harsh environmental conditions. The business combines global wind technology platforms with localized manufacturing, quality systems, and supply-chain integration to serve India's renewable energy ecosystem.</p> <p>Manufacturing facilities: Wind gearbox and drive manufacturing operations supported by Bonfiglioli India's Chennai facilities, integrated with global wind technology manufacturing and engineering centers.</p> <p>Product offerings: Main gearboxes for wind turbines; planetary and helical gear stages; yaw and pitch drive systems; customized drivetrain solutions for turbine-specific requirements.</p> <p>Industries served: Onshore wind power generation, renewable energy infrastructure, utility-scale and captive wind power projects.</p> <p>Geographic presence: Strong presence in India's key wind energy clusters including Tamil Nadu, Gujarat, Karnataka, Maharashtra, and Rajasthan, supported by Bonfiglioli's global wind footprint across multiple countries and production sites.</p> <p>Distribution & aftermarket: Direct OEM engagement with leading wind turbine manufacturers; long-term service and aftermarket support including spares, repairs, refurbishments, condition monitoring support, and field service coordination..</p> <p>Domestic & export contribution: India serves as a strategically important manufacturing and supply base for domestic wind turbine installations, with exports of selected wind gearbox components and assemblies to global markets including Europe, the US, and other renewable energy hubs.</p> <p>Key clients: Leading global and domestic wind turbine OEMs and renewable energy developers operating in India.</p>

ZF Wind Power Coimbatore Private Ltd

Key Facts	Brief Profile
<p>Parent Group: ZF Group (established 1915) India operations: Coimbatore, Tamil Nadu</p>	<p>ZF Wind Power is one of the world's leading suppliers of wind turbine drivetrain solutions, with India serving as a critical global manufacturing hub for large wind gearboxes.</p> <p>Manufacturing capabilities: One of India's largest and most advanced wind gearbox manufacturing facilities located in Coimbatore, featuring high-precision machining lines, full-scale validation systems, and load test benches. The plant operates as part of ZF's global supply network.</p> <p>Product offerings: Main Gearboxes, Integrated Wind Powertrain Systems, Condition-Monitoring-Ready Gear Units.</p> <p>Industries / segments served: Utility-Scale Wind Turbines (Onshore & Offshore), Global Wind OEMs.</p> <p>Geographic presence: Major manufacturing base in India with global hubs across Europe, China, Belgium, and the US.</p> <p>Distribution & aftermarket: Strong OEM-centric service model including diagnostics, retrofit services, field maintenance teams, and a comprehensive global spare-parts network.</p> <p>Domestic & export contribution: Highly export-oriented; India plant acts as a global manufacturing hub while also serving select Indian turbine OEM programs.</p> <p>Key clients: Vestas, GE, Siemens Gamesa, Nordex, Envision, Suzlon (select programs).</p>

Liebherr India Private Limited

Key Facts	Brief Profile
<p>Parent Group: Liebherr Group (established 1949)</p> <p>India HQ: Navi Mumbai, Maharashtra</p>	<p>Liebherr India represents the wind and heavy-engineering drivetrain capabilities of the Liebherr Group, supplying critical yaw, pitch, and slew bearing systems to the wind energy sector.</p> <p>Manufacturing capabilities: Assembly and support for wind yaw and pitch drive systems in India, with sourcing and engineering integration from Liebherr's global manufacturing plants. Quality-certified testing is conducted for drive and bearing components.</p> <p>Product offerings: Yaw Drives, Pitch Drives, Slew Bearings, Large-Diameter Gear Systems.</p> <p>Industries / segments served: Wind Turbines, Renewable Powertrain Components, Heavy Engineering.</p> <p>Geographic presence: India presence through Navi Mumbai office, supported by manufacturing and engineering hubs in Germany, Austria, and China.</p> <p>Distribution & aftermarket: Aftermarket and servicing managed through OEM service networks and selective authorized service partners; technical support for yaw/pitch drives and slew bearings.</p> <p>Domestic & export contribution: Primarily supplies domestic turbine and heavy-engineering customers, with selective exports routed through Liebherr's global channels.</p> <p>Key clients: Global wind OEMs using Liebherr yaw/pitch components and domestic partners in renewable energy and heavy-engineering sectors.</p>

10.1.4. Power Transmission Companies - Key Profiles

SKF India Limited

Key Facts	Brief Profile
<p>Incorporated: 21 April 1961</p> <p>HQ / Registered Office: Chinchwad, Pune, Maharashtra, India</p>	<p>SKF India is a leading bearing and motion-technology company within the global SKF Group, serving a wide range of automotive and industrial sectors with advanced reliability and maintenance solutions.</p> <p>Manufacturing capabilities: Three manufacturing plants in Pune, Bengaluru, and Haridwar, with capabilities spanning bearings, seals, lubrication systems, mechatronics, and condition monitoring and digital maintenance solutions.</p> <p>Product offerings: Ball & Roller Bearings, Housings, Seals, Lubrication Systems, Condition Monitoring Solutions, Power Transmission Products.</p> <p>Industries / segments served: Automotive, Metals, Paper, Cement, Mining, Railways, Renewable Energy, Food & Beverage, General Industrial.</p> <p>Geographic presence: Pan-India manufacturing and sales footprint; supported by the global SKF Group with operations in 130+ countries.</p> <p>Distribution & aftermarket: One of India's largest bearing distribution networks with 300+ distributors, industrial service centers, authorized workshops, and condition-monitoring service teams.</p> <p>Domestic & export contribution: Primarily domestic revenues with exports of bearings and components to Europe, ASEAN, the US, and global SKF supply chains (typically ~15–20% exports).</p> <p>Key clients: Tata Motors, Ashok Leyland, Maruti Suzuki, Bajaj Auto, TVS, Yamaha, John Deere, JSW, Vedanta, L&T.</p>

Timken India Limited

Key Facts	Brief Profile
<p>Incorporated: 15 June 1987 (as Tata Timken Limited; renamed Timken India in 1999)</p>	<p>Timken India is a leading manufacturer of tapered roller bearings and industrial power transmission products, integrated with Timken's global engineering and supply network.</p> <p>Manufacturing capabilities: Tapered roller bearing manufacturing facility at Jamshedpur, along with capabilities in industrial bearings, power transmission components, and bearing rebuild & refurbishment services.</p> <p>Product offerings: Tapered Roller Bearings, Cylindrical & Spherical Bearings, Housed Units, Couplings, Industrial Power Transmission Products.</p> <p>Industries / segments served: Automotive (CVs), Metals, Mining, Off-Highway, Rail, Energy, Industrial Machinery, Aftermarket.</p> <p>Geographic presence: Manufacturing in Jamshedpur with nationwide distribution and engineering presence; supported by Timken's global footprint across 40+ countries.</p> <p>Distribution & aftermarket: Strong industrial aftermarket network with channel partners across India, bearing maintenance and refurbishment centers, and dedicated service engineering teams.</p> <p>Domestic & export contribution: Higher export contribution compared to peers due to deep integration with Timken's global supply chain, with exports of tapered roller bearings to the US, Europe, and APAC.</p> <p>Key clients: Caterpillar, Tata Steel, Indian Railways, Mahindra, Ashok Leyland, Dana, Tata Motors, Fiat, Escorts, New Holland, Titagarh Wagons.</p>

Schaeffler India Limited

Key Facts	Brief Profile
<p>Established in India: Over 50 years ago</p> <p>First plant: Vadodara, Gujarat (1964)</p>	<p>Schaeffler India (brands: FAG, INA, LuK) is a major supplier of precision bearings, engine and transmission components, and drivetrain systems, serving both automotive and industrial markets.</p> <p>Manufacturing capabilities: Multiple manufacturing plants in Vadodara, Hosur, and Pune/Talegaon, producing bearings, engine & transmission components, clutch systems, and precision industrial products.</p> <p>Product offerings: Ball & Roller Bearings (FAG), Engine & Transmission Components (INA), Clutch & Drivetrain Systems (LuK), Industrial Automation Components.</p> <p>Industries / segments served: Automotive (PV, CV, 2W), Rail & Off-Highway, Industrial Machinery, Wind Energy, Manufacturing & Process Industries.</p> <p>Geographic presence: Pan-India manufacturing and service footprint; part of Schaeffler's global network across 50+ countries.</p> <p>Distribution & aftermarket: Extensive distributor network under FAG/INA/LuK brands; strong automotive aftermarket presence (clutches, wheel bearings), and robust industrial MRO and service support.</p> <p>Domestic & export contribution: Balanced domestic and export mix, with exports of bearings and drivetrain components to Europe, the US, and global Schaeffler OEM programs.</p> <p>Key clients: Toyota, Ashok Leyland, Hyundai, Mahindra, BHEL, Kubota, Volkswagen, Skoda, Tata Motors, BMW (global programs), Bosch.</p>

Source: Annual Reports , MCA, Power Circle , F&S Analysis

10.1.5. Financial Analysis of Key Companies

Key metrics	Units	Bonfiglioli Transmissions Limited				SEW-Eurodrive India Private Limited			
		As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	6,813.20	5,735.90
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	100%	100%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	NA	NA
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	NA	1,091.8	964.7
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	16.02%	16.82%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	677.00	665.30
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	9.89%	11.50%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	(903.10)	(1,187.10)
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	118	148
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	2.95	3.61
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	16.35%	19.17%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	20.57%	23.69%

Key metrics	Units	Bonfiglioli Transmissions Limited				Elecon Engineering Company Limited			
		As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	16,204.40	22,269.60	19,374.20	15,296.80
Domestic	%	72.94%	74.73%	76.16%	73.59%	77.00%	76.80%	76.35%	71.13%
Exports	%	27.06%	25.27%	23.84%	26.41%	23.00%	23.20%	23.65%	28.87%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA

EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	3,651.20	5,425.90	4,744.70	3,388.80
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	22.53%	24.36%	24.49%	22.15%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	3,351.50	4,151.00	3,555.80	2,375.10
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	19.90%	18.15%	17.95%	15.33%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(1,772.10)	(1,928.50)	(1,587.90)
Cash Conversion Cycle	Days	79	79	80	81	NA	88	98	127
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	3.97x	3.75x	2.90x
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	23.04%	24.67%	20.39%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	24.87%	27.85%	23.17%

Bonfiglioli Transmissions Limited					Nord Drive Systems Private Limited				
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	3,461.57	2,646.53
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	91.68%	95.67%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	8.32%	4.33%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	NA	506.4	435.4
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	14.63%	16.45%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	376.64	314.54
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	10.76%	11.80%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	(199.67)	(262.17)
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	166	175
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	12.43	12.55
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	23.10%	24.48%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	28.12%	29.66%

Bonfiglioli Transmissions Limited						Premium Transmission Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	7064.22	7050.05	6,326.77
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	100.00%	100.00%	100.00%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	NA	NA
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	1,346.76	1,814.01	1,508.39
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	19.06%	25.73%	23.84%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	777.09	1,312.41	827.40
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	10.95%	18.49%	13.05%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(624.27)	(300.25)	(130.00)
Cash Conversion Cycle	Days	79	79	80	81	NA	115	122	105
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	4.16	4.96	5.16
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	19.53%	40.61%	33.65%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	27.86%	45.81%	49.80%

Bonfiglioli Transmissions Limited						Shanthy Gears Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	3,836.20	6,046.20	5,360.50	4,456.50
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	90.21%	92.61%	93.47%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	9.79%	7.39%	6.53%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	800.20	1,287.30	1,017.90	898.30
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	20.86%	21.29%	18.99%	20.16%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	603.90	960.30	822.50	670.50

Bonfiglioli Transmissions Limited						Shanthi Gears Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	15.20%	15.51%	14.76%	14.68%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(647.60)	(79.10)	(900.80)
Cash Conversion Cycle	Days	79	79	80	81	NA	104	129	97
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	7.94x	7.88x	6.86x
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	25.67%	25.40%	23.85%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	32.74%	32.32%	30.29%

Bonfiglioli Transmissions Limited						Flender Drives Private Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	NA	21599.19
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	NA	45.37%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	NA	54.63%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	NA	NA	714.81
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	NA	3.31%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	NA	(445.43)
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	NA	(2.05%)
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	NA	8,375.09
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	NA	156
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	NA	6.43
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	NA	(8.24%)
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	NA	3.45%

Bonfiglioli Transmissions Limited						Dana India Private Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	14,368.08	15,224.47
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	100.00%	100.00%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	NA	NA
Revenues from End segments									
Industry & Automation	%	40.98%	40.99%	42.35%	40.76%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.06%	24.80%	26.48%	NA	NA	NA	NA
Wind Industry	%	31.97%	31.71%	29.18%	29.17%	NA	NA	NA	NA
Others	%	1.79%	4.24%	3.68%	3.59%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.41	NA	NA	1,318.7	1,040.8
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	9.18%	6.84%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	695.24	350.16
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	4.80%	2.29%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	(1,422.88)	(934.02)
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	(16)	-27
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	13.28	12.03
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	25.56%	15.89%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	37.34%	26.90%

Bonfiglioli Transmissions Limited						Comer Industries India Private Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	3,168.00	1,966.87
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	77.06%	71.39%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	22.94%	28.61%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	NA	398.63	200.67
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	12.58%	10.20%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	281.15	125.20

PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	8.82%	6.29%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	(11.64)	(155.36)
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	20	35
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	6.02	9.06
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	29.64%	16.80%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	34.60%	24.88%

Bonfiglioli Transmissions Limited					PMP Drive Systems India Private Limited				
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	NA	1,284.52	960.29
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	NA	80.14%	81.15%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	19.86%	18.85%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	NA	132.65	95.78
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	NA	10.33%	9.97%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	NA	77.54	27.85
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	NA	5.97%	2.89%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	NA	(59.29)	48.93
Cash Conversion Cycle	Days	79	79	80	81	NA	NA	(30)	9
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	NA	3.91	3.09
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	NA	18.25%	7.07%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	NA	23.07%	14.76%

Bonfiglioli Transmissions Limited					ZF WindPower Coimbatore Private Limited				
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	38,320.22	37,088.43	32,933.15
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	33%	37%	36%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	67%	63%	64%

Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	5,747.76	5,348.95	3082.31
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	15.00%	14.42%	9.36%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	3,890.32	3,405.58	2,466.26
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	9.99%	9.00%	7.13%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(7,320.09)	(6,973.75)	(1,832.31)
Cash Conversion Cycle	Days	79	79	80	81	NA	120	98	123
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	5.53	7.30	5.74
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	16.68%	17.30%	14.70%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	21.93%	24.65%	20.01%

		Bonfiglioli Transmissions Limited				Liebherr India Private Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	NA	3,777.60	3,104.60	4,245.40
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	100%	100%	100%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	NA	NA	NA
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	NA	609.10	484.00	940.40
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	NA	16.12%	15.59%	22.15%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	NA	545.50	460.50	821.40
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	NA	13.90%	14.15%	18.32%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(1,436.80)	(1,128.70)	(1,673.20)
Cash Conversion Cycle	Days	79	79	80	81	NA	141	238	110
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	26.58	43.60	64.03
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	20.34%	17.14%	34.74%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	29.16%	23.80%	43.17%

Bonfiglioli Transmissions Limited					SKF India Limited				
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for Six months ended September 30, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	25,922.10	49,199.20	45,701.30	43,049.20
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	90.24%	90.42%	91.34%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	9.76%	9.58%	8.66%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	3,331.10	7,453.60	7,175.90	7,494.10
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	12.85%	15.15%	15.70%	17.41%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	2,237.00	5,659.10	5,518.00	5,248.80
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	8.50%	11.27%	11.83%	12.05%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	(7,994.70)	(7,119.10)	(12,103.50)	(9,435.20)
Cash Conversion Cycle	Days	79	79	80	81	71	93	56	69
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	3.52x	8.54x	8.68x	9.55x
ROE	%	18.58%	23.05%	19.30%	23.41%	8.36%	21.43%	21.97%	24.83%
ROCE	%	25.18%	30.28%	24.54%	27.04%	12.06%	29.78%	27.67%	31.46%

Bonfiglioli Transmissions Limited					Timken India Limited				
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	23,882.03	31,478.10	29,095.41	28,066.10
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	81.63%	79.94%	72.96%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	18.37%	20.06%	27.04%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA

Bonfiglioli Transmissions Limited						Timken India Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	As of and for nine months ended December 31, 2025	As of and for Year ended March 31, 2025	As of and for Year ended March 31, 2024	As of and for Year ended March 31, 2023
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	3,905.78	5,916.07	5,724.06	5,603.58
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	16.35%	18.79%	19.67%	19.97%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	2,565.82	4,473.86	3,921.42	3,907.45
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	10.61%	13.99%	13.29%	13.66%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(3,808.59)	(3,059.99)	(1,311.65)
Cash Conversion Cycle	Days	79	79	80	81	NA	128	146	125
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	2.98x	4.82x	5.07x
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	17.00%	17.61%	21.16%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	19.60%	21.82%	25.75%

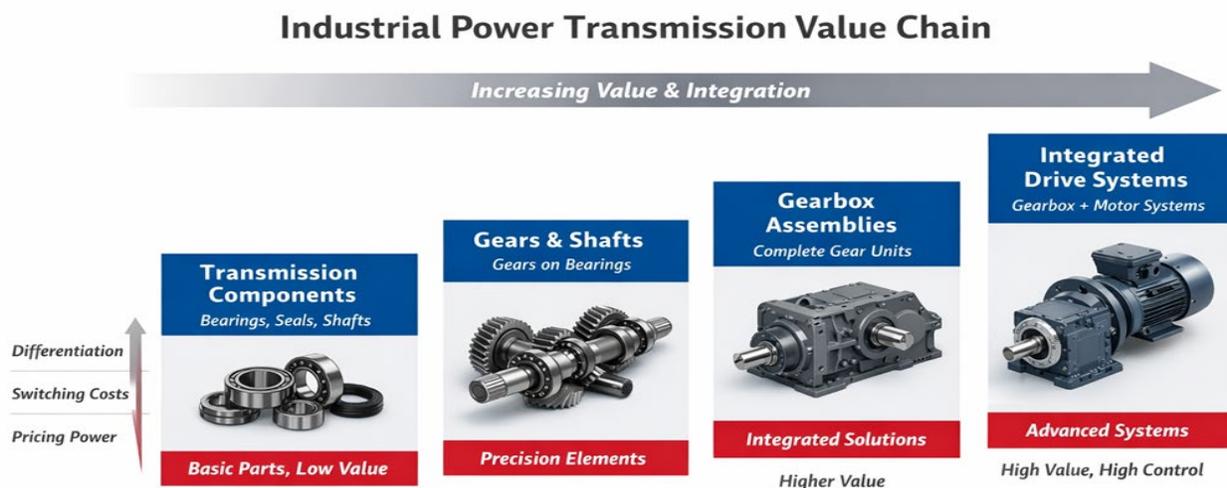
Bonfiglioli Transmissions Limited						Schaeffler India Limited			
Key metrics	Units	As of and for nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022	Nine months ended September 30, 2025	As of and for Year ended December 31, 2024	As of and for Year ended December 31, 2023	As of and for Year ended December 31, 2022
Revenue from Operations	INR Million	14,601.74	18,640.79	16,875.07	15,588.01	69,616.50	82,323.80	72,509.10	68,674.20
Domestic	%	72.94%	74.73%	76.16%	73.59%	NA	87.16%	86.79%	84.19%
Exports	%	27.06%	25.27%	23.84%	26.41%	NA	12.84%	13.21%	15.81%
Revenues from End segments									
Industry & Automation	%	40.98%	41.56%	43.08%	41.36%	NA	NA	NA	NA
Mobility Industry	%	25.26%	23.38%	25.23%	26.87%	NA	NA	NA	NA
Wind Industry	%	31.97%	32.16%	29.69%	29.60%	NA	NA	NA	NA
Others	%	1.79%	2.90%	2.00%	2.17%	NA	NA	NA	NA
EBITDA	INR Million	2,534.77	2,930.61	2,441.18	2,544.40	12,789.00	14,453.60	13,212.00	12,943.90
EBITDA Margin	%	17.36%	15.72%	14.47%	16.32%	18.37%	17.56%	18.22%	18.85%
PAT	INR Million	1,651.89	1,911.23	1,476.98	1,687.54	8,279.90	9,388.60	8,990.20	8,792.10
PAT Margin	%	11.25%	10.21%	8.68%	10.75%	11.72%	11.24%	12.19%	12.66%
Net Debt	INR Million	(1,628.29)	(1,382.04)	(1,400.92)	(1,273.04)	NA	(12,945.00)	(15,345.60)	(14,971.50)
Cash Conversion Cycle	Days	79	79	80	81	NA	84	75	70
Fixed Assets Turnover Ratio	Times	5.81x	7.19x	6.49x	8.76x	NA	3.79x	4.33x	5.41x
ROE	%	18.58%	23.05%	19.30%	23.41%	NA	18.52%	19.78%	22.15%
ROCE	%	25.18%	30.28%	24.54%	27.04%	NA	24.19%	25.73%	27.08%

Note: Source for all tables : Annual Reports , MCA, Private Circle , F&S Analysis

1. *The above line items for Bonfiglioli Transmissions Limited represent results from continuing operations only.*
2. *Our Company's domestic and export revenue mix is calculated as a percentage of revenue from customers broken down by location, while for the listed peers (Elecon Engineering, Shanthi Gears, Timken India, Schaeffler India, SKF India), it is calculated as a percentage of total revenue from operations, and for remaining unlisted peers, it is calculated as a percentage of total domestic and export sales (sales of goods, trading and services)*
3. *EBITDA is calculated as Profit after tax for the period / year plus total tax expense plus finance costs plus depreciation and amortization minus other income. Share of profit from associates and exceptional items have been excluded for all peers.*
4. *EBITDA Margin (in %) is calculated as EBITDA (excluding Other Income) divided by revenue from operations.*
5. *PAT Margin (in %) is calculated as Profit after tax for the period/year divided by Total Income. Share of profit from associates and exceptional items have been excluded for all peers*
6. *Net Debt is calculated as the sum of current borrowings, current lease liabilities, non-current borrowings and non-current lease liabilities minus cash and cash equivalents and bank balances other than cash and cash equivalents*
7. *Cash Conversion Cycle is calculated as receivable days plus inventory days minus payable days (in which receivable days is calculated as receivables divided by revenue from operations multiplied by number of days; inventory days is calculated as inventory divided by cost of goods sold multiplied by number of days; and payable days is calculated as payables divided by purchase of raw materials and components plus stock-in-trade multiplied by number of days; where cost of goods sold is the sum of cost of material consumed, change in inventory, purchases of stock-in-trade; receivables, inventory and payables taken as of end of period/year). Cash conversion for Bonfiglioli Transmissions Limited for nine months ended September 30, 2025, has been calculated using 273 days, being the actual number of days in the reporting period. Cash conversion cycle for SKF India for six months ended September 30,2025, has been calculated using 183 days, being the actual number of days in the reporting period*
8. *Return on Capital Employed is calculated as earnings before interest and tax divided by capital employed; earnings before interest and tax is calculated as profit after tax for the period / year plus total tax expense plus finance costs; capital employed is calculated as the sum of tangible net worth and total debt; tangible net worth is calculated as total equity minus intangible assets minus intangible assets under development minus deferred tax assets (net); total debt is calculated as sum of current borrowings, current lease liabilities, non-current borrowings and non-current lease liabilities*
9. *Return on Equity is calculated as profit after tax for the period/year divided by average of opening and closing total equity for the period / year*
10. *Return on Capital Employed (%), Return on Equity (%) and Fixed Asset Turnover numbers for nine months ended September 30, 2025, or six months ended September 30,2025 have not been annualized*

11.1. Industrial Power Transmission Market

The global industrial power transmission market comprises components and systems that enable the efficient transfer of mechanical and electrical power across industrial equipment. Key product groups include gearboxes (helical, bevel, planetary, worm), geared motors, electric motors, variable-frequency drives (VFDs), bearings, couplings, belts, chains, sprockets, and shafts, as well as select hydraulic and pneumatic systems. These elements support critical industrial applications across manufacturing, process industries, material handling, mobility systems, and energy infrastructure. The market is typically classified into mechanical power transmission (gearboxes, bearings, couplings, belts, chains), electrical power transmission (motors, VFDs, servo drives), and fluid power transmission. Global growth is propelled by automation, energy-efficiency requirements, Industry 4.0 upgrades, and the replacement of ageing industrial assets. Prominent global players include SEW-EURODRIVE, Bonfiglioli, Nord Drive Systems, Flender, ABB, Siemens, SKF, Timken, NTN, NSK, and Schaeffler, which offer integrated drivetrain and motion-control solutions.



1) Transmission Components (Bearings, Seals, Shafts)

This layer represents the transmission components comprising bearings, seals, and basic shafts. Competition is driven by cost efficiency, scale, and supply-chain reach rather than differentiation. Switching costs for customers are low, pricing power is limited, and margins remain thin unless players achieve massive volumes or operational excellence. Quality consistency matters, but the impact of innovation is modest. Key global players include SKF, NSK, and Timken, while India has strong presence from NBC Bearings and SKF India.

2) Gears & Shafts (Precision Elements)

At this stage, value creation shifts from scale to precision engineering, metallurgy, and manufacturing accuracy. Performance parameters such as torque density, noise, efficiency, and durability increasingly

influence purchasing decisions. Customization increases, and suppliers become more deeply embedded in OEM design cycles, raising entry barriers. Margins improve compared to components due to tighter tolerances and application knowledge. Key players include and India's Shanthi Gears, Premium Transmission, and Radicon.

3) Gearbox Assemblies (Integrated Solutions)

Gearbox assemblies represent a decisive shift toward solution selling, in which customers purchase thoroughly tested, application-ready units rather than discrete parts. Reliability, lifecycle cost, certifications, and domain expertise become critical differentiators. Switching costs rise sharply due to qualification cycles, installed base, and service dependencies. OEM relationships and after-sales networks play a significant role in sustaining margins. Global leaders include SEW-Eurodrive, Flender, and Bonfiglioli, with Indian strength from Elecon Engineering and Shanti Gears.

4) Integrated Drive Systems (Gearbox + Motor Systems)

This is the highest-value layer, where mechanical systems converge with motors, electronics, controls, and increasing software. Customers buy performance outcomes -energy efficiency, uptime, diagnostics, and system intelligence rather than hardware. Switching costs are very high due to deep integration into production lines and automation architecture. Pricing power is strongest here, supported by digital features, service contracts, and lifecycle ownership. Global leaders include ABB, Siemens, Danfoss, Bonfiglioli and SEW-Eurodrive, while India is seeing rapid adoption driven by automation-led manufacturing growth.

In India, the industrial power transmission market is expanding rapidly, driven by strong CAPEX growth in steel, cement, mining, chemicals, food processing, FMCG, packaging, water infrastructure, intralogistics, railways, and renewables. Demand encompasses helical/planetary gearboxes, geared motors, VFDs, industrial motors, bearings, couplings, belts, and chains, serving both OEM requirements and a large replacement market. The sector is further supported by Make-in-India policies, increasing localization of drivetrain components, and the emergence of regional manufacturing clusters. Leading domestic manufacturers include Elecon Engineering, Premium Transmission, Shanti Gears, NRB Bearings, NEI (National Engineering Industries), and Bharat Bijlee, complemented by strong India operations of SEW-EURODRIVE, Bonfiglioli, Flender, Nord, ABB, Siemens, SKF, Timken, NTN, NSK, and Schaeffler. Rising automation levels, the shift toward energy-efficient drive systems, and ongoing industrial expansion position India as one of the most attractive and fast-developing power transmission markets globally. Electrification of industrial processes, expansion of intralogistics/warehouse automation, and investments in renewable energy will continue to create sustained multi-year demand for advanced power transmission components.