

# Indian engineering

MAKING INDIA  
AATMANIRBHAR



At Aero India 2023 in Bengaluru, the central theme was self-reliance in defence. Leading the charge was the Tejas Mark 1 fighter (above) and it is already yielding results: India is discussing the sale of 20 Tejas light combat aircraft (LCA) with Egypt and 15 with Argentina

## Engineering is India's largest foreign exchange earner

- The engineering sector is the largest contributor to India's overall exports with a share of 23.9% (during 2022-23) and is its largest foreign exchange earner.
- The engineering sector is the largest of India's industrial sectors and accounts for 27% of the factories and represents 63% of the foreign collaborations (IBEF).
- The sector has a 30% weight in India's Index of Industrial Production (IIP).



## MSMEs BACKBONE OF INDIA'S ECONOMY

- Micro, small and medium enterprises have created 84.23 lakh jobs and have a 31% share in India's manufacturing.
- MSMEs account for 42.7% of the total exports.
- There are 63.4 million MSMEs in India which has increased by a CAGR of 18.5% from 2019 to 2020. More than 50% of the MSMEs are in rural areas (Ministry of MSME Annual Report 2021-22).
- Mandatory procurement by PSUs from MSMEs has increased from 20% to 25%.
- The government's ZED Certification Scheme (zero manufacturing defect and zero environmental impact) guarantees high-quality products.
- India's foundry industry has a turnover of US\$19 billion and export approximately US\$3.1 billion. India has 4,600 units, of which 90% can be classified as MSMEs (source: Indian Institute of Foundrymen).
- India is 11th in production and 8th in the consumption of machine tools in the world. Of the 1,000 units, around 25 in the largescale sector accounts for 70% of the turnover and the rest are in the MSME sector of the industry (Asian Machine Tools Expo, 2022-23).

# INDIA'S ENGINEERING BRILLIANCE

- India is the second-largest producer of coal (PIB), the second-largest steel producer and the fourth-largest of iron ore (PIB). In April-Oct 2022, India produced 71.56 MT of crude steel (IBEF). Domestic availability of raw materials and cost-effective labour drive the growth in the steel sector. Consequently, the steel sector has been a major contributor to India's manufacturing output.
- With a generation of 1559 TWh, India is the third-largest producer and consumer of electricity worldwide.
- India's installed power capacity is 408.71 GW as of 31st October 2022. Renewable power plants, including large hydroelectric plants, constitute 40.6% of India's total installed capacity (IBEF).
- The Indian motorcycle market is the largest in the world, accounting for about 40% of global volume (IIM Bangalore).
- India is the second largest in the world in the category of two-wheelers and the seventh-largest in commercial vehicles (SIAM)
- Eight Centres of Excellence for technology development and nine common engineering facility centres have been established at prominent research and academic institutes across the country. (IBEF)



## ENGINEERING EXPORTS – A SNAPSHOT



- The USA retained its position as the top destination of Indian engineering exports during April-March 2022-23 followed by the UAE and Germany.
- 22 out of 34 engineering panels recorded positive growth during Apr-Mar 2022-23 over the same period last fiscal. The Iron and Steel segment, Copper and Aluminium from the non-ferrous segment, Two- and three- wheelers, Railway Transport, Bicycle parts and Project goods saw major declines.
- In Apr-Mar 2022-23, cumulative engineering exports stood at US\$107.04 billion.
- North America ranked as the numero uno destination with the highest shipment of engineering products from India during April-Mar 2022-23, valued at US\$ 23.5 billion with a share of 21.9% percent of the total engineering exports.

# KEY TRENDS IN THE ENGINEERING SECTOR

## INTERNATIONAL COMPANIES IN INDIA

- With 100 percent FDI through the automatic route being permitted, major international companies such as Cummins, ABB, Alfa Laval, SANY Group and Schneider Electric have invested in the Indian engineering sector.

## MIGRATION TO VALUE-ADDED PRODUCTS

- Indian companies have become more quality conscious and are upgrading their technology to meet global market requirements.
- More than 4,000 firms in the engineering sector have ISO 9000 accreditation. Companies are increasingly focusing on their R&D and product development efforts.

- Diversification of risk
- A number of companies in the engineering sector have diversified, either geographically (mainly to West Asian countries) or sectorally.

## INDUSTRY 4.0. IN INDIA

- India's engineering R&D market is expected to increase at a CAGR of 12 to 13% to achieve USD 63 billion by 2025
- Engineering exports from India, after reaching its all-time high at USD 112.16 billion during fiscal 2021-22, finished fiscal 2022-23 at USD 107.04 billion conceding a decline of 4.57 percent.
- Despite of lower exports in 2022-23, engineering exports surpassed the predicted value of USD 105.82 billion set by Government of India for 2022-23.

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ENGINEERING THE FUTURE

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Gaganyaan, India's first human space mission, is set to launch in 2024. Individuals for astronaut designation have been picked and are undergoing mission-specific training in Bengaluru