

Indian engineering

REDEFINING TECHNOLOGY



India is preparing to launch its first manned space mission by 2022. The Indian Space Research Organisation has said it hopes to deploy its biggest rocket, the GSLV Mark III to transport three Indians into space on Gaganyaan.

Engineering is India's largest foreign exchange earner

Engineering is the largest segment in Indian industry. It contributes 25% to India's total exports in goods and is its largest foreign exchange earner.

- 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 employ over 60 million people and has a 31% share in the total manufacturing output. MSMEs account for 95% of the enterprises in the country and 40% of the total exports.
- The 63.4 million MSME units in India contribute around 6.11% of the manufacturing GDP and 24.63% of GDP from service activities. The sector has consistently maintained a growth rate of over 10%. About 20% of the MSMEs are based out of rural areas.
- Mandatory procurement by PSUs from MSMEs have increased from 20% to 25%.
- The government's ZED Certification Scheme (zero manufacturing defect and zero environmental impact) guarantees high-quality products.
- 20 large and 100 small technology centres (with block chain and artificial intelligence expertise) have been set up in the country and 15 more are coming up.
- India is 10th in production and 8th in the consumption of machine tools in the world. The size of the machine tools market in India in 2016–17 was estimated to be about US\$1.78 billion and the production of machine tools was US\$1.02 billion. More than 160 companies are in the organized machine tools sector, while approximately 400 units are small and medium enterprises (SMEs).

INDIAN ENGINEERING BRILLIANCE

- India is the third largest producer of coal and steel and the fourth largest in iron ore. India is expected to become the second largest steel producing nation in 2018 and its targeted production capacity is 300 million tons by 2025-30.
- India could become the world's first country to use LEDs for all lighting needs by 2019, saving Rs 40,000 crore (US\$6.23 billion) annually. The target: generate two trillion units (kilowatt hours) of energy by 2019.
- The World Bank's Ease of Doing Business ranks India 100th and 29th in terms of Getting Electricity in 2018 – a jump from 137th and 99th in 2015.
- With a production of 1,423 TWh, India is the third largest producer and the third largest consumer of electricity in the world.
- With an estimated 37 million motorcycles/mopeds, India is home to the largest number of motorised two-wheelers in the world.
- The Indian automotive aftermarket is estimated to grow at around 10-15 per cent to reach US\$16.5 billion by 2021. It has the potential to generate up to US\$300 billion in annual revenue by 2026, create 65 million additional jobs and contribute over 12 per cent to India's Gross Domestic Product.
- India overtook USA in 2017 to become the second largest casting producer globally with 11 million tonnes annually. India has over 6,000 foundry companies, most of them MSMEs. Total production of Indian castings and forging industry taken together was 13.5 MMT in 2017-18.

ENGINEERING EXPORTS – A SNAPSHOT

- Indian engineering exports hit a record US\$76.2 billion in 2017-18. In April-December 2018-19, exports grew by about 6% growth compared to the same period last year.
- USA remained the top destination for Indian engineering exports in April-December 2018-19 at US\$8.76 billion. This was 16.75% more its April-December 2017-18 figures.
- Exports to countries such as Nepal, Belgium, and Thailand recorded over 25% growth during the first nine months of fiscal 2018-19 on a year-on-year basis.
- Exports of Electric Machinery recorded a substantial 34.5% growth during April-December 2018-19 over April-December 2017-18.
- As a region, EU remains the largest importer of Indian engineering products with 20.6% share during April-December 2018-19 followed by North America and ASEAN+2 with shares of 19.2% and 12.7%, respectively.

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 the 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 is moving from automation to autonomy where machines speak with each other. A smart factory, armed with data exchange in manufacturing and the Internet of Things (IoT) is the future and experts are calling it revolution Industry 4.0. Reports say the smart factory industry may touch US\$215 billion by 2025 and that no major economy will be left untouched.
- India's engineering R&D market will increase from US\$28 billion in FY18 to US\$ 42 billion by FY22.

EEPCINDIA

ENGINEERING THE FUTURE

EEPC INDIA

Vanijya Bhavan (1st Floor)
International Trade Facilitation Centre
1/1 Wood Street, Kolkata 700 016
Tel: 91-33-2289 0651/52/53
Fax: 91-33-2289 0654
e-mail: eepcho@eepcindia.net
www.eepcindia.org

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The Vande Bharat Express train – also called Train 18 – is India's first semi-high speed train