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Executive summary … (1/2)

- Engineering is one of the largest industrial sectors in India.
- It accounts for 27% of the total factories in the industrial sectors and represents 63% of the overall foreign collaborations.
- Increasing industrialisation and economic development drives growth in the capital goods market.
- Turnover of the capital goods industry was estimated at US$ 92 billion in 2019 and is forecast to reach US$ 115.17 billion by 2025.
- Growth in the power industry is expected to drive growth in the electrical equipment industry.
- Electrical equipment market production is forecast to reach Rs. 500,000 crore (US$ 100 billion) by 2022 from Rs. 175,000 crore (US$ 27.3 billion) in 2017-18.
- Index of industrial production (IIP) for electrical equipment industry stood at 105.5 in FY20.
- Engineering R&D (ER&D) revenues are projected to reach US$ 42 billion by FY22F from US$ 36 billion in FY19*.

Note: *including product engineering services, F-Forecast,
Source: Dept. of Heavy Industries, India Electrical and Electronics Manufacturer Association, NASSCOM, Business Today
With infrastructure investment set to go up, demand for construction equipment will rise further.

By 2022F, construction equipment sales are forecast to reach 110,815 units.

The Indian telecom equipment market is likely to increase owing to the government’s Rs. 12,195 crore (US$ 1.6 billion) production-linked incentive scheme approved for telecom gear manufacturing in February 2021.


Increased production of Central Public Sector Enterprises (CPSEs).

Production by CPSEs under Department of Heavy Industries (DHI) increased to Rs. 39,720.24 crore (US$ 5.68 billion) in FY20 from Rs. 33,526.15 crore (US$ 5.20 billion) in FY18.

Note: DHI - Dept. of Heavy Industries, A - Actual, T - Target, E - Estimate
Source: Booz and Company, Ministry of Heavy Industries and Public Enterprise, DGCIS, Off highway Research, News Articles
2. ATTRACTIVE OPPORTUNITIES

- Nuclear capacity expansion to provide significant business opportunities in the electrical machinery industry.
- In 2019, Government had announced to invest Rs. 100 lakh crore (US$ 1.5 trillion) in infrastructure over the next five years.
- Infrastructure investment is expected to increase to Rs. 50.2 trillion (US$ 778.90 billion) during FY18-22E and will drive demand for capital goods.
- The government has also proposed to grant Rs. 10 million (US$ 0.14 million) for MSME within 59 minutes through the online portal.

1. ROBUST DEMAND

- Capacity creation in sectors such as infrastructure, power, mining, oil and gas, refinery, steel, automotive and consumer durables is driving demand in the engineering sector.
- Rising demand for electrical and construction equipment.

3. POLICY SUPPORT

- De-licensed engineering sector; 100% FDI permitted.
- In March 2020, the government approved the ‘Production Incentive Scheme’ (PLI) for large-scale manufacturing of electronics.
- In November 2020, the government set up a 22-member inter-ministerial committee for strengthening India’s capital goods sector.

4. INVESTMENTS

- Comparative advantage vis-a-vis peers in terms of manufacturing costs, market knowledge, technology and creativity leading to higher investment.
- Highly organised sector - dominated by large players employing over 4 million skilled and semi-skilled labour.

Notes: FDI - Foreign Direct Investment, FY - Indian Financial Year (April - March), US$ - US dollar, ^CRISIL Infrastructure Yearbook 2017
Source: Government of India, Ministry of Heavy Industries, Department for Promotion of Industry and Internal Trade(DPIIT), India Electrical and Electronics Manufacturer Association
Market Overview
Two major segments

- Engineering
  - Heavy engineering
    - Heavy electrical
    - Heavy engineering and machine tools
  - Light engineering
    - Automotive
    - Low technology products
    - High technology products
### Machine tools
- The Indian machine tool production and consumption were estimated at Rs. 6,150 crore (US$ 872.46 million) and Rs. 15,670 crore (US$ 2.22 billion), respectively, in 2019-20.
- This segment churns out basic machinery for all the major industries and determine competitiveness in other sectors such as automobiles, heavy electrical and defence.
- In November 2020, Larsen & Toubro delivered the first hardware—a booster segment—for the Gaganyaan Launch Vehicle to ISRO, ahead of schedule.

### Textile machinery
- It comprises over 1,446 units involved in churning out machinery and components. Another 600 units manufacture complete machinery.
- Market size of textile machinery stood at US$ 4.85 billion in 2018 and is expected to reach US$ 5.2 billion by 2021.
- The industry produced total machinery worth Rs. 6,900 crore (US$ 1,070.60 million) in FY19 including spares and accessories worth Rs. 920 crore (US$ 142.75 million).
- The upcoming new textile policy (in draft version as of February 2021) is likely to focus on setting up manufacturing hubs for textile machineries with the help of FDIs.

### Cement machinery
- Cement plants based on raw mill grinding, pre-processing and cement grinding process technology (for capacities up to 10,000 TPD) are being manufactured in India.
- Currently, 100% FDI is allowed under the automatic route.

*Source: Indian Machine Tool Manufacturers' Association, Textile Machinery Manufacturing Association, Cabinet Committee on Infrastructure report, ITMACH India*
4. **Material handling equipment**
   - Material handling equipment have four categories: storage and handling equipment, engineered systems, industrial trucks and bulk material handling.
   - With around 50 units in the organised sector, the material handling equipment industry is engaged in the setting up of coal/ore/ash handling plants and manufacturing associated equipment.
   - with research labs across the country.

5. **Plastic processing machinery**
   - There are 11 major and nearly 200 small and medium manufacturers of plastic processing machinery in India.
   - Demand for plastic processing machinery is expected to increase from 12,760 in FY20E to 13,740 in FY21P and 14,770 in FY22P.
   - Out of the total machinery demand in 2020-21P, injection molding machinery is expected to comprise 10,000 units, extrusion machines to comprise 2,770 units, and blow molding machines to comprise 970 units.

6. **Process plant equipment**
   - Over 200 manufacturers are engaged in the production of process plant machinery.
   - Nearly 65% of the total manufacturers are small and medium enterprises.

7. **Earth moving, construction and mining equipment**
   - Currently, 20 large and global manufacturers and 200 small and medium manufacturers operate in the industry.
   - The construction equipment industry’s size is estimated to reach US$ 5 billion by FY21 from around US$ 4.3 billion in FY18.
   - In January 2021, Cummins India announced that it will use the new 4.5 litre engine system to commence production of wheeled construction equipment at its Pune plant in February 2021.

*Note: Information is as per latest available data, E - Estimated, P-Projected*

*Source: Ministry of Heavy Industries and Public Enterprise Annual Report 2018-19, PLEX Council, Plastindia Foundation*
1. Casting and forging

- India overtook US to become the second largest casting producer globally. Production of castings in India stood at 12.05 MT in FY19.
- Turnover of the Indian forging industry grew nearly 12% y-o-y to Rs. 35,000 crore (US$ 5.43 billion) in FY19.

2. Medical and surgical equipment

- The medical and surgical equipment industry manufactures a wide range of medical equipment, such as ECG and X-ray scanners.
- The indigenous industry caters to 40% of demand, while the remaining is met through imports.
- Export of medical and scientific instruments reached US$ 36 billion in FY20.

3. Industrial fasteners

- The fasteners industry in India can be classified into high tensile and mild steel fasteners.
- Mild steel fasteners are primarily manufactured by the unorganised sector, while the high tensile steel segment is dominated by the organised sector.

Source: Ministry of Heavy Industries and Public Enterprise Annual Report, Association of Indian Forging Industry (AIFI), IVG Research
2. TURBINES AND GENERATOR SETS

- As per the latest data available, the industry manufactures various turbines in the range of 800-7000 MW per annum and generators ranging from 0.5 KVA to (ones even higher than) 25000 KVA.

1. BOILERS

- As per the latest data available, the Indian boiler industry has the capability to manufacture boilers with super critical parameters up to 1000 MW unit size.
- The industry’s market size reached US$ 12.8 billion in 2018 and is expected to reach US$ 20 billion in 2026.
- Export for boilers stood at US$ 29.68 million in FY20.

3. TRANSFORMERS

- A whole range of power and distribution transformers, including special type of transformers required for furnaces, electric tracts and rectifiers, are manufactured in India.
- In January 2021, Bharat Heavy Electricals Limited won an order from Nuclear Power Corporation of India Limited to supply 32 reactor header assemblies to India’s indigenously-developed 700 MW pressurised heavy water reactors (PHWRs), which will be set up at four different locations across the country.

4. SWITCHGEAR AND CONTROL GEAR

- The market size of high voltage switchgear (including panels) and low voltage switchgear (including panels) stood at Rs. 4,793 crore (US$ 679.95 million).

Notes: MW - Mega Watt, KVA - KiloVolt - Ampere
Source: Ministry of Heavy Industries and Public Enterprise Annual Report, News Articles
Automotive - key segments

Passenger and utility vehicles

- Total production in the automobiles sector reached 26.36 million units in FY20; of this, 4.7 million units are exported.
- Domestic automobiles sales increased at a CAGR of 1.29% between FY16-FY20 with 21.55 million vehicles being sold in FY20.
- Automobile export reached 4.77 million vehicles in FY20, implying a CAGR of 6.94% during FY16-FY20.
- In the automobile sector, cumulative FDI equity inflows stood at ~US$ 24.62 billion between April 2000 and September 2020.
- As per Federation of Automobile Dealers Associations (FADA), PV sales in December 2020 stood at 271,249 units, compared with 218,775 units in December 2019, recording a 23.99% surge.
- In January 2021, Tesla, the electric car maker, set up a R&D centre in Bengaluru and registered its subsidiary as Tesla India Motors and Energy Private Limited.

Auto components

- The auto components industry has more than 500 companies in the organised sector and about 10,000 entities in the unorganised sector.
- The automotive components industry is expected to increase to US$ 200 billion by 2026.
- Exports of auto components declined by 23.6% to Rs.39,003 crore (US$ 5.2 billion) in the first-half of 2020-21, from Rs. 51,028 crore (USD 7.4 billion) in the first-half of 2019-20.

Agriculture machinery

- Agricultural tractors dominate the agriculture machinery sector.
- Indian tractor industry is the world’s largest and accounts for one-third of the global production.
- Indian tractors are exported to the Malaysia, Turkey and other countries.
- As the cost of tractors manufactured in India is the least in the world, there is a lot of scope for enhancing export of tractors from the country.
- In 2020, sale of tractors stood at 880,048 units, with the export of 77,378 units.

Source: Ministry of Heavy Industries and Public Enterprise Annual Report, SIAM, Cabinet Committee on Infrastructure report, ACMA, News Articles
Robust growth in India’s engineering export over the years

- Engineering exports include transport equipment, capital goods, other machinery/equipment and light engineering products such as castings, forgings and fasteners.
- In FY16-FY20, engineering exports from India expanded at a CAGR of 6.68%.
- Engineering exports were recorded at US$ 75.90 billion in April (FY20) and reached US$ 60.25 billion in January (FY21).
- Export of engineering goods is expected to reach US$ 200 billion by 2030.
- 100% FDI is allowed through the automatic route, with major international players looking for growth opportunities to enter the Indian engineering sector.

Notes: FY- Fiscal Year, ^CAGR is up to FY20, *- until January 2021
Source: Reserve Bank of India, Engineering Export Promotion Council, Engineering Export monitoring report, Ministry of Commerce and Industry Estimates
Key categories of engineering exports

- Engineering export from India can be divided into eight major categories.
  - Out of the eight categories, Iron and Steel and products made from Iron and Steel formed a substantial share (21.32%) of the total engineering export as of FY20.
- Automobiles (19.96%) and Industrial Machinery (17.81%) also contributed a major share to total export.

Source: Engineering Export Promotion Council
<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues* (FY20)</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larsen and Toubro</td>
<td>Rs 1,41,175.50 crore (US$ 20.03 billion)</td>
<td>Engineering and construction, cement, electrical and electronics</td>
</tr>
<tr>
<td>Bharat Heavy Electricals Ltd</td>
<td>Rs 20,491 crore (US$ 2.91 billion)</td>
<td>Power generation, transmission, transportation</td>
</tr>
<tr>
<td>ABB India Ltd</td>
<td>Rs 1,624.81 crore US$ 230.50 million</td>
<td>Transformers, switch gears, control gears</td>
</tr>
<tr>
<td>CG Power and Industrial Solutions Ltd.</td>
<td>Rs 5,158.01 crore (US$ 731.71 million)</td>
<td>Power generation and transmission equipment</td>
</tr>
</tbody>
</table>

Note: Exchanges rates used are average of the period, provided on page 44, *Consolidated Total Revenue
Source: Company Annual reports, News Articles, Money control, Bloomberg
### Key players ... (2/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues* (FY20)</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineers India Ltd</td>
<td>Rs 3,492.07 crore (US$ 495.40 million)</td>
<td>Highways and bridges, mass rapid transport systems construction, specialist materials manufacturing</td>
</tr>
<tr>
<td>Kirloskar Oil Engines Ltd</td>
<td>Rs 3,421.96 crore (US$ 485.45 million)</td>
<td>Engines, engine bearings and valves, grey iron casting</td>
</tr>
<tr>
<td>Cummins India Ltd</td>
<td>Rs 5,062 crore (US$ 718.12 million)</td>
<td>Power generation, construction and mining equipment, fire pumps and cranes, compressors</td>
</tr>
<tr>
<td>Thermax Ltd</td>
<td>Rs 5,731.31 crore (US$ 813.07 million)</td>
<td>Boilers, heaters, air pollution and purification, absorption cooling</td>
</tr>
<tr>
<td>BGR Energy Systems Ltd</td>
<td>Rs 2,734.49 crore (US$ 387.93 million)</td>
<td>Boilers, turbines, generators</td>
</tr>
</tbody>
</table>

*Note: Exchanges rates used are average of the period, provided on page 44, *Consolidated Total Revenue

*Source: Company Annual Report, News Articles*
Recent Trends and Strategies
Notable trends in the industry

1. Diversification
   - Several companies in the engineering sector have diversified, either geographically (mainly to Middle Eastern countries) or sector-wise.
   - BHEL plans to foray into Ukraine.
   - Simplex Infra has moved to the Middle East.
   - Larsen and Toubro (L&T) has diversified into power equipment manufacturing.
   - Thermax entered the power utility segment.
   - Reliance Industries diversified into telecom, power generation, fertiliser and retail sectors.

2. Entry of international companies
   - With 100% FDI allowed through the automatic route, major international players such as Cummins, GE, ABB and Alfa Laval have entered the Indian engineering sector due to growth opportunities.
   - In June 2019, Joysons Safety Systems (JSS) announced merger of its two joint ventures (JVs) in India into a tri-party JV called as Joyson Anand Abhishek Safety Systems Private Limited (JAASS).

3. Partnership
   - Companies across this sector are partnering with technology providers to enhance their capabilities and sustain the market uncertainties.
   - In December 2020, Schindler partnered with L&T Technology Services Limited (LTTS) to enhance its innovative digital engineering capabilities. Under this partnership, LTTS would provide services & solutions for product development, innovation and engineering that will help Schindler accelerate its digitisation and connectivity initiatives.

Source: Sutherland Research, News Sources
Strategies adopted

1. Leveraging Indian universities
   - In November 2020, the NHAI announced an initiative under which prominent technical institutes, such as IITs, would voluntarily adopt nearby stretches of National Highways under institutional social responsibility. A total of 18 IITs (including IIT Roorkee, IIT Bombay, IIT Varanasi, IIT Guwahati, IIT Kanpur and IIT Kharagpur), along with 26 National Technology Institutes (NITs) and 190 other established engineering colleges, have agreed to collaborate.

2. Operational efficiency
   - Companies are understanding the need of operations management following the crisis period.
   - Good set of operational structure in place helps them target future business opportunities with better precision.
   - There is emphasis on human resource management, automation and higher labour productivity.

3. Expansion of trade agreement
   - In December 2021, the Government of India announced that they are in talks with Argentina and Brazil to ink trade pacts with the two largest markets in South America, as it seeks to strengthen trade with the region.

4. Skill improvement
   - In December 2020, the Ministry of Skill Development and Entrepreneurship, Government of India, along with the Ministry of National Education and Youth, Government of France and Schneider Electric inaugurated the first Centre of Excellence (CoE) for skill development in the power sector in Gurugram, India. The CoE will focus on creating a pool of highly skilled trainers and assessors for further training to increase employability of aspirants in the field of Electricity, Automation and Solar Energy Sectors.

5. PSU stake sale
   - In February 2020, the government announced plans to sell 96% PSUs to private companies and keep only 12 PSUs under its control.

Source: KPMG Report on Engineering sector
Growth Drivers
Growth drivers for the Indian engineering sector

**POLICIES**
- De-licensing
- Reduction in tariff and customs
- Supportive Government policies leading to higher investments

**DEMAND-SIDE DRIVERS**
- Capacity addition for power generation
- Increase in infrastructure spending
- Rise in export, which touched US$ 76.28 billion in FY20

**INVESTMENT**
- Increasing FDI inflows
- Higher M&A
- Easy credit facilities for manufacturing companies
India’s energy requirement is expected to grow from 1,290.02 in FY20 to 1,566 BU in FY22 and further to 2,047 BU in FY27.

The growing energy requirement will require enhancement of installed power capacity. As per the National Electricity Plan 2018, the total installed power capacity is projected to increase from 356.10 GW in FY19 to 479.42 GW in FY22P.

The increase in installed power capacity is expected to boost demand for power generation and transmission equipment.

**Notes:** BU - Billion Unit, GW - Giga Watt, P - Projected; Conventional sources includes Thermal, Nuclear and Hydro Power; Renewable sources includes Small Hydro, Wind, Solar and Bio-Power

**Source:** CEA, Ministry of Power Annual Report, National Electricity Plan 2018
In the Union Budget 2021, the government has given a massive push to the infrastructure sector by allocating Rs. 233,083 crore (US$ 32.02 billion) to enhance the transport infrastructure.

The government expanded the ‘National Infrastructure Pipeline (NIP)’ to 7,400 projects. ~217 projects worth Rs. 1.10 lakh crore (US$ 15.09 billion) were completed as of 2020.

As per Economic Survey 2018-19, India needs to spend US$ 200 billion on infrastructure to be a US$ 10 trillion economy by 2032.

Government of India has also renewed its focus on development of infrastructure of the country.

With development of infrastructure, demand for construction equipment and other machinery is expected to rise significantly.

India needs investment worth Rs. 235 trillion (US$ 3.36 trillion) in infrastructure in the next decade (2020-29).

**Note:** RE - Revised Estimates, E - Estimated

**Source:** Office of the Economic Adviser, CRISIL Infrastructure Yearbook 2018
India has one of the largest road networks (5.48 million kms) comprising expressways, national, state highways, districts and village roads.

In 2021-22, the Indian government has fixed a target to construct 12,000km of National Highways. The daily average length of the national highways constructed during 2020-21 is to the tune of 29.81 km per day.

Demand for related machinery in building roads has increased significantly due to large-scale public and private investment in roads.

Government of India allocated over Rs. 80,250 crore (US$ 12.01 billion) for upgradation of 125,000 kms of rural roads under phase-III of the Pradhan Mantri Gram Sadak Yojana.

The Infrastructure Supporting Industries Index (part of the wider Index of Industrial Production) comprises eight core industries, including coal, crude oil, natural gas, petroleum refinery products, fertilisers, steel, cement and electricity. This index rose to 131.2 in FY19, implying a growth rate of 4.38% in the year.

Source: National Highway Authority of India, Ministry of Road Transport and Highways
**Strong policy support crucial for the sector…(1/2)**

**1. Make in India**
Under the Make in India initiative, the central Government approved the policy giving preference to domestically produced steel and iron products for Government procurement in May 2017.

**2. Special Economic Zones (SEZs)**
- The Government approved a significant number of SEZs across the country for the engineering sector.
- Delhi Mumbai Industrial Corridor (DMIC) is being developed across 7 states and is expected to bolster the sector.

**3. Special Economic Zones (SEZs)**
- Governmental infrastructure projects such as Golden Quadrilateral and the North-South and East-West corridors fuelled growth in the engineering sector.

**4. Tariffs and custom duties**
- The Government has eliminated tariff protection on capital goods.
- It has reduced custom duties on a range of engineering equipment.

**5. De-licensing**
- The engineering industry has been de-licensed and 100% FDI has been permitted in the sector.
- Foreign technology agreements are allowed under the automatic route.

*Notes: GW - Giga Watt*
*Source: DHI Annual Report, Ministry of Power Annual Report, Make in India*
### Budgetary support
- In Union Budget 2019-20, the Government announced to invest Rs. 10,000,000 crore (US$ 1.5 trillion) in infrastructure over the next five years.

### Higher allocation to the defence sector
- India’s defence budget for 2021-22 is Rs. 478,195.62 crore (US$ 65.64 billion), 18.75% higher than the budget estimates 2020.21.
- Total allocation for defence services and other organisations/departments (excluding defence pension) under the Ministry of Defence for FY22 is Rs. 362,345.62 crore (US$ 49.74 billion), an increase of Rs. 24,792.62 crore (US$ 3.40 billion) over FY21.

### Investment on building internal and external infrastructure in Smart Cities
- The Government has planned to build 100 smart cities by allocating US$ 8.29 billion. The plan would need more PPP’s for better and fast execution.

### Interministerial committee
- In November 2020, to strengthen the capital goods (CG) sector, the government has set up a 22-member interministerial committee through initiatives, which will help this sector to effectively contribute to the national target of achieving a US$ 5 trillion economy and a US$ 1 trillion manufacturing sector.

### New export policy in Uttar Pradesh
- The policy is aimed at promoting export growth and competitiveness, providing export subsidiaries with the required export-related assistance and services and creating & improving technical and physical infrastructures to improve exports from state industries.
- The Export Policy Uttar Pradesh 2020-25 focusses on crafts, agriculture and processed food items, engineering goods, handcrafts and textiles, leather goods, carpets and rugs, glass and ceramic goods, wood products, sports goods, defence goods, utilities, education, tourism, IT & ITES and travel & logistics for medical value.

**Notes:** Capex - Capital Expenditure, JNNURM - Jawaharlal Nehru National Urban Renewal Mission
**Source:** Union Budget FY14, Union Budget 2018-19 and 2019-20
### Special economic zones (SEZs) to promote exports ... (1/3)

<table>
<thead>
<tr>
<th>Developer</th>
<th>Location</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh Industrial Infrastructure Corporation Limited (APIIC)</td>
<td>Ranga Reddy, Andhra Pradesh</td>
<td>Aerospace and precision engineering</td>
</tr>
<tr>
<td>Deccan Infrastructure and Land Holdings Ltd</td>
<td>Nalgonda, Andhra Pradesh</td>
<td>Light engineering</td>
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<tr>
<td>M/s Essar Hazira SEZ</td>
<td>Hazira, Gujarat</td>
<td>Engineering</td>
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<tr>
<td>Gujarat Industrial Development Corporation Ltd (GIDC)</td>
<td>Gandhinagar, Gujarat</td>
<td>Electronic products</td>
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<tr>
<td>N.G. Realty Pvt Ltd</td>
<td>Ahmedabad, Gujarat</td>
<td>Engineering</td>
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<td>M/s Synefra Engineering and Construction Ltd</td>
<td>Vadodara, Gujarat</td>
<td>High-tech engineering and related products</td>
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<td>E. Complex Pvt Ltd</td>
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<td>Dishman Infrastructure Ltd</td>
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<td>Ansal Properties and Infrastructure Ltd</td>
<td>Sonepat, Haryana</td>
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<td>Ansal Kamdhenu Engineering SEZ Ltd</td>
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<td>Karnataka Industrial Areas Development Board</td>
<td>Shivamogga, Karnataka</td>
<td>Engineering</td>
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<tr>
<td>Suzlon Infrastructure Ltd</td>
<td>Mangaluru, Karnataka</td>
<td>Port-based for high-tech engineering products</td>
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**Source:** SEZ India
### Special economic zones (SEZs) to promote exports ... (2/3)

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<thead>
<tr>
<th>Developer</th>
<th>Location</th>
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<td>Quest Machining and Manufacturing Pvt Ltd</td>
<td>Belagavi, Karnataka</td>
<td>Auto, aerospace and industrial engineering</td>
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<tr>
<td>Viraj Profiles Ltd</td>
<td>Thane, Maharashtra</td>
<td>Stainless steel engineering products</td>
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<td>Navi Mumbai SEZ Pvt Ltd</td>
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<td>Light engineering</td>
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<td>Maharashtra Industrial Development Corporation (MIDC)</td>
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<td>Jajpur, Orissa</td>
<td>Metallurgical engineering</td>
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<td>Vividha Infrastructure Pvt Ltd</td>
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<td>Mahindra Worldcity (Jaipur) Ltd</td>
<td>Jaipur, Rajasthan</td>
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*Source: SEZ India*
Special economic zones (SEZs) to promote exports ... (3/3)

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<thead>
<tr>
<th>Developer</th>
<th>Location</th>
<th>Product</th>
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<tbody>
<tr>
<td>Aspen Infrastructures Ltd</td>
<td>Vadodara, Gujarat</td>
<td>High-tech Engineering products and related Services</td>
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<tr>
<td>Aspen Infrastructures Ltd</td>
<td>Karnataka</td>
<td>High-tech Engineering products and related Services</td>
</tr>
<tr>
<td>Quest SEZ Development Private Ltd</td>
<td>Belagavi, Karnataka</td>
<td>Precision Engineering Product</td>
</tr>
<tr>
<td>Khed Economic Infrastructure Limited (Bharat Forge Ltd)</td>
<td>Pune, Maharashtra</td>
<td>Engineering and Electronics</td>
</tr>
<tr>
<td>State Industries Promotion Corporation of Tamil Nadu</td>
<td>Vellore, Tamil Nadu</td>
<td>Engineering</td>
</tr>
<tr>
<td>State Industries Promotion Corporation of Tamil Nadu</td>
<td>Erode, Tamil Nadu</td>
<td>Engineering</td>
</tr>
<tr>
<td>Aspen Infrastructures Ltd</td>
<td>Coimbatore District, Tamil Nadu</td>
<td>High-tech Engineering products and related Services</td>
</tr>
</tbody>
</table>

Source: SEZ India
Inflow of foreign investment; rise in M&A activity ... (1/2)

- According to The United Nations Conference on Trade and Development (UNCTAD), India ranked among the top 10 recipients of Foreign Direct Investment (FDI) in 2019, attracting US$ 49 billion in inflows, a 16% increase from the previous year, driving FDI growth in South Asia.

- FDI inflows for miscellaneous mechanical and engineering sectors stood at US$ 3,650.78 million between April 2000 and September 2020.

- The Government’s increasing focus on attracting foreign investors in manufacturing and infrastructure is likely to boost FDI in the sector.

Source: Department for Promotion of Industry and Internal Trade (DPIIT), News Articles
## Inflow of foreign investment; rise in M&A activity ... (2/2)

### M&A deals

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Type</th>
<th>Acquisition date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pidilite Industries Ltd.</td>
<td>Huntsman Advanced Materials Solutions Pvt Ltd (HAMSPL)</td>
<td>Acquisition</td>
<td>October 2020</td>
</tr>
<tr>
<td>Siemens India</td>
<td>C&amp;S Electric</td>
<td>Acquisition</td>
<td>January 2020</td>
</tr>
<tr>
<td>Shinryo Corporation</td>
<td>Suvidha Engineers India</td>
<td>Acquisition</td>
<td>October 2018</td>
</tr>
<tr>
<td>Schneider Electric and Temasek</td>
<td>Larsen &amp; Toubro’s Electrical &amp; Automation business</td>
<td>Acquisition</td>
<td>May 2018</td>
</tr>
<tr>
<td>Adani Transmission</td>
<td>Reliance Infrastructure (Mumbai Power business)</td>
<td>Acquisition</td>
<td>March 2018</td>
</tr>
<tr>
<td>Axiscades</td>
<td>Mistral Solutions</td>
<td>Acquisition</td>
<td>November 2017</td>
</tr>
<tr>
<td>ABB Group</td>
<td>GE Industrial Solutions</td>
<td>Acquisition</td>
<td>September 2017</td>
</tr>
<tr>
<td>Hero Electronix</td>
<td>Spectrum Integrated Technologies and Lynxemi Pvt Ltd</td>
<td>Acquisition</td>
<td>August 2017</td>
</tr>
<tr>
<td>Warburg Pincus</td>
<td>Tata Technologies Ltd.</td>
<td>Minority Stake</td>
<td>June 2017</td>
</tr>
<tr>
<td>Havells India</td>
<td>Lloyd Electricals - consumer durables unit</td>
<td>Acquisition</td>
<td>February 2017</td>
</tr>
<tr>
<td>Birla Corp. Ltd</td>
<td>Reliance Cement Company Pvt. Ltd.</td>
<td>Acquisition</td>
<td>July 2016</td>
</tr>
<tr>
<td>Fairfax India Holdings Corp. and</td>
<td>Bangalore International Airport Ltd.</td>
<td>Minority stake</td>
<td>March 2016</td>
</tr>
<tr>
<td>Fairfax Financial Holdings Ltd</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Enfield</td>
<td>Harris Performance company</td>
<td>Acquisition</td>
<td>March 2016</td>
</tr>
<tr>
<td>Balasore Alloys Ltd - Ispat Group</td>
<td>Rohit Ferro-Tech</td>
<td>Acquisition</td>
<td>May 2015</td>
</tr>
<tr>
<td>Reliance Infrastructure</td>
<td>Pipavav Defence and Offshore Engineering</td>
<td>Majoriy stake</td>
<td>March 2015</td>
</tr>
<tr>
<td>Systra S.A</td>
<td>SAI Consulting Engineers</td>
<td>Majority stake</td>
<td>December 2014</td>
</tr>
<tr>
<td>Tractors India Pvt Ltd</td>
<td>Caterpillar Global Mining LLC</td>
<td>Acquisition</td>
<td>February 2014</td>
</tr>
</tbody>
</table>

*Note:* *Acquired by its German subsidiary - Geometric Europe GmbH*

*Source:* Grant Thornton, Thomson Banker, VC circle, News Articles
Opportunities
Growth opportunities in the engineering sector … (1/2)

1. Defence sector

- Allocation to the defence sector was raised to US$ 65.37 billion under Union Budget 2020-21. In addition, Make in India policy is being carefully pursued to achieve greater self-sufficiency in the area of defence equipment including aircrafts.

- Government initiatives, such as allowing private sector participation, have been reinforced by opening the sector to 100% FDI (49% through automatic route), and its offset policy is expected to enhance private sector (including SME) participation.

- Ministry of Defence has eased its procurement norms, making it easier for Indian companies and start-ups to offer equipment and other products to the Indian armed forces.

2. Auto components

- Domestic auto component production is projected to grow 10-12% annually till FY23 to Rs. 5,223 billion (US$ 81.04 billion).*

- In auto components sector, 100% FDI is allowed under the automatic route.

- The Government announced Rs. 150,000 (US$ 2,250) income tax deduction on interest paid on loans for purchase of electric vehicles in the Union Budget 2019-20.

3. Civil nuclear sector

- In January 2021, India’s nuclear power installed capacity was 6.78 GW and ~3,300 MW of nuclear capacity is expected to be commissioned by 2022.

- It represents business opportunity worth US$ 312 million for the manufacturing industry.

Notes: GW - Giga Watt, SME - Small and Medium Enterprises, CY - Calendar Year, *As per CRISIL Research
Source: Sutherland Research, Crisil, News Source
4. Power transmission and distribution (T&D)

- T&D expenditure is set to increase on growth in power generation and privatisation of distribution.
- In June 2019, the government launched US$ 5 billion of transmission-line tenders in phases to reach 175 GW target by 2022.

5. Machine tools

- Demand for machine tools from the capital goods sector (especially automobile and textile industries) is projected to remain high.
- Considering the industry's demand for higher productivity, superior precision, accuracy and low-cost manufacturing solutions, Computer Numerically Controlled (CNC) machine tools are set to be in greater demand.

6. Material handling equipment

- The material handling equipment sector is expected to gain from robust demand from steel, power, mineral and other infrastructure industries.
- The ‘Make in India’ initiative and government's focus on ease of doing business is likely to present several opportunities in material handling equipment sector.
- The Indian market for material handling equipment accounted for ~13% share of the country's construction equipment industry in 2019.

Note: CKM- Circuit Kilometres
Source: Sutherland Research
India’s electrical equipment industry has witnessed significant growth in the last few years.

Major electrical equipment’s’ manufactured include electric power equipment and parts, electric wires and cables, boilers and parts and transmission line towers and parts.

Note: T&D - Transmission and Distribution, BTG - Boilers, Turbine, Generator

Source: Indian Electrical and Electronics Manufacturers Association, Department of Heavy Industries, DGCIS
India’s electrical equipment industry witnessed a record seven-year high growth of 12.8% in FY19 on the back of increase in Government spending on rural and household electrification schemes and program to improve power distribution.

The generation equipment (BTG) segment is projected to grow to US$ 25 billion by FY22.

Production of generation equipment (boilers, turbines and generators) in India is estimated to be around US$ 5.7 billion by 2022.

Demand for generation equipment is projected to rise to US$ 25.1 billion in FY22 from US$ 3.3 billion in FY16.


Note: BTG - Boiler, Transmission and Generation, ^CAGR is up to FY19
Source: Indian Electrical and Electronics Manufacturers Association
India’s Earthmoving and Construction Equipment (ECE) industry has enjoyed strong growth over the last seven years due to rapid economic development.

The organised construction sector in India (for example, roads, urban infrastructure) accounts for approximately 55% of the ECE industry. Mining, irrigation and other infrastructure segments (power, railways) account for the remaining.

Earthmoving sector is continuing to make headways and command a share of 56.2%, followed by concrete equipment and material handling equipment.

Construction equipment industry stood at US$ 4.3 billion in value with recorded sales of 98,204 units in 2018. Sales are forecast to increase to 110,815 in 2022*.

### Expected unit sales by 2021

<table>
<thead>
<tr>
<th>Equipment</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2022*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backhoe loaders</td>
<td>21,192</td>
<td>29,847</td>
<td>32,728</td>
<td>45,000</td>
<td>45,000</td>
</tr>
<tr>
<td>Crawler excavators</td>
<td>11,013</td>
<td>16,491</td>
<td>20,062</td>
<td>24,000</td>
<td>34,000</td>
</tr>
<tr>
<td>Mobile compressors</td>
<td>3,542</td>
<td>4,678</td>
<td>5,108</td>
<td>5,200</td>
<td>5,500</td>
</tr>
<tr>
<td>Mobile cranes</td>
<td>4,863</td>
<td>5,492</td>
<td>7,749</td>
<td>11,000</td>
<td>11,000</td>
</tr>
<tr>
<td>Compaction equipment</td>
<td>2,771</td>
<td>3,865</td>
<td>4,765</td>
<td>5,500</td>
<td>5,000</td>
</tr>
<tr>
<td>Wheeled loaders</td>
<td>2,097</td>
<td>2,206</td>
<td>2,781</td>
<td>3,300</td>
<td>3,500</td>
</tr>
<tr>
<td>Crawler dozers</td>
<td>391</td>
<td>435</td>
<td>534</td>
<td>450</td>
<td>600</td>
</tr>
</tbody>
</table>

*Forecast

Source: NBM and CW
Key Industry Contacts
### Key Industry Contacts

<table>
<thead>
<tr>
<th>Agency</th>
<th>Contact Information</th>
</tr>
</thead>
</table>
| **National Automotive Testing and R&D Infrastructure Project (NATRiP)** | NBCC Place, South Tower, 3rd Floor, Bhishma Pitamah Marg, Pragati Vihar, Lodhi Road, New Delhi - 110003  
Tel: +91-11-49215555  
Fax: +91-11-24369333  
E-mail: team@natrip.in  
Website: [https://www.natrip.in/](https://www.natrip.in/) |
| **The Automotive Research Association of India** | Survey No 102, Vetal Hill, Off Paud Road, Kothrud, Pune - 411 038  
P.B. No 832, Pune - 411 004  
Tel. No: +91-020-30231111  
Fax No: +91-020-25434190  
Email Id: info@araiindia.com  
Website: [https://www.araiindia.com/](https://www.araiindia.com/) |
| **Fluid Control Research Institute** | Kanjikode West, Palakkad - 678623.  
Phone: 91-491-2566120/2566206  
Fax: 0491-2566326  
E-mail: fcri@fcriindia.com  
Website: [https://www.fcriindia.com/](https://www.fcriindia.com/) |
| **Engineering Export Promotion Council (EEPC)** | ‘Vaniya Bhawan’, 1st Floor,  
International Trade Facilitation Centre  
1/1, Wood Street  
Kolkata, West Bengal-700016  
Phone: 91-33-22890651, 22890652  
Fax: 91-33-22890654  
E-mail: eepc@eepcindia.org  
Website: [https://www.eepcindia.org/](https://www.eepcindia.org/) |
Appendix
Glossary

- BTG: Boilers, Turbines, Generators
- BHEL: Bharat Heavy Electricals Limited
- MHI: Mitsubishi heavy industries
- DHI: Department of Heavy industries
- BHEL: Bharat Heavy Electricals Ltd
- ICEMA: Indian Construction Equipment Manufacturer’s Association
- HAL: Hindustan Aeronautics Limited
- IEEMA: Indian Electrical and Electronics Manufacturers Association
- EEPC: Engineering Export Promotion Council
- TPD: Tonnes Per Day
- NHAI: National Highway Authority of India
- MORTH: Ministry of Road Transport and Highways
- CEA: Central Electrical Authority
- HVDC: High Voltage Direct Current
- US$: US Dollar
- Rs: Indian Rupee
- FY: Indian Financial Year (April to March)
- Wherever applicable, numbers have been rounded off to two decimals
# Exchange rates

## Exchange Rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs. Equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>44.95</td>
</tr>
<tr>
<td>2005-06</td>
<td>44.28</td>
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<tr>
<td>2006-07</td>
<td>45.29</td>
</tr>
<tr>
<td>2007-08</td>
<td>40.24</td>
</tr>
<tr>
<td>2008-09</td>
<td>45.91</td>
</tr>
<tr>
<td>2009-10</td>
<td>47.42</td>
</tr>
<tr>
<td>2010-11</td>
<td>45.58</td>
</tr>
<tr>
<td>2011-12</td>
<td>47.95</td>
</tr>
<tr>
<td>2012-13</td>
<td>54.45</td>
</tr>
<tr>
<td>2013-14</td>
<td>60.50</td>
</tr>
<tr>
<td>2014-15</td>
<td>61.15</td>
</tr>
<tr>
<td>2015-16</td>
<td>65.46</td>
</tr>
<tr>
<td>2016-17</td>
<td>67.09</td>
</tr>
<tr>
<td>2017-18</td>
<td>64.45</td>
</tr>
<tr>
<td>2018-19</td>
<td>69.89</td>
</tr>
<tr>
<td>2019-20</td>
<td>70.49</td>
</tr>
<tr>
<td>2020-21</td>
<td>72.59</td>
</tr>
</tbody>
</table>

## Exchange Rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs. Equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>44.11</td>
</tr>
<tr>
<td>2006</td>
<td>45.33</td>
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<tr>
<td>2007</td>
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<td>2008</td>
<td>43.42</td>
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<tr>
<td>2009</td>
<td>48.35</td>
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<tr>
<td>2010</td>
<td>45.74</td>
</tr>
<tr>
<td>2011</td>
<td>46.67</td>
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<td>2012</td>
<td>53.49</td>
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<tr>
<td>2013</td>
<td>58.63</td>
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<tr>
<td>2014</td>
<td>61.03</td>
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<tr>
<td>2015</td>
<td>64.15</td>
</tr>
<tr>
<td>2016</td>
<td>67.21</td>
</tr>
<tr>
<td>2017</td>
<td>65.12</td>
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<tr>
<td>2018</td>
<td>68.36</td>
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<tr>
<td>2019</td>
<td>69.89</td>
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<tr>
<td>2020</td>
<td>74.18</td>
</tr>
<tr>
<td>2021*</td>
<td>73.69</td>
</tr>
</tbody>
</table>

**Note:** As of February 2021  
**Source:** Reserve Bank of India, Average for the year
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