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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.
- The Index of Industrial Production (IIP) for the electrical equipment industry stood at 92.0 in FY21.
- The Index of Industrial Production (IIP) for the electrical equipment industry stood at 127.9 in September 2021.
- Engineering R&D (ER&D) revenues are projected to reach US$ 42 billion by FY22F from US$ 36 billion in FY19*.
  - According to the National Association of Software and Service Companies (Nasscom), India’s share in the global engineering and research and development (ER&D) market is likely to expand at a CAGR of 12-13% to reach US$ 63 billion by 2025.

Note: *including product engineering services, F-Forecast,
Source: Dept. of Heavy Industries, India Electrical and Electronics Manufacturer Association, NASSCOM, Business Today
Executive summary … (2/2)

- With infrastructure investment set to go up, demand for construction equipment will rise further.
- In FY22 (until October), India exported engineering goods worth US$ 63.89 billion compared with the US$ 39.97 billion recorded in FY21 (until October).
- In October 2021, exports of engineering goods from India stood at US$ 9.4 billion, a 50.89% increase from October 2020.
- By 2022, construction equipment sales are forecast to reach 110,815 units.
- India registered sales growth of 47% in construction equipment in Q2 FY22 (July to September) compared with Q1 FY22 (April to June). Total sales stood at 21,323 units in Q2 FY22 and 14,522 units in Q2 FY21.
- 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.

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 November 2020, the government set up a 22-member inter-ministerial committee for strengthening India’s capital goods sector.
- In October 2021, the Ministry of Textiles allowed pilot projects for application of geo-textiles in infrastructure projects.
- In August 2021, Prime Minister Mr. Narendra Modi launched the Voluntary Vehicle-Fleet Modernisation Program (VVMP), also known as the Vehicle Scrapping Policy. The policy will bring in investments worth ~Rs. 10,000 crore (US$ 1.35 billion) to set up 450-500 Automated Testing Stations (ATS) and 60-70 Registered Vehicle Scrapping Facilities (RVSF) across the country.
- According to Crisil, the government's push towards better infrastructure, increased budgetary allocation and economic recovery will boost revenue of engineering and capital goods companies by 15% in FY22.

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
Heavy engineering - key segments ... (1/2)

1 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 September 2021, Bharat Fritz Werner India, a leading machine tool manufacturer in the subcontinent, announced that it is entering the metal additive manufacturing area.

2 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).
- In September 2021, the government announced its Production-linked Incentive (PLI) scheme of Rs. 10,683 crore (US$ 1.4 billion), for textiles, specifically aimed at boosting production of man-made fibre (MMF) fabric, MMF apparel and technical textiles.

3 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
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.

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.

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.

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.
- In August 2021, Bharat Heavy Electricals secured its largest-ever order worth Rs. 10,800 crore (US$ 1.45 billion) from the Nuclear Power Corporation of India Limited (NPCIL) for the EPC of a turbine island for 6 units of 700 MW.

1. BOILERS

- As per the latest data available, the Indian boiler industry has the capability to manufacture boilers with super critical parameters up to 1,000 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 April 2021, Tata Power, in collaboration with Hitachi ABB Power Grids and Cargill, commissioned India’s largest natural ester-filled 110/33/22 kV, 125 MVA power transformer in the Mumbai Transmission network at the Bandra-Kurla Complex receiving station.

4. SWITCHGEAR AND CONTROL GEAR

- The market size of high voltage switchgear (including panels) and ow 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

- In October 2021, domestic sales of passenger vehicles stood at 226,353 units, whereas sales of three-wheelers and two-wheelers reached 31,774, and 1,541,621, respectively.

- As of June 2021, the Indian auto sector recorded a growth of 14.68%, selling 1.30 million units as compared with 1.13 million units sold in the same month last year.

- In the automobile sector, cumulative FDI equity inflow stood at ~US$ 30.51 billion between April 2000 and June 2021.

- In May 2021, the compact SUV segment sales stood at 24,399 units. The mid-SUV segment has been the second highest with 20,132 unit sales, followed by compact hatchbacks in the third place with 17,230 unit sales.

- In June 2021, the passenger vehicle segment recorded a growth of 119.31% with 231,633 units against 105,617 units sold in June 2020.

Auto components

- The auto components industry has more than 500 companies in the organised sector and about 10,000 entities in the unorganised sector

- India’s domestic market for auto components was worth US$ 49.30 billion in FY20 and is expected to reach US$ 200 billion by FY26.

- 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, production of tractors in the country stood at 863,125 units, with sales of 880,048 units and exports 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.

- Between FY16 and FY21, engineering exports from India expanded at a CAGR of 5.51%.
  - In FY22 (until October), India exported engineering goods worth US$ 63.89 billion compared with the US$ 39.97 billion recorded in FY21 (until October).
  - In October 2021, exports of engineering goods from India stood at US$ 9.4 billion, a 50.89% increase from October 2020.
    - The US is at the top of India’s export destination for engineering goods.

- 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.

- In October 2021, India’s merchandise exports stood at US$ 35.65 billion, a 43.05% increase from October 2020.

**India’s engineering goods exports (US$ billion)**

Notes: FY - Fiscal Year, ^CAGR is up to FY21, * - Until October 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 & steel and products made from iron & steel contributed 30.7% to the total engineering exports in October 2021.
  - Automobiles (16%) and industrial machinery (15.4%) also contributed a major share to total exports.

Source: Engineering Export Promotion Council
### Key players ... (1/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue (FY21)</th>
<th>Products</th>
</tr>
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<tbody>
<tr>
<td>Larsen and Toubro</td>
<td>Rs. 73,316 crore (US$ 9.88 billion)</td>
<td>Engineering and construction, cement, electrical and electronics</td>
</tr>
<tr>
<td>Bharat Heavy Electricals Ltd.</td>
<td>Rs. 17,678.28 crore (US$ 2.38 billion)</td>
<td>Power generation, transmission, transportation</td>
</tr>
<tr>
<td>ABB India Ltd.</td>
<td>Rs. 5,926 crore (US$ 798 million)</td>
<td>Transformers, switch gears, control gears</td>
</tr>
<tr>
<td>CG Power and Industrial Solutions Ltd.</td>
<td>Rs. 3,065 crore (US$ 413 million)</td>
<td>Power generation and transmission equipment</td>
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**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
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<thead>
<tr>
<th>Company</th>
<th>Revenue (FY21)</th>
<th>Products</th>
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</thead>
<tbody>
<tr>
<td>Engineers India Ltd.</td>
<td>Rs. 3,332 crore (US$ 449 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. 3,296 crore (US$ 444 million)</td>
<td>Engines, engine bearings and valves, grey iron casting</td>
</tr>
<tr>
<td>Cummins India Ltd.</td>
<td>Rs. 4,256 crore (US$ 573 million)</td>
<td>Power generation, construction and mining equipment, fire pumps and cranes, compressors</td>
</tr>
<tr>
<td>Thermax Ltd.</td>
<td>Rs. 4,791 crore (US$ 645 million)</td>
<td>Boilers, heaters, air pollution and purification, absorption cooling</td>
</tr>
<tr>
<td>BGR Energy Systems Ltd.</td>
<td>Rs. 1,146 crore (US$ 154 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
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. Demonstrate capabilities
   - In September 2021, Larsen & Toubro (L&T) announced that it will participate in the Expo 2020, Dubai to be held from October 5, 2021, to March 31, 2022, as part of the Indian pavilion.
   - L&T plans to demonstrate its capabilities in hydrocarbon engineering, and businesses such as water-effluent treatment, power transmission and distribution.

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. Acquisitions
   - In June 2021, auto component manufacturer Minda Industries announced acquisition of a 51% stake in Harita Fehrer Ltd. for Rs. 115 crore (US$ 15.80 million)

4. Skill improvement
   - In December 2020, the Ministry of Skill Development & 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 the power sector in Gurugram, India. The CoE will focus on creating a pool of skilled trainers and assessors for further training to increase employability of aspirants in the field of Electricity, Automation and Solar Energy Sectors.
   - Eight CoEs for technology development and nine common engineering facility centres have been established at prominent research and academic institutes across the country.
   - The Ministry of Heavy Industries is focusing on innovation and research & development in manufacturing by establishing six technology platforms, which will be accelerators for making India self-reliant in the Capital Goods and Auto Sector with focus on developing mother technologies.
   - In FY21, Rs. 54.22 crore (US$ 7.30 million) were utilised under the scheme on ‘Enhancement of Competitiveness in the Indian Capital Goods Sector’.

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
Capacity augmentation boosts demand

- 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.

- According to India Ratings and Research (Ind-Ra), the solar production-linked insurance (PLI) scheme will support 8-13% of photovoltaic energy plant requirements until 2029-30 and will help add 20 GW (gigawatts) of energy in the next five years.

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
Prime Minister, Narendra Modi, on the country’s 75th Independence Day, announced plans to invest Rs. 100 trillion (US$ 1.35 trillion) in infrastructure to stimulate economic development and generate employment.

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 of December 2020, out of Rs. 111 lakh crore (US$ 1.52 trillion), projects worth Rs. 44 lakh crore (US$ 601.31 billion), accounting for 40%, are under implementation and projects worth Rs. 22 lakh crore (US$ 300.65 billion) that account for NIP’s 20% are under development stages. The government invested US$ 1.4 trillion in infrastructure development (NIP), as of July 2021.

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).

Source: Office of the Economic Adviser, CRISIL Infrastructure Yearbook 2018, News Article
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 12,000 km 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, such as coal, crude oil, natural gas, petroleum refinery products, fertilisers, steel, cement and electricity. This index reached 123.2 in FY21, a decrease from 131.6 recorded in FY20.

Source: National Highway Authority of India, Ministry of Road Transport and Highways
Strong policy support crucial for the sector…(1/3)

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
Strong policy support crucial for the sector...(2/3)

6 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.

7 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.

8 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.

9 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.

Notes: Capex - Capital Expenditure, JNNURM - Jawaharlal Nehru National Urban Renewal Mission
Source: Union Budget FY14, Union Budget 2016-19 and 2019-20
Strong policy support crucial for the sector…(3/3)

10 New Engineering Research & Development Policy
- In March 2021, the Karnataka government launched the ‘Karnataka Engineering Research & Development (Engineering R&D) Policy 2021’ to help anchor the sector’s potential by creating 50,000 new jobs and increasing the state’s contribution to 45% in this sector.

11 Voluntary Vehicle-Fleet Modernisation Programme (VVMP)
- In August 2021, Prime Minister Mr. Narendra Modi launched the Voluntary Vehicle-Fleet Modernisation Programme (VVMP), also known as the Vehicle Scrapping Policy during the ‘Investors Summit for Setting Up Vehicle Scrapping Infrastructure’ in Gujarat.
- The Vehicle Scrappage Policy will bring in investments of ~Rs. 10,000 crore (US$ 1.35 billion) to set up 450-500 Automated Testing Stations (ATS) and 60-70 Registered Vehicle Scrapping Facilities (RVSF) across the country.
- A single window clearance portal is being developed where applications for ATS and RVSF will be catered through a single portal within 60 days.

12 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.

Source: Press releases
Special economic zones (SEZs) to promote exports ... (1/3)

<table>
<thead>
<tr>
<th>Developer</th>
<th>Location</th>
<th>Product</th>
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<tbody>
<tr>
<td>Andhra Pradesh Industrial Infrastructure Corporation Limited (APIIC)</td>
<td>Ranga Reddy, Andhra Pradesh</td>
<td>Aerospace and precision engineering</td>
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<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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<td>Gujarat Industrial Development Corporation Ltd (GIDC)</td>
<td>Gandhinagar, Gujarat</td>
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<td>N.G. Realty Pvt Ltd</td>
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<td>Engineering</td>
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<tr>
<td>Karnataka Industrial Areas Development Board</td>
<td>Shivamogga, Karnataka</td>
<td>Engineering</td>
</tr>
<tr>
<td>Suzlon Infrastructure Ltd</td>
<td>Mangaluru, Karnataka</td>
<td>Port-based for high-tech engineering products</td>
</tr>
</tbody>
</table>

*Source: SEZ India*
## Special economic zones (SEZs) to promote exports ... (2/3)

<table>
<thead>
<tr>
<th>Developer</th>
<th>Location</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quest Machining and Manufacturing Pvt Ltd</td>
<td>Belagavi, Karnataka</td>
<td>Auto, aerospace and industrial engineering</td>
</tr>
<tr>
<td>Viraj Profiles Ltd</td>
<td>Thane, Maharashtra</td>
<td>Stainless steel engineering products</td>
</tr>
<tr>
<td>Navi Mumbai SEZ Pvt Ltd</td>
<td>Navi Mumbai, Maharashtra</td>
<td>Light engineering</td>
</tr>
<tr>
<td>Maharashtra Industrial Development Corporation (MIDC)</td>
<td>Satara, Maharashtra</td>
<td>Engineering</td>
</tr>
<tr>
<td>Township Developers India Pvt Ltd</td>
<td>Pune, Maharashtra</td>
<td>Engineering</td>
</tr>
<tr>
<td>Maharashtra Industrial Development Corporation (MIDC)</td>
<td>Aurangabad, Maharashtra</td>
<td>Engineering and Electronics</td>
</tr>
<tr>
<td>Orissa Industrial Infrastructure Development Corporation (IDCO)</td>
<td>Jajpur, Orissa</td>
<td>Metallurgical engineering</td>
</tr>
<tr>
<td>Vividha Infrastructure Pvt Ltd</td>
<td>Patiala, Punjab</td>
<td>Engineering</td>
</tr>
<tr>
<td>Mahindra Worldcity (Jaipur) Ltd</td>
<td>Jaipur, Rajasthan</td>
<td>Light engineering</td>
</tr>
<tr>
<td>New Chennai Township Pvt Ltd</td>
<td>Kanchipuram, Tamil Nadu</td>
<td>Engineering</td>
</tr>
<tr>
<td>Perundurai Engineering SEZ by SIPCOT</td>
<td>Erode, Tamil Nadu</td>
<td>Engineering</td>
</tr>
<tr>
<td>Uttar Pradesh State Industrial Development Corporation (UPSIDC)</td>
<td>Kanpur, Uttar Pradesh</td>
<td>Engineering</td>
</tr>
</tbody>
</table>

*Source: SEZ India*
### Special economic zones (SEZs) to promote exports ... (3/3)

<table>
<thead>
<tr>
<th>Developer</th>
<th>Location</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspen Infrastructures Ltd</td>
<td>Vadodara, Gujarat</td>
<td>High-tech Engineering products and related Services</td>
</tr>
<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
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 inflow for miscellaneous mechanical and engineering sectors stood at US$ 3,720.4 million between April 2000 and June 2021.
- The Government’s increasing focus on attracting foreign investors in manufacturing and infrastructure is likely to boost FDI in the sector.

**Note:** * - Until June 2021  
**Source:** Department for Promotion of Industry and Internal Trade (DPIIT), News Articles
## 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>Majority 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
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 of FY21.
- 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.
- The government is taking several steps to boost domestic defence manufacturing. In line with this, between FY17 and FY22 (until June 2021), the Indian government has signed 264 contracts for defence equipment procurement, with 159 contracts for armed forces equipment procurement.
- The 12th edition of DefExpo, India’s flagship event showcasing land, naval, air and homeland security systems, will be held in Gandhinagar, Gujarat, from March 10 to March 13 in 2022. The aim of DefExpo-2022 is to build and achieve ‘Aatmanirbharta’ (self-reliance) in defence and increase defence exports to US$5 billion by 2024.

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.
- In August 2021, Mr. Narendra Modi launched the Voluntary Vehicle-Fleet Modernisation Program (VVMP), also known as the Vehicle Scrapping Policy, during the ‘Investors Summit for Setting Up Vehicle Scrapping Infrastructure’ in Gujarat.
  - The Vehicle Scrapping Policy will bring in investments of ~Rs. 10,000 crore (US$ 1.35 billion) to set up 450-500 Automated Testing Stations (ATS) and 60-70 Registered Vehicle Scrapping Facilities (RVSF) across the country.
- In September 2021, the Indian government announced a PLI scheme for automobiles and auto components worth Rs. 25,938 crore (US$ 3.49 billion). This scheme is expected to attract investments worth >Rs. 42,500 (US$ 5.74 billion) by 2026.

Notes: GW - Giga Watt, SME - Small and Medium Enterprises, CY - Calendar Year, *As per CRISIL Research
Source: Sutherland Research, Crisil, News Source
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.

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.

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.

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
Growth potential in the construction equipment industry

- 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*.

- In 2020, India’s construction equipment market had a ~US$ 6.5 billion turnover despite the pandemic.

### 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>

*Note: *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)** | ‘Vanijya 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/) |
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>
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<td>2007-08</td>
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<td>2008-09</td>
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<td>2009-10</td>
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<td>2010-11</td>
<td>45.58</td>
</tr>
<tr>
<td>2011-12</td>
<td>47.95</td>
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<tr>
<td>2012-13</td>
<td>54.45</td>
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<td>2013-14</td>
<td>60.50</td>
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<tr>
<td>2014-15</td>
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<td>2015-16</td>
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<td>2016-17</td>
<td>67.09</td>
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<td>2017-18</td>
<td>64.45</td>
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<td>2018-19</td>
<td>69.89</td>
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<tr>
<td>2019-20</td>
<td>70.49</td>
</tr>
<tr>
<td>2020-21</td>
<td>73.20</td>
</tr>
</tbody>
</table>

### Exchange Rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs. Equivalent of one US$</th>
</tr>
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<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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<tr>
<td>2020</td>
<td>74.18</td>
</tr>
<tr>
<td>2021*</td>
<td>72.89</td>
</tr>
</tbody>
</table>

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