

ENGINEERING AND CAPITAL GOODS



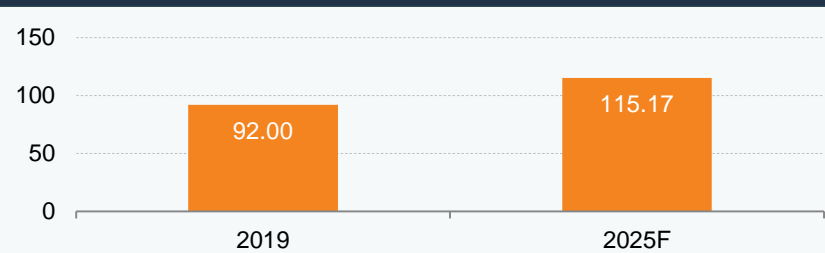
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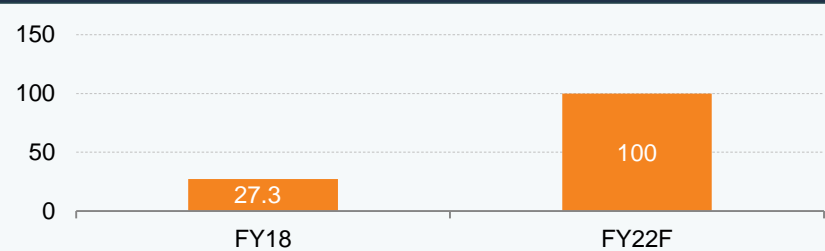
Executive summary ... (1/2)

- 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*.

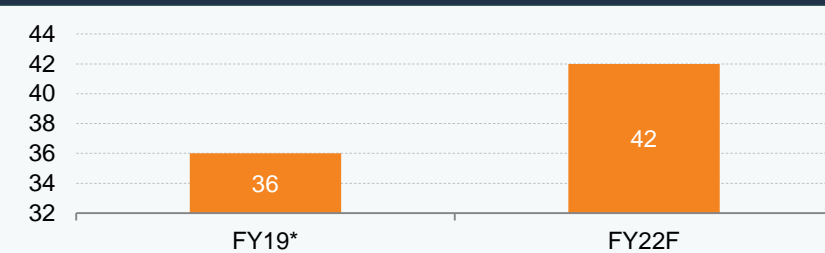
Capital goods turnover (US\$ billion)



Electrical equipment production (US\$ billion)



Engineering R&D Revenue (US\$ billion)



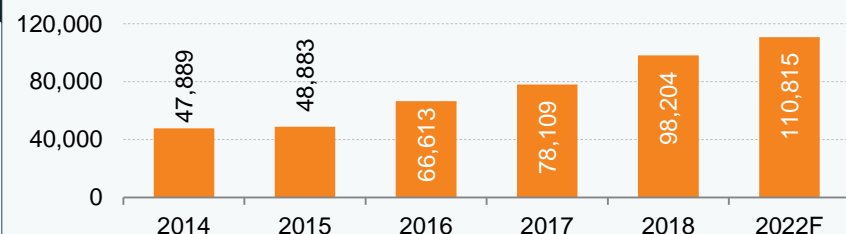
Note: *including product engineering services, F-Forecast,

Source: Dept. of Heavy Industries, India Electrical and Electronics Manufacturer Association, NASSCOM, Business Today

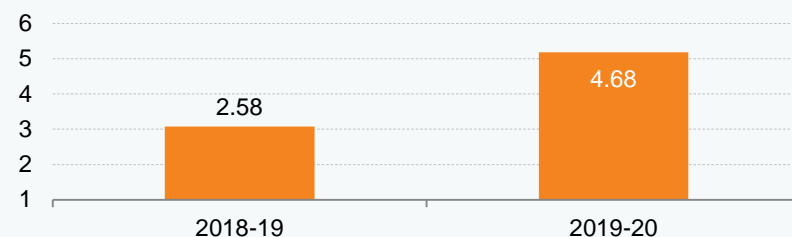
Executive summary ... (2/2)

- With infrastructure investment set to go up, demand for construction equipment will rise further.
- 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.
- Export of telecom instruments increased from US\$ 2.58 billion in 2018-19 to US\$ 4.68 billion in 2019-20.
- 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.

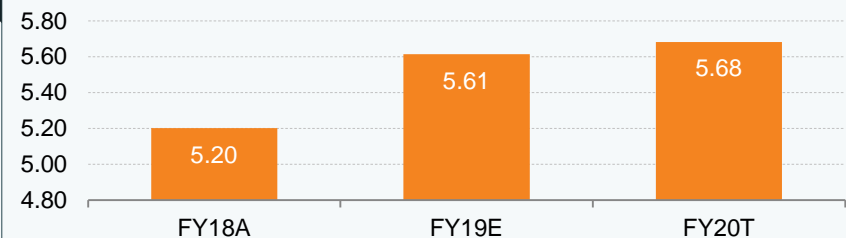
Construction equipment sales volume (in units)



Telecom instrument exports (US\$ billion)



Production by CPSEs under DHI (US\$ billion)



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

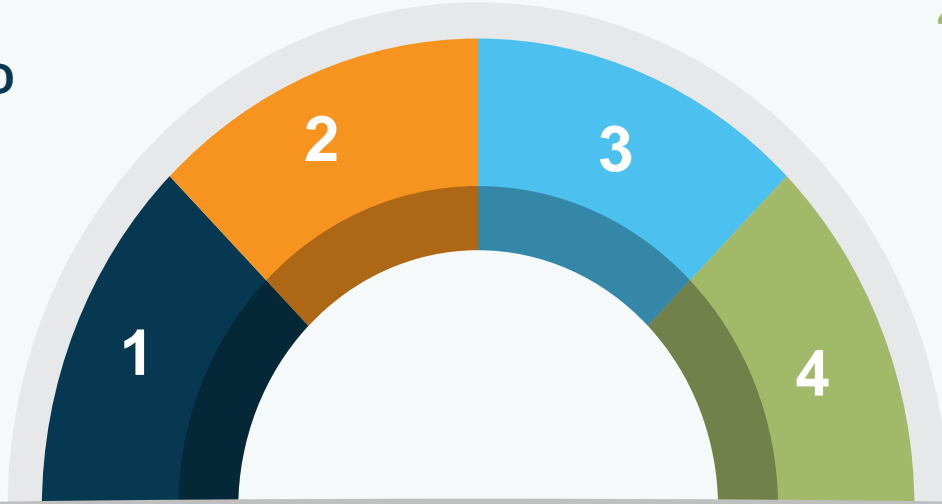
- Nuclear capacity expansion to provide significant business opportunities in the electrical machinery industry.
- In 2019, Government had announced to invest Rs. 100 lakh crore (US\$ 1.5 trillion) in infrastructure over the next five years
- Infrastructure investment is expected to increase to Rs. 50.2 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.

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.

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.



4. INVESTMENTS

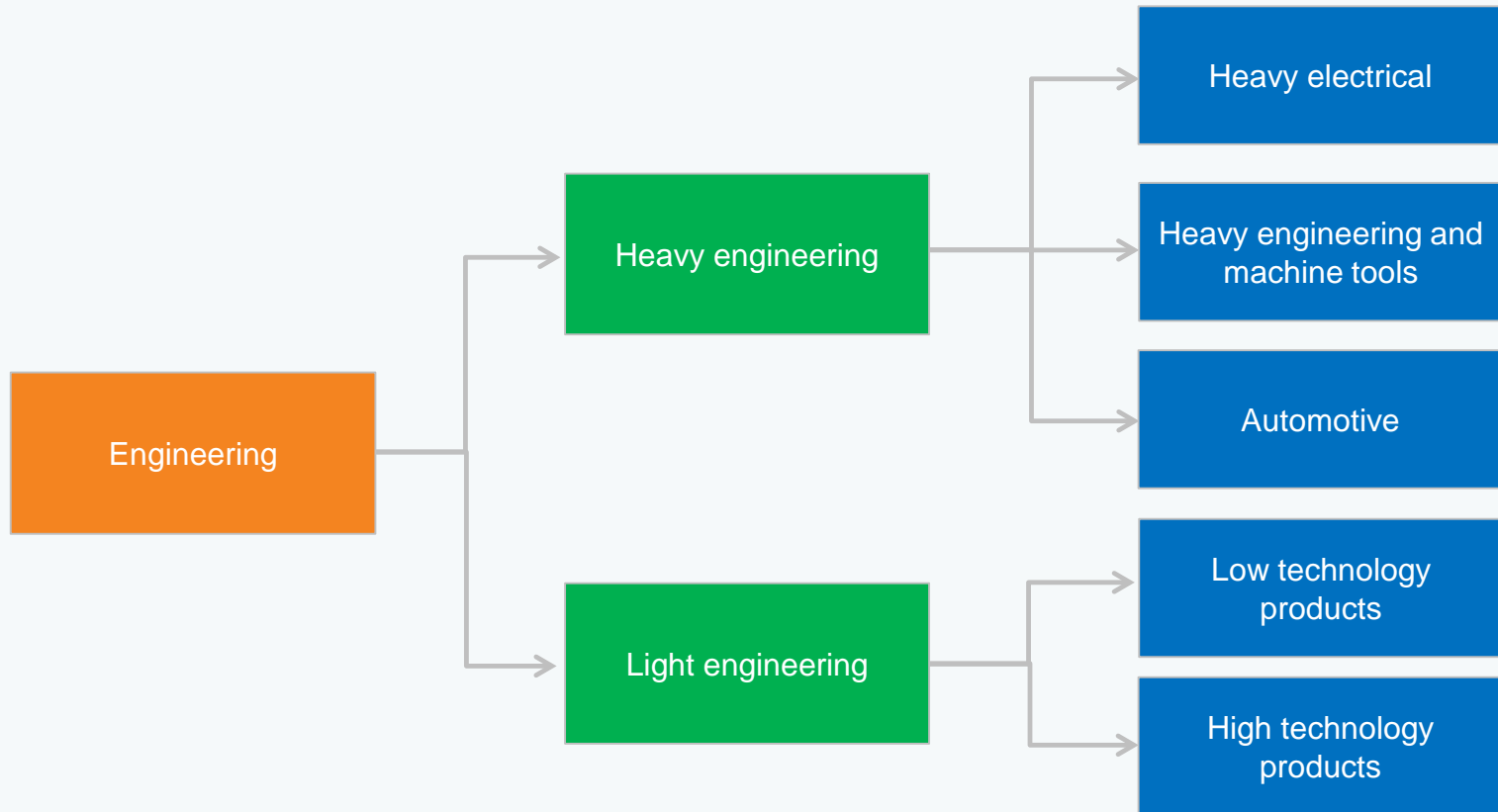
- Comparative advantage vis-a-vis peers in terms of manufacturing costs, market knowledge, technology and creativity leading to higher investment.
- Highly organised sector - dominated by large players employing over 4 million skilled and semi-skilled labour.

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



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 November 2020, Larsen & Toubro delivered the first hardware—a booster segment—for the Gaganyaan Launch Vehicle to ISRO, ahead of schedule.

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).
- 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.

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.

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

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

Light engineering - key segments

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

Heavy electrical - key segments

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

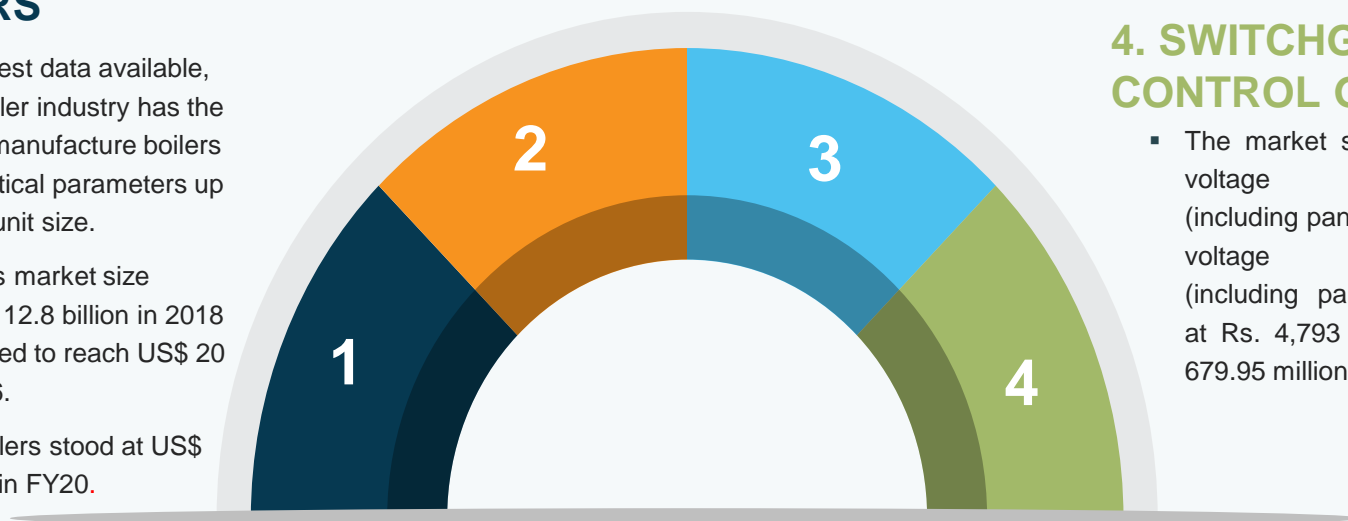
- As per the latest data available, the Indian boiler industry has the capability to manufacture boilers with super critical parameters up to 1000 MW unit size.
- The industry's market size reached US\$ 12.8 billion in 2018 and is expected to reach US\$ 20 billion in 2026.
- Export for boilers stood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

- In FY21*, automobile production (passenger, three-wheeler and two-wheeler vehicles) was 17.21 million units (until January 2021).
- 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\$ 25.40 billion between April 2000 and December 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 May 2021, TVS Motor Company announced that it sold one lakh units of 'NTORQ 125' scooter in the international market.



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%.
- 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.



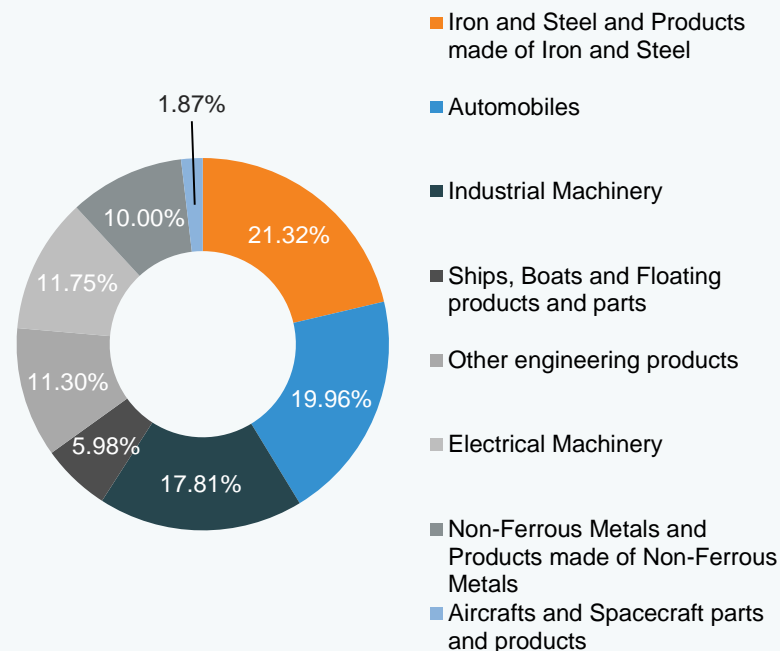
Notes: FY- Fiscal Year, ^CAGR is up to FY21

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.

Engineering export performance (FY20)



Source: Engineering Export Promotion Council






Key players ... (1/2)

	Company	Revenues* (FY20)	Products
	Larsen and Toubro	Rs 1,41,175.50 crore (US\$ 20.03 billion)	Engineering and construction, cement, electrical and electronics
	Bharat Heavy Electricals Ltd	Rs 20,491 crore (US\$ 2.91 billion)	Power generation, transmission, transportation
	ABB India Ltd	Rs 1,624.81 crore US\$ 230.50 million)	Transformers, switch gears, control gears
	CG Power and Industrial Solutions Ltd.	Rs 5,158.01 crore (US\$ 731.71 million)	Power generation and transmission equipment

*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)

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

Note: Exchange 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.

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.

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

Source: KPMG Report on Engineering sector



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

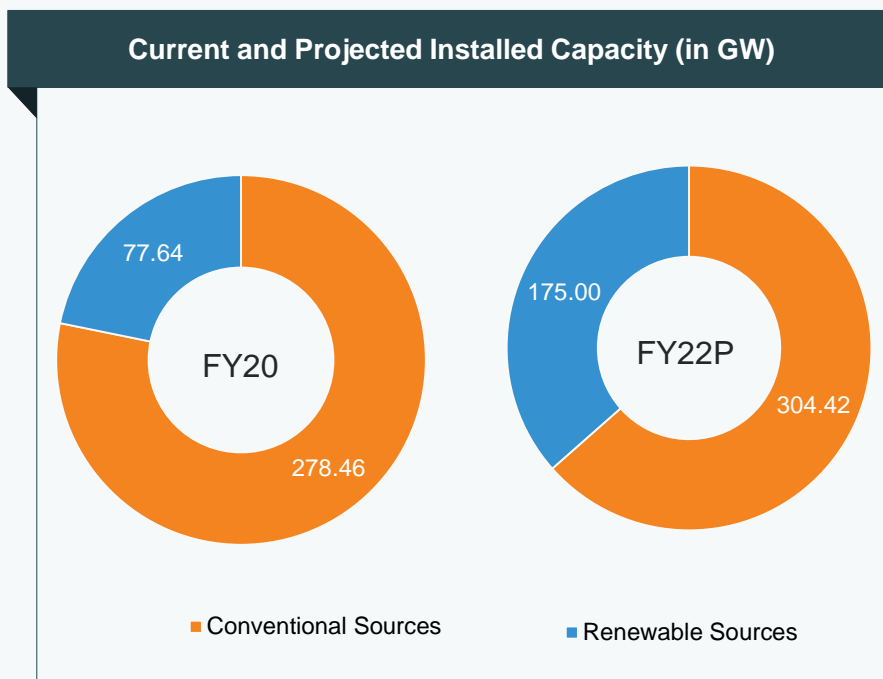
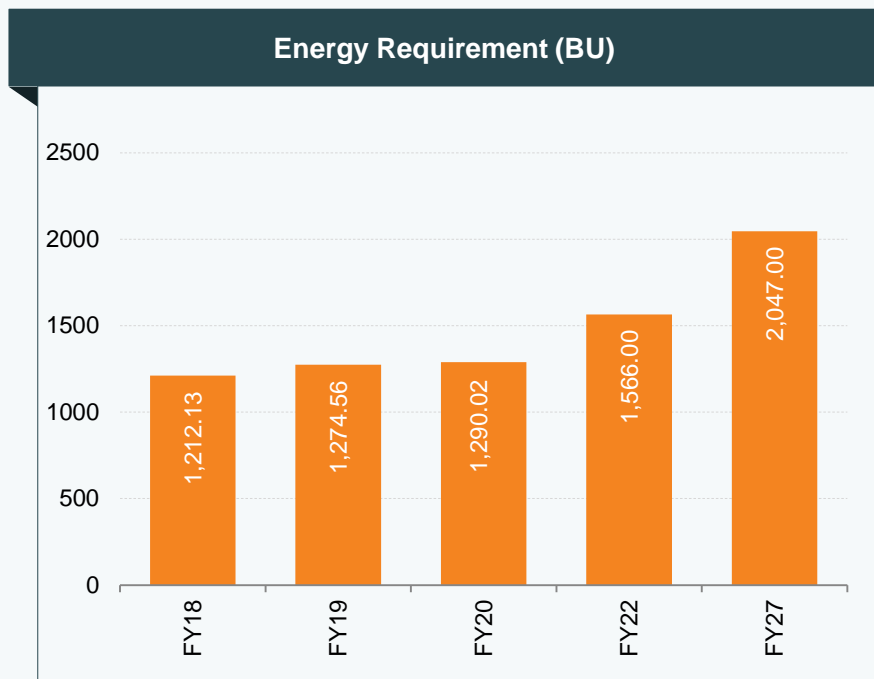
- Capacity addition for power generation
- Increase in infrastructure spending
- Rise in export, which touched US\$ 76.28 billion in FY20



INVESTMENT

- Increasing FDI inflows
- Higher M&A
- Easy credit facilities for manufacturing companies

Capacity augmentation boosts demand

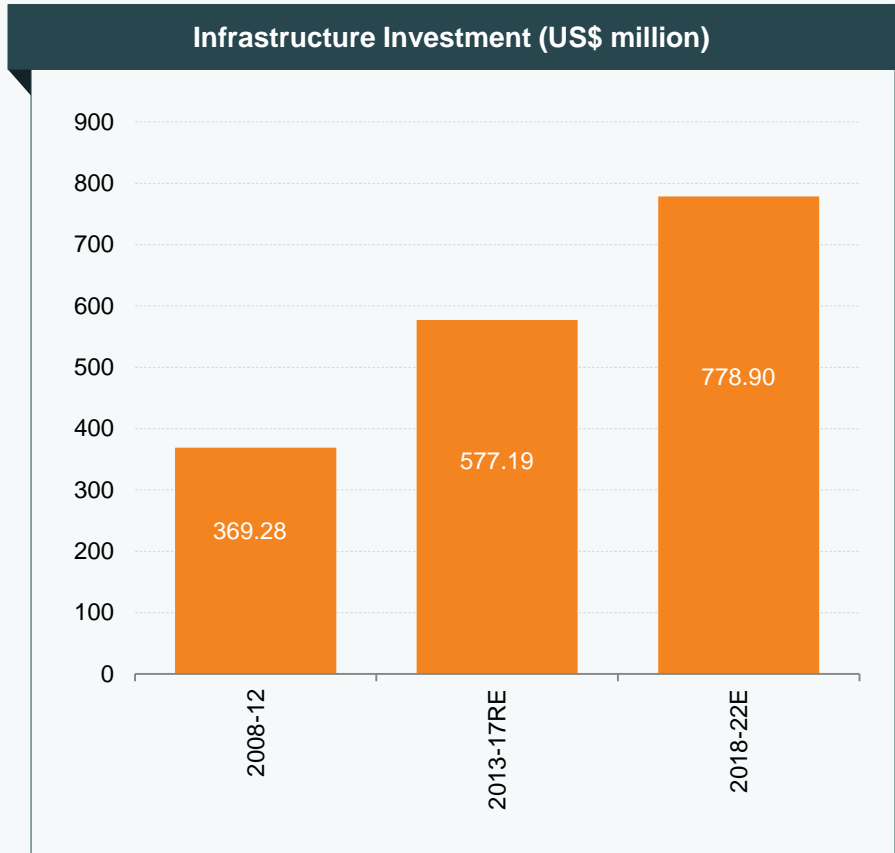


- India's energy requirement is expected to grow from 1,290.02 in FY20 to 1,566 BU in FY22 and further to 2,047 BU in FY27.
- The growing energy requirement will require enhancement of installed power capacity. As per the National Electricity Plan 2018, the total installed power capacity is projected 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

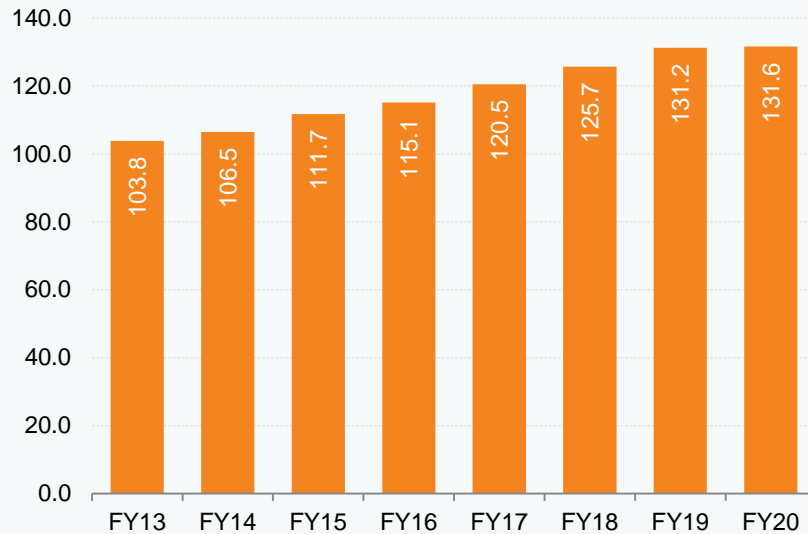
- In the Union Budget 2021, the government has given a massive push to the infrastructure sector by allocating Rs. 233,083 crore (US\$ 32.02 billion) to enhance the transport infrastructure.
- The government expanded the 'National Infrastructure Pipeline (NIP)' to 7,400 projects. ~217 projects worth 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).



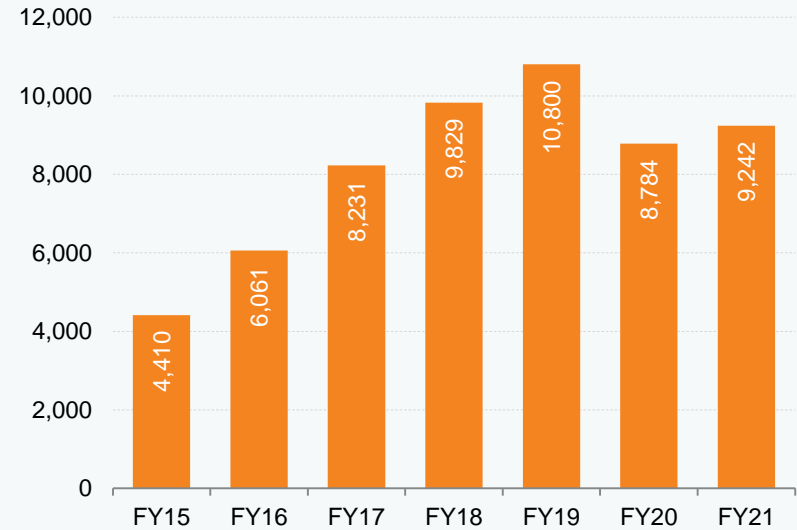
Note: RE - Revised Estimates, E - Estimated

Source: Office of the Economic Adviser, CRISIL Infrastructure Yearbook 2018

Infrastructure Supporting Industries Index



Length of National Highways Constructed (in kms)



- 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, 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

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

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.

10

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, handicrafts 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)

Developer	Location	Product
Andhra Pradesh Industrial Infrastructure Corporation Limited (APIIC)	Ranga Reddy, Andhra Pradesh	Aerospace and precision engineering
Deccan Infrastructure and Land Holdings Ltd	Nalgonda, Andhra Pradesh	Light engineering
M/s Essar Hazira SEZ	Hazira, Gujarat	Engineering
Gujarat Industrial Development Corporation Ltd (GIDC)	Gandhinagar, Gujarat	Electronic products
N.G. Realty Pvt Ltd	Ahmedabad, Gujarat	Engineering
M/s Synefra Engineering and Construction Ltd	Vadodara, Gujarat	High-tech engineering and related products
E. Complex Pvt Ltd	Amreli, Gujarat	Engineering
Dishman Infrastructure Ltd	Ahmedabad, Gujarat	Engineering
Ansal Properties and Infrastructure Ltd	Sonepat, Haryana	Engineering
Raheja Haryana SEZ Developers Pvt Ltd	Gurgaon, Haryana	Engineering
Ansal Kamdhenu Engineering SEZ Ltd	Sonepat, Haryana	Engineering
Karnataka Industrial Areas Development Board	Shivamogga, Karnataka	Engineering
Suzlon Infrastructure Ltd	Mangaluru, Karnataka	Port-based for high-tech engineering products

Source: SEZ India

Special economic zones (SEZs) to promote exports ... (2/3)

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

Source: SEZ India

Special economic zones (SEZs) to promote exports ... (3/3)

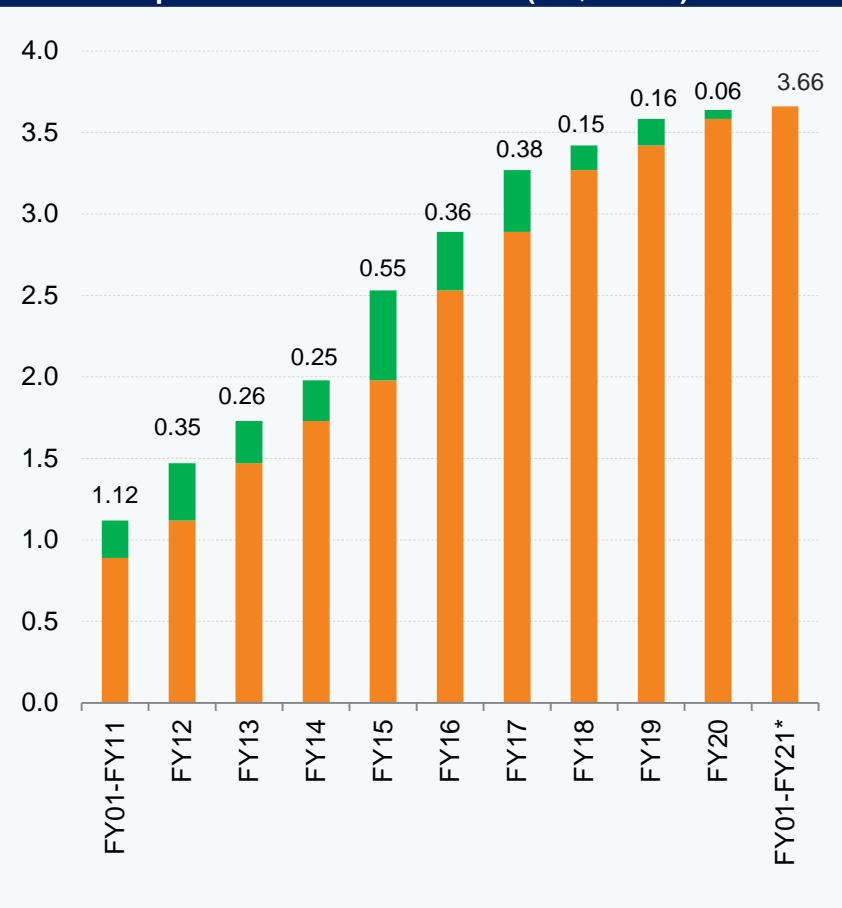
Developer	Location	Product
Aspen Infrastructures Ltd	Vadodara, Gujarat	High-tech Engineering products and related Services
Aspen Infrastructures Ltd	Karnataka	High-tech Engineering products and related Services
Quest SEZ Development Private Ltd	Belagavi, Karnataka	Precision Engineering Product
Khed Economic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

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\$ 3,669.51 million between April 2000 and December 2020.
- The Government's increasing focus on attracting foreign investors in manufacturing and infrastructure is likely to boost FDI in the sector.

FDI inflows in miscellaneous mechanical and engineering from April 2000 to December 2020 (US\$ billion)



*Note: * - Until December 2021*

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

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

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

Source: Grant Thornton, Thomson Banker, VC circle, News Articles

Opportunities



OPPORTUNITIES

Growth opportunities in the engineering sector ... (1/2)

1. 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.
- 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.
- On May 17, 2021, the Defence Ministry unveiled the first batch of anti-COVID drug, 2-deoxy-D-glucose (2-DG), which was developed by the Institute of Nuclear Medicine and Allied Sciences (INMAS), a lab of Defence Research and Development Organisation (DRDO), along with Dr. Reddy's Laboratories (DRL), Hyderabad.



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.

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.

*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

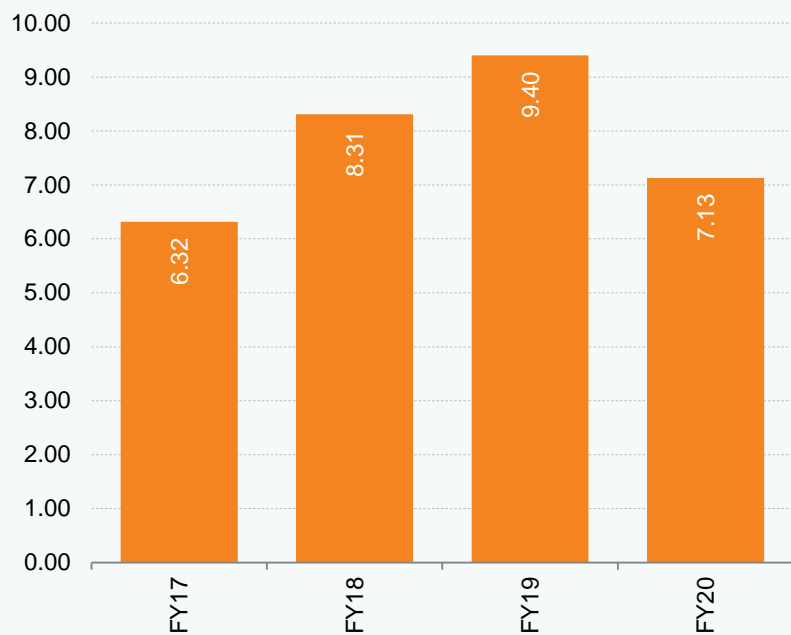
- The material handling equipment sector is expected to gain from robust demand from steel, power, mineral and other infrastructure industries.
- The 'Make in India' initiative and government's focus on ease of doing business is likely to present several opportunities in material handling equipment sector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

Note: CKM- Circuit Kilometres

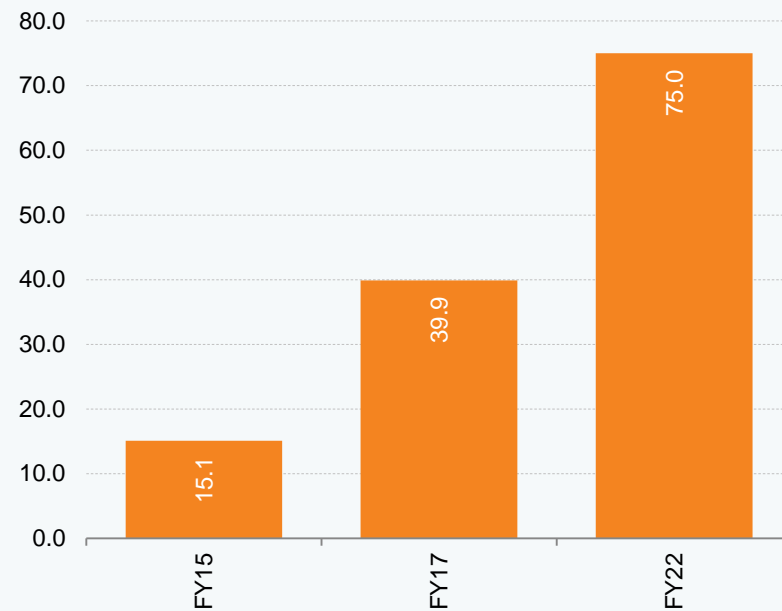
Source: Sutherland Research

Rising demand for electrical equipment ... (1/2)

Imports of electrical machinery and equipment (US\$ billion)



T&D equipment demand projection (US\$ billion)



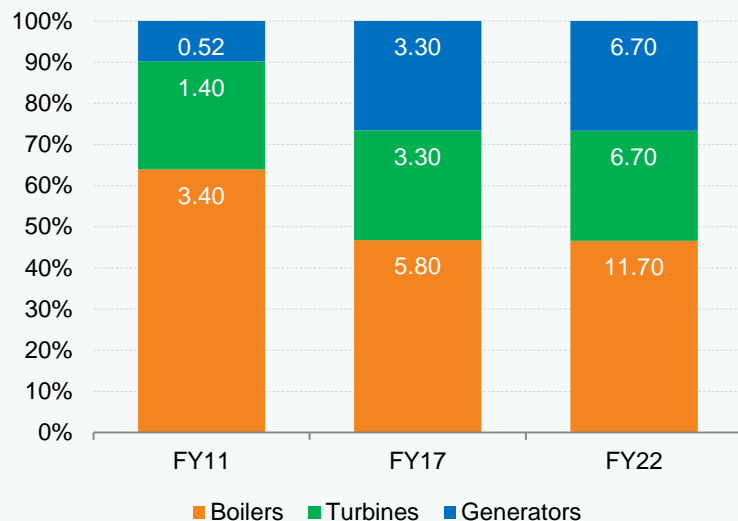
- India's electrical equipment industry has witnessed significant growth in the last few years.
- Major electrical equipment's manufactured include electric power equipment and parts, electric wires and cables, boilers and parts and transmission line towers and parts.

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

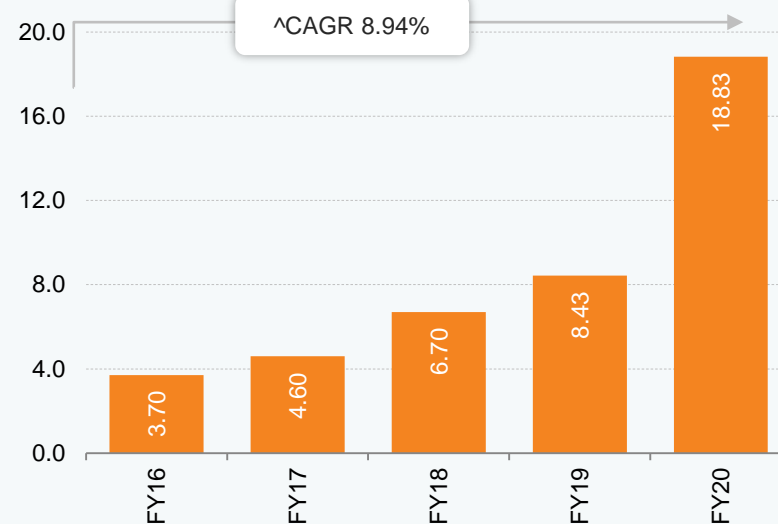
Source: Indian Electrical and Electronics Manufacturers Association, Department of Heavy Industries, DGCIS

Rising demand for electrical equipment ... (2/2)

Generation equipment-wise demand projection (US\$ billion)



Exports of industrial machinery (US\$ billion)



- 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.
- Export of electrical machinery grew at a CAGR of 8.94% during FY10-19. It stood at US\$ 7.39 billion in FY20 (until January 2020).

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*.

Expected unit sales by 2021

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





Note: *Forecast

Source: NBM and CW

Key Industry Contacts



Key Industry Contacts

	Agency	Contact Information
 <p>NATRIP Driving India Into The Future</p>	<p>National Automotive Testing and R&D Infrastructure Project (NATRiP)</p>	<p>NBCC Place, South Tower, 3rd Floor, Bhisma 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/</p>
 <p>ARAI Progress through Research</p>	<p>The Automotive Research Association of India</p>	<p>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/</p>
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 <p>EEPCINDIA ENGINEERING THE FUTURE Sponsored by Ministry of Commerce & Industry, Government of India</p>	<p>Engineering Export Promotion Council (EEPC)</p>	<p>'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/</p>



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)

Year	Rs. Equivalent of one US\$
2004-05	44.95
2005-06	44.28
2006-07	45.29
2007-08	40.24
2008-09	45.91
2009-10	47.42
2010-11	45.58
2011-12	47.95
2012-13	54.45
2013-14	60.50
2014-15	61.15
2015-16	65.46
2016-17	67.09
2017-18	64.45
2018-19	69.89
2019-20	70.49
2020-21	73.20

Exchange Rates (Calendar Year)

Year	Rs. Equivalent of one US\$
2005	44.11
2006	45.33
2007	41.29
2008	43.42
2009	48.35
2010	45.74
2011	46.67
2012	53.49
2013	58.63
2014	61.03
2015	64.15
2016	67.21
2017	65.12
2018	68.36
2019	69.89
2020	74.18
2021*	74.94

Note: As of April 2021

Source: Reserve Bank of India, Average for the year

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