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ANALYSIS REPORT ON INDIAN ENGINEERING SECTOR (DECEMBER 2021 EDITION)

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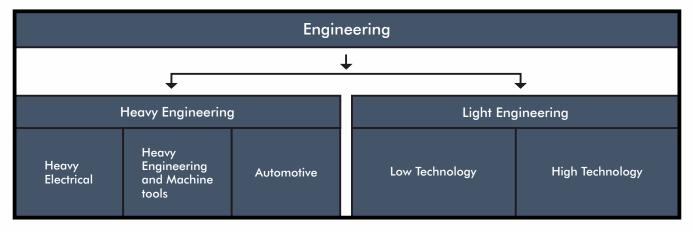
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# 1. Introduction

The Indian engineering sector is one of the largest of all industrial sectors which is approximately 27% of the total factory establishments in the country. The sector has shown tremendous progress over the last 5 years in the wake of rapid infrastructure development which requires higher industrial production. Being closely knit with the manufacturing and capital goods sector, it proved to be a strategically important sector for the growth of the Indian economy too.

When India is all set to become a global superpower, the engineering sector thus plays an important role and provides the basic building blocks for the same. India's quest to move the wheel of growth at an unprecedented speed is fuelled by this diversified sector which is broadly segmented into two areas:





These segments can be better understood in the light of supply and demand theory. Supply is ample in all the major sub sectors but faces an issue in terms of logistics, supply chain, raw material availability, and trained manpower on time. The demand raised from the capitalintensive sectors such as Railways, Automobile, Infrastructure Development, Power, etc create pressure on the manufacturers and thus provide tremendous opportunities to grow.



But the sector is capital intensive in itself and majorly held by existing giants like L&T,

BHEL. Thus, there is intense competition among these major players which provides a major blow to small companies in the sector in terms of pricing, product quality, and other specific capabilities required for such strategically important projects.

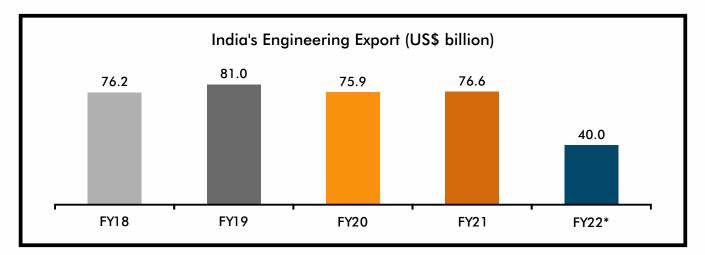
In the last few years, the engineering sector of the Indian economy worked as a backbone to the country's GDP and thus command special attention from the government too. Because of its strategic importance and tremendous performance in rising export, the government has decided to appoint an apex body by the name Engineering Export Promotion Council (EEPC), to look into the promotion of Indian engineering goods, products, and services. India has also played a key role in the world forum as a member of the Washington Accord since 2014, which is dedicated to engineering studies and the mobility of engineers globally. India is one of the 17 permanent signatories of this accord.

If we go by the projections, the market size of the Electrical Equipment industry is expected to reach US\$ 100 billion in the financial year 2022. The sector is a high contributor in the export share too, in 2020-21, the engineering exports were recorded at US\$ 75.90 billion. As the Indian engineering sector enjoys a competitive advantage concerning to its peers, This gives them an upper hand in manufacturing costs, technology, market knowledge, and intensive demand. The government's initiatives like "Make in India" are providing a major push to the sector and welcoming international players to enter into the Indian engineering sector with remarkable growth opportunities.

The government's push to infrastructure development through the projects such as Gati Shakti, 100% FDI policy for the sector, the subvention scheme for MSMEs, and the policy support during the Covid-19 Pandemic have played a major role to charge up this crucial sector that is also a major employer in the Indian economy. This is one of the major organized sectors of the Indian economy and accounts for the employment of around 4 million skilled and unskilled workforces in India.



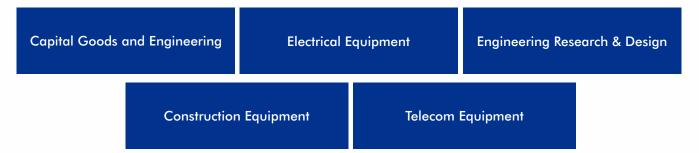
Indian engineering sector provides major input for the Capital Goods and Manufacturing industry in India along with construction, infrastructure, power, consumer goods industry, etc. The contribution of the sector in manufacturing is 12%, which also make a share of 1.8% in total GDP. India's export share of the engineering sector in the financial year 2021-22 till October is US\$ 40billion which was US\$ 76.6billion in the financial year 2020-21 altogether.



India's export share for last 4 years

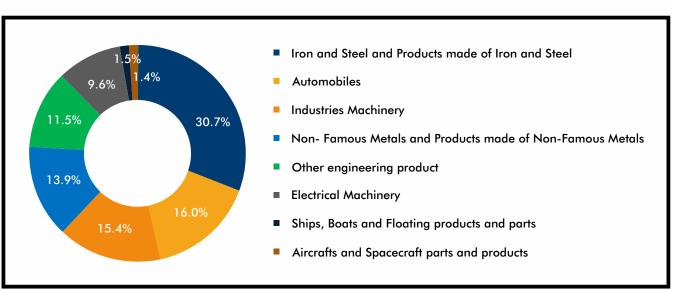
The Engineering industry market in India is majorly categorized into five sub-sectors and their market size and export share vary as per the domestic and global market demands. It is expected that the capital goods turnover of the country till by 2025 will be US\$ 115.17 billion whereas the market size of electrical equipment will reach US\$ 100 billion by the year 2021-22 as per government projections. Export of telecom instruments have also increased in 2019-20 and reached US\$ 4.68 billion in comparison to the US\$ 2.58 billion in the financial year 2018-19. The mission plan implemented by the Department of Heavy Industry, Government of India will develop and grow the domestic electric equipment market throughgenerating demands in power generation, transmission, and distribution.

#### Sub-sectors of Indian Economy



The United States and Europe are the largest Indian engineering goods export market and account for 60% of the total export share. The Indian engineering export share consists of different

segments and export categories like automobiles, Industrial machinery, auto craft parts, etc and each of them has a significant share in the overall export contribution for the country. The domestic demand in this sector is majorly dependent on the future infrastructure development plans of the country which will increase the consumption of power, oil & gas, refinery, steel, etc over time.



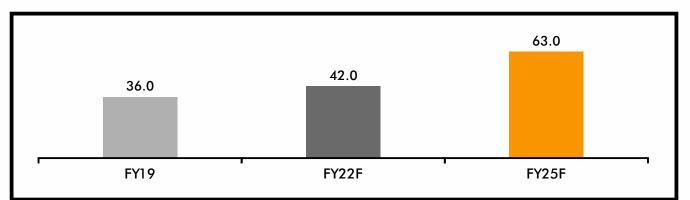
Engineering Export Share (As of October 2021)

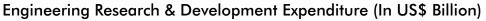
The capital Goods industry in India constitutes a US\$ 43.2 billion market size in which the electrical equipment is the largest sub-sector preceded by plant equipment, and earthmoving or mining machinery sub-sectors.

Market Share of Primar	y Capital Goods Subsectors	$in 2018_{-}19$ (	In LISS Billion
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Subsector	Market Size	% share in total capital goods
Heavy electrical equipment	24.2	56.2
Process plant equipment	3.7	8.6
Earthmoving machinery	3.3	7.6
Printing machinery	3.01	7.0
Food processing machinery	2.4	5.6
Dies, moulds, and press tools	2.3	5.3
Textile machinery	1.8	4.2
Machine tools	1.4	3.2
Plastic machinery	0.5	1.2
Metallurgical machinery	0.4	0.9

As per NASSCOM, India's share in engineering research and development at the global level shows an upward trend and is estimated to reach up to US\$ 63 billion by 2025. In the financial year 2022, it is forecasted that India is going to make the expenditure of US\$ 42 billion in the field of Engineering Research and Development.





The major advantage of India's engineering sector concerning higher exports is the competitive advantage in terms of low manufacturing cost, higher market understanding, technology, creativity, and technical manpower availability. The increasing number of sanctions to Special Economic Zones and Industrial Corridors are also giving momentum to the Indian engineering sector. In this regard, the sector receives a high contribution from both, the government as well as the private sector, but the higher NPAs (Non-Performing Assets) in the sector are a major cause of concern.

Due to rapid infrastructure development in the country and rising global demands of engineering products, the companies in this sector are working continuously on capacity creation and thus set to provide direct and indirect employment to 1.4 million and 7 million people respectively through this sector. Currently, the sector also provides input to banks for granting credits but it also faces a significant share of challenges such as shortage of infrastructure projects and raw material, the need for technology up-gradation, and unavailability of required skilled laborers with time.

# Capital Goods Building the New India



Share in the country's manufacturing sector •



# **3. Growth Prospects and Barriers of Industry**

The government's push to the engineering sector has been evident because of the initiatives like Make in India, Digital India, Atmanirbhar Bharat, etc. These initiatives poured in a major investment in the manufacturing of electronic, electrical, and telecom equipment along with the capital goods industry and also encouraged private and global players to enter the Indian engineering market. There is a massive market demand present in this industry as it is expected to become a US\$ 100 billion market by 2022.

India always has an upper h a n d i n the global engineering market because of the availability of a skilled workforce for the industry. India's strategic geographic location also plays an important role in its global trade whereas the rising domestic population creates abundant demand



for engineering solutions in its economy too. But all these scenarios work greatly in favour of India from the last few years when the government also proposed lustrous policies for the industry with prospective reforms in labor laws and licensing system. The increasing privatization in the industry is also making it more responsive and efficient to handle strategic outsourcing at the global level.

### In this regard the major drivers of growth for the Indian engineering sector can be seen as:

#### Rapid Infrastructural Development

Due to growing industries and higher population size, India is witnessing an unprecedented and holistic infrastructure upgrade for the last few years. All these are creating demand in the engineering and manufacturing sector especially for mining, machine tools, petrochemicals, Oil & Gas extraction, etc.

#### Replacement of Ageing Equipments

In the areas of power transmission and distribution, there is a huge demand for the replacement of aging equipment to minimize and avoid AT & C losses.

#### Narrowing Down the Gap between Import and Export

As per the Indian Government data, the import in the sector is 3 time sits export that is showing the higher dependency on imports in the Indian engineering sector. The major reason for this may be seen as the low investment in technology up-gradation and research & development in the sector. But as the government is supporting these areas through major policy frameworks, it has major potential to narrow down this gap in the future.

### Export and Import Trends in Major Engineering Sub Sectors (In US\$ Million)

Capital goods subsector	Export		Import			
	Apr-Dec 2018-19	Apr-Dec 2019-20	Growth (%)	Apr-Dec 2018-19	Apr-Dec 2019-20	Growth (%)
Machine tools	364.15	341.14	-6.3	2595.2	2452.1	-5.5
AC, refrigeration machinery etc	1519.09	1081.49	-28.8	2678.25	2656.67	-0.8
Cranes, lifts, and winches	362.12	438.01	21.0	1285.65	1193.91	-7.1
Electric machinery and equipment	6260.54	6691.12	6.9	7471.35	8514.15	14.0
IC engines and parts	2077.85	1922.68	-7.5	1872.02	1691.72	-9.6
Industrial machinery for dairy, agriculture, food processing, etc.	4339.9	4180.58	-3.7	9191.06	9378.01	2.0
ATM, injecting moulding machinery etc	1182.03	1333.4	-12.8	780.47	745.35	-4.5
Nuclear reactor, industrial boilers and parts	531.12	626.34	-17.9	272.06	334.9	-23.1
Other construction machinery	1248.9	1071.46	-14.2	1737.89	1388.28	-20.1
Auto components/parts	4267.63	4045	-5.2	4125.68	3531.96	-14.4

### Power Reforms and Capacity Addition

India is going to witness huge power demand in the future due to rapid urbanization and industrialization. Thus, the government is providing the push to capacity creation in power generation, transmission, and distribution through various reforms and creating massive growth prospects for the engineering sector.

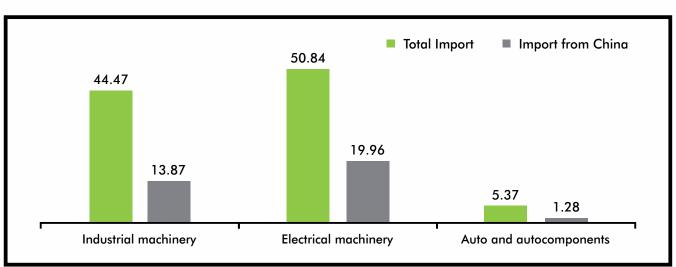
Besides these factors, the capacity expansion in the field of nuclear science and technology is also providing impetus to the engineering sector by introducing major business opportunities in the market. The "Make in India" program of the Government of India is highly benefiting the Indian engineering sector due to the promotion of localized manufacturing and is expected to provide growth to equipment manufacturers in the field of steel, power, mineral, etc.

Due to Covid-19 Pandemic, when the whole world went digital, it also created high demand for low-cost IT manufacturing solutions to increase productivity, precision as well as accuracy. This also created a huge demand in the field of medical equipment like ECG, X-Ray Scanners, where 40 % of the demand is met by imports. During the pandemic in the financial year 2020, India has increased the export of medical and scientific equipment and reached the scale of US\$ 36 Billion which shows the remarkable progress by the sector.

Across all the sub sectors of the engineering industry, India is heavily dependent on imports from China. The low-value production and assembly work along with lack of capacity upgradation is some of the main reasons responsible for this outlook. Indian Engineering sector annually produces goods of a m o unt US\$ 726 Billion (approx.). But over time, India is gradually working on upgrading its underdeveloped capital goods



and manufacturing industry through capital investment and technology up-gradation. This will help India to counter its negative trade balance in the future and provide growth to the sector.



India's 2019 Import Scenario of Major Engineering Sub Sectors (In US\$ Million)

Currently, India plays an active role on world forums and thus commands a significant position in the policy formulation of global trade in the forums like the World Trade Organization as well. During the pandemic, when the global movement of people and goods got to a standstill, India created the opportunity in disguise with an initiative like Atmanirbhar Bharat which provided a significant boost to the engineering sector in India along with the overall growth of the Indian economy. The engineering sector of the Indian economy has a 12% of the total share in the Indian manufacturing sector. It is a highly capital-intensive industry and requires high investments through government, private players, and global investors. Thus, to meet out parts of this demand, 100% Foreign Direct Investment (FDI) is allowed by the government for the sector through an automatic route.

As of March 2020, the engineering sector in India constituted a significant 5.5% of total bank credits in the country where the outstanding total bank credits of the industry stand for 6.9%. As per the last year's trend, the Gross bank credit increased in 2019 as compared to 2018 and reached up to around US\$ 24.3 Billion but again showed a declined trend during 2020 and touched the mark of US\$ 21 Billion (Approx.) which is a good sign for the industry's growth.

The "Make in India "program of the Government of India and the launch of its next phase as "Make in India, Make for the World" is projecting India as a global manufacturing hub along with bringing global investments for the industry and providing a major boost to the Indian economy. The large market size and remarkable growth opportunities in the industry made it a preferred destination for international players too and thus, they are putting their best foot forward to enter the Indian engineering market.

As per the data of the United Nations Conference on Trade and Development, during 2019, India was one of the top 10 recipients of Foreign Direct Investment and became a global FDI attraction in South Asia. It recorded a 16% hike in FDI this year in comparison to the previous year which accounts for approximately US\$ 49 Billion and was majorly drawn in the mechanical and engineering sector.

Sector	FDI	Share%
Automobile	24210.68	5.1
Metallurgical Industry	13401.78	2.9
Electrical equipment	8604.02	1.8
Industrial machinery	5619.5	1.2
Misc. mechanical and engineering industries	3636.79	0.6
Medical and surgical appliances	2129.5	0.5
Railway related products	1107.6	0.2
Machine tools	980.78	0.2
Agri. Machinery	574.48	0.1
Earth moving machinery	456.8	0.1
Commercial office and household equipment	388.88	0.1
Scientific instruments	286.84	0.1
Boiler and steam generating plants	283.37	0.1
Industrial instruments	88.36	0.0
Mathematical surveying and drawing instrument	7.98	0.0
Subtotal	61767.96	18.1
Total	476119	

#### Sector-wise Distribution of cumulative FDI between 2000-2020 (In US\$ Million)

The global player's interest in the Indian engineering sector is governed by competitive advantages like low manufacturing costs, technology, and innovation in the industry. When these advantages are supported through lucrative government policies and regulations, then it will create a conducive environment to register growth in the sector. The same implies



with the Indian engineering sector, which is currently receiving major policy attention from the government side and thus attracting higher FDIs and international investments such as BHEL is setting up a "Make in India Business Development Group" to work on manufacturing opportunities in the Indian markets by collaborating with global Original Equipment Manufacturers under "Make in India, Make for the World" program.

Some of the major investments that takes place in the Indian engineering sector in recent years are from Tesla, which setup its Research and Development Center in Bengaluru in January 2021 and registered its Indian subsidiary too. This will draw a major investment in the short run and provide many employment opportunities. Likewise, Hitachi ABB Power Grids Limited received a supply order of transformers to Indian Railways worth Rs 160 Crore which contributes to the growth of the sector.

The participation of Larsen & Toubro (L&T) in Dubai Expo, 2020 to showcase their abilities in the field of hydrocarbon engineering, power transmission, distribution, etc to attract global investment. Even some of the global and domestic investors also like to invest in the sector through the stock market but their risk quotient always proved to be high in comparison to their profit margins and returns yields. In the past decade, only 30% return on investments was recorded in the Indian engineering sector stocks and they prove to be highly unstable.

But during this growth period, the Indian engineering sector needs to put focus on distinctive research &development in the sector to attract major investments that should directly contribute towards the value addition in the sector as well as the Indian economy. Thus, producers need to use these investments wisely and work on quality control to successfully counter the low-quality engineering imports from China. In this regard, the Government

Government of India Reviews Extant Foreign Direct Investment (FDI) Policy



of India should also come forward with trade facilitation measures and benefit the local engineering sector and strengthen them for global competition.

# 5. Response to Covid-19 Pandemic and Way Forward

The Covid-19 pandemic and its both waves put the global economies on still and the Indian engineering sector has not been untouched by the continuous ill impacts of this misfortune. The impact of the pandemic is visible on the Indian engineering trade and faced the reduction in demand from all over the globe. As every economy has put restrictions on the movement of goods and people thus, in the first wave, the Indian engineering sector too received a major blow with restricted imports. In this phase, the Indian Government infused new energy in the sector through the "Atmanirbhar Bharat" mission and start promoting the development of the local supply chain and start reducing the import dependency as and where possible.

Still, the sector absorbed the shock very well and proved to be strong enough on a recovery path. As the economy starts picking up the gear after the first wave, the governmental push to the nation's growth and economic prosperity paves the way ahead for the sector



too. In this phase, the biggest concern for Indian engineering firms is to start on-site work with all the safety standards and Covid-19 guidelines. This scenario also made skilled laborers lose their jobs and later the industry faced the challenges of attracting those workers on site again.

#### The impact of this pandemic on the Indian engineering sector was two fold:

- Lack of raw material and shortage of supply
- Rising Project Costs

Both these issues hampered the attractiveness, reliability, and competitiveness of this industry. It was evident in this phase, that after tremendous efforts from the Government of India, the manufacturing sector of the country saw a 0.7% decline during the financial year 2020, which in turn impacted the engineering industry too. But still on the recovery path, in the same financial year, the engineering export was recorded to be around 60% of the total export tally of the country and provided a great sense of relief for the sector.

As the Indian economy came out of this recession, it looked more confident with a major infrastructure upgrade and holistic development plan through Gati Shakti Master Plan, National Infrastructure Pipeline, etc, and all set to help the engineering sector in India to hold back its momentum. This is evident, as the government statistics reveal that the engineering goods export in India is expected to touch the point of US\$ 200 Billion by 2030.

All these efforts from the Government of India and the innate ability of the Indian engineering sector utilize this adverse scenario for narrowing down its trade deficit against China. The sector is ready to upgrade its production capabilities and capacities through the investments offered via various channels and create a level playing field for all stakeholders. The process thus includes fair assessment and implementation along with developing the support mechanism for small companies through Indian Giants in the sector in form of knowledge and technology sharing.

# 6. Government Schemes and Policy Framework

In the 75<sup>th</sup> year of Indian Independence, the Government of India has launched a mega plan to revive the Indian economy from the shock of the pandemic. Thus, the investment plan of Rs 100 trillion was announced for the Indian infrastructure sector, which will directly provide stimulus to the engineering sector of India. This will increase the demand for the engineering tools such as those used for mining, machining, and construction.

The engineering sector of the Indian economy has strategic importance and thus the policy framework of the government such as the Production Link Incentives (PLI) scheme is also providing a level playing field to the local producers and help to develop India as a global hub for engineering facilities and simultaneouslynarrowing down



the trade deficit. Some of the major policy initiatives of the government to boost the sector and attract investment are as under:

The Ministry of Heavy Industries is geared up to promote innovation in the sector through the establishment of 6 technology platforms to provide self-sufficiency in the sector. The government is also developing the Centre of Excellence and common engineering facility centers for technology development in the domain and establishing the inclination towards research and development through continuous interaction between industry and academia.

#### Electronic Development Fund

The fund was developed by the Government of India in 2016 with the involvement of the industry to inculcate the practice of Innovation, Research, and Development. For this purpose, it provides risk capital to both academia and industry. The fund is aimed to develop the electronic industry in the country and provide financial support for the development of new technologies in the domain of Nano-electronics, Electronics, and Information Technology.

#### Indian Electrical Equipment Industry Mission Plan 2012-22

The plan is prepared by the Indian Government to establish India as a global hub for electrical equipment production through the balancing act to manage import and export and achieve the target of US\$ 100 billion by 2022. The plan was proposed to coordinate and find synergy among the various stake holders in the industry such as power utilities, regulatory

authorities, etc and provide rapid growth to the domestic electrical equipment industry in a sustainable way.

### National Capital Goods Policy 2016

This manufacturing sector policy is framed to provide a boost to the Indian engineering and capital goods market. The policy has aim to increase the production capacity of capital goods to 750,000 Crore by the year 2025. Through this, the government is trying to increase the domestic production capacity of capital goods to 80% of the total capacity which establishes India as a net exporter in the sector and provides employment to around 30 million people in the country.

### National Manufacturing Policies

The policy is designed to bring changes in the Indian manufacturing sector with the objecting of increasing the share of the manufacturing sector from 16% to 25% of the Gross Domestic Product (GDP) by the year 2022. For the realization of this vision, the policy advocates for technology development including green technology and skill up-gradation of the workforce in the industry.

### National Policy on Electronics 2019

The policy is prepared to establish India as a global center for Electronic System Design and Manufacturing with additional push to increase export in the domain by developing core components for the industry such as chipsets and make it competitive at the global level. It will leverage local electronic product manufacturers and develop a funnel of investment and advanced technology for them.

All these policy frameworks are providing impetus to the Indian engineering sector and working in the right direction of establishing India as a global choice for engineering products and manufacturing.



# 7. Conclusion

The engineering sector is omnipresent, and thus it has cross-sectional application in various major sectors of the Indian economy such as capital goods, manufacturing, etc. The products from bulb to computer have all included engineering and that is the beauty of this sector. Thus, it is very important to provide impetus to this sector for the overall growth of the Indian economy.

Over time, the government's strong will to boost this sector has omitted many hindrances in the growth such as License Regulations, stringent labor laws, etc. In this regard, the investment through government, private, and global players creates a positive impact to support and developa sense of research and development for the industry.



The US\$ 15 Billion investment from the Indian government for the research and development of the Indian engineering sector in the coming 5 years will help local service providers in the industry at large. This will help domestic engineering sector companies to prepare themselves and scale up their capabilities to serve the rising demand of the Indian economy as well as the globe.



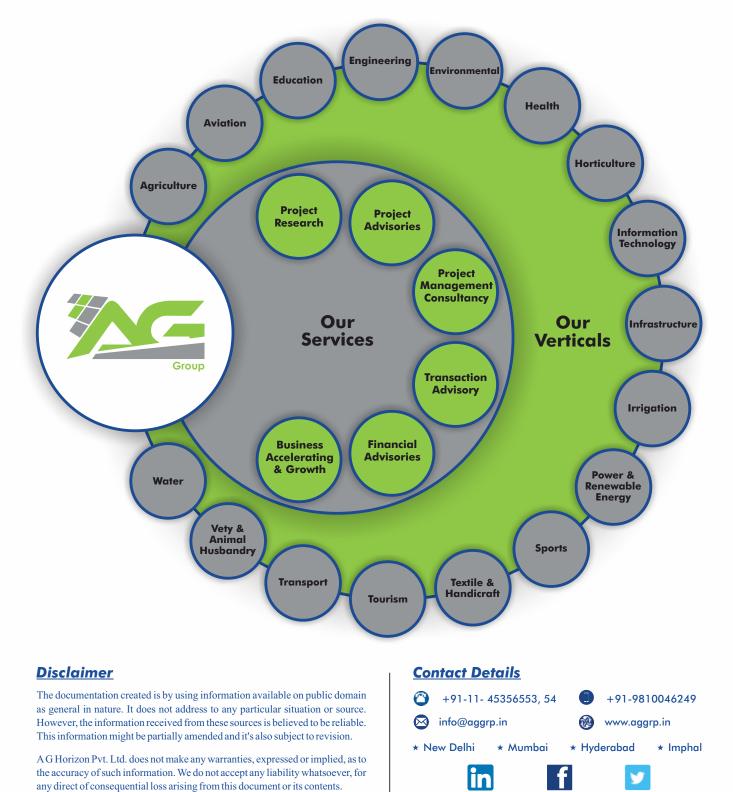
### 8. References

- 1. https://www.investindia.gov.in/sector/capital-goods
- 2. <u>https://heavyindustries.gov.in/</u>
- 3. https://statisticstimes.com/economy/country/india-gdp-sectorwise.php
- 4. <u>https://www.indiabudget.gov.in/economicsurvey/</u>
- 5. <u>https://www.ibef.org/industry/engineering-india.aspx</u>
- 6. <u>https://www.equitymaster.com/research-it/sector-info/engg/Engineering-Sector-Analysis-Report.asp</u>
- 7. https://commerce.gov.in/wpcontent/uploads/2020/02/MOC\_635851104240906967\_FAQ\_on\_ FTA\_28July2015.pdf
- 8. https://indconosaka.gov.in/pdf/VG%202019\_Engineering\_Sector%20Profile.pdf
- 9. <u>https://www.cii.in/Sectors.aspx?enc=prvePUj2bdMtgTmvPwvisYH+5EnGjyGXO9hLECvT u NuN6O8po7XzqQsLGb6mUXAP</u>
- 10. <u>https://www2.deloitte.com/content/dam/Deloitte/us/Documents/energy-resources/us-2022-outlook-engineering-and-construction.pdf</u>
- 11. <u>https://www.ipsos.com/sites/default/files/ct/publication/documents/201809/indias\_engineering\_industry-nov2013.pdf</u>
- 12. <u>https://www.televisory.com/blogs/-/blogs/indian-engineering-industry</u>
- 13. <u>https://www.eepcindia.org/eepcmagazine/magazinepage.aspx?id=MAZ220720201545280837</u> <u>4&p-id=27&page=spotlight</u>
- 14. https://www.investindia.gov.in/key-policies-and-schemes
- 15. https://www.meity.gov.in/esdm/policies
- 16. <u>https://www.pib.gov.in/PressReleasePage.aspx?PRID=1671981</u>
- 17. <u>https://www.dgft.gov.in/CP/?opt=epcg</u>
- 18. <u>https://aatmanirbharbharat.mygov.in/</u>
- 19. https://heavyindustries.gov.in/writereaddata/Content/indian\_mission\_plan\_2012-2022.pdf
- 20. https://dpiit.gov.in/sites/default/files/po-ann3.pdf
- 21. <u>https://www.meity.gov.in/writereaddata/files/National%20Manufacturing%20Policy%20(201</u>1)%20(167%20KB).pdf
- 22. <u>https://www.meity.gov.in/writereaddata/files/Notification\_NPE2019\_dated25.02.2019.pdf</u>
- 23. https://www.meity.gov.in/esdm/edf
- 24. https://heavyindustries.gov.in/writereaddata/Content/indian mission plan 2012-2022.pdf
- 25. https://dpiit.gov.in/sites/default/files/po-ann3.pdf
- 26. <u>https://www.meity.gov.in/esdm/policies</u>

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