



सत्यमेव जयते

Ministry of Commerce & Industry  
Government of India

**EEPCINDIA**  
ENGINEERING THE FUTURE



# Export India: Unleashing India's Engineering Exports Potential

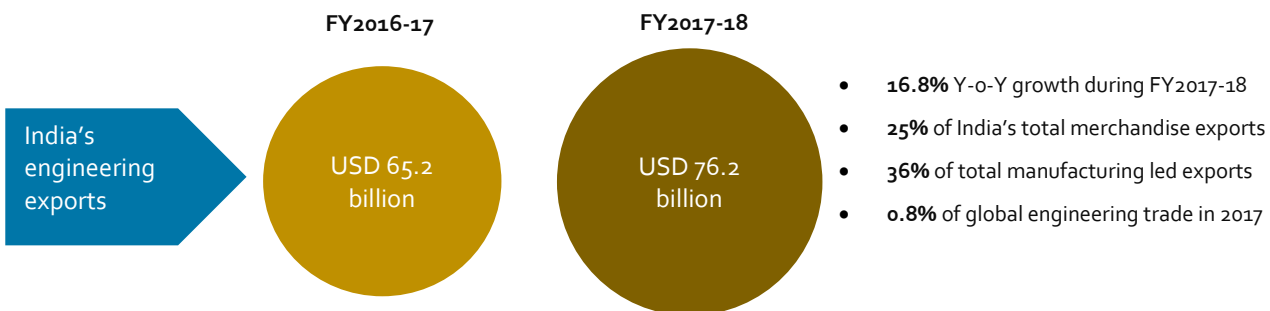
Prepared by

**Deloitte.**

# Engineering exports strategy paper: 2019-2025

Indian engineering sector is of strategic importance for the growth of the country, being closely associated with the manufacturing and infrastructure sectors of the economy. In other words, growth of the engineering sector drives the growth of core sectors of the Indian economy.

**Figure 1: Status of India's engineering exports**



Source: EEPC; World Bank; Trade Map; International Trade Centre

In the global exports market across the various product categories defined by DGCIS classification, India is not a "leader" in any product category and continues to be a "follower" nation. **Export India** framework, prepared in consultation with engineering exporters and EEPC India, highlights the opportunities to unleash the country's exports potential and achieve an aspirational target of USD 200 billion for engineering exports by 2025, almost a three-fold increase from actual exports during 2017-18. This target looks achievable considering the increased trade flow of engineering products and provides India an opportunity to attain leadership across various product categories.

The technology intensity of India's engineering export portfolio has not changed significantly over the decade, and India still exports low- and medium-technology intensive engineering goods. The share of high-tech goods is slightly more than six percent<sup>1</sup> of the overall engineering export basket. Historically, labour cost arbitrage has been the competitive advantage for India and this has resulted in limited exports in the high-end segment.

However, technology trends across product categories and emergence of digital technologies in manufacturing are expected to significantly change the engineering exports landscape. These may also threaten India's competitive advantage owing to labour cost arbitrage. India's engineering exports is accounted by large exporters and Micro, Small and Medium Enterprises (MSMEs). Typically, large exporters have capabilities to embrace the emerging product and manufacturing technologies. The MSMEs do not necessarily have the capability and financial strength to invest in emerging technologies. Moreover, the scale of operations and production volumes are significantly lower than that of China, the main competitor in the engineering export segment.

<sup>1</sup> UNCTAD Skill-Technology Matrix

**China**

- 16.8% share in global engineering trade during 2017
- Largest producer of metal castings at 48 MMT during 2017
- Largest exporter of textile machinery with 20% of total world exports
- Nearly 50 GW manufacturing capacity of Solar PV cell

**India**

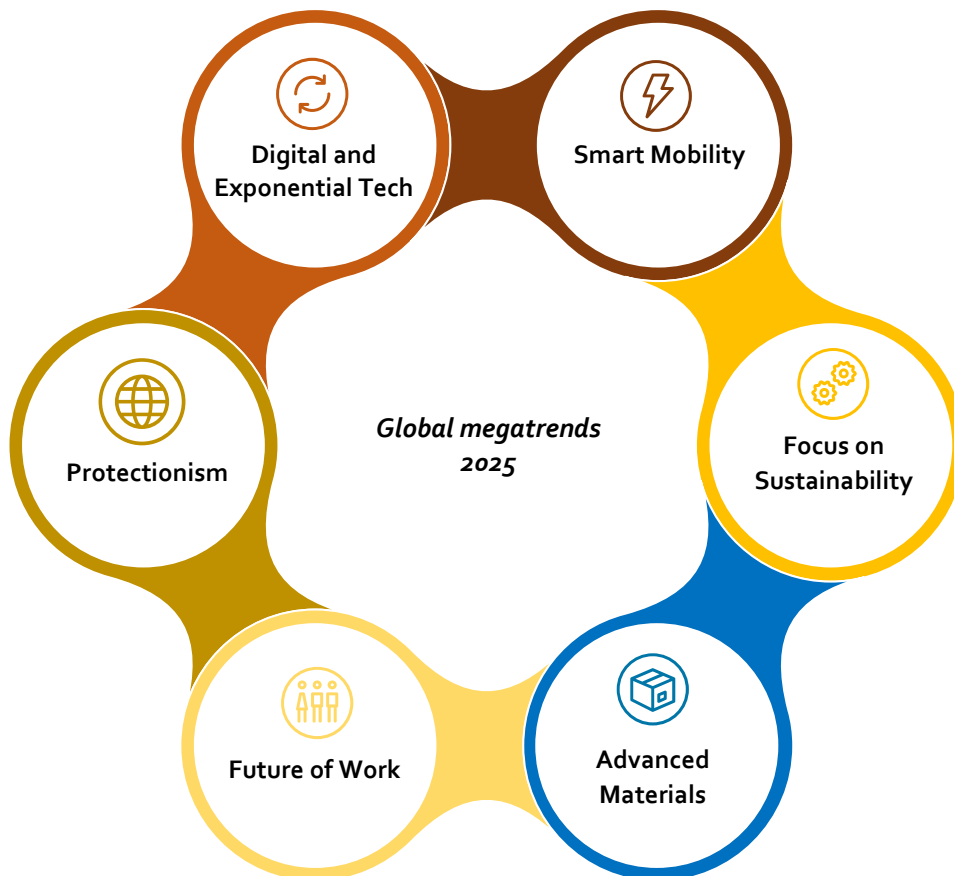
- 0.8% share in global engineering trade during 2017
- Second largest producer of metal castings at 11.5 MMT during 2017-18
- Exports around 3% of the total global exports of textile machinery
- Manufacturing capacity for solar PV cell is nearly 3.2 GW

Source: Trade Map, International Trade Centre; Industry reports

EEPC India has felt the need to have a comprehensive study to identify the focus areas to boost engineering exports and to help SMEs in moving up the value chain. Thus, it had commissioned Deloitte India to prepare a strategy paper **"Export India: Unleashing India's engineering exports potential"**.

This report was prepared after a comprehensive assessment of the market and product technology trends, both global and Indian. The current period is significant with cautious outlook for the global economy in the short term. This is primarily due to tight global finance and liquidity conditions, moderate industrial production, volatile currency movements, and increased trade tensions along with inward looking policy protectionism across developed and emerging economies. This enhanced risk perception and protectionism in global markets is likely to have an impact on trade of engineering products in the short term. The report has also considered the global megatrends (by 2025), that are likely to transform the manufacturing and engineering industries.

Figure 2: Global mega trends 2025

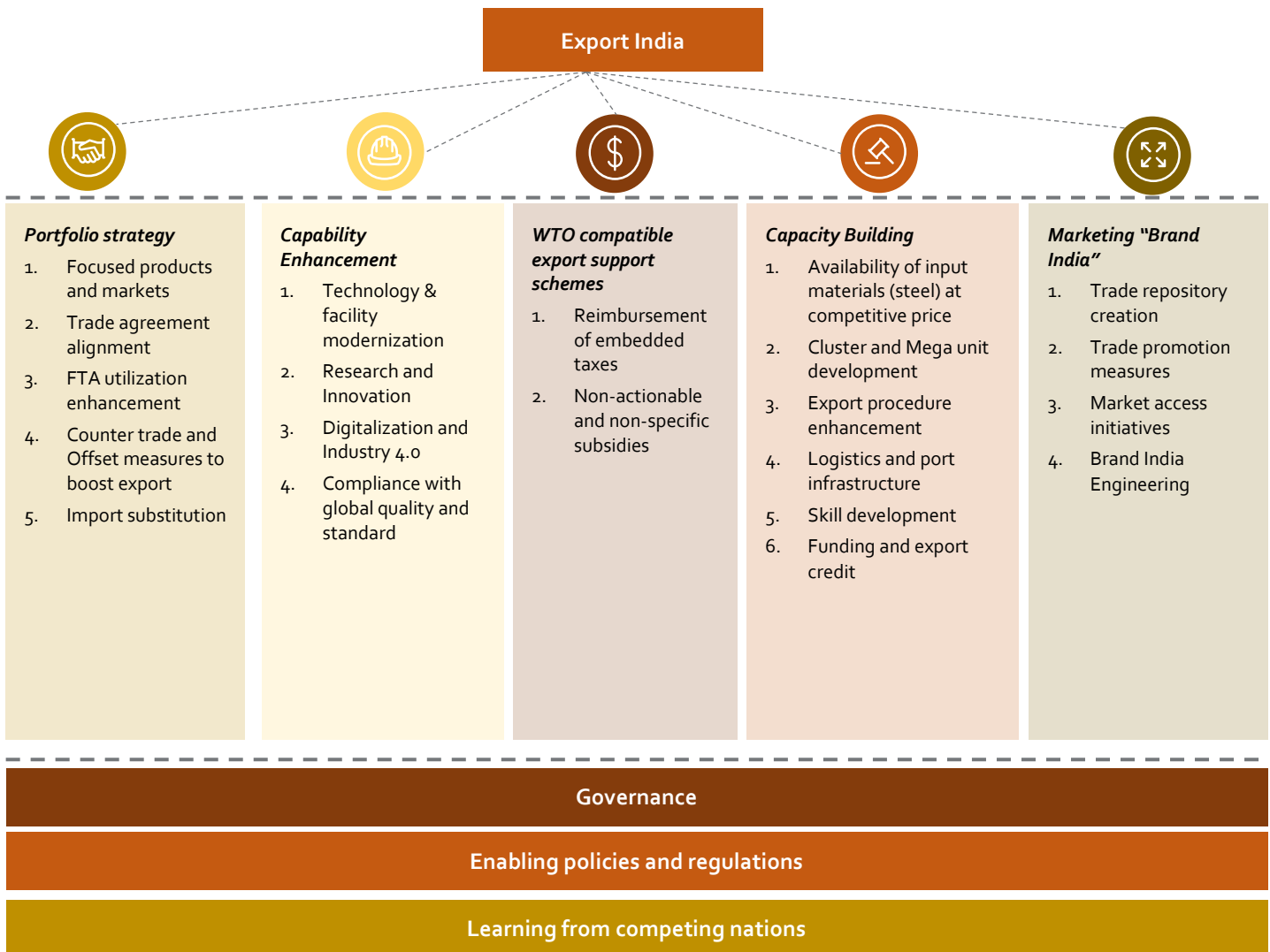


The report emphasises on specific exporter challenges related to market awareness and access, capability and capacity constraints along with limited handholding, and incentives to small engineering exporters. Further, this report highlights that many of the export incentives could already be non-compliant per WTO guidelines, while some of the export incentives are likely to be withdrawn in the future. Hence, it is imperative that the country focuses on a holistic framework to address issues related to competitiveness.

India has one of the youngest populations compared to its competitors. By 2020, India’s average age would be 29<sup>2</sup>, the least amongst the global average. It is expected to surpass China as the world’s largest country by 2025, with a large proportion falling in the working age category. While China’s growth in manufacturing and exports seem to have already benefited from a demographic dividend, India has the potential to achieve significant manufacturing and exports growth from continuing demographic dividend over the next decade.

The “Export India” framework addresses the issues of the exporters and identifies the strategic options for engineering exports by 2025 across five pillars, viz. “Product-Market Optimisation”, “Capability Enhancement”, “Export support schemes”, “Capacity Building”, and “Marketing Brand India”.

Figure 3: Export India framework



Source: Deloitte analysis in consultation with exporters and EEPC India

<sup>2</sup> India’s demographic dividend – BBC News

The report has tried to evaluate the impact of various government policies and regulations on engineering exports from India. In addition, it comprises collated learning from competing nations such as China, US, Germany, Japan, South Korea, and a few other nations from ASEAN, Latin America, and European Union (EU) in different sections. Some of the key themes that emerge from competing nations and drive their competitiveness include focus on “product leadership”, focus on smart and advanced manufacturing technologies, government policies for manufacturing and small and medium enterprise (SME) development, infrastructure, and innovation focus amongst others. India may look to adopt some of best practices of different leading nations of the engineering world for competitiveness.

Evaluation of all product categories under “HS codes 72-94” was carried out. Product categories were prioritised based on multiple parameters. The focus product categories (24) are shown below.

Product category	Sub-category
<b>Ferrous articles</b> (Chap – 73, 84)	Ferrous casting
	Steel forging
	Pipes and tubes, fittings
	Industrial fasteners
<b>Mechanical Machinery</b> (Chap – 84)	Construction and Earthmoving Machinery
	Agricultural Machinery
	Textile Machinery
<b>Electrical Machinery</b> (Chap – 85)	Electric Rotating Machines
	Transformer
	Switchgear
	Cables
<b>Other Machinery</b> (Chap – 82, 84)	Pumps
	Valves
	Bearings
	Machine Tool
	Hand & Power Tool
<b>Auto</b> (Chap – 87)	Passenger Car
	Commercial Vehicles
	Two wheelers
<b>Auto Components</b> (Chap – 87)	Auto Components
<b>Others</b> (Chap – 85, 87, 90)	Bicycle
	Medical devices and equipment
	Renewable equipment

## Project Exports

The report highlights various aspects related to the current trade scenario, market and industry dynamics along with global and Indian technology trends that affect each of the focus product categories in detail. It may be noted that there are many other product categories that have exhibited historical growth and have significant contribution to engineering exports. Selection of the above categories is done based on the future growth potential, participation of the MSME industries, overall export market size, and India's capability.

Recommendations are along four themes aligned with the "Export India" framework. Some of the recommendations, based on the feedback and inputs from the various stakeholders, which may improve India's engineering export competitiveness include:

### 1. Product – Market Optimization

- **Target product-market portfolio strategy:** It is imperative to identify the focus product baskets at six digit HS code levels, where India has established credibility, growth potential is high, or the government has additional focus for future expansion. The selection of the target markets needs to be done based on the future demand, acceptability of Indian products, and India's competitiveness in those markets. It is critical to understand the specific requirements (standards, regulations, technical features, etc.) in those markets.

While each category has been studied in reasonable detail, and HS code-wise target markets have been identified, major markets are highlighted in the table below.

Product Category	Target Markets
Ferrous Casting	North America, Germany, France, Italy, UK, Japan, Mexico, Thailand
Steel Forging	North America, Germany, UK, Italy, France, Mexico, China, Japan, Thailand, Middle East
Pipes, Tubes, and Fittings	Gulf Cooperation Council (GCC) countries, US, Canada, Nigeria, Angola, Norway, Finland, UK, Germany, France, Australia
Industrial Fasteners	Germany, North America, Italy, UK, France, Netherlands, Mexico, Thailand
Construction and Earthmoving Machineries	SAARC, ASEAN Countries with focus on Indonesia and Malaysia, Algeria, Sub-saharan Africa with focus on South Africa, Kenya and Nigeria, Australia
Agricultural Machineries	SAARC, ASEAN countries, South Africa, Algeria, Kenya, Nigeria, Ghana
Textile Machineries	Bangladesh, Vietnam, Turkey, Indonesia, Brazil
Pumps	Centrifugal pump – Africa, SAARC, ASEAN, Middle East, Mexico; Fuel Pump – Developed nations such as US and EU nations
Valves	US, Canada, Germany, France, UK, Russia, GCC, Mexico, Brazil and ASEAN countries
Bearings	Germany, USA, Italy, France, Canada, Mexico, Thailand, Indonesia
Machine Tools	Turkey, ASEAN countries, Mexico, Brazil, USA, Canada, China
Hand & Power Tool	US, Canada, UK
Electric Rotating Machines (Motor, Generator & Gensets)	Motors and generator – GCC, US, UK, ASEAN Gensets – SAARC, GCC, Africa
Transformer	US, GCC, SAARC, ASEAN countries
Switchgear	US, GCC, SAARC, ASEAN countries
Cables	GCC, SAARC, ASEAN, USA, Mexico, UK

Product Category	Target Markets
Passenger Car	ASEAN nations, SAARC, Mexico, African nations
Commercial Vehicles	ASEAN nations, SAARC, Mexico, African nations, Australia
Two-wheelers	ASEAN nations, SAARC, African nations, Argentina, Colombia, Peru, Chile
Auto Components	US, Germany, Canada, Japan, Mexico, Italy, UK, Thailand
Bicycle	SAARC and Sub-saharan Africa
Medical Devices & Equipment	SAARC, Sub-saharan Africa; US, Germany, France for consumables (Class A and Class B devices and equipment)
Renewable Equipment	Sub-saharan Africa, Sri Lanka, Bangladesh, Nepal, USA, Middle East and North Africa
Project Exports	Focus on countries with EXIM (export-import) bank line of credit (LoC), i.e., Bangladesh, Nepal, Mongolia, Tanzania, Rwanda, Ethiopia, Mozambique, Kenya

- Trade agreements alignment to get maximum benefits from preferential tariffs:** Stakeholders indicated that Indian trade agreements are not adequately aligned with countries that have consumption potential. Recently, India’s engineering exports have been led by developed nations such as USA, EU, Middle East, and these are now fast shifting towards emerging economies such as SAARC, ASEAN, Africa, CIS, and Latin America. Therefore, it is critical that future policy actions focus more on the emerging destinations with high potential of export to boost India's overall exports. The trade negotiations should have representations from the industry to include relevant tariff lines and appropriate Rules of Origin (ROO) criteria to benefit Indian exporters.

**Long term recommendations:**

- Ensure active participation of industry bodies during trade agreement negotiations to include categories in which India is ahead in the value chain or cost competitive.
- Include HS Codes where India has competencies at the time of amendment of Preferential Trade Agreement (PTAs)/Free Trade Agreement (FTAs), e.g., auto components, electrical machineries, etc.
- Explore FTAs/PTAs with new geographies to boost export, e.g., Africa, CIS, etc.

- FTA utilization enhancement:** Reports suggest that FTA utilization is as high as 70-80% in developed countries while in India FTA utilisation is significantly low<sup>3</sup>. The government should consider focusing to increase the utilisation of FTA by importers and exporters. This should be done to correct the existing trade distortions, where the partner country has been able to get access to Indian market but the Indian industry has failed to reap the benefit of preferential agreements.

**Short and medium term recommendations:**

- Capture FTA utilisation data.
- Set up “Origin Management System” for exporters.
- Enhance awareness of preferential duty benefits and compliance requirements (ROO, COO, etc.) under various FTAs for importers and exporters.

- Counter trade and offset measures:** India has significant trade deficit in engineering goods with some specific countries where counter trade measures could be explored, to increase export and involvement of SMEs. India has significant trade deficits with countries such as China, Iran, Saudi Arabia, Australia, Indonesia, Kuwait, Nigeria, Qatar, Peru, Argentina, Ghana, etc. The government could consider devising a counter trade mechanism for identified product categories.
- Import substitution:** India’s import of engineering goods and corresponding trade deficit has increased steadily in past five years.
  - Imports have increased from USD108 billion in 2013 to USD134 billion in 2017<sup>4</sup>.

<sup>3</sup> <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/tax/tax-2016/in-tax-deloitte-fta-utilization-noexp.pdf>

<sup>4</sup> Trade Map, International Trade Centre

b. Trade deficit has increased from USD33 billion to USD53 billion during 2017<sup>5</sup>.

There are some categories, where import can be substituted significantly through appropriate policy interventions, technology transfer, and manufacturing capability development.

**Short and medium term recommendations:**

- Identify countries where counter trade measures can benefit India by bridging trade deficit.
- Identify engineering product ranges, which have export potential in specific countries.

**Long-term recommendations:**

- Initiate Government-to-Government (G2G) dialogue and devise a counter trade mechanism.

**Key items for import substitution<sup>6</sup>:**

Category	Import dependence (%)
Solar PV	85 – 90%
Machine Tools	70 – 80%
Pumps	65 – 75%
Textile Machinery	60 – 70%
Construction & Earthmoving machinery	55 – 65%
Valves	50 - 60%
Medical Devices	50 - 70%
LV Switchgear	50 - 55%
Printing Machinery	45 – 50%
HV Switchgear	40 – 45%
Motor & Generator	30 – 35%

**2. Exporter Capability Development**

- **Create productive and competitive SMEs through technology and facility upgradation and manufacturing support:**  
The competition in the international trade has made it imperative for the Indian SMEs to improve competitiveness by lowering cost, improving quality and improving productivity by initiating various measures that include manufacturing innovation, facility modernization, and upgradation of technology. The MSMEs with high level of technology are better adapted to meet the varied business needs and compete in the domestic and global markets. The government should consider re-visiting its policy towards manufacturing support and technological upgradation, and undertake appropriate advocacy for enhancement of their competitiveness.

**Global examples range of services provided by SME Manufacturing support programs**

Country	USA	Germany	Austria	Japan	Korea	China
Promote Technology Adoption for SMEs	✓	✓	✓	✓	✓	✓

<sup>5</sup> Estimated: Trade Map, International Trade Centre

<sup>6</sup> Source: Trade Map, International Trade Centre; Industry reports



Country	USA	Germany	Austria	Japan	Korea	China
Provide Audits of SMEs' Lean Mfg. & Innovation Processes & Skills	✓			✓		
Support Tech Transfer & Commercialization	✓	✓	✓	✓	✓	✓
Promote Tech/ Knowledge Diffusion from Universities	✓	✓	✓	✓	✓	✓
Perform R&D in Direct Partnership with SMEs				✓		
Provide Access to Research Labs/Prototyping Facilities	✓			✓	✓	
Provide SMEs Direct R&D Funding Grants	✓	✓	✓	✓	✓	✓
Provide SMEs Loans to Scale/Grow Businesses			✓	✓	✓	✓
Use Innovation Vouchers		✓	✓			
Promote Energy-Efficient Manufacturing Skills	✓	✓		✓		
Provide Assistance with Standards	✓				✓	
Host Best Practice Events	✓			✓		

The focus needs to be to strengthen “Technical and capital assistances” programme by increase in budgetary allocation for “technology and facility upgradation” to bring it at par with global benchmarks (USA, Japan, Korea, etc.). Thus, it creates a mechanism to provide technical assistance to MSMEs/Start-ups, and help manufacturing MSMEs with process modification and adoption of best practices. Engineering Export Promotion Council (EEPC) should consider carrying out a “need assessment study” to understand the type of support required by the SMEs.

**Short and medium term recommendations**

- Carry out a cluster wide capability benchmarking study, identify the clusters/facilities that require facility upgradation, and prepare an investment estimate.
- Educate MSMEs on global trends, standards, and quality requirement jointly with various Ministries (MSME, DHI, etc.).
- Develop campaigns on awareness programmes for existing schemes to upgrade technology for MSMEs.
- Identify right collaborator for technology upgradation.

**Long-term recommendations**

- Strengthen “Technical and Capital assistance” programme by increasing budgetary allocation and setting up a “Technical Helpdesk”.
- Align the manufacturing process with global leading practices, such as process R&D, adoption of automation, etc.

- **Focus on research and innovation:** Most of the developed nations have aggressively invested in research and innovation to move up in the value chain. While multiple schemes are in operation under the Department of Science and Technology and Ministry of MSME, it appears that they are not at par with their global peers. In general, India seems to lack a coherent approach to enable SMEs with appropriate research and innovation and subsequent commercialisation. The Government should consider adopting a more aggressive policy to fund research and innovation in emerging technologies and focus on the optimum utilisation of the policy.

**Short and medium term recommendations**

- Prioritise the research and innovation areas in the engineering and manufacturing sector in collaboration with Department of Science and Technology (DST) and the industry.
- Design an aggressive "SME assistance programme" with an adequate outlay of fund.
- Devise a "governance framework" for funding utilisation; the governing body should have appropriate representation from the government, industry, and EEPC.

**Long-term recommendations**

- Set up R&D and innovation hubs with performance linked funding arrangement.
- Develop G2G or Government to Corporate (G2C) collaboration for right research partnership in India and abroad.
- Focus more on industry-academia collaboration with time bound commercialisation plan.

- **Create a national policy towards adoption of Industry 4.0:** The adoption of "I4.0" is expected to be driven by rapid convergence of digital technologies, manufacturing, logistics, and human systems. The government and industry need to collaborate to develop an ecosystem for mass-scale adoption of "I4.0". The collaborative effort should focus to increase awareness amongst SME community, facilitation of domestic manufacturing of sensors, adoption of emerging technologies such as embedded technology, networking, etc., design, implementation, and scaling up of pilot projects.

**Short and medium term recommendations**

- Create mass scale adoption of "I4.0" as a national agenda.
- Create and define new roles and industry standards for "I4.0" initiatives, which will be followed by MSMEs.

**Long-term recommendations**

- Focus on developing an ecosystem for mass-scale adoption of "I4.0".
- Involve SMEs in adoption of I4.0 initiatives and increase awareness by arranging seminars and workshops regularly.
- Formulate an incentive scheme for MSMEs to encourage adoption of digitalisation.
- Facilitate domestic manufacturing of sensors.
- Design a "pilot project" for implementation of I4.0 and then scale it up.

- **Create a vibrant 'Start-up ecosystem':** Globally, "Start-ups" are seen to contribute significantly to the advancement of research and innovation in various emerging fields. The government should target setting up of multiple incubation centres across the country, in Public Private Partnership (PPP) mode to support and groom promising Start-ups in the technology and manufacturing space.

**Long-term recommendations**

- Identify promising Start-ups in the engineering and manufacturing space.
- Set up multiple incubation centres (at least 4-5, one in each region) across the country in PPP mode to support and groom the identified Start-ups.
- Devise a cost sharing mechanism between the government and the industry to set-up the incubation centres.
- Encourage Start-ups to work on emerging technologies such as 3D printing, robotics, automation, digitalisation, etc., which could have transformational impact in the industry.
- Provide support to "pre-incubation", "incubation", and "post-incubation" phases of Start-ups.

- **Assist MSMEs in understanding and adoption of global standards and regulations:** Standards-related measures serve an important function to facilitate international trade. These are considered as one of the most prominent non-tariff barriers. Despite having a vibrant economy and several multi-nationals, Indian MSMEs often find it challenging to meet standards and conformity assessment criteria demanded by the developed nations. Therefore, the Government, Bureau of Indian Standards (BIS) and EEPC could consider jointly create programmes pertaining to standards and technical regulations.

#### *Short and medium term recommendations*

- Enhance awareness regarding requirement of standards and conformity assessment in developed nations amongst MSMEs. EEPC can arrange panel/product wise awareness campaign in different regions.
- Each enterprise should develop a "Standard strategy" based on their product basket and target markets.
- Ensure mandatory enforcement of relevant standards (e.g., in medical device, quality standard is not mandatorily enforced).
- Increase participation of industry apex members/standard bodies in global forum for standard development.
- Extend the funding assistance for MSMEs to all types of conformity assessment under Market Access Initiative (MAI) scheme.

#### *Long-term recommendations*

- Harmonise relevant Indian standards (BIS) with ISO and IEC; currently, 75 percent of BIS standards are harmonised.
- Explore Mutual Recognition Agreements (MRAs) with target geographies during trade agreement negotiations and amendments.

- **Upgrade testing and certification infrastructure:** The government should consider to upgrade testing and certification infrastructure such as Central Power Research Institute (CPRI), Electrical Research and Development Association (ERDA), and setting up more institutes (CMTI equivalent) to meet the requirements of all engineering sub-sectors.

#### *Short and medium term recommendations*

- Develop adequate affordable testing and certification infrastructure in PPP mode.
  - For example, stakeholders admitted that short circuit test for HV equipment (>132 kV) is not done regularly in CPRI and ERDA; cost increases with testing in overseas laboratory, e.g., KEMA, Netherlands.

### 3. Design and promote World Trade Organisation (WTO) compliant support schemes

- Export promotion schemes under India's Foreign Trade Policy (FTP) provide promotional measures to boost India's exports. Most prominent export promotion schemes are MEIS, Advanced Authorization, schemes for Export Oriented Unit (EOU) and Special Economic Zone (SEZ), and Export Promotion for Capital Goods (EPCG). The US and other countries in the WTO forum have recently challenged India's export subsidy programmes, because of India's graduation from Annex VII (b) category. It is most likely that India may need to stop some of the existing export subsidy schemes. Therefore, the government may need to focus to devise innovative incentive schemes, which are compliant with WTO guidelines and, at the same time, provide economic and technical benefit to MSMEs.

#### *Long-term recommendations*

- Provide funding towards research and innovation, which is allowed per WTO.
  - Financial assistance to the higher education institutes
  - R&D grants towards specific "high priority" research projects
  - Capital subsidy towards environmental equipment
- Provide non-specific subsidies to the MSME segment, which are not export contingent, in various forms.
  - Facility upgradation assistance to MSMEs
  - Funding towards skill development and coaching of workforce
  - Cheap credit/interest subvention to MSMEs
- Strengthen "Market Access Initiative" scheme with increased financial assistance.
- Provide funding assistance towards testing compliance in overseas market. For example:
  - "CE Marking" for EU market; "CSA Marking" for Canada; "JIS Marking" for Japan; "KC Marking" for Korea; "CCC Marking" for China

- **Develop a mechanism to refund embedded taxes and duties:** Stakeholders suggested that engineering exports should be zero-rated. Hence, the government should consider developing a separate refund mechanism for all embedded indirect taxes in the export value chain. Examples of such taxes are taxes blocked for the inputs not under purview of GST, taxes on fuel, electricity duty, input credits blocked due to tax inversion, and many other state taxes. A mechanism may need to be developed to map the entire supply chain and identify the transaction nodes. In addition, a verification system needs to be put in place to confirm the nature and quantity of inputs that are consumed in the production of the exported products.

#### *Short and medium term recommendations*

- Devise a mechanism to map the entire supply chain and identify the transaction nodes of manufacturing.
- Develop a verification system to confirm inputs that are consumed in the production of the exported product and in what amounts. This would require a robust IT infrastructure to capture data.

#### 4. Capacity Building

- **Ensure competitive procurement of steel, the major input to engineering industry:** One of the major input for engineering products is steel in various forms. Any variation in input steel prices adversely affects the operating margins of engineering exporters. This makes cost of steel as input a crucial parameter with respect to India's export competitiveness.
  - a. India's domestic steel price is higher than the export price of steel; current gap in India's export steel price and domestic steel price is USD50-100/MT of steel<sup>7</sup>.
  - b. Domestic steel price in India is higher than domestic steel price of China (the major competition in engineering exports) by almost USD50-100/MT of steel<sup>8</sup>.

The government and the industry should consider working together to help MSMEs procure steel at a competitive price, as the bargaining power of MSMEs is low due to their low demand.

#### *Short and medium term recommendations*

- Introduce suitable measures to regulate the domestic steel price
- Consider reducing most favored nation (MFN) duty for the steel categories where India has limited domestic production capabilities, such as Ferro-nickel, CRGO, CRNO, and various grades of alloy steel.

#### *Long-term recommendations*

- Aggregate steel demand of MSMEs to obtain bulk discount and pass that on to MSME users; the industry bodies should collaborate with various Start-ups working on this space.
- Develop an e-commerce platform for an online steel marketplace for MSMEs; EEPC can act as the custodian for the e-commerce platform.
- Leverage India's Start-up ecosystem to facilitate freight aggregation easier for MSMEs.
- Set up "sales and distribution nodes" to reach out to the MSMEs, scattered throughout the country.

- **Focus on cluster and mega industrial unit development for engineering segment:** Currently, the Ministry of MSME and Government of India (GoI) has adopted the cluster development approach as a key strategy to enhance the productivity, competitiveness, and capacity building of MSMEs. Though the government has gradually increased the financial assistance towards cluster development in the past few years, there is scope for further increase the budgetary allocation, especially for engineering segments (~22 percent of total assistance<sup>9</sup>). The government should consider focusing more on engineering clusters with increased budgetary allocation.

India lacks development of mega industrial units for large-scale industrial development. China is a best-in-class example of such an approach. In terms of size and scale, it has been observed that China's industrial units are 10X to 20X bigger than size of India's mega units.

<sup>7</sup> JPC, SBB Platts

<sup>8</sup> Estimated from JPC, SBB Platts

<sup>9</sup> Estimated from cluster development data- Ministry of MSME

#### *Short and medium term recommendations*

- Carry out a cluster wide need assessment to understand the development needs and investment required, as different clusters may have different needs.
- EEPC should carry out the cluster wide due diligence study to understand the development needs.
- Increase focus on engineering clusters with increased budgetary allocation.
- Upgrade the existing clusters to unlock the unrealised potential.
- Strengthen clusters' governance mechanism to facilitate coordinated and effective planning without compromising business confidentiality.
- Support clusters on "Visioning", "Communication", and "Branding" strategy development.

#### *Long-term recommendations*

- Identify need of development of new clusters in strategic locations and develop those per need.
- Develop "Mega Industrial Units", preferably near major ports (such as those of Coastal Economic Zone), of around 1000 acre+ area, with the capacity to accommodate 100-150 engineering units, in line with global benchmark.

- **Facilitate optimum utilisation of existing infrastructure and industry-academia collaboration:** Existing infrastructure such as Central Manufacturing Technology Institute, Central Mechanical Engineering Research Institute (CMERI), CSIR etc. should be utilised most optimally for all kind of emerging industry research. Awareness of SMEs seems to be low about the existing infrastructure, therefore, resulting in low utilisation. Industry-academia collaboration is another area to focus to bridge the technology gaps in the country.

#### *Short and medium term recommendations*

- Leverage technical resources of reputed technical institutes such as IITs, IISc, CSIR, CMERI to expedite research and innovation with definite commercialisation plan.

- **De-bottleneck logistics and port infrastructural challenges:** The inland logistics and port sectors are seen to be plagued with infrastructural challenges, slow adoption of technology, and high cost of operation. Indian ports exhibit high turn-around time (3-4 days) and low level of operational efficiency. Overall freight cost is also on higher side due to sub-optimal modal mix, high rate charged by international shipping liners and high cost of inventory due to high transit time. The government should consider focusing on use of innovative models, new technological systems, international best practices, and infrastructure modernisation. Some of the immediate focus areas could be promotion of digital technologies, and oversight of shipping liner charge (through a "shipping regulator").

#### *Short and medium term recommendations*

- Carry out a detail country wide benchmarking study on the domestic transport cost and shipping cost to evaluate India's performance vis-à-vis other countries.
- Explore possibility to form a "Shipping regulator" to oversee the rate charged by the international liners.

#### *Long-term recommendations*

- Focus on port modernisation and leverage digital technologies in port sector to enhance operational efficiency, utilise assets, and streamline information flow.
- Optimise India's modal mix - increase share of rail and inland waterways in the modal mix.
- Invest in port capacity augmentation - participation of industry is essential to improve overall maritime systems.
- Focus on improving export competitiveness by developing new manufacturing clusters at the vicinity of ports ("port led industrialization" is one of the focus areas of Sagarmala).

- **Facilitate availability of the right skillset required in MSME sectors:** Migration of skilled resources is a constant challenge faced by the industry. In addition, getting workforce with right skill is difficult for MSME segments. The government and industry should jointly focus on development of both functional and digital skillsets within MSME workforce. Accordingly, training curriculum needs to be modified and funding arrangement should be institutionalized.

**Short and medium term recommendations**

- EEPC should carry out a 'study on need assessment' for skill development for engineering sector
- EEPC should conduct a talent audit to identify skill gaps, and identify priority sectors and/or clusters that need assistance on skill development
- Institutionalize 'Workforce Development Fund' dedicated for engineering & manufacturing sector, with special focus on 'Digital skill development'
- Strengthen focus on vocational training curriculum and modify the coursework periodically taking feedback from industry; this should include both conventional and digital skill
- Help MSME exporters to get maximum benefits out of existing schemes on skill development
- Enhance overall quality development of existing training institutes - update course curricula, engage professional coaches
- Incentivize MSMEs for certifying their workforce from training centers

**Long-term recommendations**

- Set up new training centers focusing on future skill – set up at least one training center at the vicinity of each cluster

- **Reduce export related procedural delays:** Besides infrastructural challenges, delays and high costs due to procedural and documentation factors are other major challenges. In the last few years, India has made tremendous progress in 'Ease of Doing Business' parameters. However, the time to export and cost of exports are higher in India than China and other developed nations. The government must leverage technology and increase use of digital to reduce 'Time to export'. Development of regulatory information repository, faceless transactions, automation of information flow and online processing of documents and forms are few key initiatives with potential to reduce procedural delays.

**Short and medium term recommendations**

- Leverage technology, increase use of digital to reduce "Time to export" - possibly through process digitisation, introduce portal hosting all regulatory information, maximise online services related to clearances.
- Focus on timely closure of "advance license".
- Streamline Goods and Services Tax (GST) refund process.
- Educate exporters on custom processes and GST claiming methods, documentation required, and touchpoints.

- **Facilitate funding and export credit:** The flow and cost of credit from the banking sector are key concerns for the Indian exporters. Cost of credit for Indian exporters is higher than exporters from competing nations such as China. It makes the overall pricing of products uncompetitive.

Export credit is a category within priority sector listed under the Reserve Bank of India Directions, 2016. During 2017-18, export credit as a percentage of priority sector lending (PSL) was only 1.74 percent<sup>10</sup>. The RBI data until December 2018 also indicates an annual drop of more than 54 percent<sup>11</sup> in the gross bank credit deployment for the export sector. In 2018, Government of India (GoI) enhanced the interest equalisation rate for MSME exporter and included merchant exporters under the Interest Equalization Scheme (IES) on pre- and post-shipment rupee export credit. However, discontinuation of LoU/LoC has increased the cost of credit for exporters because exporters used these methods for import of raw materials. Hence, there is a need to evaluate interventions to enhance export credit flow.

**Short and medium term recommendations**

- Facilitate Restoration of LoU/LoC with "proper safeguards" to increase the availability of credit for traders.
- Facilitate streamlining and simplification of the procedure to generate new LC or renew limits
- Ensure closure of open items under Export Data Processing Management System for banks to honor shipping bills older than two years
- Allow differential treatment for MSMEs for bank credit and ECGC policies
- Facilitate collaborations between exporter associations and domestic banks or Export-Import (EXIM) Bank of India and foreign banks
- Carry out an evaluation on the implications of various alternative reference rates for transition from LIBOR
- Evaluate potential usage of digital technologies in trade finance and related areas
- Facilitate continuous interaction and information dissemination through trainings and consultation workshops/seminars

<sup>10</sup> [http://164.100.47.5/committee\\_web/ReportFile/13/97/146\\_2018\\_10\\_10.pdf](http://164.100.47.5/committee_web/ReportFile/13/97/146_2018_10_10.pdf)

<sup>11</sup> RBI - [https://rbi.org.in/Scripts/BS\\_PressReleaseDisplay.aspx?prid=46162](https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=46162)

## 5. Marketing 'Brand India'

- **Create a trade repository for exporters and overseas buyers:** In India, access to right information is a major challenge for MSMEs. A trade repository, a one-stop-shop portal for exporters and overseas buyers, may be developed to provide assistance on various aspects. Apart from information on trade, markets, and customers, this portal may provide value added services such as online consultation, running a helpdesk, product branding, etc. EEPC should focus on conceptualising and develop this repository.

### Short and medium term recommendations

- Design and develop a comprehensive trade repository for exporters and overseas buyers, in collaboration with EEPC, IBEF, and Ministry of Commerce - this could host information on exporters and buyers, regulatory requirement, market information, etc.
- Educate MSME exporters about use of the repository.

- **Set up trade promotion offices and desks in target countries utilizing Indian missions:** Branding of Indian products in various target countries is seen to be a major challenge for India's exporting community. One of the most effective ways to branding and promotion is to utilise existing Indian missions in target markets. Therefore, India must consider leveraging presence of Indian missions in target geographies by opening up trade promotion desks and with better coordination with their counterparts. However, this would require competency development of diplomats and officials from commercial wings to deal with trade intricacies, branding & promotion, and collaboration.

### Short and medium term recommendations

- Prioritise and finalise the countries for trade promotion, e.g., ASEAN and Africa are two most prospective regions.
- Set up dedicated trade promotion desk in the target countries and strengthen commercial wings, if existing already.

### Long-term recommendations

- Enable trade promotion offices/desks with functional competencies – training of diplomats, collaboration with industry, and availability of promotional collaterals and resources.

- **Strengthen branding through optimization of market access initiatives and other schemes:** Currently, two schemes – Market Access Initiative Scheme (MAIS) and Brand India Engineering are operational, which takes care of market access initiatives and product branding for exporters. To have significant exports growth, apart from technological advancement and skill development, branding of right product in the right market and access of exporters to those markets are extremely crucial.

### Short and medium term recommendations

- Strengthen MAI scheme by increasing budgetary allocation.
- Create an allocation to fund overseas regulatory compliance/ testing costs for exporters.
- Limit of allocation should be increased in specific product/market category where market potential is higher than other categories.
- More categories should be included as focused categories under "Brand India Engineering" campaign, such as, automotive, agricultural machineries.
- Dovetail Brand India Engineering e-catalogues with trade repository/portal.
- Increase participation in more number of global trade fairs, such as BUMA CONEXPO Africa, CWIEME Berlin, MEDIC West Africa, etc.

Additionally, few other recommendations, which can also be evaluated, are listed below:

- **Dovetail existing schemes for optimum utilization of benefits and funds:** Multiple schemes from multiple departments/ministries are in place with stipulated budgetary allocation. There is a felt need to harmonise all such schemes to optimise the utilisation of incentives/benefits or funding within MSME segments.
- **Creation of a different ministry for engineering:** Currently, multiple ministries and departments (e.g., DHI, Ministry of MSME, Ministry of Steel, etc.) govern engineering sector. For enhanced focus on this sector, creation of a separate ministry may be considered.

## 6. Governance Mechanism

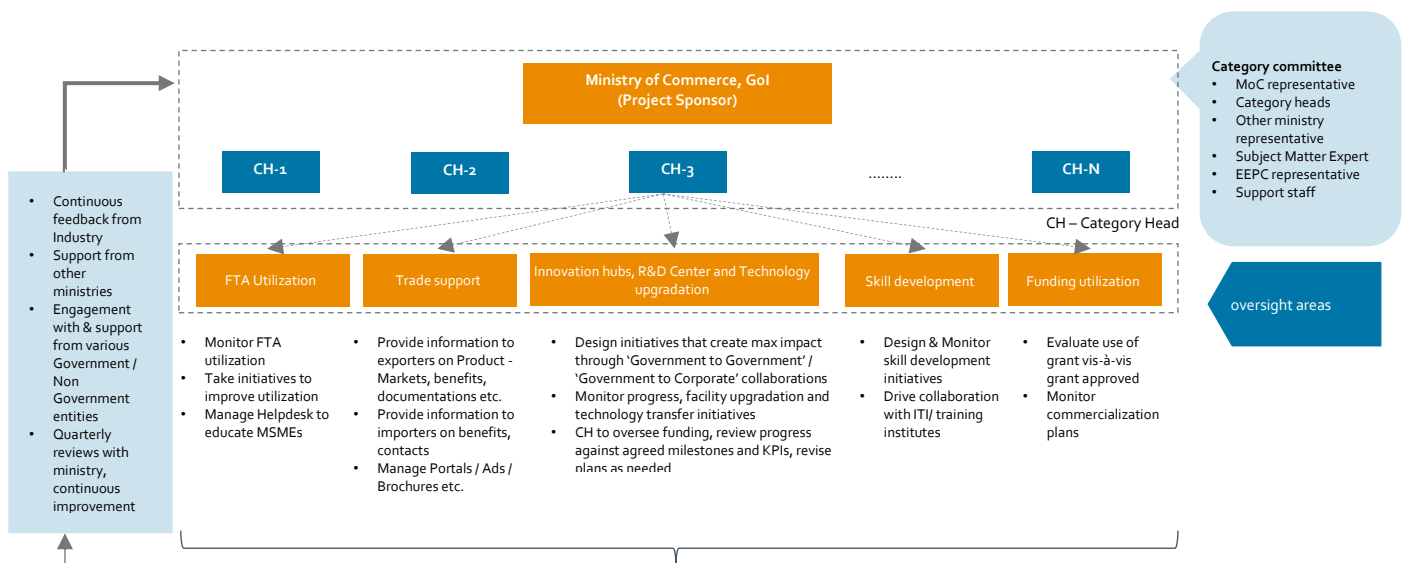
A strong governance mechanism comprising of representatives from the Government, industry professionals, and EEPC is necessary to implement and monitor the initiatives. The governance mechanism need to have the following components:

**Project sponsor** – Ministry of Commerce, Government of India seems to be most suitable to act as the key sponsor for implementation of the governance mechanism, with a senior official chairing the “Category Committee”.

**Category Heads** – Category Heads could be an industry representative or “Officer of Special Duty” (OSD) from the Government of India, who will be expected to steer and oversee the initiatives for one or multiple product categories. Category Heads will be accountable for timely implementation of the initiatives in their respective product categories.

**Category Committee** – “Category Committee” could comprise “Category Heads”, representative from Ministry of Commerce, EEPC and industry and subject matter experts. Category Committee may be made the sole decision making body and facilitate collaboration within cross-functional members of the committee.

Figure 4: Illustration on structure of Governance Mechanism



The gamut of the scope of the “Category Committee” could cover a broad range of initiatives within engineering export ecosystem, such as:

- FTA utilisation support
- Trade support
- Capability development through promoting innovation and R&D
- Pilot projects on technology and facility modernisation
- Skill development
- Monitoring of progress of initiatives
- Funding utilisation

However, success of such governance mechanism will depend on identification of right people in the “Category Committee” and implementation of a time bound Key Performance Indicator (KPI) based approach to monitor the progress of various initiatives.

## 7. Role of EEPC

EEPC could focus on three key areas: advocacy for policies, expansion and branding in target markets, enhance awareness of MSMEs on emerging needs and providing necessary information to exporters. EEPC should also play a crucial role in monitoring the efficacy of various schemes implemented by the GoI to increase engineering exports or to develop capability of engineering industry.



# EEPCINDIA

ENGINEERING THE FUTURE

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