



INDIA 2018

SURGING AHEAD



Ministry Of External Affairs
Government Of India



ECONOMIC
DIPLOMACY
& STATES
DIVISION



“ Diplomacy
for Development ”

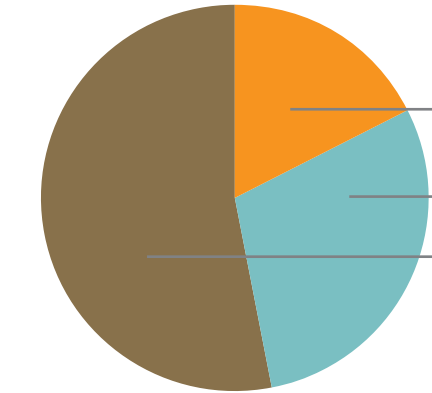
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Economy

- Size: **US\$2.4 trn**
- Projected GDP growth (2017-18): **6.75%**
- Estimated GDP growth (2018-19): **7.5%**
- GDP growth (2014-15 to 2017-18): **7.3%**
- Industrial production growth (2014-15 to 2017-18): **3.78%**
- Avg WPI Inflation 2017-18: **2.9%**
- Per capita net income growth (2014-15 to 2017-18): **29.3% to US\$1753.86**
- Rise in forex reserve (2014-15 to 2017-18): **20% to US\$409.4 bn**

- Export growth 2017-18 (April-Dec): **12% to US\$223 bn**; Import growth: **22% to US\$338 bn**
- Population base: **1.3 bn**
- Unemployment Rate: **3.6%**
- Labour Participation Rate: **~53.8%**
- Central Bank Interest Rate: **~ 6%**
- Bank Lending Rate **~ 9.45%**
- Yield on 10-yr Govt. Securities: **7.27% (Jan 2018)**



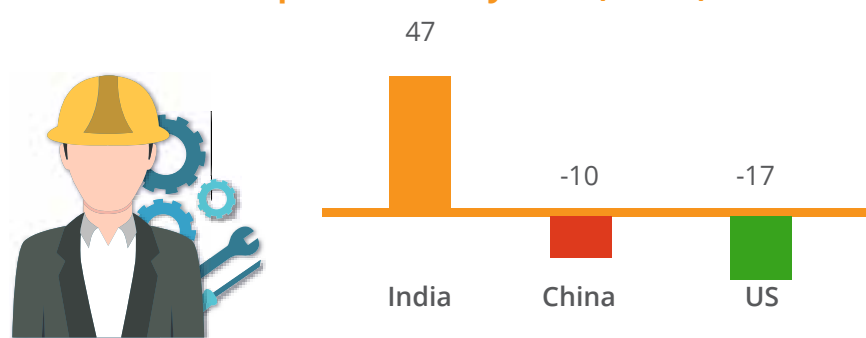
Contribution to GDP:
Agriculture ~ 17.5%
Industry ~ 29.6%
(Manufacturing ~ 16.6%)
Services ~ 53%

- Gross Fiscal Deficit: **3.2%** of GDP (2017-18); **3.68%** over past four FY
- Credit Rating - **Moody's: Baa2 (Stable); S&P: BBB-(Stable)**
- World Bank Growth Estimates: **7.3% (2018), 7.5% (2019-20)**
- India's share in global GDP (2016): **2.99% (Nominal GDP) and 7.73% (GDP in PPP)**
- India's share in global exports: **2% (2016)**
- FDI inflow over (April-Sept 2017): **US\$25.4 bn - increase of 17%**
- Government debt to GDP @ **69.2%**
- Household Debt to GDP **~10.1%** IMF Forecast till 2018

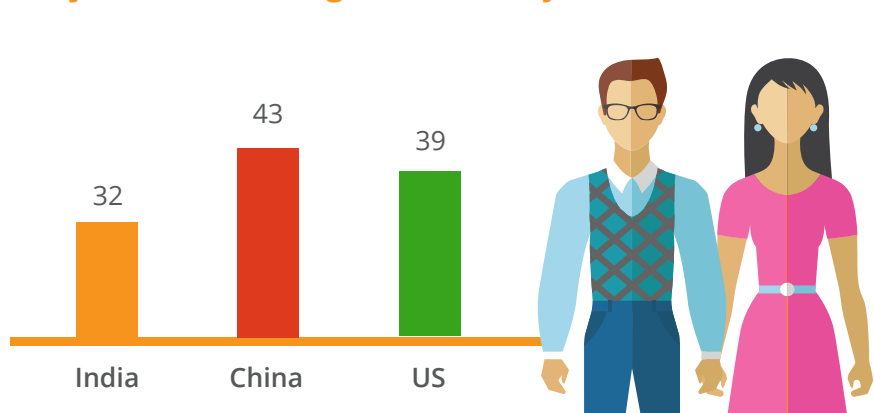
Young Demography

- Young Demography: **World's youngest country by 2020, with an average age of 29 years.**
- A surplus workforce of **47 mn** against a deficit of 10 mn in China and 17 mn in the USA
- By 2030: India's workforce will have an **average age of 32 years.** In comparison, during the same period, the average age is expected to be 43 years in China and 39 years in the USA
- Young Demography: A window of opportunity
 - To improve labour productivity,
 - To increase domestic production,
 - To enhance revenue from services,
 - To increase savings,
 - To reduce the burden of old residents on the working population.
- Empowered with unique demographic advantages and guided by the government's efforts, India is poised to position itself among developed economies within the next 10-15 years.

Labour Force surplus/deficit by 2020 (in mn)



Projected median age in 2030 (in years)



Ease of doing business

- Goods and Services Tax (GST), an integrated indirect tax introduced on July 1st 2017, made paying indirect taxes easier and **raised indirect taxpayers in India by 50%**
- Aadhaar, a 12-digit ID based on biometric data, made mandatory for essential services, bringing **improved transparency.**
- In November 2016, India discontinued and replaced high-value currency, thus checking black money and **reducing cash usage in economy**
- 20 Services of Central Government have been integrated with the E-Biz single window IT Platform
- Cooperative and Competitive **Federalism**
 - **42% share** for states in the divisible pool of taxes.
 - States assessed on 8 broad parameters of Ease of Doing Business.
- **New Bankruptcy Law Passed.**
- New **IPR policy** announced.
- Investor Facilitation Cell – **INVEST INDIA**, established to guide, assist and handhold investors during the entire life cycle of a business.
- Road-map to reduce corporate tax from **30% to 25%** laid down.

- Government has set up four leading initiatives - **Make in India, Skill India, Digital India and Startup India** - to augment India's manufacturing and innovation capabilities while supporting training of workforce and boosting connectivity

Highlights of 2018-19 Budget

- MSP for crops to be **at least 1.5** of production cost
- **100% deduction** proposed for certain Farmer Producer Companies
- Extension of **reduced rate of 25%** to more companies under MSME
- State-run **National Insurance, United India Assurance, Oriental India insurance** to merge
- NITI Aayog to initiate a national programme on **Artificial Intelligence(AI)**
- Centres of excellence to be set up on **robotics, AI, Internet of things**
- Proposed changes in customs duty to promote creation of **more jobs**

Make in India

- As part of the Ease of Doing Business, the Make-in-India (MII) program was launched on **25 Sept 2014**.
- MII focuses on: **Attracting investment** into manufacturing by introducing a business friendly **regulatory environment, fostering innovation, enhancing skill development, protect IPR, and build best-in-class manufacturing infrastructure**.
- Increase manufacturing share in GDP from **16% to 25% by 2022**.
- Create **100 Mn jobs** by 2022.
- Completely overhaul the FDI regime through the **opening up of more sectors to FDI**
- **25 Sectors identified:** Automobile, Auto Components, Aviation, Biotechnology, Chemicals, Construction, Defence, Electrical Machinery, Electronic Systems, Food Processing, IT & BPM, Leather, Media & Entertainment, Mining, Oil & Gas, Pharma, Ports & Shipping, Railways, Renewable Energy, Roads, Space, Textiles & Garments, Thermal Power, Tourism & Hospitality, and Wellness.
- A pentagon of corridors is being envisaged to facilitate

manufacturing and to project India as a **Global Manufacturing Destination**.

- Amritsar Kolkata Industrial Corridor
- Bengaluru Mumbai Economic Corridor
- Chennai Bengaluru Industrial Corridor
- Delhi Mumbai Industrial Corridor
- Vizag Chennai Industrial Corridor



FDI

- **No. 1 FDI Destination in the World;** Most open economy in the world for investment.
- **Steady amendments in laws** and regulations guiding investment
- National Investment and Infrastructure Fund (NIIF) created with a corpus of **US\$6.2 bn**
- 1st Rank on the Baseline Profitability Index (BPI); BPI Ranking: **India : 1; USA : 50; China : 65**
- Foreign trade
 - Export April-Dec 2017: **US\$223 bn** as against **US\$199 bn - 12.05% growth**
 - Import April-Dec 2017: **US\$338 bn** as against **US\$277 bn - 21.76% growth**
 - Trade deficit (April-Dec 2017) at **US\$70 bn, compared with US\$35.6 bn**

Top regions receiving FDI:

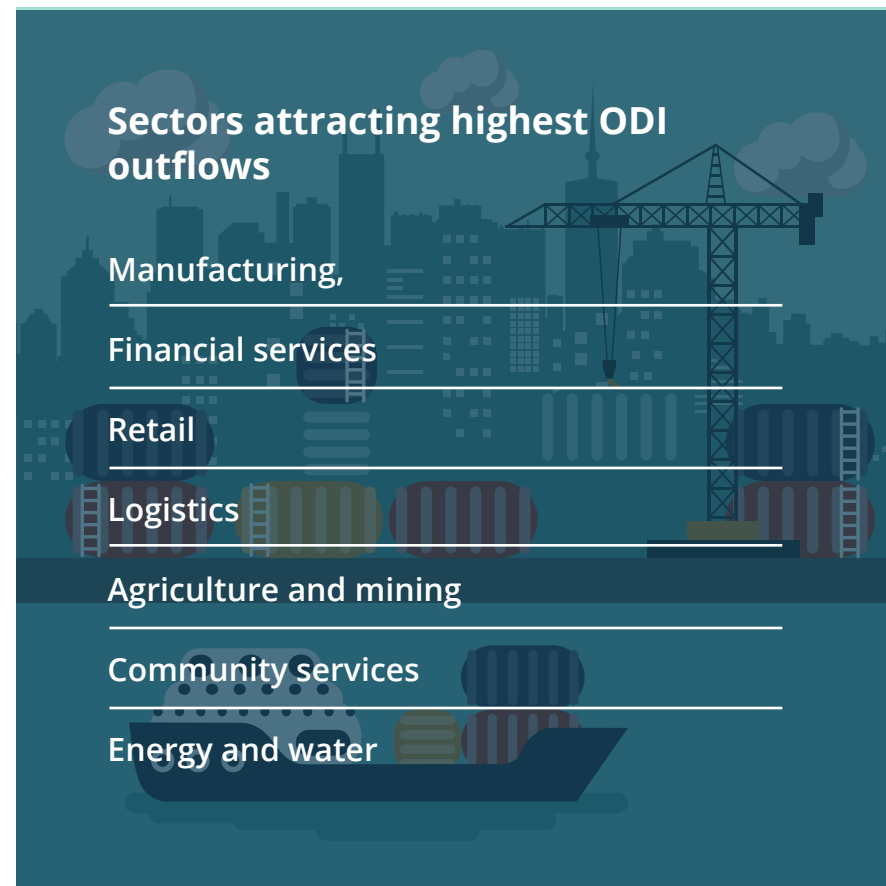
Mumbai, New Delhi, Bengaluru, Chennai, Ahmedabad, Hyderabad, Kolkata, Kochi, Jaipur, Chandigarh

Baseline Profitability Index (BPI) ranking



- Foreign Direct Investment into India (FDI)
 - FDI inflow over (April-Sept 2017): **US\$25.4 bn - increase of 17%**
 - **Top investing nations:** Mauritius, Singapore, Japan, the UK and the Netherlands, the USA, Germany, Cyprus, France and the UAE
 - **Top sectors attracting FDI:** services, telecommunications, computer software and hardware, infrastructure development, automobile, trading, ,

- chemicals, power and construction
- **100% FDI** allowed in **92% of sectors**, including:
 - Industrial Parks, Construction Development, Railways, Telecom, Defence and Petroleum & Natural Gas – Exploration.
 - **Airports** – Greenfield & Brownfield; Ground Handling Services; MRO facilities; Flying & technical institutes.
 - Credit Information Companies, Non-banking Finance Companies, and Asset Reconstruction Companies .
 - **Pharmaceutical, Bio-tech, Medical Devices** – Greenfield & Brownfield
 - **Mining** – coal & lignite, metal & non-metal ores
 - **Trading** – Wholesale & B2B E-commerce, Food Products Retail Trading, and Duty Free Shops
 - Recently, Indian approved 100% FDI in single-brand retail and real estate broking services and 49% FDI in power exchanges, via automatic routes.
- India's Overseas Direct Investment (ODI)
 - ODI outflows (April-Aug 2017): **US\$3.9 bn**
 - ODI (financial commitment): **US\$7.9 bn**
 - **Top ten ODI destination:** Mauritius, Singapore, the USA, the UAE, the Netherlands, the UK, Switzerland, Russia, Jersey, British Virgin Islands



India Rankings

India's proactiveness in setting up a flourishing business environment has led to the economy gathering global recognitions

Baa2

Moody's raises India's sovereign bond rating, after a gap of **13 years**, to **Baa2** from Baa3

30

World Economic Forum's Future of Production Report 2018

126

IMF's 2017 global ranking of per capita GDP

30

India at top of World Bank's annual remittances inflow ranking

100

World Bank's Ease of Doing Business Ranking
2018 rank - 100
2017 rank - 130



GST

- Biggest Reform Ever
 - **Launched 1 July 2017, 200,000 tax officials involved, and over 10,000 GST outreach programs.**
 - **US\$375 mn** spent on GST backend IT infrastructure.
 - **4.500 GST** helpdesks operational across the country.
- Features
 - **GST is a destination based tax.**
 - Levied at all stages: **Manufacturing to Consumption.**
 - Only **value addition** will be taxed.
 - Burden of tax is to be borne by the **final consumer.**
 - Dual GST: Central-GST and State-GST will be simultaneously levied on a **common tax base.**
 - Integrated GST (IGST): Will be levied and administered by Centre on every **inter-state supply of goods and services.**
 - Location of the supplier and the recipient within the country is **immaterial for the purpose of CGST.**
 - **SGST** would be chargeable only when the supplier and the recipient are both located within the State.

Benefits

- Pave the way for a **common national market.**
- Reduction in the overall tax burden on goods which is currently estimated at **25%-30%.**
- Make Indian products competitive in the **domestic and international markets.**
- Revenue gain for the Centre and the States due to widening of the tax base, **increase in trade volumes and improved tax compliance.**
- **Transparent and easier** to administer.

GST Rates

- India has categorized **1,211 commodities** and **119 categories** of services under tax slabs of **0%, 5%, 12%, 18% and 28%.**

Commodities outside the purview of GST

- **Alcohol** for human consumption
- **Petroleum Products** viz. **petroleum crude, motor spirit (petrol), high speed diesel, natural gas**
- **Aviation turbine fuel & Electricity**

Railways

- Indian Railway Facts: **115,883 km** of tracks: Caters to **15% of public transport & 30% of total freight**
- Over **12,500 trains** ferrying **23 mn people** and **7,400 trains** carrying **3 mn tons of freight every day**
- Employs **1.4 mn people** – world's 7 largest employer with revenues: **US\$28 bn** (2016-17)
- New Initiatives:
 - **100% FDI allowed** under the automatic route in construction, operation, and maintenance of suburban corridor projects, high-speed train, dedicated freight lines, railway electrification, mass rapid transit systems, passenger/freight terminals and signalling systems.
 - Mumbai-Ahmedabad 508 km **High Speed Railway Corridor:** Japan to fund 80% of the US\$ 15 bn project @ 0.1% interest with a 15-year moratorium on a 50-year repayment period.
 - **Project Nilgiri** (WiFi Services at Stations): In partnership with Google, WiFi hotspots will be set up in 400 stations in Phase 1. In Phase 2 WiFi service will be extended to running trains.
 - Locomotive and wagon manufacturing: Contracts worth **US\$6.2 bn** signed with GE & Alstom for diesel and electric locomotives.



- Investment Planned: **US\$133.5 bn** over a period of 5 years ending 2019
- **Targets**
 - Increasing track length by 20% to **138,000 km**
 - Daily passenger carrying capacity to be raised from 23 mn to **30 mn**
 - Annual freight carrying capacity to rise from 1 bn tonnes to **1.5 bn tonnes**
 - Replace 3,450 railway crossings with 920 under and over-bridges through an investment of **US\$1 bn.**
 - Redevelop/Modernize **400 railway stations** through PPP model.
 - Introduction of **bio-toilets and vacuum toilets**, waste-to-energy plants at stations, conducting energy audits etc.
 - Installation of **train protection warning systems** and **train collision avoidance systems.**
 - Installation of **surveillance cameras** in trains and railway stations

- Railway Investment opportunities:
 - Dedicated Freight Corridors (DFC)
 - Railway lines to and from mines and ports
 - Development of high-speed tracks and suburban corridors
 - Redevelopment of railway stations and freight terminals
 - Power generation and energy saving
 - Setting up wagon, coaches and locomotive unit
 - Gauge conversion
 - Network expansion.
- Focus on Speed:
 - Increase speed of 9 railway corridors from 110-130 kmph to **160-200 kmph.**
 - Increase the average speed of freight trains to **100 kmph** (unloaded trains) and **75 kmph** (loaded trains)
 - Diamond quadrilateral network of **high-speed rail** to connect major cities.
 - Introduction of **bullet trains** (350 kmph speed)

New Objectives:

Increase investments	Better amenities & safety
Decongesting heavy haul routes	Improving railway systems
Speed up trains	



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Station Redevelopment

- Indian Railways has **51,648 hectares** of vacant land...**10,000 hectares** available for commercial development...**1,092 hectares** identified near railway stations.
- 400 stations identified for modernization...**cost US\$15 bn.**
- Stations redeveloped on PPP model by modifying the Swiss challenge model.
- Companies interested: IL&FS, GMR, Tata Realty & Infra, Brigade Group, Mantri Developers, Raheja, Shapoorji Pallonji, Reliance Infra, Lanco Infratech, Essel Group
- Malaysia, UK, South Korea and France have shown interest; roadshows organized in UAE and Malaysia.
- Boston Consulting Group is preparing the overall strategy; Ernst & Young (EY) also roped in.
- Progress:
 - **12 stations** to be developed by Indian Railway Stations Development Corp
 - **23 stations** to be developed by Zonal Railways
 - **18 Mumbai Suburban Railway stations** to be developed by Mumbai Railway Vikas Corp. (MRVC) and Railway Land Development Authority (RLDA)
 - **10 Stations** to be developed by National Buildings Construction Corp. (NBCC)



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Roads

- India has the second largest road network across the world at **5.4 mn km**
- This road network transports over **60% of all goods** in the country and **85% of India's total passenger traffic**.
- Average length of road projects awarded by NHAI in the last five years was **2,860 km**
- NHAI wants to award more than **50,000 km** of road projects worth around **US\$250 bn by 2022**
- Indian Government plans to develop a total of **66,117 km of roads** under different programmes such as National Highways Development Project (NHDP), Special Accelerated Road Development Programme in North East (SARDP-NE) and Left Wing Extremism (LWE)
- Government of India will spend around **US\$15.3 bn during FY 18-20** to build roads in the country under Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Government of India has decided to invest **US\$107.8 bn** for construction of new roads and highways over the next five years
- Northeast Focus: Total Length of the NE Highway: **13,258 Km - 109 Projects of length 7,148 km underway...**Rest to be awarded.

Leading new projects

- **Bharatmala:** Build National Highways to connect coastal/border areas, tourist places and all district headquarters. – Contours of the program being worked out.
- **Setu Bharatam:** To make National Highways free of railway level crossings. Project involves:
 - Building 208 Railway over Bridges @ an estimated cost of **USD 3.1 Bn**
 - Replacing **1500 old bridges** @ a cost of USD 4.5 Bn.
- **Eastern Peripheral Expressway:** a 135 km six-lane expressway with a total project cost of USD 3.7 Bn – Already awarded & work has commenced.
- **Western Periphery:** 135 Km in 2 sections – Manesar-Palwal (52 Km) – Completed; and Kundali-Manesar (85 Km) – Awarded.
- **Delhi-Meerut Expressway:** A 150 km project with a total project cost of USD 1 Bn – Already awarded.

- Policy support:
 - Industry status for the road sector.
 - **FDI of up to 100%** and increased concession periods of up to 30 years.
 - **100% tax exemptions** in any consecutive 10 years out of 20 years.
 - Duty free imports of certain identified equipment for construction plants.
 - Amendments made to the **Model Concession Agreement (MCA)** for BOT projects.
 - **Segregation of Civil Cost** from **Capital Cost** for National Highway (NH) Projects for appraisal and approval.
 - Rationalized compensation for concessionaries executing NH projects in BOT mode for delays not attributable to them.
 - Exit Policy for Private Developers: 2 years from start of operations, irrespective of date of award of project.

Highlights of Budget 2018-19

- Budgetary allocation on infrastructure for **2018-19 is US\$93.5 bn** against estimated expenditure of US\$76.4 bn in 2017-18.
- Under the Bharatmala Pariyojana, **35,000 kms road construction** in Phase-I at an estimated cost of US\$84.2 bn has been approved



- Awarding of Road Projects:
Road projects in India have always been awarded in one of the three formats—BOT annuity, BOT-toll and EPC.
 - BOT annuity, a developer builds a highway, operates it for a specified duration and transfers it to the government, which pays the developer annuity over the concession period.
 - Under BOT-toll, a concessionaire generates revenue from the toll levied on vehicles using a road.
 - In EPC, the developer builds with government money.
- Hybrid Annuity Model announced (2016):
 - Govt. commits up to 40% of the project cost over a period and hands over the project to the developer to start road work.
 - Revenue collection will be Govt.'s responsibility, while developers will be paid in annual instalments over a period of time.
 - HAM gives enough liquidity to the developer and the financial risk is shared by the government.

Ports

- **200 notified** Non-Major Ports (administered by the State Governments).
- In 2016-17, Indian ports handled **1,065 mn tons** of cargo. By 2025, the ports are required to handle a cargo of **2,500 MTPA**
- Total turnaround time has improved from **3.44 days** in 2016-17 to **2.08 days** in 2017-18 (as on 31.10.2017).
- Jawaharlal Nehru Port (JNPT), India's largest container port recorded **40.10 lakh TEUs** for current financial year 2017-18 which is 6.91 per cent higher than 37.51 lakh TEUs handled during the same period previous year

Focus of Port Modernization programme:

- Improvement of gate processing and rake turnaround time.
- Dredging: Increase draft up to 23 meters to handle container vessels of **>15,000 TEUs** and super-max vessels (50,000 to 60,000 DWT)
- New Terminal Developments

- Ports in India handle **90 per cent by volume** and **70 per cent** by value of India's external trade.
- Indian shipping tonnage, which was only **1.92 lakhs Gross Tonnage (GT)** on the eve of Independence, now stands at **122.32 lakhs GT** with **1359 ships as on 31.10.2017**.
- 900 vessels of about 1.52 mn GT are engaged in Coastal trade and remaining 399 vessels are plying in overseas trade
- Chabahar Port: Phase-I of Shahid Beheshti Port at Chabahar, Iran, developed by India, was inaugurated on December 2017
- **Policy Initiatives**
 - A new Berthing Policy and Stevedoring Policy have been implemented.
 - 100 per cent FDI is being allowed in PPP Projects in the Port Sector
- **Maritime Agenda 2010-20**
 - Increase percentage share of India to 5 per cent in global ship building
 - 10 per cent share in global ship repair for India by 2020.

Sagarmala

- New ports:
 - **6 new ports** have been identified to be built
 - **142 port capacity expansion** projects (total cost: **\$ 14.07 bn**) have been identified for implementation till 2035
- Rail-Port connectivity:
 - More than 150 connectivity projects at an estimated investment of more than **\$ 30.77 bn** have been identified.
 - Focus: **Heavy-haul rail corridor** to evacuate large volumes of coal, freight-friendly expressways to enable efficient movement of containers on key routes, development of multi-modal logistics parks and the development of strategic inland waterways
- Port-led industrialization:
 - **14 Coastal Economic Zones (CEZs)** along the coastline.
 - Clusters to have industries from the energy, bulk materials as well as discrete manufacturing segments.
- Coastal communities:
 - Developing opportunities for fishermen and other coastal communities as well as development of the numerous islands along India's coastline.

- Optimizing multi-modal transport to reduce the cost of domestic cargo
- Minimizing the time and cost of export-import cargo logistics
- Lowering costs for bulk industries by locating them closer to the coast, and
- Improving export competitiveness by locating discrete manufacturing clusters near ports.
- Time period: 2015-35
- 415 projects Budget: US\$120 bn



Flagship infrastructure Projects

- **Bharatmala Project:** The second largest highways construction project under which almost 51,000 km of highway roads are targeted to be built across the country. In the first phase, 24,500 km will be built in five years along with another 10,000 kms worth \$ 82.31 bn. Focussing on optimizing efficiency of freight and passenger movement across the country
- **Mumbai Trans Harbour Link:** \$2.75 Bn seabridge (22.5 km) to link Mumbai's eastern suburbs with the mainland.
- **Bogibeel bridge:** India's longest rail-cum-road bridge - 4.94-km long Bogibeel bridge over Brahmaputra in Assam with an anticipated cost of US \$ 0.77 bn
- **Railway lines in Arunachal Pradesh:** Location survey to connect Tawang, Aalo, Pasighat with broad gauge railway networks already started.
- **Setu Bharatam project:** \$7.6 bn project aims to build 208 rail over bridges (ROBs) by 2019 (\$3.1 Bn) and replace 1,500 bridges of the British era (\$4.5 Bn). 78 ROBs with an estimated cost of US \$ 0.99 bn have been sanctioned till 31.03.2017, of which 35 works have been awarded
- **Chardham-Highway Project:** 900 km of national highways will be built at a cost of \$1.8 bn in Uttarakhand



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to improve connectivity to the Char Dham pilgrimage centres in the Himalayas. So far, 24 works have been sanctioned traversing a length of 395 kilometres. 22 works covering a length of 340 kilometre have been awarded-to be completed by March 2020

- **Rashtriya Rajmarg Zila Sanjoyokta Pariyojna:** 6,600 km of highways at an estimated cost of about \$9 Bn to connect 100 of the 676 district headquarters in the country with world-class highways
- **India's longest bridge:** the 9.15 km long Dholasadiya Bridge over River Brahmaputra in Assam was inaugurated on May 2017 ensuring 24x7 connectivity between upper Assam and Eastern part of Arunachal Pradesh
- **Gujarat-Gorakhpur gas pipeline:** Indian Oil Corporation (IOC) is laying India's longest 1987-km LPG pipeline from Kandla coast in Gujarat to Gorakhpur in eastern Uttar Pradesh to carry 3.75 MTPA of LPG
- **Bridge on River Chenab:** The government is building the tallest bridge in the world over river Chenab at Doda (359 metre above the river) at a cost of \$180 Mn.

Urban Development

- **100 Smart Cities:** Retrofit/Redevelop or build Greenfield cities planned
- Growing Urbanization~75% of GDP by 2030
- **Smart City Mission:** Drive economic growth and improve the quality of life in the country by enabling local area development and harnessing technology
- **99 cities already approved.** A total investment of US \$ 28 bn proposed by 99 smart cities. Under SCM, 2,864 projects worth \$20.92 bn in various stages of implementation.
- Projects that commit at least 30% of the total cost for low-cost affordable housing ~ exempted from the minimum built-up area and capitalisation requirements.
- **100% FDI in automatic route** permitted for operation of townships, malls, and business centres. Floor area restriction and minimum capitalisation removed; easy exit option for foreign investors
- **Investment Outlay:**
 - Smart Cities Mission from FY2015-16 to FY2019-20 is more than **US\$15 bn.**
 - Atal Mission for Rejuvenation and Urban Transformation (AMRUT) from FY2015-16 to **FY2019-20 is approx. US\$7.5 bn**



100 Smart Cities Initiative ... Progress

Total Winning Proposals: 99

Urban Population impacted: 99,486,840

Total Cost of Projects: US \$ 31.07 bn

Total Area Development Cost: US \$ 25.1 bn

Total Pan-city solution: \$US 5.98 bn



Urban Development

Sector	Investment potential
Smart Energy	<ul style="list-style-type: none"> Implementation of 8 smart grid pilot projects with an investment of US\$10 mn for energy storage Power Grid Corporation of India has planned to invest Rs 1 trn (US \$ 153 bn) in the next 4 years; about 130 mn smart meters would be installed by 2021
Smart Environment	<ul style="list-style-type: none"> The Ministry of Water Resources plans to invest US\$ 50 bn in the water sector.
Smart Transportation	<ul style="list-style-type: none"> Govt. of India has approved a US \$4.13 bn plan to spur electric and hybrid vehicle production by setting up an ambitious target of 6 mn vehicles by 2020
Smart ICT	<ul style="list-style-type: none"> Cloud computing is expected to evolve into a US\$4.5 bn market in India by 2018. US\$333 mn allocated to 7 cities (Delhi, Mumbai, Kolkata, Chennai, Ahmedabad, Bengaluru and Hyderabad) under the Safe City Project
Smart Building	<ul style="list-style-type: none"> India is expected to emerge as the world's 3rd largest construction market by 2020 by adding 11.5 mn homes every year Intelligent Building Management System market estimated to reach \$31.74 bn by 2022 from \$7.42 bn in 2017

AMRUT

Atal Mission for Rejuvenation and Urban Transformation

AMRUT envisages urban India's transformation by focusing on:

- Water supply.
- Sewerage facilities and septage management.
- Storm water drains to reduce flooding.
- Pedestrian, non-motorized and public transport facilities, parking spaces etc.
- Enhancing amenity value of cities by creating and upgrading green spaces, parks and recreation centers, especially for children.
- 500 cities selected



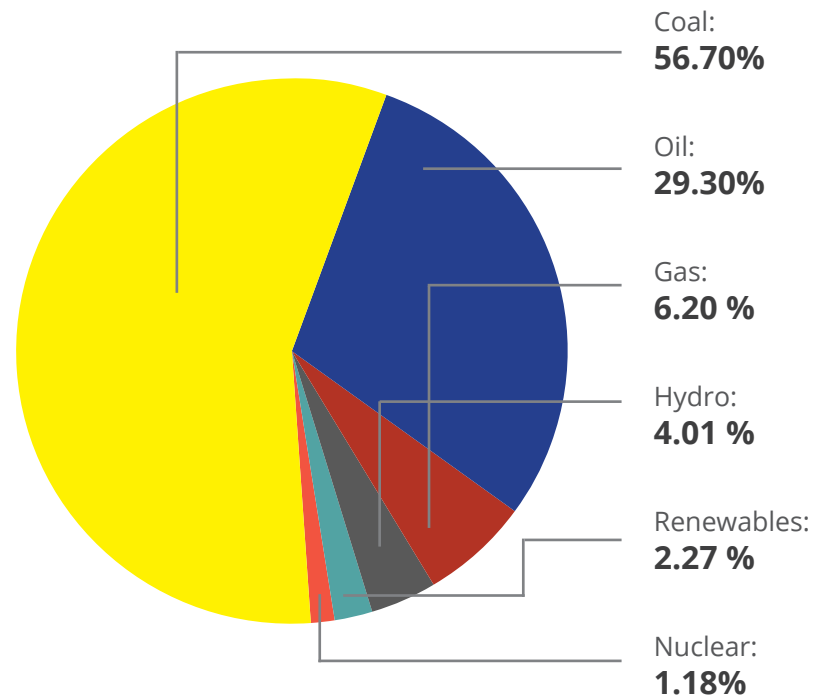
- The total outlay for AMRUT is \$ **US 7.69 for five years** from FY2015-16 to FY2019-20

Business Opportunities:

- Water treatment plants, pipelines, metering and grid management solutions, desilting, ground-water recharge etc
- **Waste management:** decentralised underground sewerage networks, sewage treatment plants, waste collection-transport treatment integration, septage cleaning-transport treatment, storm-water drainage and reuse etc
- **Urban transportation:** Ferry vessels, pathways, skywalks, non-motorised transport, multi-level smart parking, bus rapid transport systems etc
- **Green Zone components:** Landscaping, creating of green infrastructure (parks, ponds etc), vertical greening etc
- Reform implementation would need services like implementation, consulting, monitoring and evaluation services

Primary Energy Consumption

- India has **18% of the world's population**...consumes only **6% of the world's primary energy**.
- Structural dependence on energy imports – **Crude Oil Dependency – 82 %**– **Gas import dependency – 44 %**
- Global ~ **13,276 MTOE** (Mn. tons oil equivalent)
- India ~ **724 MTOE**...+5.4 % over 2015. Or **5.5 % of global annual energy consumption**
- Energy intensity (the amount of energy required per unit of GDP) declined by **1.3 % in 2016**, a slower decline than the 10-year average of 1.6 %



Oil

- Oil
 - Imports ~ 4.37 MBD (2017)
 - Growth of +1.8% over 2016
 - 3rd largest crude consumer
 - 4.6% of global consumption
 - March 30, 2017: India became an Associate member of the IEA
 - Domestic Output ~ 36 MTPA in FY17
 - Decline of -2.5% over FY16
 - 0.9% of global production
- Crude Suppliers:
 - **Middle East – 61.1%**
 - **Africa – 19%**
 - **South America – 16%**
 - **Russia – 0.1%**
- Refining Capacity:
 - Growth in capacity and throughput largest in the world in 2017
 - 247.6 MMTPA capacity spread across 23 refineries
 - Demand to double to 1.5 BTOE by 2035 from 723.9 MTOE in 2016
 - India's share in global primary energy consumption to rise by 2-folds by 2035

Strategic Oil Reserves:

- **Phase-1:** Underground rock caverns for storage of 5.33 MT (10.5 days of crude requirement) at Vizag (1.33 MT), Mangalore (1.50 MT) and Padur (2.5 MT) have been created.
- **Phase-2:** Two more caverns to be set up in Chandikhole, Odisha & Bikaner, Rajasthan ~ 10 MT each.
- **Phase 1 + Phase 2 = 15.33 MT** of Strategic reserve capacity.
- Currently, India has 63 days of commercial reserve of crude oil, petroleum products and gas.

To boost domestic oil and gas production, Government of India announced the Hydrocarbon Exploration and Licensing Policy (HELP) on March 10, 2016:

- **Uniform License:** Enabling exploration and production of all forms of hydrocarbon - conventional as well as unconventional oil and gas resources including CBM, shale gas/oil, tight gas and gas hydrates.
- **Open Acreage Policy:** To enable E&P companies choose the blocks from the designated area.
- Cess and import duty will not be applicable on blocks awarded under the new policy.
- Marketing and pricing freedom for the crude oil and natural gas produced.
- **National Data Depository:** Centralized database of geological and hydrocarbon information has been inaugurated in July 2017.
- **Revenue Sharing Model**
- Government not concerned with the cost incurred & will receive a share of the gross revenue from the sale of oil, gas etc.
- Lower royalty rates for offshore areas



Gas

- Government Targets:
 - Move towards a gas based economy.
 - Share of **natural gas to rise to 15%.**
- 4th largest LNG importer in the world:
 - Sources: **Qatar – 61%, Nigeria – 14.7%, Others – 24.3%**
 - India represents **5.68% of global imports**
 - **2015-16: 21.3 bcm**
 - **2016-17: 22.4 bcm**
- LPG Imports (2016-17) @ **12 mn tonnes**
 - Major Suppliers: Qatar, Saudi Arabia, and the UAE
- **India Gas Reserves:** 1.2 trn cubic meters (2015) or 0.7% of global reserves. Reserves to Production (R/P) ratio of 44.4.
- **India natural gas production (2017-18, April-Nov):** 21.3 BCM, about 0.8% of global production.
- **Consumption (2016):** 50.1 bn cu meters - annual growth of **9.2%** and representing about **1.4%** of global natural gas consumption.
- **FDI Policy:** 100% FDI through automatic route allowed in Exploration activities of natural gas fields, infrastructure related to marketing of natural gas, natural gas/pipelines, and LNG Regasification infrastructure.

Total installed LNG capacity in India is 26.6 MMTPA

Dahej:	Kochi:
15 MMTPA	5 MMTPA
Hazira:	Dabhol:
5 MMTA	1.6 MMTA

- **New LNG Terminals:**
 - New **LNG terminal of 5 MMTPA** at Ennore, Tamil Nadu is at an advanced stage.
 - Two new R-LNG terminals of 5 MMTPA capacity each (at Dhamra and Kakinada on the east coast) are also planned to be developed.
- Future LNG Regasification capacity:
 - **>65 MMTPA** of new capacity planned by 2030
 - Both land-based LNG terminals and Floating Storage Regasification Unit (FSRU)

Free LPG Scheme

- **1 May 2016: Pradhan Mantri Ujjwala Yojana (PMUY) Scheme** was launched in Balia, Uttar Pradesh.
- **\$1.2 Bn scheme to provide 80 mn new LPG connections, for BPL families, for three years from 2016 to 2019**
- How does the Subsidy work?
 - **Subsidy of US \$ 24.61** per household covering the security deposit charges of one cylinder, pressure regulator, hose pipe (1.2 meters), installation charges, and domestic gas consumer card (DGCC) Booklet is given to the Oil Marketing Companies.
 - Beneficiaries buy the gas stove or the Oil Marketing Companies can finance purchase of LPG stove on installment basis
 - **12 cylinders (14.2-kg)** supplied to each household in a year.
 - **Direct Benefit Transfer (DBT):** 1/3 of the market price of the LPG cylinder is transferred in advance directly into bank accounts of individuals, who then buy the gas at market rates.
- **Beneficiaries:** As on December 4, 2017, 32 mn LPG connections given



- Why Free LPG connection to BPL families?
 - Access to clean cooking fuel
 - Addresses health problems caused by use of traditional sources of cooking fuel such as fire wood, coal, cow dung, etc.
 - Enhance productivity of women and raise their quality of life by removing drudgery associated with collection of wood

Give it up



- Under the “Give it up” and “Give back” – affluent consumers, who could afford to buy LPG at market price, are encouraged to give up their entitlement to subsidy
- Over 12 mn consumers have given up their LPG subsidy which has helped in ensuring access to LPG connections to the under-privileged people.
- LPG coverage in India has now increased to 78.3 %.
- US \$ 9.0 bn of subsidy has been transferred directly to the beneficiaries bank accounts in the last two years. Estimated saving of over US \$ 4.5 bn in two years to the government.
- Households with annual incomes of **US\$15,000 plus no longer eligible for subsidized LPG**
- Benefits of providing 100% access to clean energy:
 - Eradicate extreme hunger and poverty by increasing economic potential of women and reducing economic loss due to bad health
 - Empower our women
 - Reduce child mortality
 - Improve maternal health
 - Ensure environmental sustainability and
 - Combat tuberculosis
- Would impact 6 of the 8 millennium development goals:

MARKET PRICE: \$9.51

SUBSIDISED PRICE: \$6.55

SUBSIDY PER CYLINDER: \$2.94



Power for All (PFA)

- **Integrated Power Development Scheme:**
 - **Outlay: \$9.8 Bn** – smart metering, underground cabling, infrastructure upgrading, GIS substations, IT enablement for energy accounting etc., in urban areas.
 - So far, projects worth **\$4.14 bn covering 3,616 towns** have been sanctioned by the Monitoring Committee.
 - Government of India launched Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) in September 2017 to achieve universal household electrification at US \$2.51bn, including gross budgetary support of US \$1.9 bn
- **Extending Transmission Capacity:**
 - **13,820 circuit km** (ckm) of transmission lines have been commissioned during 2017-18 (April-November 2017).
 - **50,805 MVA** of transformation capacity of substations has been added during 2017-18 (April-November 2017)
 - **Central Govt. scheme to reform State Distribution companies (UDAY):** Aimed at taking over the debts of Distribution companies, lowering the cost of debt servicing and improving operational efficiency through infra. augmenting, smart metering, and improved collection efficiency through public participation. **27 States and 4 UTs have joined UDAY till date.**

- 24x7 power to all households, industry, commercial businesses, agriculture farm holdings, and any other electricity consuming entity by 31 March 2019



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Role Of Coal

- **Issues:** Coal Supply; T&D Losses; and poor health of Power Utilities.
- Efforts being made to adopt HELE technologies – SC, ASC, USC, AUSC, Coal Liquefaction, Coal Gasification, Carbon Capture & Utilization to keep carbon-dioxide intensity as low as possible.
- **41 GW of Supercritical capacity installed...** 46 GW under construction.
- Thermal capacity addition after 2018 will mandatorily use Supercritical technology... **3 GW of inefficient thermal capacity has been retired.**
- From 2027 all new thermal fleet will be Ultra Super Critical.
- Indigenous Research ongoing to develop Advanced Ultra Super Critical Technology (**Steam parameters:** 300 kg/cm² pressure and temperature of 700°C.)
- Coal remains the dominant fuel, accounting for 58% of India's energy consumption.
- India's coal consumption fell to nearly half the 10 year average to only **15 million tonnes** despite the share in global consumption rising to **11% last year**

- **Total Installed Power Capacity:** **330 GW**
- **Installed Coal-based capacity:** **194 GW**
- **Peak Demand:** **165.2 GW**



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Village Electrification

- **15 August 2015:** Govt. pledged to electrify all un-electrified villages within 1000 days – by May 2018.
- **The Village Electrification Scheme:** To provide 24x7 affordable & quality power to all villages with a capital outlay of US \$11.4 Bn...Grant component ~ \$9.5 Bn
- **An integrated scheme covering all aspects of rural power distribution** – Feeder Segregation, installation of new transformers, last-mile infrastructure, smart metering etc.
- Scheme provides grant to the States at **60 % of project cost**. Additional 15 % grant, on fulfillment of milestones.
- 85 % grant for special category States. Additional 5 per grant on fulfillment of milestones.
- **November 2017:** Out of the 18,452 un-electrified census villages in the country, **15,183 villages have already been electrified**
- A village would be declared as electrified if:
 - Distribution transformer and distribution lines are provided in the inhabited locality.
 - Electricity is provided to public places like Schools, Village Local Administration Office, Health Centers, Dispensaries, Community centers etc.

- **New Definition: All households in the village should be electrified**



Renewable Energy

- India's estimated renewable energy potential: **1096 GW**

Solar power: 750 GW
Wind: 302 GW (100 mt mast height);
Small Hydro: 21 GW
Bio-energy: 25 GW

- **Grid-connected Capacity (December 2017):** A capacity addition of **27.07 GW** of renewable energy has been reported during the last three and half years under Grid Connected Renewable Power.
- With **60.98 GW** installed renewable power capacity, the renewable power has a share of about **18.37%** to the total installed capacity
- **Foreign Direct Investment (FDI) up to 100%** is permitted under the automatic route for renewable energy generation and distribution projects subject to provisions of The Electricity Act, 2003.
- India's Intended Nationally Determined Contribution (INDC)
 - Reduce the emissions intensity per unit GDP by **33 to 35 % below 2005 by 2030**.
 - Increase the share of non-fossil-based power capacity from **30 % today to about 40% by 2030**.
 - Create an additional carbon sink of **2.5 to 3 bn tons** of CO2 through additional forest and tree cover.

- India needs as much as **\$200 bn** to meet its new target of installing **100 GW of solar power capacity** and **60 GW of wind power capacity** by 2022.

Renewable Source	GW
Wind	44.2
Solar	25.98
Bio-Power	9.08
Small Hydro	4.97
Waste to Energy	0.92
TOTAL	85.37



Solar

- India's Solar Potential: **750 GW**
- National Solar Mission: **100 GW by 2022...**
- Capacity break-up:
 - Rooftop Scheme : 40GW
 - **Entrepreneur Scheme : 20GW**
 - **Already planned : 10GW**
 - **States driven : 10GW**
 - **Public Sector : 10GW**
 - **Private Sector : 5GW**
 - **Independent Power Producers : 5GW**
- If India meets its renewable energy target...no additional coal power will be needed till 2027
- **\$100 Bn investment** over the next 7 years.
- **16.61 GW of Solar Capacity**, including 0.86 GW from Solar Roof Top projects has been installed in the country. (November 2017) Solar capacity increased 370 per cent in the last three years
- **Green Grid Corridor:** Launched in May 2017. Aimed at integrating renewable energy with thermal energy for transmission of power through ultra high-voltage direct current to high consumption centers located thousands of kms away.



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- International Solar Alliance (ISA):
 - **121 prospective member** countries between the Tropics of Cancer & Capricorn.
 - ISA a Treaty-based organization is headquartered in India.
 - **ISA Framework Agreement** opened up for signature in Marrakech on November 15, 2016 during COP22.
 - 51 Signatories and 22 Ratifications have made ISA a legal entity on December 6, 2017
 - India to host the inaugural conference of the ISA in New Delhi on March 11, 2018 in presence of business and political leaders from around the world
- Declining Solar Tariffs (kWh)
 - **May 2017: Solar tariff dropped to Rs. 2.44 (4 cents) per unit** in a bidding for a 500 MW project for Bhadla III Solar park project in Rajasthan
- Declining Solar power tariff because of:
 - Sharply declining prices of solar panels
 - Better structuring of the project - reduces risk for project developers; and Better currency hedging deals - makes financing available at competitive cost
- **India – 3rd largest solar market in the world**
- **March 2017:** India's solar power capacity increased to more than 12.87 GW from 2.65 GW in 2014. India's solar capacity is expected to touch the 18.7 GW shortly, about 5 per cent of the global pie

• Solar Business Models in India

- **Feed-in-tariff:** Developers sign a PPA at fixed tariffs.
- Renewable Energy Certificates.
- **Open Access** – Developer supplies to any 3rd party at negotiated rates
- **Captive & Group Captive:** Consumers offtake the majority of the output from the captive & own at least 26% of equity
- **Sites & Parks** - Developer develops the infrastructure and charges a rental fee from users.



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Policy Support

- **100% FDI for solar cell manufacture.**
- 10-year tax-holiday for solar projects.
- Viability Gap Funding.
- Accelerated depreciation @**40% within first 2 years of commercial operation.**
- **Exemption** from Open Access Charges, Wheeling & Banking Charges etc.
- Developers get a fixed sum per unit energy generated in addition to tariff.
- **No Excise Duty** for RE generation components.
- Customs Duty @ **5%** for selected components of RE generation power projects.
- **30% subsidy** for off-grid PV & Solar Thermal.
- Payment Security Mechanism to cover defaults by state utilities/distribution companies
- **Provision of roof top solar** and 10 percent renewable energy as mandatory under Mission Statement and Guidelines for development of smart cities

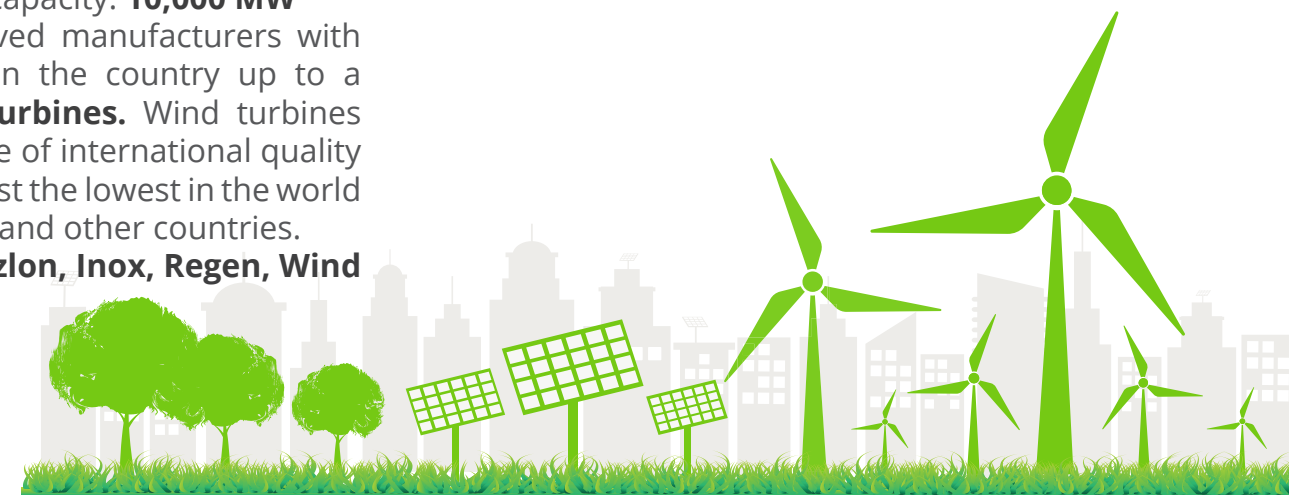
Current Status Of Manufacturing

- Majority of Indian projects have adopted **Crystalline silicon technology**, with an average efficiency of 16-17%.
- India has **2.9GW of cell and 5.2GW of module production capacity.**
- Photo-Voltaic industry dependent on imports of critical raw materials and components.
- Low capacity to manufacture silicon material & solar thermal.
- Opportunity for Manufacture:
 - Concentrator collectors, receivers, crystalline silicon technology components etc.
 - Off-grid technologies: Micro grids of 150 watts (powering 20 households) to 5 kilo watt (40 households and commercial use like water pumps) in villages; lanterns, street lighting; refrigeration etc.
 - **India's Official Renewable Energy Meet, 19-21, April 2018, Noida**

Wind

- **National Institute of Wind Energy (NIWE)** India's installable wind energy potential is 102 GW @ 80 metre height & 302 GW with towers of a height of 100 metres.
- **India ranks No.4 in terms of installation capacity** after China, the US and Germany.
 - **Installed Capacity: 32.75 GW (July 2017)**
- During the year 2016-17, highest wind power capacity addition of **5.5 GW was made**
- New Capacity Installation Target: **60 GW by 2022.**
- Domestic wind manufacturing capacity: **10,000 MW**
- Presently, there are 20 approved manufacturers with 53 models of wind turbines in the country up to a capacity of **3.00 MW single turbines.** Wind turbines Being manufactured in India are of international quality standards and cost-wise amongst the lowest in the world
- Being exported to Europe, USA and other countries.
- Turbine suppliers: **Gamesa, Suzlon, Inox, Regen, Wind World, LM Wind and Senvion.**

- Grid integration challenges:
 - **Green Corridor Programme:** Objective is to improve linkage between India's regional (southern) grids with its national grid.
 - This will facilitate interstate transmission.
 - Signing of PPAs/ PSAs for first SECI wind auction (1000 MW, tariff discovered was Rs. 3.46 in Feb 2017). Second wind auction of 1000 MW which resulted in lowest tariffs of Rs. 2.64/ unit.



- **National Offshore Wind Energy Policy 2015 (NOWEP)**
 - Certain blocks near Gujarat and Tamil Nadu coast line have been identified.
 - First LiDAR installed and commissioned off Gujarat coast for gathering wind resource data.
 - Guidelines allow for setting up offshore wind farms within territorial waters that extend up to **200 nautical miles from the coastal baselines of India**
 - NIWE will allocate the blocks to the project developers through an open international competitive bidding process.
 - NIWE will give single window clearance.
 - Environmental Impact Assessment, oceanographic surveys, environmental audit etc. to be done before the blocks of offshore wind energy can be demarcated
- **Policy Support**
 - **Raw material used in manufacturing of wind turbine generators have been exempted from the Special Additional Duty of 4%.** No excise duty and Customs duty @ 5% on import of forged steel rings used in the manufacture of bearings used in wind operated electricity generators.
 - The tax on coal for the **National Clean Energy Fund (NCEF) doubled to US \$ 6.15 per tonne.** NCEF is used for supporting research and clean energy technology solutions.



Standards & Labelling

- India's **per capita annual energy consumption is 1100 units**, which is lower than Europe and US. The country is committed to reduce the energy intensity of its economic growth by one-third by 2030
- Bureau of Energy Efficiency initiated the S&L program for Equipment and Appliances in 2006
- The Scheme invoked for **21 appliances...8 have been notified** under mandatory labelling since 2010, and 13 appliances are under the voluntary domain
- India's Bureau of Energy Efficiency has designed the **Super Efficient Equipment Program (SEEP)** to bring accelerated transformation for super-efficient appliances by providing financial stimulus innovatively at critical points of intervention

- Four Initiatives under National Mission for Enhanced Energy Efficiency
 - **Perform, Achieve & Trade (PAT) –reducing SEC in large energy intensive industries**
 - Market transformation for Energy efficiency-aimed at using energy efficient appliances
 - Framework for Energy Efficient Economic Development-promote fiscal instruments to encourage energy efficiency financing
 - Energy Efficiency Financing Platform-platform to team up with financial bodies and project developers



- **Energy Conservation Building Code (ECBC)** (Reduction in Energy Consumption by 20-25%)
 - Sets minimum energy standards for new commercial buildings having a connected load of 100 kW or contract demand of 120 KVA and above
 - **Currently, 10 States and 1 Union Territory have notified and adopted the code**
 - Bureau of Energy Efficiency has also developed a voluntary Star-Rating Program based on the actual performance of a building for 4 categories of buildings – Residential, Commercial, Hospitality, and Retail.
- **Over 300 mn LED lamps distributed**
- 8.5 mn tonnes of oil equivalent saved in energy through Perform, Achieve and Trade (PAT) scheme
- **6,000 MW power generation** capacity avoided in the 1st cycle of PAT.
- **2,320 GWh in total energy savings for the period between 2017-2027**



Construction

- **100 % FDI by automatic route is** allowed in the construction development of the following:
 - **Townships**
 - **Roads & Bridges**
 - **Residential & Commercial Premises**
 - **Hotels & Resorts**
 - **Hospitals**
 - **Educational Institutions**
 - **Recreational facilities**
 - **City & Regional level infrastructure**
- **100% FDI** under automatic route is permitted in completed projects for operation and management of townships, malls/ shopping complexes and business centres.
- No minimum floor area or minimum capitalization Requirement
- Each phase of construction development project will be considered as a separate project for FDI purposes
- **A foreign investor will be permitted to exit and repatriate** foreign investment before the completion of project under automatic route, subject to a lock-in-period of three years
- Lock-in period will not apply for FDI into hotels and resorts, hospitals, SEZs, educational institutions, old age homes and NRI investments.
- FDI is not permitted in an entity which is engaged or proposes to engage in real estate business, construction of farm houses and trading in transferable development rights (TDRs).
- Foreign Direct Investment (FDI) received in Construction Development sector (townships, housing, built up infrastructure and construction development projects) from April 2000 to September 2017 stood at US\$ 24.7 bn, according to the Department of Industrial Policy and Promotion (DIPP)
- **Budget 2018-19:** To fulfil target of housing for All by 2022, more than 10 mn houses will be built by 2019 in rural areas, besides already constructed 60 mn toilets under Swachh Bharat Mission.
- **January 25, 2018:** To promote affordable housing for the masses:
 - Concessional Rate of GST of 12% extended to construction of houses constructed/ acquired under the Credit Linked Subsidy Scheme for Economically Weaker Sections, Lower Income Group, Middle Income Group sections under the Housing for All (Urban) Mission/Pradhan Mantri Awas Yojana (Urban)

Textiles & Garments

- **Textiles contribute 5% to GDP;** 14% to overall Index of Industrial Production (IIP) and 15% to exports.
- **2nd largest employer after agriculture** ~ employs over 45 mn people directly and 60 mn indirectly
- 2nd largest producer of textiles and garments in the world
- Availability of complete value chain – from fibre to fashion.
- **1st in global jute & cotton production;** and 2nd largest producer of silk & manmade fibres
- **India accounts for almost 24% of the world's spindle capacity** and 8% of global rotor capacity
- **100% FDI allowed in Textiles**
- 60%+ of textile & garments exported to the U.S. and EU
- India has FTA with ASEAN
- **Current market size is \$150 Bn (Domestic~\$110 Bn and Exports~\$40 Bn)...expected to grow to \$250 Bn by 2020**
- Global textile/garment sourcing houses have offices in India.
- Govt of India increased its allocation to \$ 1.1 bn to the textile ministry in the 2018-19 budget. Last year, the government had approved US\$923 mn for textiles and



apparels to create 10 mn new jobs in three years and attract investments of US \$ 11 bn with an eye on US \$ 30 bn in exports

- **Technology Upgradation Fund Scheme (TUFS):** Rolled out in January 2016 with a budget provision of US \$ 2.3 bn for the next 7 years expected to attract an investment of US\$ 15 bn and generate 3 mn jobs. Got a higher allocation in 2018-19 budget from US \$ 300 mn (Rs 1956 crores) to US \$ 353 mn (2300 crores).
- **508 projects with projected cost of US \$ 249.38 mn (Rs. 1,621.03 Crores) and subsidy requirement of US \$ 19.58 mn (Rs. 127.28 Crores) approved under Amended TUFS in December 2017.**
- An investment facilitation cell set up in the Textile Commissioner's office in Mumbai to guide investors
- Apparel and Garment centres set up in all the **8 North eastern states to promote entrepreneurship in apparel manufacturing** and provide employment to the local population
- **Integrated Processing Development Scheme** provides upto 50 per cent assistance for Common Effluent Treatment Plants with Zero Liquid Discharge System subject to a ceiling of US \$ 11.54 mn (Rs 75 crore)
- "PowerTex India" launched on 1st April, 2017, with an outlay of US \$ 74.92 mn (Rs. 487 crores) for three years and has the potential to generate investments worth \$ US 153 mn (Rs. 1000 crores), and employment for 10,000 people

- Indian Handlooms got worldwide recognition through India Handloom Brand (IHB) which guarantees high quality, authentic handloom items made with organic substances.



Textile Machinery

- Market size for textile machinery sub-sector is **Rs 12,308 crore (approx \$1.8 Bn)**
- The sector has been growing at **5.1% p.a over last 3 years**
- Production, currently at **Rs 6,960 Cr (approx. \$1 Bn)** has grown by 9.6% p.a.
- Import constitutes a significant portion of total demand **at 63%; also 35% of total production is exported.**
- **'SAATHI' (Sustainable and Accelerated Adoption of Efficient Textiles Technology to Help Small Scale Industries)** launched jointly by Ministry of Textiles and Ministry of Power to provide energy-efficient powerlooms, motors and rapier kits to small and medium powerloom units at no upfront cost.

Technology gaps in India

- Weaving
 - Shuttleless looms (rapier >400 rpm; air jet > 800 rpm; water jet > 800 rpm)
- Knitting
 - High speed circular knitting machinery (Micro-processors)
 - Warp knitting

- Processing
 - Environmentally sustainable processing,
 - High speed wide width processing and
 - Special purpose processing and finishing machinery (e.g. plasma-finishing)
- Industrial Stitching
 - Hi-tech industrial stitching/sewing machinery (lockstitch, overlook,
 - Cover stitch, bar tacking, pocket set, button holes, etc.)

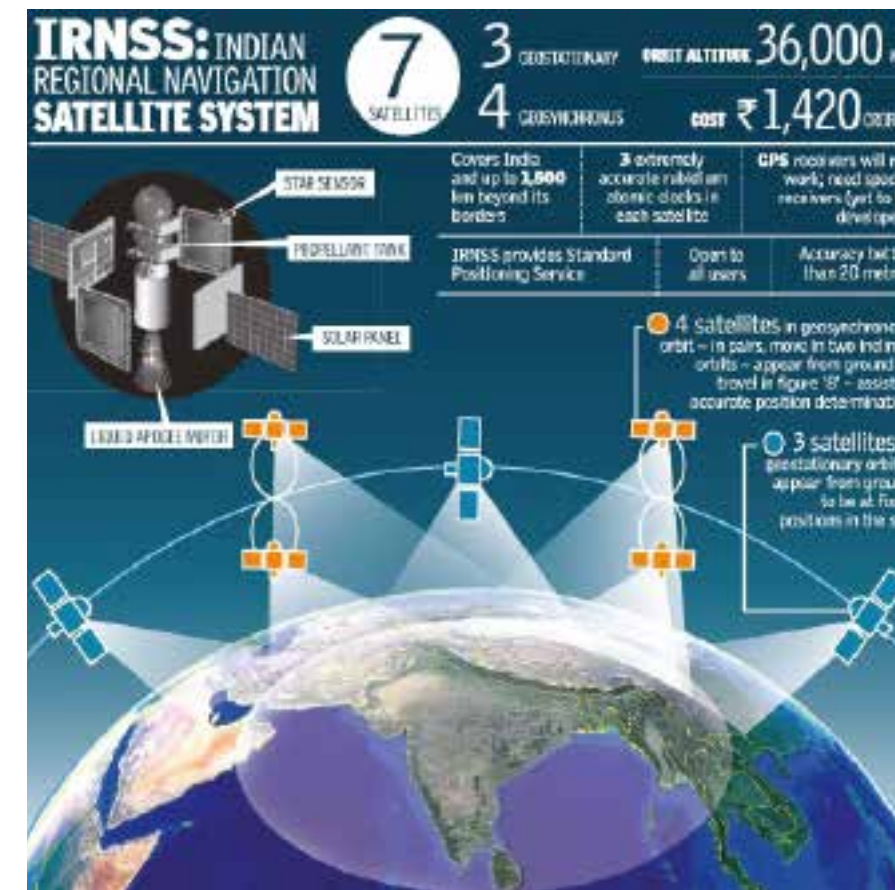


Space

ISRO: Indian Space Research Organization (Est. 1969) is headquartered in Bengaluru. Its vision is to harness space technology for national development, while pursuing space science research and planetary exploration. **ANTRIX** is the Commercial arm of ISRO. It provides launch services for satellites on-board ISRO's launch vehicles - Polar Satellite Launch Vehicle (PSLV) and Geo- Synchronous Satellite Launch Vehicle (GSLV).

Pathbreaking launches:

- **Jan 2018:** Launched its **100th satellite**
- **Jan 2018:** Launched Cartosat-2 earth observation satellite, along with 30 other micro- and nano-satellites from six different countries
- **Feb, 2017:** Created a **world record** by launching 104 satellites in one go using PSLV
- Of these **104 satellites, 101 belonged to foreign countries** – 96 from U.S. and one each from Israel, Kazakhstan, the Netherlands, and Switzerland.
- **June, 2017:** Launched the GSLV-MK III rocket with a capability to carry payloads of up to 4 tons into the Geostationary orbit or up to 10 Tons into the Low Earth Orbit.



- **April 2016:** India completed **launching 7 satellites** as part of the Indian regional Navigation Satellite system to offer GPS services
- **May 2016:** Successfully tested the Reusable Launch Vehicle-Technology Demonstrator (RLV-TD).
- **June 22, 2016:** ISRO launched **20 satellites in one mission.**
- **Aug 2016:** ISRO successfully tested the indigenously developed Scram Jet (or air breathing) engine. The engine will be used to **power the Regional Navigation Satellite System to offer GPS services.**
- **2014:** 1st country to reach Mars in its 1st attempt.
- 2014: Successfully tested the “crew module” aboard the GSLV MK3.
- **2008/09 Chandrayaan-1:** India’s 1st **unmanned moon mission** carried the Moon Impact Probe Payload and made the discovery of water on the moon.
- **1975:** Launched **1st satellite – ARYABHATTA.**
- **1960s:** Beginning of the Indian space program.
- Indo-Japanese cooperation in space technology has grown to include cooperation on a variety of areas including “earth observation, satellite-based navigation, space sciences and lunar exploration”.



Defence

Government of India will develop two defence industrial production corridors and bring out an industry-friendly military production policy to promote defence manufacturing in India by the public sector, private sector and MSMEs. In 2018, a total allocation of **US \$ 45.46 bn** was made for the defence budget. **US \$ 15.38 bn** has been set aside for capital outlay to purchase new weapons, aircraft, warships and other military hardware.

Private investment in defence production has been opened up, including liberalising foreign direct investment. **Up to 49 per cent FDI** is allowed under automatic route and beyond 49 per cent through Government route.

- **Among the world’s top five defence spenders** at US\$ 45.46 in 2018. This is estimated to reach US\$ 64 bn by 2020.
- **Brahmos, the world’s fastest supersonic cruise missile** launched in November 2017
- In the last three financial years up to November 2017, **119 contracts worth US \$ 17.93 bn** were signed with Indian vendors and 68 contracts worth **US \$ 19.12 bn** have been signed with foreign vendors for procurement of defence equipment including rockets, simulators and

component level repair facility for Tanks from Russia, Laser Designation Pods, Radars, Pods for Aircraft Radios, Weapons for Garuda and Missiles from Israel, Aircraft, Helicopters, Missiles, Artillery Guns and Simulators from USA and Aircraft Ammunition.



Defence Procurement Policy – DPP 2016

- Highest preference for Indigenously Designed Developed and Manufactured (IDDM) equipment
- **60 per cent to be locally sourced** if design not Indian; and 40 per cent if design is Indian
- **Offsets policy liberalized for foreign vendors:** Obligation to invest at least 30 per cent of the contract value in India will kick in at **US \$ 307.69 mn**
- **Special focus on MSMEs, and on “Make in India”.**
- **10 per cent weightage for superior technology,** instead of selecting the lowest bidder only in financial terms
- Notified the **‘Strategic Partnership (SP)’** Model

which envisages establishment of long-term strategic partnerships with Indian entities wherein they would tie up with global Original Equipment Manufacturers (OEMs) to seek technology transfers to set up domestic manufacturing infrastructure and supply chains

Defence production – Self reliance

- **All naval ships & submarines are being built in India.**
- 75 per cent of the total acquisition orders of the Indian Army are with Indian firms.
- Examples: Tejas LCA; Naval Warships – INS Kochi & INS Kolkata; Submarine – INS Kalvari; Akash Missile System; HTT40 – Basic Trainer aircraft; Dhanush-155mm/45 calibre, artillery gun system etc.



Defence deals concluded

- **36 Rafale jets** – Deliveries between Sept 2019 - Apr 2022
- **Six C130 J transport aircraft,** AKH 64 attack helicopters and M777 ultra-light Howitzers
- **2 Phalcon/IL-76 AWACS valued and 10 Heron TP UAVs**

Domestic players

- Between Jan 2001 and Feb 2016, 333 industrial licences have been granted to private firms for defence manufacturing.
- Serious players such as Bharat Forge Ltd (BFL), Reliance Industries Ltd (RIL), Tata group, Hinduja group, Larsen and Toubro Ltd (L&T), Godrej group and the Mahindra group have built a portfolio in electronics, land systems, aerospace products and shortrange missiles.
- BFL has tied up with Rafael Advanced Defence Systems Ltd and Elbit Systems Ltd and UK-based Rolls-Royce Corp.
- Tata group has tied up with US-based firms Sikorsky Aircraft Corp., Lockheed Martin Corp. and Boeing Co.
- Reliance has tied up with the French company Thales (for underwater systems), Ukraine-based Antonov (for transport aircraft) and Israel’s Rafael (for air-to-air missiles).
- Mahindra has tied up with Airbus for helicopters and UK’s Ultra Electronics for underwater weapon systems.
- Hinduja group has partnered with Larsen & Tubro for manufacturing in various facets of defence
- Indigenously developed Tejas LCA inducted into the Indian Air Force in July 2016



Defence export

- Requirement of End User Certificate (EUC) has been dispensed with for the export of parts, component, sub-assemblies and sub-systems;
- **Issuing advance / in principle clearance for exploring business opportunities abroad.**
- **DRDO laboratories** and test facilities of other organizations of the Ministry of Defence (MoD) are made available to the Indian Domestic Defence Industry based on their requirement and availability.
- Target of **exporting Indian defence goods worth US\$ 200 mn by 2019**
- **India exports defence equipment** to Mauritius, Bangladesh, Philippines, Afghanistan and Oman.
- **UK and UAE** are also looking at **developing its defence technology in India** for joint exports from India

Civil Aviation

Indian civil aviation industry follows globally accepted dynamic pricing practices. Pricing deregulation has allowed competition to bring down prices dramatically in India, making it one of the lowest-fare markets in the world.

- Currently, India is the **9th largest civil aviation market** in the world.
- Market size of **US\$ 16 Bn**
- Expected to be the third largest by 2020 and **world's largest domestic civil aviation market in the next 10 - 15 years**
- **Highest passenger traffic growth** rate in the world: **17.31 per cent**
- **2017 passenger traffic:** 117.1 mn
- Combined fleet size of all airlines about **548 aircraft** in India, and another **920 aircrafts are expected to be inducted into the fleet by 2025**
- Airbus and Boeing estimate India will need **1,610 and 1,740 jets**, respectively, over the next 20 years
- Only 75 airports in the country have a scheduled airline service. There are 350 unused airstrips – reviving these airports are high on government agenda
- **Govt. is planning to invest around \$120 bn** in airport infrastructure and aviation navigation services over the next decade

Growth drivers

- **Growing economy** and rising disposable incomes
- Increased competition among airlines, especially among low-cost carriers
- Fall in prices of aviation turbine fuel
- **Rise tourism flows** – E-visa scheme extended to 161 countries
- Modern airports, and greater use of technology

New Civil Aviation Policy 2016

- Airlines can commence international operations provided they deploy 20 aircraft or 20 per cent of total capacity, whichever is higher
- Open Skies Policy for SAARC and countries beyond 5000 km from Delhi
- Focus on Regional Connectivity

UDAN or Regional Connectivity Scheme Operationalized

- Flights cover distances of up to 800 km through a market-based mechanism.
- **43 cities are expected to be connected**
- Fares capped at **US\$ 40 per seat per hour**
- Five airlines — Alliance Air, SpiceJet, Turbo Megha, Air Odisha and Air Deccan — were awarded 128 routes under the scheme

Civil Aviation...MRO business

Liberalized FDI Policy

- **100 per cent FDI** through automatic route in greenfield airports.
- **100 per cent FDI in brownfield** – automatic route up to 74 per cent and government route beyond 74 per cent
- **49 per cent FDI through automatic route** in Scheduled Air Transport / Domestic Passenger Airline - 100 per cent for NRIs
- **100 per cent FDI** through automatic route in non-scheduled air transport service
- **100 per cent FDI through automatic route** in Helicopter / Seaplane services
- **100 per cent FDI** through automatic route in MRO operations, flying training institutes, and technical training institutions
- **100 per cent FDI** through automatic route in Ground Handling Operations

MRO business opportunity

- The Maintenance, Repair and Overhauling (MRO) business of Indian carriers is around **US \$ 750 mn**
- **90 per cent of Indian airplanes are serviced outside India** – in Sri Lanka, Singapore, Malaysia and UAE

New MRO policy

- Tools and tool-kits used by the MRO have been exempted from Customs and Excise duty
- Restriction of one year for utilisation of duty free parts removed
- Import of unserviceable parts by MROs for providing exchange / advance exchange allowed
- Foreign aircraft brought to India for MRO work will be allowed to stay up to 6 months or as extended by the Directorate General of Civil Aviation (DGCA). The aircraft can carry passengers in the flights at the beginning and end of the stay period in India

Automotive

The third largest automotive market globally, this sector contributes to 7 per cent of India's GDP. The domestic industry produced a total 21,415,719 vehicles including passenger vehicles, commercial vehicles, three wheelers, two wheelers and quadricycle between April-December 2017. The same period witnessed an overall automobile exports increase of 13.01 per cent. With India being a leading player and supporter of global environmental concerns, there are clear opportunities in greener vehicles and alternative mobility in the future

- **31 per cent of small cars sold globally are manufactured in India**
- Auto industry will grow from US\$ 260 to US\$ 300 bn by 2026 and create 65 mn additional jobs
- **100 per cent FDI** allowed in auto sector via the automatic route
- Auto sector attracted **FDI worth US\$ 1.61 bn in FY 2017**

National Mission for Electric Mobility (NMEM) 2020

- To foster adoption of electric and hybrid vehicles and encourage their manufacturing in India
- Target: To have 6-7 mn electric/hybrid vehicles by 2020
- Outlay: US \$ 2.15 bn during the span of the scheme

- Promote R&D in technology including battery technology, power electronics, motors, systems integration, battery management system, testing infrastructure, and ensuring industry participation in the same
- Promote charging infrastructure
- Provide demand and supply side incentives
- Encourage retro-fitment of on-road vehicles with hybrid kit

Status of manufacturing

- Largest tractor manufacturer
- Largest two-wheeler manufacturer
- Second largest bus manufacturer
- Third largest heavy truck manufacturer
- Sixth largest car manufacturer
- Sixth largest commercial vehicle manufacturer

Auto Clusters

North

Cities: Delhi, Gurgaon, Noida, Ghaziabad,

Ludhiana, Haridwar	Maruti Suzuki
Eicher	Mahindra
Escorts	Mazda
Hero Motor	New Holland
Honda Motorcycle	Suzuki
Honda Cars	Motorcycles
ICML	Tata Motors
JCB	Yamaha

West

Cities: Baroda, Halol, Sanand, Mumbai, Pune, Nashik, Aurangabad

Bajaj Auto
Fiat

East

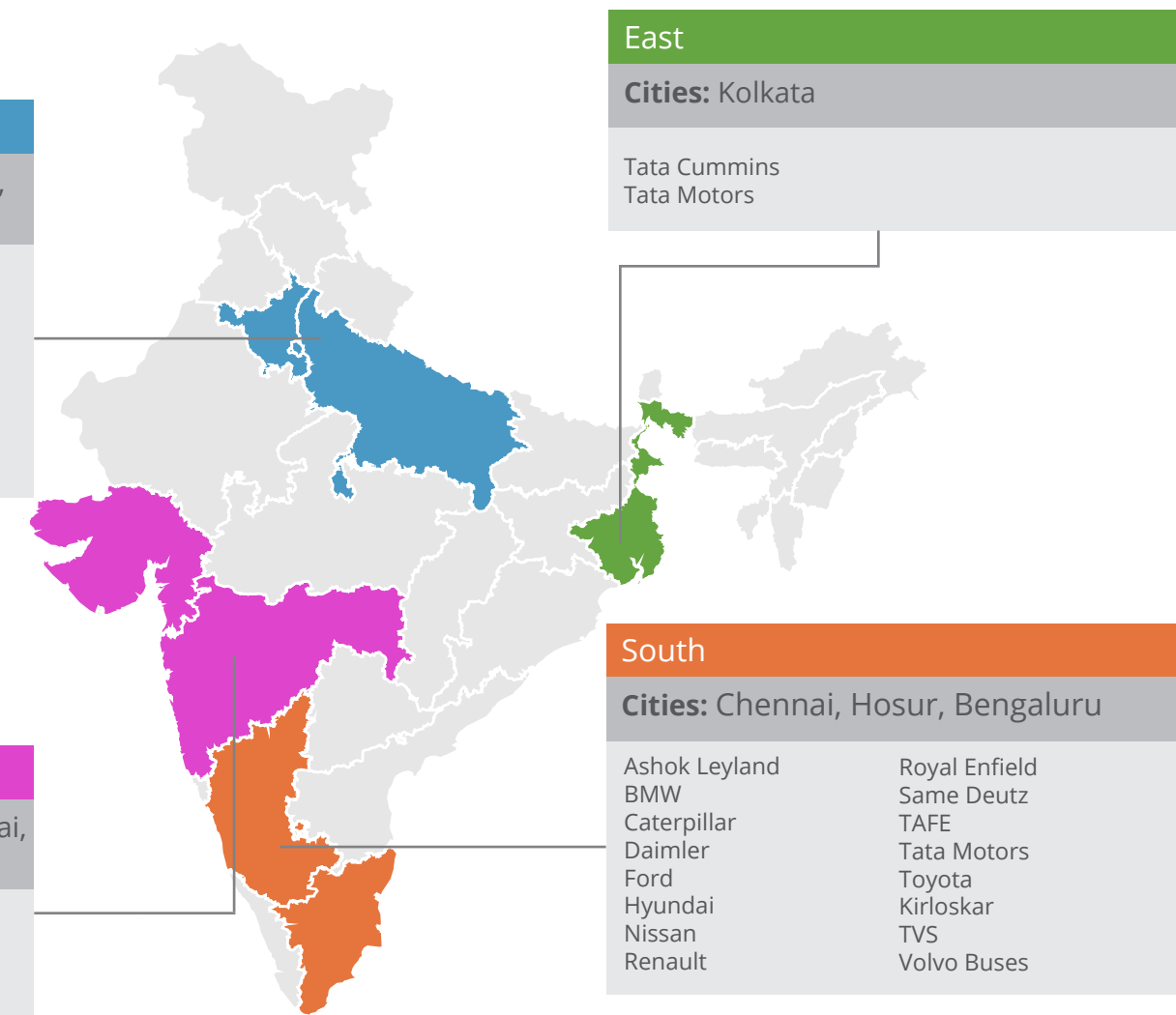
Cities: Kolkata

Tata Cummins
Tata Motors

South

Cities: Chennai, Hosur, Bengaluru

Ashok Leyland	Royal Enfield
BMW	Same Deutz
Caterpillar	TAFE
Daimler	Tata Motors
Ford	Toyota
Hyundai	Kirloskar
Nissan	TVS
Renault	Volvo Buses



- Achieve top-line of **US \$ 260-300 bn**
- Increase export intensity to **35 - 40 per cent**
- **Attract investments of US \$ 70 - 90 bn** over next 10 yrs
- Provide incremental employment to **65 mn** persons
- Foster the promotion of **“Brand India”** by developing a sophisticated ecosystem of research, design, engineering and manufacturing that is conducive for a variety of players - both mass market and niche seekers
- To rank within the **top three of the world in engineering, manufacture and export of vehicles and components**
- Harmonisation: Clear roadmap to adhere to **1998 Agreement of UN Global Technical Regulations (WP.29)**
- **Fuel efficiency:** Define roadmap for all categories of vehicles
- **Road safety:** Reduction in accidents and fatalities as per norms specified in Road Transport & Safety Bill

Segment	Per 1000 persons
Passenger vehicles	20
Two wheelers	208
Buses	0.11

Segment	Market Share
Passenger vehicles:	14 per cent
Commercial vehicles:	3 per cent
Three wheelers:	3 per cent
Two wheelers:	80 per cent

Mission Plan 2026

- Turnover: US \$ 39 bn
- Contribution to GDP: 3.5-4 per cent
- Component exports: US \$ 10.81 bn
- Domestic aftermarket: US \$ 6.8 bn
- Direct employment: 1.50 mn
- Industry fast embracing modern shop-floor practices: Kaizen, TQM, TPM, 6 Sigma and Lean Manufacturing

StartUp Environment

- India is home to around **20,000 Startups**
- **1,400 new entrants** every year
- **Startup Initiative:** Envisions building a strong ecosystem for nurturing innovation and startups in the country and empowering startups to grow through innovation and design.
- **World’s youngest start-up nation**
- 72 per cent Startup founders are below 35 years
- Dominated by internet and financial services start-ups
- India ranks third among global startup ecosystems with more than 4,200 new-age companies
- **Bengaluru ranks 7** in valuation and 11 in performance.
- Bengaluru engineers are most economical (US\$ \$8,600 annual salary)
- Startup investment in India: \$4.7 Bn in 2014, \$9 Bn in 2015, \$4 Bn in 2016 and \$6.4 Bn (first 6 months of 2017)

Policy support

- **StartUp India Hub** : 21,000 registered as of Jan 2018
- **StartUp India Learning Programme** : 191,000 registered as of Jan 2018
- Launched State and Union Territory StartUp Ranking Framework, the Compendium of Good Practices for

- Promoting start ups in India and the **StartUp India Kit** to act as catalysts to help the Startup India
- The State and UT Ranking Framework comprises feedback collected from stakeholders, including startups, mentors, investors, accelerators, incubators and government bodies
- StartUp India Compendium of Good Practises focuses on enriching the startup ecosystem through ethical behaviours and covers 95 good practises, distilled into 38 action points including incubation support, seed funding, angel & venture funding, startup policy & implementation, simplified regulations, easing public procurement, awareness & outreach.
- The Startup India Kit is a one-stop guide on all Startup India offerings and offers vital information, through website links, statistics, tools, templates, events, competitions and a glossary on startup terminology



Features of the scheme:

- **Simple compliance** based on self-certification
- Legal support, fast-tracking patent examination at reduced costs and fast exit
- **Relaxed norms of public procurement** for startups
- Fund support through a corpus of US\$ 1.5Bn.
- **Credit guarantee support** ~ US\$ 75Mn per year for 4 years (ending in 2020)
- Tax exemption for 3 years in a block of 7 years.
- Tax exemption on capital gains if invested in equity shares of eligible startups.
- Startup Fests and Annual Incubator Challenge



Digital India

Digital India envisions a digitally enabled infrastructure for every citizen.

Pillars of Digital India

- **Broadband highways**
- Universal access to mobile connectivity
- Public internet access programme
- **e-Governance:** Reforming government through technology
- **e-Kranti** - Electronic delivery of services covering health care, education, agriculture, cyber security, financial inclusion, justice and planning,
- Information for all
- Electronics manufacturing
- **IT jobs** - training and skills development to cater to the needs of the global IT industry
- Early Harvest Programmes

Digital India would encompass

- Setting up of a pan-India **fibre-optic network**
- **Wi-Fi** services in cities with a population of more than 1 mn.
- **Broadband access** to 250,000 village clusters by 2019
- **Digital lockers** to each citizen, allowing them to store

all their original identification documents and records

- **Universal mobile phone connectivity**
- Net Zero Electronic Imports by 2020
- Focus on moving toward automation in delivery of government services
- Achievement of a leadership position in IT toward betterment of health, education and banking services

Highlights of Budget 2018-19

- NITI Aayog will initiate a national program to direct efforts in Artificial Intelligence
- Department of Science & Technology will launch a Mission on Cyber Physical Systems to support establishment of centres of excellence for research, training and skilling in robotics, artificial intelligence, digital manufacturing, big data analysis, quantum communication and Internet of Things.
- The Budget doubled the allocation on Digital India programme to **US \$ 473 in 2018-19**
- To further broadband access in villages, the Government proposes to set up five lakh wi-fi hotspots to provide net connectivity to five crore rural citizens
- The Finance Minister allocated **US\$ 1.5 bn in 2018-19** for creation and augmentation of Telecom infrastructure.

Demonetization

On **Nov 8, 2016**, the Government of India announced the demonetisation of high denomination bank notes (Rs. 500 and Rs. 1000). As a result, there is a reduction in the quantum of cash currency and circulation in India. This has increased the taxation base and spurred greater digitization of the economy

Primary reasons for Demonetization:

- Tax evasion
- Parallel economy which is unacceptable in an inclusive society
- Eliminate corruption, black money, counterfeit currency and terror funding
- Promote digitisation of the economy
- Increase flow of financial savings and greater formalisation of the economy, all of which will eventually lead to cleaner and higher GDP growth and tax revenues

Benefits

- The number of taxpayers has increased post demonetization to 3.89 crore income-tax e>Returns filed, translating into a growth rate of 19.5 per cent in the tax base
- Surplus liquidity, created by demonetisation, will lower

borrowing costs and increase the access to credit. This will boost economic activity, with multiplier effects

Government efforts to promote digital payment

- **BHIM App:** A unified payment interface (directly linked to the bank account – no need to load money) which allows wire transfers between two bank accounts has been launched
- **Schemes to promote the usage of BHIM:** Referral Bonus Scheme for Individuals and Cash Back Scheme for Merchants
- **Aadhar Pay:** A merchant version of Aadhar (National Identification Card) enabled payment system will be launched...to benefit those without debit cards, and mobile phones.
- Transaction above US\$ 4690 will not be permitted in cash
- Exemption of Customs and Excise on Micro ATMs as per standards version 1.5.1, Fingerprint reader / scanner, Iris Scanner, Miniaturised POS card reader for m-POS (other than Mobile phone or Tablet Computer), parts and components for manufacture of the above-mentioned devices
- **Introduced e-assessment** In 2016 on a pilot basis in 2017.
- Extended it to 102 cities with the objective of reducing the interface between the department and the taxpayers

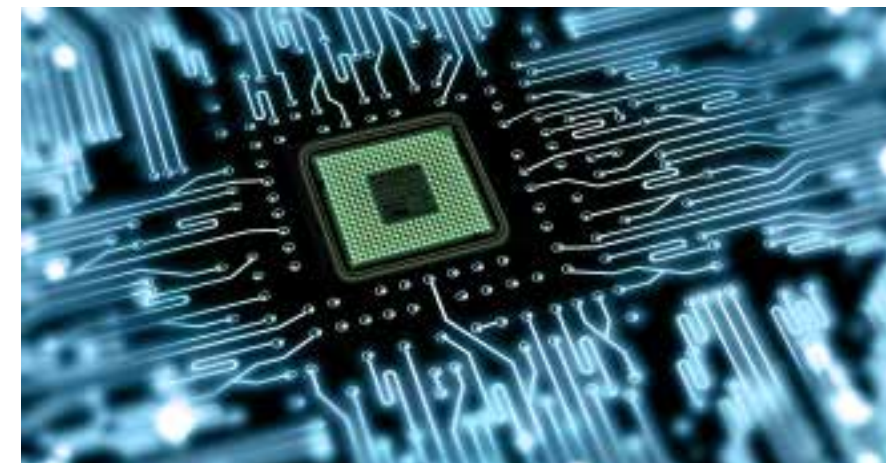
IT

- India is **fast emerging as a digital economy**...Digital India, Make in India, Skill India are creating a renewed thrust on the domestic market.
- **Indian IT companies can offer solutions** in the following segments:
 - Social Mobile Analytics & Cloud (SMAC),
 - **ERP, CRM, mobility** and user experience technologies.
 - Business Process Management sector, which is being driven by greater automation, expanding omni-channel presence, application of analytics across entire value chain.
- 2016: Indian IT Industry clocked revenues of US\$155bn... Exports segment US\$ 98.5bn ...Domestic market grew by 14 per cent- fuelled by ecommerce
- 2017: Exports to grow by 5-6 per cent; Domestic market – 15-17 per cent.

India for IT

- **The Indian IT and ITeS industry is divided into 4 major segments** – IT services, Business Process Management (BPM), software products & engineering services, and hardware.
- **The IT-Business Process Management (IT-BPM) industry constitutes 8.1 per cent of India's GDP,**

- adding about US\$115-120bn to the Indian economy. Largest export market for IT Services: the USA and the EU.
- India - world's largest sourcing destination for IT industry, accounting for 67 per cent of the US\$124-130 bn market.
- Cost competitive in providing IT services – 3 to 4 times cheaper than the US.
- **India is also gaining prominence in terms of intellectual capital** with several global IT firms setting up their innovation centres in India.



Electronics

The Indian electronics industry is one of the largest in the world and is expected to reach **US \$ 400 bn by 2020**. Total production of electronics hardware goods in India is estimated to reach **US \$ 104 bn by 2020**. Make in India and Digital India initiatives of the Government envisage the development of the Electronics System Design and Manufacturing (ESDM) sector to achieve **“Net Zero Imports” by 2020**. Electronic Manufacturing Services (EMS) industry - a significant contributor to the entire industry’s development.

Current scenario

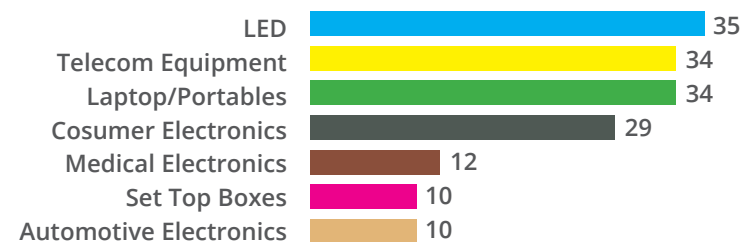
- Changing global landscapes in electronics design and manufacturing capabilities, and cost structures have turned the attention of global companies towards India
 - **65 per cent of the electronics is currently imported**
 - Electronics imports, are currently the third highest, after crude and gold
 - **25 - 30 per cent of the systems are only assembled in India**
 - Less than 10 per cent of the electronic systems are completely designed and manufactured in India.
 - Almost 100 per cent of semiconductors are imported
- Domestic production can cater to a demand of only

US\$ 100 bn by 2020. **This is a demand-supply gap of US\$ 300 bn**

Top 10 electronic products contributing about 70 per cent by total revenue include:

- Mobile Phones
- Flat Panel TVs
- Notebooks
- Desktops
- Digital Camera
- Inverters & UPS
- Memory Cards & USB Drivers
- 4W EMS
- LCD Monitors
- Servers

• Segment: **2020 market size**



Policies to promote ESDM industry include

- National Policy on Electronics
- Preferential Market Access
- Modified Special Incentive Package (MSIP) Scheme
- Fab Policy
- Electronic Manufacturing Clusters (EMCs) and Information Technology Investment Regions (ITIRs)
- Export Incentives

Objective of the National Policy on Electronics

- To achieve a turnover of **US \$ 400 bn by 2020** by investing **US \$100 bn**
- To build a supply chain...raise local production from **20 - 25 per cent to over 60 per cent.**
- Preferential market access
- Preference for locally manufactured electronic goods in Govt. procurement...**not less than 30 per cent of the total procurement**
- Modified Special Incentive Package Scheme
- Electronic Manufacturing Clusters Scheme

Incentives

- **Budget 2018-19 doubled the allocation on Digital India Programme** to US \$ 473 mn
- Subsidy of **25 per cent** on Capex if the ESDM unit is in non-SEZ and 20 per cent on capex if within SEZ, available for investments made within 5 years from date of approval
- **200 per cent deduction on R&D** for electronic chip

- manufacturing units
- Reimbursement of central taxes and duties (like custom duties, excise duties and service tax) for 10 years in select high- tech units like Fabs, Semiconductor Logic and Memory chips, LCD fabrication applications accepted till Dec 2018
- **US \$111 mn worth incentives under MSIPS scheme**
- Grant assistance for setting up Greenfield & Brownfield EMCs
- Zero per cent Basic Customs Duty on products covered under the Information Technology Agreement (ITA) of WTO and specified raw materials used for manufacture of electronic components and optical fibers and cables
- **Focus Product Scheme (FPS)** – Duty Credit 2 per cent of FOB and Special Focus Product Scheme (SFPS) – Duty Credit 5 per cent of FOB



Pharmaceuticals

- Recognized globally for high quality medicines at affordable prices
- **US\$30 bn plus turnover** [50 per cent domestic and 50 per cent exports]...CAGR of around 14 per cent since last 5 years.
- Around **10,500 registered manufacturing units**.
- **2,500** bulk drug manufacturing units
- Over **8,000** formulation units.
- India has **10 per cent of the global bulk drugs market** amounting to **US\$110bn**.
- **Ranked 3** globally in volume and 13 in value.
- Compared to the USA, R&D cost is just 12.5 per cent, clinical trials 10 per cent and manufacturing cost at 35per cent.

India supplies:

- 10 per cent of total global pharmaceutical production.
- 20 per cent of total volume of global generics.
- 30 per cent of the world requirement of Anti-HIV drugs.
- **India produces medicines under all therapeutic categories:** Antiinfective, Cardio-vascular, Anti-cancer, Anti-AIDs, Gynaecology, Neurological, Dermatology, Gastro-intestinal, Respiratory, Analgesics, Anti Diabetic,

Vitamins/ Minerals and Nutrients.

- Exports to 200+ countries. Top markets - U.S., Russia, Germany, Austria & UK.
- India has the largest US-FDA, WHO-GMP, EDQM, TGA, MHRA and Health Canada compliant pharma plants outside USA.
- 1,400 WHO-GMP approved plants, and 253 EDQM approved plants are located in India.

New initiatives

- Track and trace system (barcoding) for export of pharmaceuticals and drug consignments.
- 100 per cent FDI allowed in Greenfield & Brownfield pharma projects.

India Pharma Vision 2020:

- Making India one of the leading destinations for end-to-end drug discovery and innovation.
- Catapult India into one of the top five pharmaceutical innovation hubs by 2020.

Biotechnology

- **India ranks amongst the top 20 biotech destinations in the world** and ranks 3rd in the Asia-Pacific region.
- Industry growth...in excess of 20 per cent CAGR.

India's strengths:

- **Top-ranked universities.**
- World-class strengths in **chemical, biological, and environmental sciences** alongside a fabulous process engineering community.
- Pharma companies that have **solid track records in manufacturing products and processes** related to chemical compounds, including enzymes, proteins and antibodies.
- **Cost arbitrage** of up to 50 per cent for global companies wanting a presence in India.
- Abundant and diverse genetic profile.
- Established biotechnology infrastructure.

100% FDI is allowed in Biotechnology

New initiatives:

- National Biotechnology Development Strategy 2015-2020 launched in 2015 seeks to establish India as a world-class bio-manufacturing hub
- **5 new bio-clusters, 50 new bio-incubators, 150 technology transfer offices and 20 Bio-connect offices** are being set up in research institutes and universities across India
- **BIRAC has launched SEED** (Sustainable Entrepreneurship and Enterprise Development) Fund of US\$1.5m for providing financial equity based support to startups and enterprises through bio-incubators for scaling enterprises
- Budgetary provision for biotechnology research in the Union budget for 2018-19 financial year has been raised to US\$ 374.5m
- Promotion of Bio-entrepreneurship through BIRAC Regional Entrepreneurship Centre (BREC) with an aim to impart bio-entrepreneurs with the necessary knowledge and skills required for converting innovative ideas into successful ventures

Fiscal Incentives for Biotech sector:

- The turnover limit to avail the Presumptive Tax Scheme under section 44AD has been increased to US\$ 300,000
- New manufacturing companies incorporated on or after March 1, 2016 to be given an option to be taxed at 25 per cent + surcharge and cess on fulfilment of certain conditions.
- **100 per cent deduction of profits for 3 out of 5 years** for startups setup between April 2016 and March 2019.
- **10 per cent rate of tax** on income from worldwide exploitation of patents developed and registered in India by a resident.
- Exemption of service tax on services provided by Biotechnology Industry Research Assistance Council (BIRAC)2 approved biotechnology incubators to incubatees with effect from April 1, 2016.

Ease of Doing Business: Norms for import and export of human biological samples have been relaxed; no license required to import or export biological samples w.e.f August 4, 2016.

Biosimilar Policy of 2016:

- Addresses the regulatory pathway regarding manufacturing process and safety, efficacy and quality aspects.
- Allows a reference biologic (for which the bio-similar is being developed) not marketed in India, to be licensed in



any International Council for Harmonization of Technical Requirements for Pharmaceuticals (ICH) country (i.e. EU, Japan, US, Canada and Switzerland)

- **The guidelines advocates** for post-marketing studies within 2 years of receiving marketing permission/ manufacturing license. It also provides information on when a confirmatory clinical safety and efficacy study can be waived.

Regional Centre for Biotechnology:

- An Act has been enacted in 2016 to set up a Regional Centre for Biotechnology to facilitate transfer of technology and knowledge.
- Aim is for India to be a biotechnology expertise hub in the Asian region

Medical equipment

- Indian medical equipment market is a sunrise segment in the healthcare space worth around **US\$ 5.2 bn**
- Expected to be a **US\$ 25-30 bn** industry by 2025
- Medical devices developed in India, include a wide range of electro-mechanical diagnostic and therapeutic devices, implantable devices and active implantable, like pacemakers, high precision components, sub-assemblies, printed circuit boards, assembling, implantable grade materials and sterile packaging, biodegradable implantable materials, noble metals and biomaterials like nitinol, polymers, silicones, epoxy, microelectronics, polymers and laser welding-hermetic sealing,
- **Fourth in Asia** after Japan, China and South Korea and in the list of top 20 in the world
- **Imports currently constitute around 75 per cent of sales (30 per cent from U.S.).**
- **750+ medical devices manufacturers in India** with an average investment of Rs 170 –200 mn and an average turnover of **US\$ 7.7 mn.**
- Several MNCs have established manufacturing and research centres in India to serve both the Indian and global markets

Manufacturing geographies

Indian states are known **to manufacture low-cost, high-quality devices** and are also exporting to specific regions

- **Haryana:** Low-end consumables, dental equipment
- **Gujarat:** Stent manufacturing
- **Karnataka:** Medical IT, Implants, PCR machines
- **Tamil Nadu:** Diagnostics, Critical Life Support systems, Ophthalmology

Growth driver

- Rising income levels: Per-capita income to rise from the current US\$1,508 to US\$2,672 by 2020.
- **Increasing private sector investment in healthcare**
- Ageing population: Population above 60 years of age is expected to reach 300 mn by 2050.
- Increased prevalence of life-style diseases
- Growing medical tourism industry



Policy support

- Setting up of three Med Tech Parks with manufacturing, R & D and skills development facilities
- **FDI up to 100 per cent** under the automatic route permitted for manufacturing of medical devices.
- **Robust legal regime** - India is a signatory to the TRIPS Agreement and has strong patent, trade mark and copyright protection.
- Competition law to ensure level playing field
- **Periodic renewal of licences not required**
- Budget 2017-18: New Rules to be formulated to attract investments in the Medical Devices sector
- With the introduction of GST, **medical device manufacturers can claim the input credit**
- Only 15 notified devices fall under the category of drugs under the new Medical Device Rules announced in 2017 to pave the way for growth in this sector
- April 2015: Dept. of Pharmaceuticals issued the Draft National Medical Device Policy 2015, which sets out the regulatory structure for medical devices
- Indian medical device innovation ecosystem has also evolved
- **Government of India has rolled back import duty concessions for 67 medical devices**

Engineering and R&D

India is emerging as the Engineering and Design hub for various vertical domains such as Automobiles, Aerospace, Consumer electronics, Machinery, Semiconductor, Telecom, Construction, Industrial automation, Medical devices, Energy and Computing

- US \$12.3 bn, or **40 per cent of the total globalized Engineering and R&D (E&RD) spend in 2016.**
- India has a total of **25 innovation centres** in the country
- Ranked as the top innovation destination in Asia and second in the world for new innovation centres
- India accounts for **27 per cent of Asia's new innovation centres.**
- Moved up to the 60th position in the 10th edition of Global Innovation Index (GII) in 2017 and is **likely to feature on the list of the top 25 nations in the next 10 years**
- Ranks second amongst the countries with highest increase in contribution to high-quality scientific research
- The Indian E&RD market is expected to reach **US\$ 38 bn by 2020.**
- Services offered by Indian E&RD firms include:
 - Supporting clients on innovation

- Enabling access to new markets (SBMs)
- Designing products for emerging markets (frugal engineering)
- Innovating on existing designs to suit market needs and client requirements
- Driving end-to-end product development
- There are over **400 service providers** and captives offering E R&D services from India
- Over **200,000 engineers** have been employed by service providers
- Indian service providers invest around **3.5 per cent in R&D**
- **India-based E R&D centres resulted in cost savings of US\$ 20 bn for global organisations**

Policy support

- Ease of doing business policies, SEZ policies, Defence offsets programs
- IOT Policy
- Large investment in R & D in agriculture and pharmaceutical sectors

E-commerce

- The number of internet users in India is expected to increase from 429.23 mn as of September 2017, to 829 mn by 2021
- **India's E-commerce industry is expected to reach US\$ 120 bn by 2020**
- The e-commerce retail market is estimated to be worth **US\$ 12 bn**
- **Expected to surpass the US to become the second largest e-commerce market** in the world by 2034.
- E-commerce revenue growing at an annual rate of **51 per cent**, is the the highest in the world.
- **63 per cent of e-commerce is travel-related** - tickets, hotel bookings and cabs.
- E-tail business growth at **29 per cent**
- Mobile/DTH recharge seeing >1 mn transactions per day
- **Electronics & apparel** are the most popular online purchases
- Delivery to **"12,500-15,000 pin codes"** out of nearly 100,000 pin codes in India
- India's leading e-commerce companies – Flipkart, Snapdeal, Amazon, PayTM and others
- **Mode of Payment:** Cash on Delivery (76 per cent), Debit Cards (10 per cent), Credit Cards (7 per cent), Net Banking

- (5 per cent), and Others (2 per cent)
- The logistics sector pertaining to the e-commerce industry in India expected to grow at a CAGR of **48 per cent to reach US\$ 2.2 bn by 2020**
- Number of online shoppers is expected to go up to **175 mn by 2020**

Policy support:

- **100 per cent FDI via automatic route is permitted in B2B e-commerce.**
- FDI in B2C e-commerce is permitted in the following cases:
 - Single brand entities allowed to venture into E-commerce
 - Manufacturers encouraged to sell via e-commerce
 - Moving towards a cashless economy, Digital India, Make in India, Start-up India, Skill India, Innovation Fund, US\$ 1.55 bn to BharatNet Project, DigiGaon, BHIM, Udan, Umang, GST, rewards worth around Rs 153.5 crore (US\$ 23.8 mn) to 1 mn customers for embracing digital payments, under the Lucky Grahak Yojana and Digi-Dhan Vyapar Yojana.

Drivers of E-commerce:

- Young demography
- **Rising Mobile Phone, Broadband & 4G penetration**
- Rising standards of living & upwardly mobile middle class
- **High disposable incomes** and busy lifestyles.
- Urbanisation
- Growing nuclear households
- Growth in non metro cities
- **Innovative payment options**
- **Internet content in local languages to attract shoppers in rural India**
- Growth of logistics and warehouses

2017 data:

- **1 bn+ active mobile phone subscriptions**
- **462 mn+** internet users.
- **300 mn+** smart phone users.
- **1-1.2 mn transactions per day in e-commerce retailing**
- Grocery accounts for 48 per cent of India's total retail consumption and valued at US \$310 bn.



Retail

- The **world's fifth largest retail destination**, India is one of the fastest growing retail markets in the world
- Exponential growth in major cities and in Tier-II and Tier-III cities
- **Market size:** India's retail market (organized and unorganized) - worth almost **US\$ 672 bn in 2017**. Expected to reach over **US \$1 trn by 2020**.
- Organized retail stands at 9 per cent today and is expected to grow to 15 -17 per cent by 2020.

Growth drivers:

- Favourable demographics
- Rapid urbanization
- Nuclear families
- **Rising affluence**
- Growing preference for branded products
- Higher aspirations
- FDI inflow
- **Innovative financing models**
- Policy support
- Easy payment options

100 per cent FDI in retail trading food products that are manufactured or produced in India.

Multi-Brand Retail:

- 51 per cent FDI allowed through Govt. route
- Minimum FDI: **US \$100 mn**
- 50 per cent of FDI to be invested in 'backend infrastructure' within 3 years of the first tranche of FDI
- Back-end infrastructure: Investment towards processing, manufacturing, distribution, design improvement, quality control, packaging, logistics, storage, ware-house, and agriculture market produce infrastructure
- At least **30 per cent domestic sourcing from small industries**



Cash & Carry / Wholesale:

- **100 per cent FDI allowed through the automatic route**
- A single entity will be permitted to undertake both the activities of single brand retail and wholesale
- **Brand owners can wholesale their products.**

Duty Free:

- **100 per cent FDI** permitted under automatic route in **Duty Free Shops located and operated in the Customs Bonded Areas.**

Single Brand Retail:

- **100 per cent FDI allowed through the Govt. route**
- 30 per cent of local sourcing to be reached over a period of 5 years from the date of opening of first outlet
- **30 per cent local sourcing requirement relaxed** for high technology products subject to government approval
- Single-brand retail trade permitted to undertake ecommerce activities

Food Processing

- Size of the Indian Food Market: US\$ 191 bn.
- **Processed Food Market: Over US\$ 100 bn.**
- Total horticultural production: **287 mn tonnes**
- **Fruits & Vegetables production:** 2nd largest in the world – 271 mn tonnes
- Poultry: 3rd largest egg producer and 4th largest chicken producer in the world
- Marine: Total fish catch in the Indian coasts touched 3.63 mn tonnes
- India exports fish and fisheries products to about 95 countries
- Milk: Largest producer of milk in the world – 163.7 mn tonnes (2016-17)
- Largest livestock population: 512 mn
- India has an arable land of 184 mn hectares, 20 agro-climatic regions and 46 of the 60 soil types in the world.
- India's food exports stood at US\$ 1.3 bn in 2017
- Growth drivers: **Large raw material base, over 1 bn consumer base, and proximity to food importing nations.**

Infrastructure support:

- Food processing training centres

- Upgrading 59 existing food testing laboratories and setting up 62 new mobile testing labs across the country
- **42 mega food parks** – US \$750 mn
- Setting up state-of-the-art testing facilities in the food parks
- **138 cold chain projects** -US \$500 mn
- 60 modern abattoirs
- Promoting specialized agro-processing financial institutions

Organic Food Market:

- **Ranked 1st in terms of the number of organic producers among over 170 countries**
- 9th in terms of the area under organic agriculture
- Dominated by pulses and food grains
- Growing at 25-30 per cent annually
- Current market size at US\$ 370 mn. Projected to reach US\$ 1.36 bn by 2020
- Practiced in 12 states in about 2.25 mn hectares
- Govt. plans to bring an additional 200,000 hectares of land under organic farming by 2018
- State of **Sikkim is the first 100 per cent producer of organic food in India**

- The entire north-east offers opportunities to create functional infrastructure for organic produce

Food map of India

- Ministry of Food Processing Industry along with YES Bank released **Food Maps on India**
- The **maps provide details** on availability of fruits and vegetables; and cover all major agri commodity classes - Cereals, Oilseeds, F&V, Meat, Poultry, Fish and Dairy
- Graphs on annual food wastage, **current food processing levels across major perishables and state-wise share of food processing industries are included**



Premier Event: **WORLD FOOD INDIA**
September 27-29, 2018, Mumbai, India

Policy Support:

- Nivesh Bandhu – unique portal for information on policies and incentives for food processing sector
- National Agricultural Market – E-market Platform launched
- E-market platform for farmers to sell produce to licensed traders at any wholesale market in India, links 21 wholesale markets in 8 states
- **585 wholesale markets** to be linked by March 2018
- Expected to benefit small farmers
- www.enam.gov.in
- Pradhan Mantri Kisan Sampada Yojana, to create world-class food processing infrastructure
- Investment tracking and facilitation Desk of Invest India set up in the Ministry
- Service tax relief to the cold chain operators
- GST facilitation cell

Mega Food Parks Scheme (MFPS)

- MFPS are modern infrastructure facilities for food processing along the value chain from farm to market based on hub and spokes model.
- **Each MFPS is spread over 50 acres of land and will have 30-35 units with an investment of about US \$ 37.5 mn.**
- **Financial assistance provided in the form of grant-in-aid** at 50 per cent of eligible project cost in general areas and at 75 per cent of eligible project cost in North East Region and difficult areas subject to maximum of US\$ 7.5 mn per project.
- **42 MFPS approved – 9 operational.**

Cold Chain Scheme (CCS)

- Assisted **232 Cold Chain projects** (completed and ongoing) with a capacity of **7.38 lakh** metric tonnes of cold storage
- Financial assistance in the form of grant-in-aid at 50 per cent of the total cost of plant and machinery and technical civil works in general areas and **75 per cent** for difficult areas subject to a maximum of **US \$1.5 mn.**

FDI Policy & list of select Incentives:

- **100 per cent FDI is allowed under automatic route in food processing industry and food infrastructure**
- including food parks, distillation & brewing of alcohol, cold storage chain and warehousing.
- **100 per cent FDI** is allowed through the Govt. route in the marketing of food products produced and manufactured in India.
- **150 per cent deduction** allowed for setting and operating cold chain facility or warehousing
- facility for agricultural produce.
- **100 per cent** deduction allowed for beekeeping and production of honey and beewax.
- **100 per cent tax exemption for first 5 years of operation**, and after that 25 per cent of profits are exempted from tax. Benefit allowed for 10 years.
- No excise duty on machinery for installation of cold storage or for preservation, storage, or processing of agricultural, apiary, horticultural, dairy, poultry, aquatic and meat products.
- Customs Duty at 5 per cent for all goods related to food processing imported as part of a project.

Tourism & Hospitality

- **India ranks 40th among 136 nations** in the April, 2017 World Economic Forum Travel and Tourism Competitive Index
- Tourism sector accounts for 9.6 per cent of GDP
- **Foreign Tourist Arrivals: 90.01 lakh (2017)**
- **E-Visa:** 167 countries. 2 months stay. Dual entry for business and tourism visa) triple entry (for medical visa)
- **16.97 lakh e-visas issued in 2017**
- Film Visa: One year with multiple entry option

Policy Support

- Hotel and Tourism industry declared a high priority sector. **100 per cent FDI allowed under the automatic route**
- Extension of Investment Linked Tax incentive under **section 35AD** of the Income Tax Act to new hotels of two-star category and above anywhere in India
- Reserve Bank of India (RBI) has de-linked credit for hotel projects from Commercial Real Estate (CRE), thereby enabling hotel projects to avail credit at relaxed norms and **reduced interest rates.**
- Ministry of Finance has included the following two categories of hotels in the **“Harmonized List of**

Infrastructure Sub-sector”.

- Three-star or higher category classified hotels located outside cities with population of more than 1 mn.
- Hotels with a project cost of more than US\$ 30 mn each in any place in India and of any star rating

Wellness/ Medical Tourism

- Currently a **US\$ 3 bn market**...expected to reach **US\$ 8 bn by 2020.**
- India is well-known for its **quality and affordable surgeries for heart bypass, heart valve replacement, angioplasty, hip replacement, knee replacement, spinal fusion etc.**
- World class hospital infrastructure.
- Lower waiting period for treatment
- Holistic and ancient treatment methods and offered in India

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Thank You



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