

ELECTRONICS SYSTEM DESIGN & MANUFACTURING

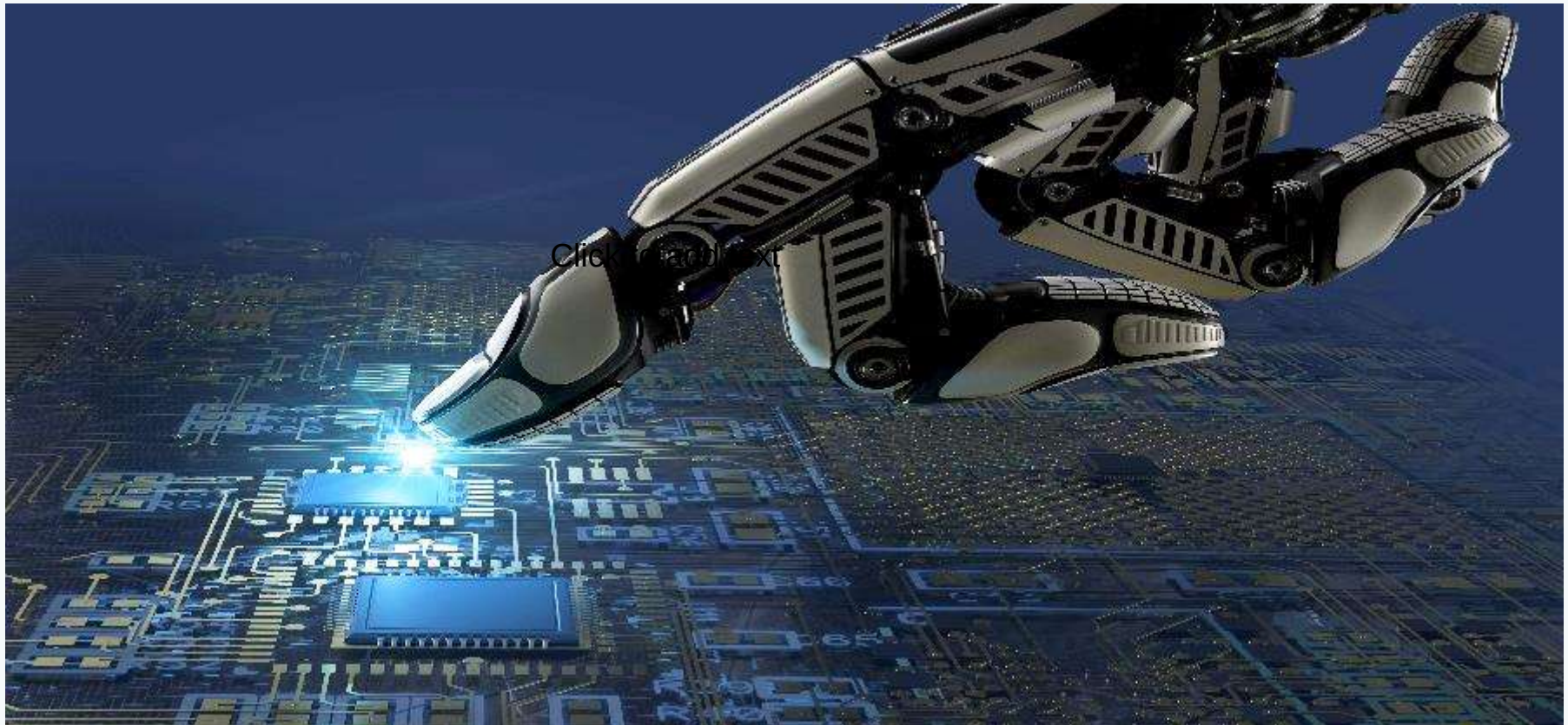


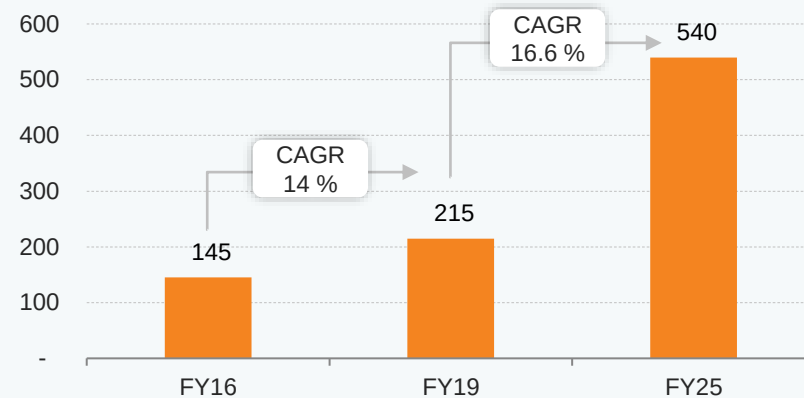
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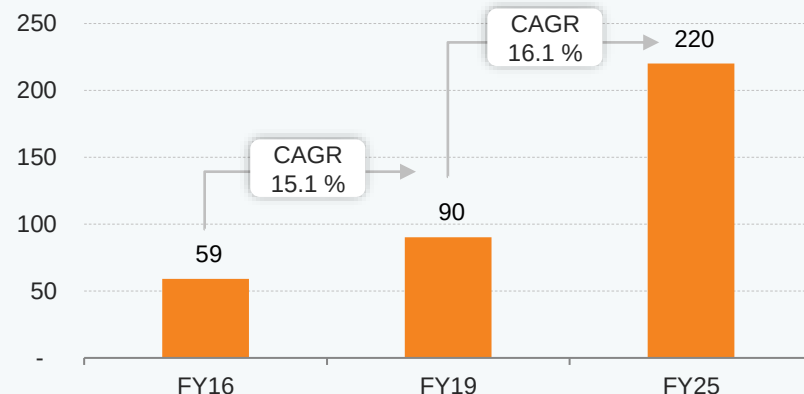
Executive summary

- India has witnessed a substantial spike in the demand of electronic products in the last few years; this is mainly attributed to India's position as the second-largest mobile phone manufacturer globally and surge in the internet penetration rate.
- The Electronics System Design & Manufacturing (ESDM) market in India is anticipated to increase at a CAGR of 16.1% between 2019 and 2025, owing to strong demand, supportive government policies and increased digitalisation.
- The ESDM sector plays a key role in the government's goal of generating US\$ 1 trillion of economic value from the digital economy by 2025.
- The Government of India attributes high priority to electronics hardware manufacturing as it is an important pillar of Make in India, Digital India and Start-up India programmes.
- In September 2021, the Indian government started working on policy roadmap to create champions in the design of electronic systems and semiconductors in India. The government has started working on chip manufacturing in India and is in discussion with Taiwan to bring a US\$ 7.5 billion fab unit in India.
- In December 2021 and January 2022, exports of electronic goods stood at US\$ 1.64 billion and US\$ 1.32 billion, respectively.
- The demand for electronic products will rise to US\$ 400 billion by 2025 from US\$ 33 billion in FY20.
- India has a goal of producing 1 billion mobile handsets worth US\$ 190 billion (Rs. 13,00,000 crore) by 2025, with 600 million handsets worth US\$ 110 billion (Rs. 7 lakh crore) targeted for exports.

Electronics Market in India (US\$ billion)



Electronics System Design & Manufacturing (ESDM) Market in India (US\$ billion)





Advantage India

2. ATTRACTIVE OPPORTUNITIES

- One of the top three global economies in terms of number of digital consumers.
- Addressable market for domestic OEMs is projected to be >Rs. 10 lakh crore (US\$ 131.99 billion) by 2025.
- The government intends to incentivise and attract investments to set up semiconductor FABs (fabrication plants) in India.
- PLI scheme for large-scale electronics manufacturing and IT hardware to promote mobile phones and component manufacturing.
- The Indian government's National Policy on Electronics (NPE 2019) aims to facilitate a turnover of US\$ 400 billion in domestic manufacturing by 2025.
- Electronics repair, in addition to manufacturing, is a US\$ 20 billion opportunity that has the potential to create 5 million jobs.

3. POLICY SUPPORT

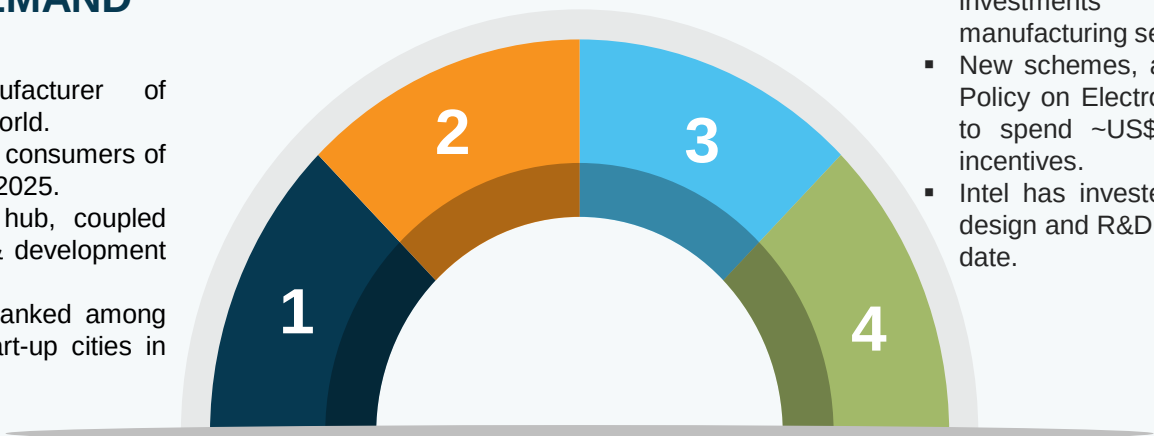
- The production-linked incentive (PLI) schemes will provide companies opportunities to establish manufacturing plants in India.
- 100% FDI is allowed under the automatic route. In case of electronics items for defence, FDI up to 49% is allowed under automatic route and beyond 49%, government approval is required.
- The electronics sector is expected to nearly double in contribution to the GDP in the next few years, owing to increased support from the government to domestic manufacturing.
- Under the PLI scheme for IT Hardware, the approved enterprises are estimated to manufacture equipment worth >US\$ 21.62 billion over the next four years. Of the total production, foreign companies have suggested production worth US\$ 11.38 billion, whereas domestic enterprises have planned a production of US\$10.20 billion.

4. INVESTMENTS

- The government has set a target to get ~Rs. 18,000 crore (US\$ 2.4 billion) investments in the electronics manufacturing segment by 2021-22.
- New schemes, as a part of the National Policy on Electronics (NPE) 2019, outlay to spend ~US\$ 6.7 billion in form of incentives.
- Intel has invested over US\$ 7 billion in design and R&D facilities in the country to date.

1. ROBUST DEMAND

- Large consumer base.
- Second-largest manufacturer of mobile phones in the world.
- Will be the fifth-largest consumers of electronic products by 2025.
- Third-largest start-up hub, coupled with strong research & development (R&D) ecosystem.
- Bengaluru has been ranked among the world's top 50 start-up cities in 2021.

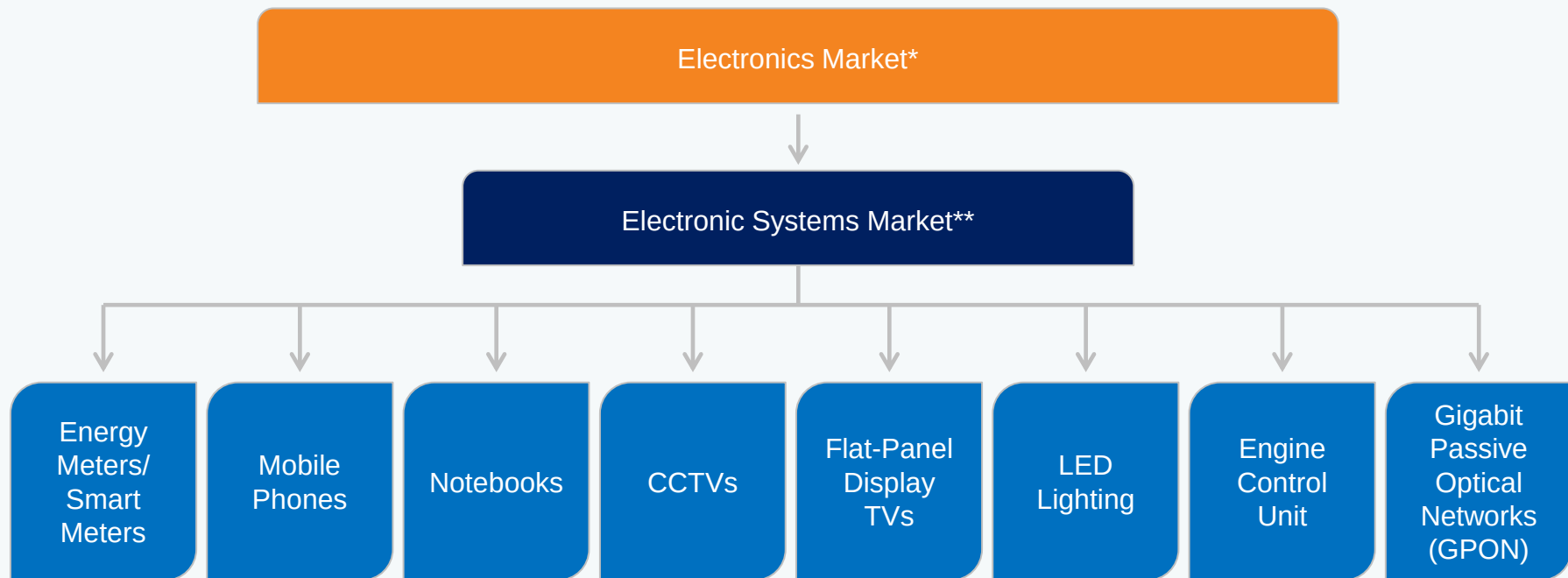


Source: Ministry of Electronics and Information Technology (MeitY) Union Budget 2021-22

Market Overview



Major product segments



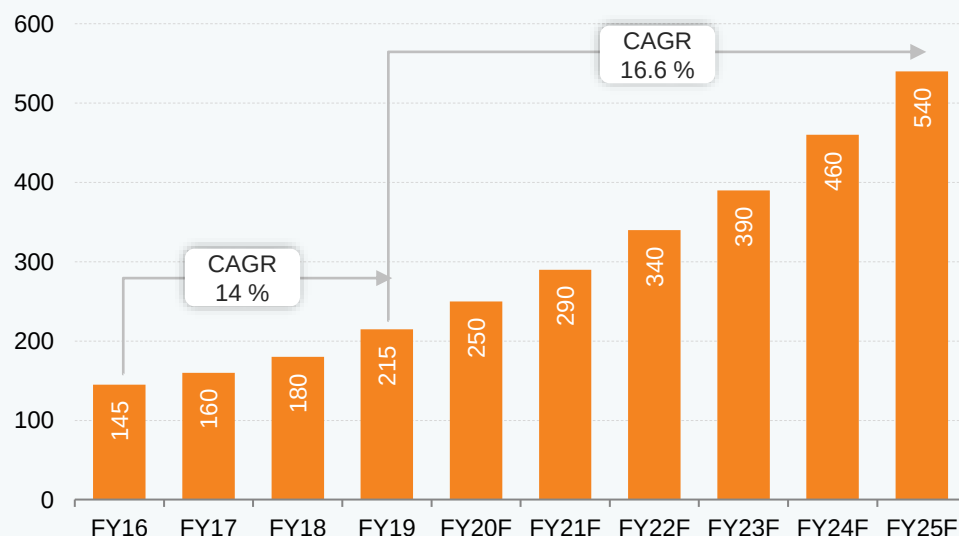
*The Electronics Market includes (Total Domestic Consumption + Exports) + Electronics Design Market + Electronics Manufacturing Services Market + Electronics Component Market

**The Electronics System Design & Manufacturing (ESDM) industry includes electronic hardware products and components relating to information technology (IT), office automation, telecom, consumer electronics, aviation, aerospace, defence, solar photovoltaic, nano electronics and medical electronics. The industry also includes design-related activities such as product designing, chip designing, very large-scale integration (VLSI), board designing and embedded systems

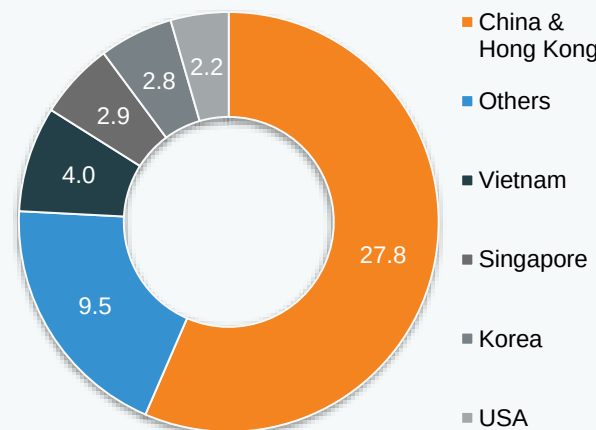
Note: The top eight product segments by value have been considered for the purpose of market sizing

Overview of electronics market in India...(1/2)

Electronics Market in India (US\$ billion)



Electronics imports in India (FY20) (US\$ billion)



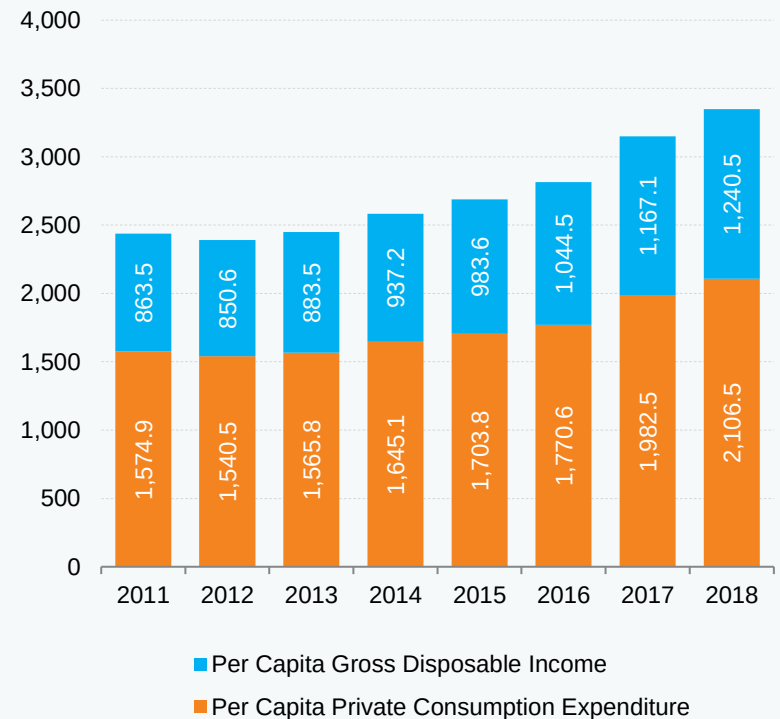
- The electronics market has grown at a CAGR of 14% from 2016-19 and is expected to accelerate at a CAGR of 16.6% in 2020-25, with the total demand likely to account for US\$ 540 in FY25.
- In FY21, export of electronics stood at US\$ 2.43 billion. In FY22 (until January 2022), imports of electronics goods stood at US\$ 58.64 billion, whereas exports stood at US\$ 12.38 billion.
- According to the IESA (India Electronics & Semiconductor Association), more than 90% semiconductor companies globally have their R&D centres in India. The semiconductor R&D generates about US\$ 2.5 billion in revenue and 6 lakh jobs in India.
- PLI scheme for large scale electronics manufacturing launched by Ministry of Electronics and Information Technology (MeitY) in April 2020 has been extended from existing five years band (FY21-FY25) to six years (FY21-FY26).

Source: India Electronics & Semiconductor Association (IESA)

Overview of electronics market in India...(2/2)

- As per Union Budget 2022-23, the Ministry of Electronics and Information Technology (MeitY) has been allocated Rs. 14,300 crore (US\$ 1.85 billion). In the allocated budget, revenue expenditure allocation is Rs. 13,911.99 crore (US\$ 1.8 billion) and capital expenditure allocation is Rs. 388.01 crore (US\$ 50.4 million).
- The Indian electronics manufacturing industry is projected to reach US\$ 520 billion by 2025.
- The key government initiatives such as 'Make in India' and 'Digital India' improved the country's EoDB. For 2022-23, the total budget allocation towards the 'Digital India' programme is Rs. 10,676 crore (US\$ 1.38 billion).
- India has been one of the largest consumers of electronic products specifically in Asia-Pacific due to factors such as rising per capita disposable incomes and consumption in the past decade.
- The ESDM sector is likely to generate US\$ 100-130 billion in economic value by 2025.
- In March 2022, Reliance announced that it would invest US\$ 220 million in a joint venture with Sanmina Corp, a US-listed company for making electronic products in Asian countries.
- The Tata Group announced plans to enter the semiconductor manufacturing business as of August 2021—seeking a proportion of the US\$ 1 trillion high-tech electronics manufacturing sector.
- In September 2021, India started discussions with Taiwan to alleviate the global semiconductor chip shortage. According to an exclusive Bloomberg report, this may bring chip production to South Asia by end-2021, coupled with tariff reductions on components used to make semiconductors. Officials from New Delhi and Taipei recently negotiated a proposal to set up a semiconductor facility worth US\$ 7.5 billion in India; the facility will supply everything from 5G devices to electric cars.

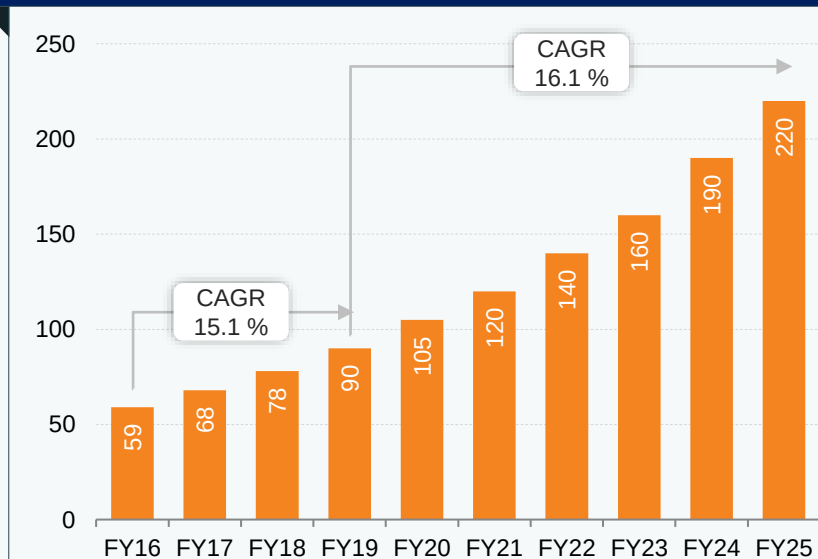
Per Capita Disposable Income and Consumption Expenditure (US\$)



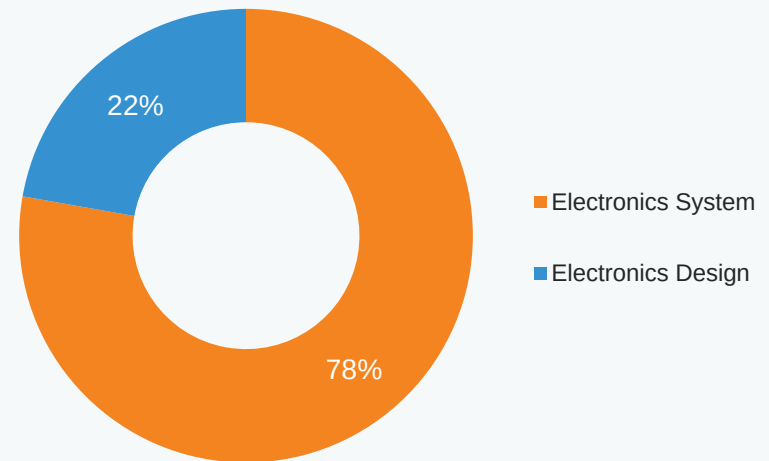
Note: EoDB - Ease of Doing Business
Source: News Articles, Union Budget 2021-22

Overview of electronics system design & manufacturing (ESDM) market in India...(1/2)

ESDM Market Demand (US\$ billion)



Segmentation of ESDM Market (FY19)

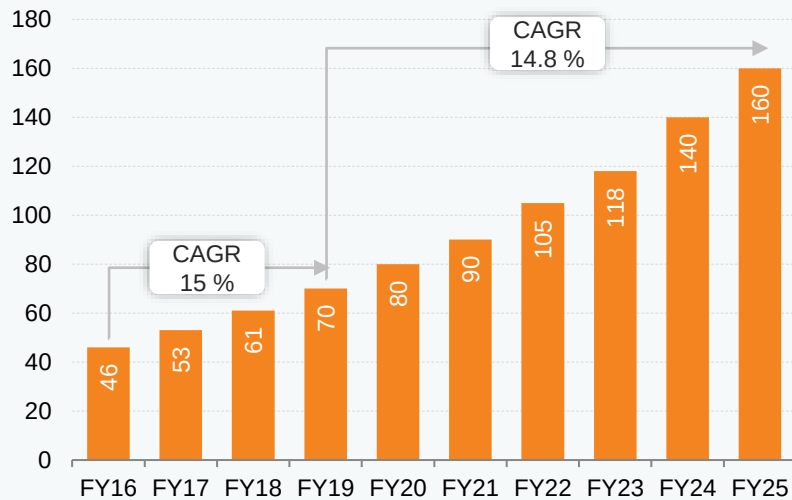


- The Electronics System Design & Manufacturing (ESDM) is broadly segregated into—Electronics System and Electronics Design.
- With a spike in demand for electronic products, the ESDM sector in India is predicted to reach US\$ 220 billion by 2025, rising at a 16.1% CAGR between 2019 and 2025.
- To support the ESDM sector and its growth trajectory, the Government of India (GoI) made electronics production an important pillar of key initiatives such as Make in India, Digital India and Start-up India.
- The ESDM sector plays a vital role in the government's goal of generating US\$ 1 trillion of economic value from digital economy by 2025.

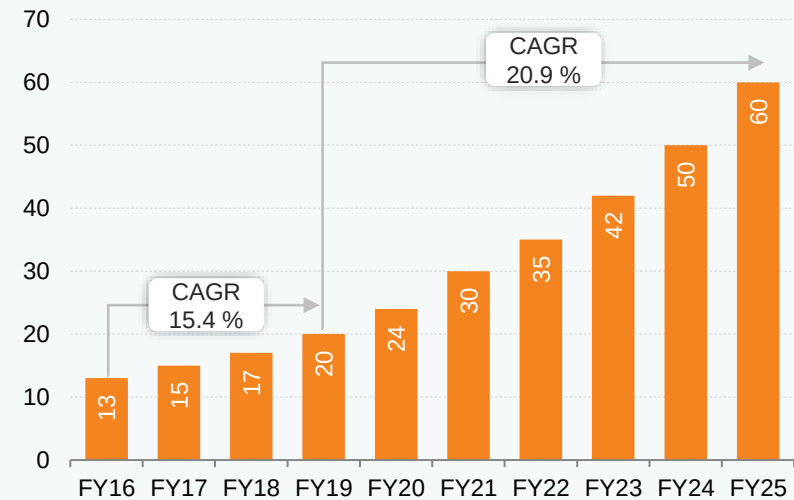
Source: India Electronics & Semiconductor Association (IESA)

Overview of electronics system design & manufacturing (ESDM) market in India...(2/2)

Electronics System Market (US\$ billion)



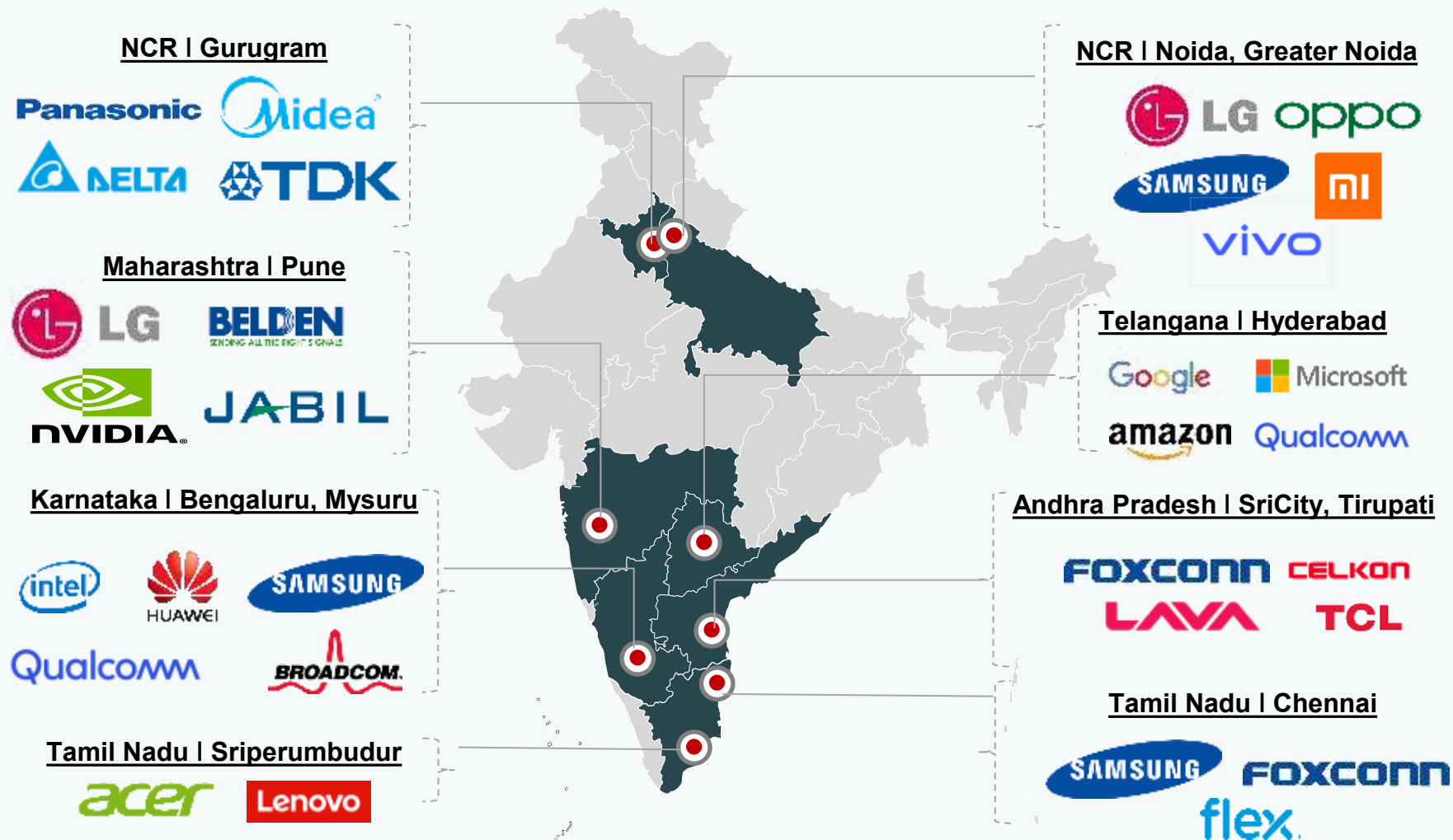
Electronics Design Market (US\$ billion)



- Electronics system market is expected to witness 2.3x demand compared to FY19 to reach US\$ 160 billion by FY25.
- Electronics design segment, growing at 20.1%, accounted for 22% of ESDM market size in FY19; it is anticipated to be 27% of the ESDM market size in FY25.
- At present, most demand for semiconductors is being met through imports from countries such as the US, Japan and Taiwan. To reduce this dependency on imports, the government is boosting electronics manufacturing clusters (EMCs) throughout the country to provide world-class infrastructure and facilities.
- Owing to the ongoing pandemic, digital transformation is taking place at an accelerated rate and is laying the foundation for a digitally-enabled India post COVID-19.
- Rising income levels and increased customer preference for in-vehicle digital experiences are likely to propel India's automotive electronics industry to US\$ 18 billion by 2027, with a CAGR of 17%.

Source: India Electronics & Semiconductor Association (IESA)

ESDM landscape in India - key players & clusters



Source: Invest India



Growth drivers



POLICIES

- Policy support to promote electronics manufacturing.
- Initiatives such as 'Make in India' and 'Digital India'.
- Skill development initiatives.
- In Union Budget 2021-22 the government notified Production Linked Incentive (PLI) schemes for 13 sectors. Out of them two sectors schemes include: Mobile Manufacturing and Specified Electronic Components, Electronic/Technology Products.



DEMAND-SIDE DRIVERS

- Large consumer base.
- Rollout of 5G, and industrial use of Internet of Things (IoT) technology.

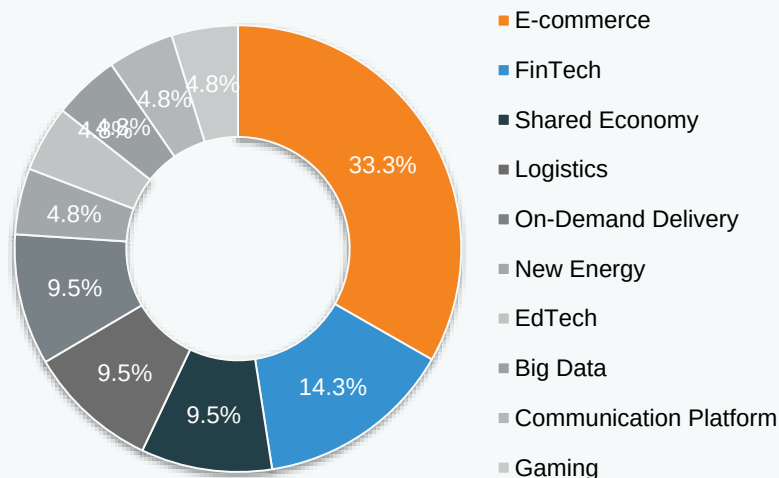


INVESTMENT

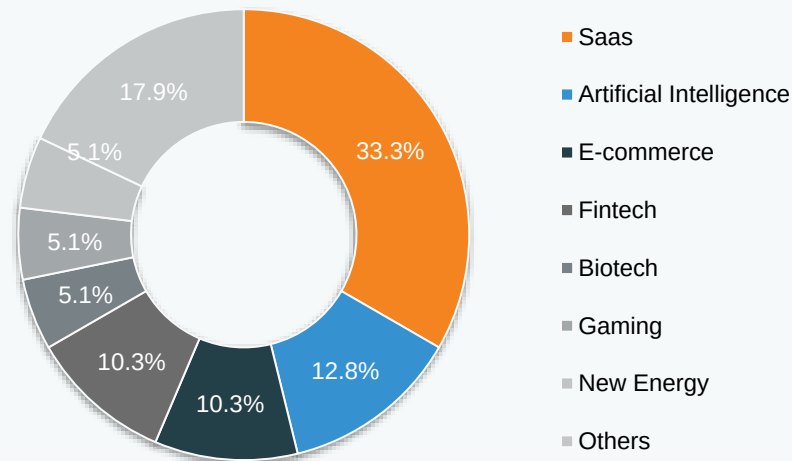
- Increasing FDI inflows.
- Third-largest start-up ecosystem.
- Robust research & development (R&D) ecosystem.

The third-largest start-up ecosystem

Sector-wise Share (%) of Start-ups, 2020



% Share of Start-ups by Technology, 2020

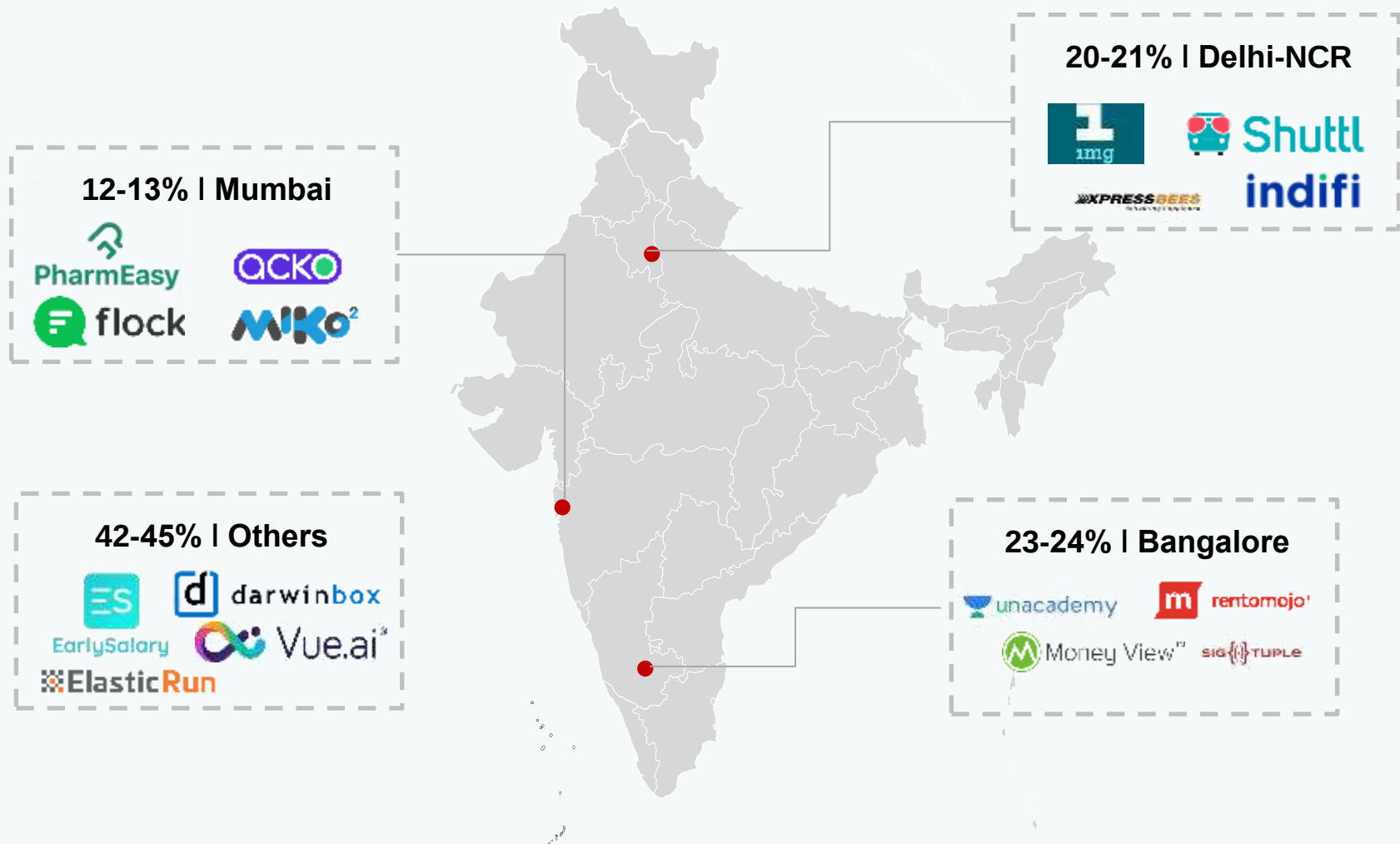


- India emerged as the third-largest ecosystem for start-ups, following the US, and China.
- To further boost this ecosystem, IESA has set an ambitious target (in 2018/19) of incubating 100 start-ups, creating 1,000 IPRs, generating business worth US\$ 0.14 billion (Rs. 1,000 crore) and creating 1 million jobs over next five years.
- By 2030, ADIF, a think tank for IT start-ups, aims to put India among the top three start-up ecosystems in the world, with emphasis on expanding the knowledge base, encouraging collaboration and outlining the best policies.
- In September 2021, the Indian Institute of Technology Indore and the Confederation of Indian MSME in Electronics System Design and Manufacturing (ESDM) and Information Technology (CIMEI), signed a Memorandum of Understanding (MoU) to collaborate and share knowledge and best practices as well as offer technological support for the growth of Indian start-ups and SMEs.

Notes: IPR - Intellectual Property Rights

Source: NASSCOM, News Article

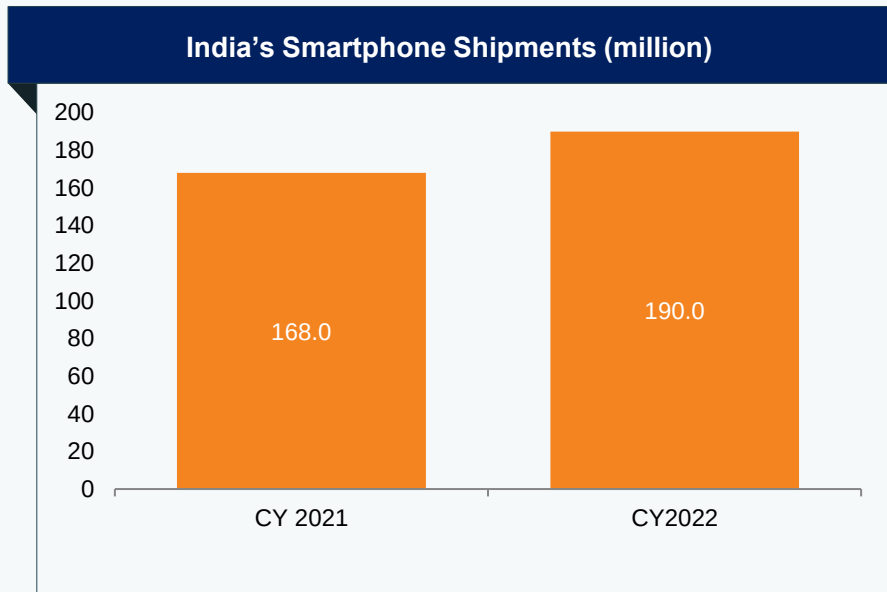
Bangalore, Delhi-NCR and Mumbai are home to 55-58% start-ups



Source: NASSCOM

Large consumer base

- India emerged as the second-largest manufacturer of mobile phones in the world, with production value of mobile devices reaching US\$ 30 billion in 2019-20 from US\$ 3 billion in 2014-15.
- In addition, the consumer electronics and appliances industry in India is expected to become the fifth largest in the world by 2025; this is noticeable for LCD/LED TVs, which witnessed more than 2x growth (by volume) in the past five years.
- Smartphone shipments from India crossed 168 million in CY21 and is expected to reach ~190 million in CY22.
- Factors such as high internet penetration rate (over 718 million users) and second-largest global smartphone manufacturer boosted penetration of electronic products to the large potential consumer base, which in turn is driving ESDM market.
- Smartphone shipments in India increased by ~82% YoY to reach 33.0 million units in the second quarter of 2021. Xiaomi led the Indian smartphones market with 28.4%, followed by Samsung (17.7%).
- 5G device shipments are expected to grow by 129% YoY to ~64 million in CY22 from 28 million in CY21.



Note: LCD - Liquid Crystal Display; LED - Light-emitting Diode, F - Forecasted

Source: Reserve Bank of India (RBI), Ministry of Electronics and Information Technology (MeitY), News Articles

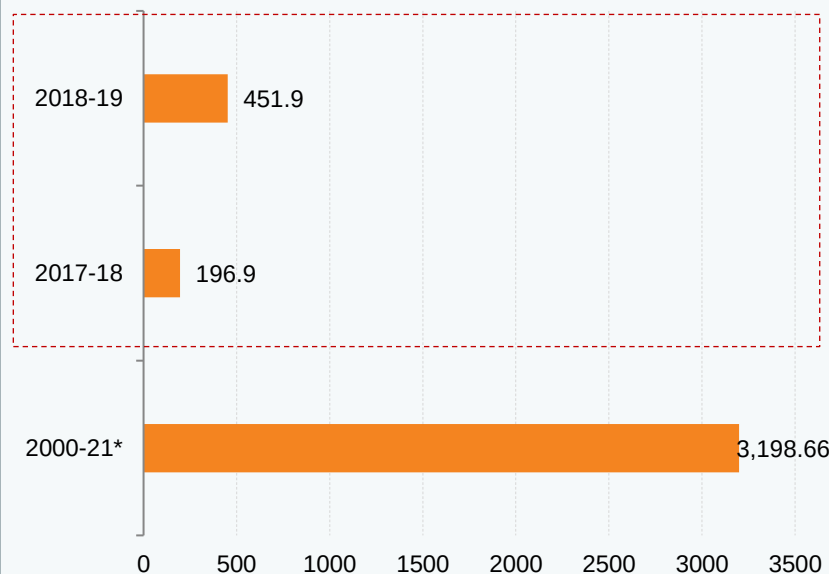
Increasing FDI inflows

- The ESDM sector provides lucrative opportunities for investors. From April 2000-December 2021, FDI equity inflow stood at US\$ 3,198.66 million.
- For defence electronics, FDI inflows in this sector up to 49% are allowed under automatic route and beyond 49% through government approval
- The government allows 100% FDI in the ESDM sector through an automatic route to attract investments from OEMs and IDMs.

The following is a list of areas of interest for investments in ESDM:

1. Mobile phone manufacturing
2. Semiconductor wafer fabrication
3. Light Emitting Diode (LED) and Liquid Crystal Display (LCD)
4. Wearable devices
5. Solar cells and modules
6. Research, innovation and skill development in emerging areas such as Augmented Reality (AR), Virtual Reality (VR), drones, robotics and additive manufacturing
7. Medical electronic devices manufacturing
8. R&D in automotive electronics and power electronics for mobility

FDI Inflows in Electronics in India (US\$ million)



Notes: OEM - Original Equipment Manufacturer, IDM - Integrated Device Manufacturers, * - From April 2000 To December 2021

Source: Make in India, Department for Promotion of Industry and Internal Trade

Key investors in electronics sector



- In September 2021, tech giant Lenovo announced plans to ramp up manufacturing capabilities in India across various product categories, such as PCs, notebooks and smartphones, due to rising consumer demand. However, details of the investment were not disclosed.
- As of March 03, 2021, 19 companies have filed for the production-linked incentive (PLI) scheme for IT hardware. The scheme was open for applications until April 30, 2021; its incentives will be available from April 01, 2021. Over the next four years, the scheme is expected to lead to a total production of ~Rs. 160,000 crore (US\$ 21.88 billion). Of the total production, IT hardware companies have proposed production of >Rs. 135,000 crore (US\$ 18.46 billion) and domestic companies have proposed production of >Rs. 25,000 crore (US\$ 3.42 billion).
- In March 2021, Xiaomi, a Chinese multinational electronics company, announced that it will invest Rs. 100 crore (US\$ 13.6 million) to expand its offline retail presence in tier 2 and 3 cities, towns and rural India.
- Under the government's production-linked incentive (PLI) scheme, domestic electronics manufacturers such as Dixon Technologies, Infopower Technologies, VVDN and Bhagwati Products (Micromax) have invested >US\$ 26.85 million to boost IT hardware manufacturing capacity.

Source: News Articles

Government initiatives and policy support

New schemes to promote electronics manufacturing

- In April 2020, the Indian government approved three key schemes in order to position India as a global hub for Electronics System Design and Manufacturing (ESDM). This move is anticipated to attract minimum investments worth US\$ 6 billion into the country. The initiative includes Production Linked Incentive Scheme (PLI), Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECs) and Modified Electronics Manufacturing Clusters Scheme (EMC 2.0)
- Of these, Production Linked Incentive Scheme (PLI), one of the biggest incentive, is aimed at boosting domestic manufacturing of mobile phones and their components, including Assembly, Testing, Marking and Packaging (ATMP) units
- PLI package of ~ US\$ 5.7 billion (Rs. 420 billion) will be extended as an incentive of 4-6% on incremental sales (of locally manufactured goods) for a period of five years
- This is in line with transforming India into a manufacturing hub of electronics and components, at par with established and more diversified countries such as China and Vietnam
- As per Union Budget 2022-23, the Ministry of Electronics and Information Technology (MeitY) has been allocated Rs. 14,300 crore (US\$ 1.85 billion). In the allocated budget, revenue expenditure allocation is Rs. 13,911.99 crore (US\$ 1.8 billion) and capital expenditure allocation is Rs. 388.01 crore (US\$ 50.4 million).
- Under Union Budget 2021-22, the government has set a target of ~Rs. 18,000 crore (US\$ 2.4 billion) investments in the electronics manufacturing segment by 2021-22. It has also allocated Rs. 2,631.32 crore (US\$ 361.50 million) to promote electronics and IT hardware manufacturing programmes (Modified Special Incentive Package Scheme (M-SIPS), Electronics Development Fund (EDF) and Manufacturing Clusters).
- Under the production-linked incentive (PLI) scheme for IT Hardware Products, the Ministry of Electronics and Information Technology has approved 14 qualified applicants. To manufacture these products in India, the government will offer incentives of US\$ 983.76 million over the next four years. In this duration, production worth US\$ 21.62 billion and exports of US\$ 8.06 billion are expected.

Remission of duties or taxes on export products (RoDTEP) scheme.

- In January 2021, the India Cellular and Electronics Association (ICEA) proposed a RoDTEP rate of 2% on smartphones, 2.4% on featurephones, 2% on tablets/laptops, 3.4% on battery chargers and 1.48% on battery packs.

Skill development in ESDM sector

1. Centre of excellence (CoE) in Noida (Gautam Buddha Nagar)

- In December 2020, to establish the required ecosystem at Noida, the Indian Cellular and Electronics Association (ICEA) proposed the establishment of a centre of excellence in Noida for product-based Li-ion cells (post-cell). This has been approved and groundwork will begin as soon as the Government of India receives sanctions. In partnership with the Ministry of Electronics & Information Technology and industrial associations, the government will create three centres of excellence.



3. Centre for Invention, Innovation, Incubation and Training (CIIT)

- In December 2020, to strengthen industry-academia partnership and bring qualitative improvements in technical education, Mr. Manoj Sinha, the Lieutenant Governor of Jammu and Kashmir, inaugurated the Centre for Invention, Innovation, Incubation and Training (CIIT), which was established at a cost of Rs. 181.57 crore (US\$ 24.88 million), at the Government Polytechnic College, Baramulla.

2. Electronic system incubation centre

- On December 02, 2020, 'Hubli ESDM Exchange' (HEX), an incubation centre for the development of electronic device design (ESDM), backed and funded by the state government's Karnataka Innovation & Technology Services (KITS) and managed by the India Electronics & Semiconductor Association (IESA), was launched at the KLE Tech Park of the KLE Technical University (KLETU) in Hubballi.
- A fund of Rs. 3.2 crore (US\$ 433.46 thousand) for three years has been approved by the Department of Electronics, IT, BT, Science & Technology.

Notes: ESSCI - Electronics Sector Skills Council of India; NSDC - National Skill Development Corporation; IESA - India Electronics and Semiconductor Association

Source: Ministry of Electronics and Information Technology (MeitY)

Key Trends and Developments



Trends and opportunities



LOCAL MANUFACTURING OF LAPTOPS, TABLETS

- According to ICRA, India has the potential to become a significant part of the global supply chain in electronics and become a hub for laptops and tablets by capturing 18% of the global exports.
- By 2025, these initiatives would have a potential production value of US\$ 100 billion and will also generate 5 lakh additional job opportunities.



GROWING DOMESTIC HANDSET MANUFACTURING MARKET

- The increasing domestic demand for handset manufacturing and government support policies have led India to build on its smartphone manufacturing capabilities. By 2025, it is estimated that the addressable market for OEMs (original equipment manufacturers) would reach ~Rs. 10–11 lakh crore (US\$ 140–150 billion).



ESTABLISHING QUANTUM COMPUTING APPLICATIONS LAB

- To accelerate quantum computing-led research & development and enable new scientific discoveries, the Ministry of Electronics and Information Technology (MeitY), in collaboration with Amazon Web Services (AWS), will establish a quantum computing applications lab in the country.
- The MeitY quantum computing applications lab will provide quantum computing as a service to government ministries and departments, researchers, scientists, academia and developers, to enable advances in areas such as manufacturing, healthcare, agriculture and aerospace engineering.

Major recent developments...(1/3)

1

August 2020

- Samsung Electronics Co. and Apple Inc.'s assembly partners pledged investments worth Rs. 110 billion (US\$ 1.5 billion) to establish mobile phone manufacturing units in India

2

September 2020

- Larsen & Toubro announced closure of its deal to sell its electrical and automation business to Schneider Electric. The companies announced this deal in May 2018; for US\$ 1.9 billion (Rs. 14,000 crore)
- Tamil Nadu unveiled the Electronics and Hardware Manufacturing Policy, which targets US\$ 100 billion output by 2025, with a goal to contribute 25% to India's total electronic exports by 2025

3

October 2020

- Abaj Group, in partnership with QThree Ventures, will set up ABAJ-QThree Techpark—a manufacturing facility for LED televisions and air-conditioners in Gujarat.
- Aequs to invest Rs. 3,500 crore (US\$ 476.27 million) to set up a consumer electronics cluster in Karnataka

4

November 2020

- On November 7, 2020, a delegation of representatives of seven Taiwanese firms under Taipei Economic and Cultural Centre (TECC) agreed to invest in YSR Electronics Manufacturing Cluster in Andhra Pradesh.
- HPL Electric & Power established a new R&D centre for smart metres in Gurugram, Haryana.

Major recent developments...(2/3)

5

December 2020

- Lenovo announced its plan to start manufacturing tablets in India and expand its laptop manufacturing by 10x. The company is also expecting to grow by 25-30% in the current fiscal year, due to increase in demand from the education segment and large enterprises.

6

January 2021

- boAt, a earphones and smart wearable manufacturer, received an investment of US\$ 100 million from Warburg Pincus, a key private equity firm.
- India Cellular & Electronics Association announced its plan to create a smartphone design, R&D and application ecosystem in India.

7

February 2021

- On February 16, 2021, Amazon announced that it will commence manufacturing of electronics products from India with Cloud Network Technology, a subsidiary of Foxconn in Chennai, later in the year. The device manufacturing programme will be able to produce 'Fire TV Stick' devices in large quantities every year, catering to demands of customers in India.

8

July 2021

- C4V, a lithium-ion cell manufacturer in the US, invested >US\$ 537.15 million in the electric battery manufacturing sector in Karnataka.

9

August 2021

- Dixon Technologies, an Indian electronics manufacturing services (EMS) company, has signed an MoU with Rexxam, a Japanese electronics company, to form a joint venture.

Source: News Articles

Major recent developments...(3/3)

10

September 2021

- PG Electroplast, a contract manufacturer of electronic goods, announced that it had applied for a PLI scheme and pledged to invest Rs. 300 crore (US\$ 40.47 million) towards the production of air conditioner components.

11

November 2021

- 42 companies have been selected under the PLI scheme for white goods with an outlay of Rs. 6,238 crore (US\$ 839 million). The selected companies include 26 air conditioner manufacturing companies and 16 LED lights manufacturing companies.

12

February 2022

- To boost manufacturing in India, about 80% of the Production-Linked Incentive Scheme (PLI) spanning 14 sectors with a Rs. 3,00,000 crore (US\$ 39 billion), is concentrated towards only three sectors - electronics, automobile and solar panel manufacturing.

13

March 2022

- In March 2022, Reliance announced that it would invest US\$ 220 million in a joint venture with Sanmina Corp, a US-listed company for making electronic products in Asian countries.

Sector policies

National Policy on Electronics (NPE), 2019

- The National Policy on Electronics (NPE) 2019 aims to position India as a global hub for ESDM by encouraging manufacturing capabilities in the country to develop core components, including chipsets, and creating an environment for the industry to compete on an international platform
- The NPE 2019 replaces the NPE 2012, which has successfully built the foundation for a competitive Indian ESDM value chain. The NPE 2019 targets to promote domestic manufacturing and export in the entire value chain of ESDM and achieve a turnover of US\$ 400 billion by 2025

Phased Manufacturing Programme (PMP)

- The phased manufacturing programme is essentially a roadmap for tariff rationalisation wherein duty differentials are created to incentivise domestic manufacturing
- To promote depth in manufacturing, the roadmap was prepared keeping in view the state of the design/manufacturing ecosystem in India to substantially increase value addition

Production-Linked Incentive (PLI) Scheme

PLI scheme for large scale electronics manufacturing launched by Ministry of Electronics and Information Technology (MeitY) in April 2020 has been extended from existing five years band (FY21-FY25) to six years (FY21-FY26).

For growth industries, such as consumer electronics, electric vehicles and renewable energy, ACC battery production represents one of the biggest economic opportunities. PLI scheme for the ACC battery would allow key domestic and international players to set up a competitive ACC battery plants in the region.

In March 2021, a scheme for large-scale electronics manufacturing and IT hardware, along with a scheme to promote component manufacturing, will reduce the country's dependence on Chinese electronic products.

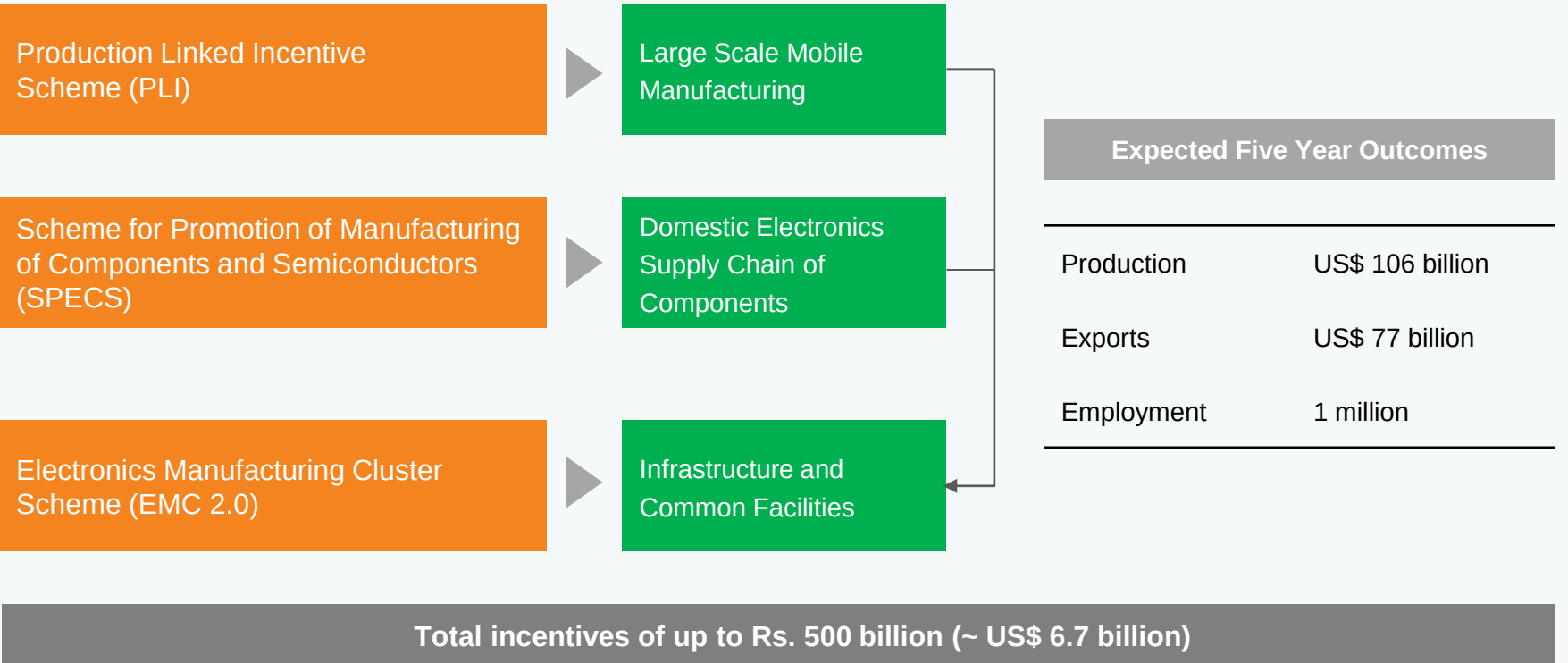
In May 2021, the cabinet, chaired by the Prime Minister Mr. Narendra Modi, approved a proposal by the Department of Heavy Industries and Public Enterprises to implement the production-linked incentive (PLI) scheme 'National Programme on Advanced Chemistry Cell (ACC) Battery Storage' to achieve manufacturing capacity of 50 GWh (Giga Watt Hour) of ACC and 5 GWh of 'Niche' ACC, with an outlay of Rs. 18,100 crore (US\$ 2.47 billion).

Sectors	Ministry/ Department	Approved financial outlay over a five-year period
Electronic/ Technology Products	Ministry of Electronics and Information Technology	Rs. 5,000 crore (US\$ 674.92 million)
'National Programme on Advanced Chemistry Cell (ACC) Battery Storage	Department of Heavy Industries and Public Enterprises	Rs. 18,100 crore (US\$ 2.47 billion)

Source: Ministry of Electronics and Information Technology (MeitY), PIB

New schemes for electronics manufacturing...(1/3)

To position India as a global hub for ESDM sector and further the vision of the National Policy on Electronics (NPE) 2019, three new schemes were announced by the Indian government on April 1, 2020, as follows:



Source: Ministry of Electronics and Information Technology (MeitY)

New schemes for electronics manufacturing...(2/3)

1

Production Linked Incentive Scheme (PLI)

- PLI offers a production linked incentive to boost domestic manufacturing and attract large investments in mobile phone manufacturing and specified electronic components, including Assembly, Testing, Marking and Packaging (ATMP) of units.
- Incentive: 4-6% on incremental sales (over base year) of goods manufactured in India; incentives up to US\$ 5 billion will be awarded over a period of five years
- Eligibility: Subject to thresholds of incremental investments and incremental sales of manufactured goods

2

Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)

- Aims to offset disabilities in domestic manufacturing of electronic components and semiconductors in order to strengthen the electronics manufacturing ecosystem in the country
- Incentive: 25% on capital expenditure pertaining to plant, machinery, equipment, associated utilities and technology, including R&D on reimbursement basis; up to US\$ 500 million over a period of eight years
- Target Segments: Electronic components, semiconductors, specialised subassemblies and capital goods for these items
- Eligibility: Applicable to investments in new units and expansion of the existing units.

3

Modified Electronics Manufacturing Clusters scheme (EMC 2.0)

- EMC 2.0 has been introduced with the objective to address the disabilities, by providing support to create world-class infrastructure, along with common facilities and amenities, including RBF sheds/Plug and Play facilities to attract key global electronics manufacturers and their supply chain to establish units in India.
- Incentive: 50% of project costs, subject to a ceiling of ~ US\$ 10 million for every 100 acres of land.
- Anchor Units: Electronics manufacturing companies with a commitment to purchase/lease a minimum of 20% of the land area and invest a minimum of ~US\$ 40 million.

Notes: RBF - Ready Built Factory

Source: Ministry of Electronics and Information Technology (MeitY)

New schemes for electronics manufacturing...(3/3)

4

Electronics Development Fund (EDF)

- To promote start-ups and innovation, a scheme called Electronics Development Fund (EDF) was launched.
- The EDF is a fund of funds that invest in venture funds, which in turn invest in innovation ventures/start-ups in electronics, nano-electronics and IT. At least 50% of the corpus has to be invested in ventures working in the ESDM sector
- CANBANK Venture Capital Funds Ltd. (CVCFL), a subsidiary of Canara Bank, is the fund manager for EDF

5

Export Incentives

- Export incentives of 2-3% are available under the Merchandise Export from India Scheme (MEIS)
- The list of products that get export incentives include air conditioning parts and compressors, refrigerating equipment compressors, fully automatic washing machines, televisions and others

6

Modified Special Incentive Package Scheme (M-SIPS)

- To promote large scale manufacturing in the country, M-SIPS was announced by the government in 2012. This scheme provides capital subsidy of 25% for the electronics industry outside the special economic zones (SEZs). Electronics industries located inside SEZs are provided 20% subsidy. The scheme provides:
 1. Capital Subsidy—20% for investments in special economic zones (SEZs) and 25% in non-SEZs.
 2. Incentives for both new units and expansion units
 3. Incentives for a period of five years from the date of approval of application
 4. Incentives for 44 categories/verticals across the value chain (raw materials including assembly, testing, packaging and accessories, chips, components)
 5. Minimum investment threshold for each product category/vertical (from ~ US\$ 140,000 for manufacturing of accessories to ~ US\$ 680 million for memory semiconductor wafer fabrication unit)
 6. Establishments to be in industrial area notified by central/state govt.

Source: Make in India, Ministry of Electronics and Information Technology (MeitY)

Key Industry Contacts



Key Industry Contacts

Agency	Contact Information
 India Electronics & Semiconductor Association	Unit G-02, Ground Floor, Prestige Terminus-II, 901 Civil Aviation Road, Konena Agrahara, Bengaluru - 560 017 Phone: +91 80 4540 6100 Fax: +91 80 80 2522 0048 Website: https://iesaonline.org/
 Consumer Electronics and Appliances Manufacturers Association	F-4/ 23, 4th Floor, Wave 1st Sliver Tower Sector - 18 Noida - 201 301 (UP) Phone: +91-120-4265697 e-mail: info@ceama.in Website: https://ceama.in/
 Electronic Industries Association of India	ELCINA House, 422 Okhla Industrial Estate, Phase III. New Delhi, INDIA-110020 Tel: +91-11-26924597, 26928053, 41615985 Fax: +91-11-26923440 e-mail: info@elcina.com Website: http://www.elcina.com/
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Glossary

- ESDM: Electronics System Design and Manufacturing
- MeitY: Ministry of Electronics and Information Technology
- IESA: India Electronics and Semiconductor Association
- PLI: Production Linked Incentive Scheme
- SPECS: Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors
- EMC 2.0: Modified Electronics Manufacturing Clusters Scheme
- ESSCI: Electronics Sector Skills Council of India
- NSDC: National Skill Development Corporation
- ICT: Information and Communications Technology
- ITU: International Telecommunication Union
- NPE: National Policy on Electronics
- NDCP: National Digital Communications Policy
- PMP: Phased Manufacturing Programme
- MEIS: Merchandise Export from India Scheme
- SEZ: Special Economic Zone
- US\$: US Dollar
- FY: Indian Financial Year (April to March)

Exchange rates

Exchange Rates (Fiscal Year)

Year	Rs. Equivalent of one US\$
2004-05	44.95
2005-06	44.28
2006-07	45.29
2007-08	40.24
2008-09	45.91
2009-10	47.42
2010-11	45.58
2011-12	47.95
2012-13	54.45
2013-14	60.50
2014-15	61.15
2015-16	65.46
2016-17	67.09
2017-18	64.45
2018-19	69.89
2019-20	70.49
2020-21	73.20
2021-22 [#]	74.26

Exchange Rates (Calendar Year)

Year	Rs. Equivalent of one US\$
2005	44.11
2006	45.33
2007	41.29
2008	43.42
2009	48.35
2010	45.74
2011	46.67
2012	53.49
2013	58.63
2014	61.03
2015	64.15
2016	67.21
2017	65.12
2018	68.36
2019	69.89
2020	74.18
2021	74.84
2022 [*]	74.57

Note: # - As of December 2021; * - As of 11 February 2022
Source: Foreign Exchange Dealers' Association of India

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