DRAFT

Policies to drive a National Agenda for ICTE

National Policy on Electronics 2011

(NPE 2011)

Department of Information Technology

Ministry of Communications and Information Technology

Government of India

National Policy on Electronics, 2011
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PREAMBLE

Electronics Industry reported at USD 1.75 Trillion is the largest and fastest growing manufacturing industry in the world. It is expected to reach USD 2.4 Trillion by 2020. The demand in the Indian market was USD 45 Billion in 2008-09 and is expected to reach USD 400 Billion by 2020. Domestic demand is expected to be driven by growth in income levels leading to higher off-take of electronics products, automation demands of corporate sector and the government's focus on e-governance. The domestic production in 2008-09 was about USD 20 Billion. However, the actual value-addition in the domestically produced electronic product is very low, ranging between 5 to 10 percent in most cases. At the current rate of growth, the domestic production can cater to a demand of USD 100 Billion in 2020 as against a demand of USD 400 Billion and the rest would have to be met by imports. This aggregates to a demand supply gap of nearly USD 300 Billion by 2020. Unless the situation is corrected, it is likely that by 2020, the electronics import may far exceed oil imports. This fact goes unnoticed because electronics, as a "meta resource" forms a significant part of all machines and equipment imported, which are classified in their final sectoral forms, for example, automobiles, aviation, health equipment, media and broadcasting, defence armaments, etc. It is also pertinent to note that Indian electronics hardware production constitutes only around 1.31% of the global production. On the other hand, the share of global electronic equipment production of the largest contributing nation has increased from 17% in 2004 to 33% in 2009. Conversely, the country's imports are expected to rise from 50% to 75% even as demand is rocketing.

2. India is a recognised global player in software and software services sector. It lags behind in electronics hardware manufacturing capabilities, though it is increasingly becoming a destination for chip design and embedded software. The vision is to transform India into a global hub for electronics system design and manufacturing (ESDM) so as to meet the growing domestic and global demand. There are many challenges to advance the same – infrastructure gap, tax structure, supply chain and logistics, inflexible labour laws, limited R&D focus, inadequate funding and limited value addition. Recognising the importance and potential of the Electronics Sector, several economies in the Asia-Pacific region have repositioned themselves through infrastructural investments and proactive policies to emerge as a global power-house in this field.

3. Electronics is characterized by high velocity of technological change. Consequently the life cycle of products is declining. As a result, the value of design and development in the product has increased quite significantly. Given India's growing strength in chip design and embedded software, the increasing importance of design in product development has potential to make India a favoured destination for ESDM.

4. ESDM is of strategic importance as well. Not only in internal security and defence, the pervasive deployment of electronics in civilian domains such as telecom, power, railways, civil aviation, etc. can have serious consequences of disruption of service. This renders tremendous strategic importance to the sector. We cannot be totally dependent on imported electronic components and products for such a sector.

5. The electronic components, which are basis of an electronic product, are low volume-low weight, cheap and easy to transport across the globe. Moreover, under Information Technology Agreement-1 (ITA-1) of the World Trade Organization, which came into force in 1997, a large number of electronic components and products are bound with zero tariffs making trade unrestricted across international borders. Also, the electronics manufacturing is characterized by high volume and low margins. All these have resulted in the electronics hardware industry being globally integrated with few large global players catering to a large part of the world.

6. India is one of the fastest growing markets of electronics in the world. There is potential to develop the ESDM sector to meet our domestic demand as well as to use the capabilities so created to successfully exports ESDM products from the country. The National Policy on Electronics aims to address the issue with the explicit goal of transforming India into a premier ESDM Hub.

I. VISION

To create a globally competitive electronics design and manufacturing industry to meet the country's needs and serve the international market.

II. MISSION

1. To promote indigenous manufacturing in the entire value-chain of ESDM for economic development.
2. To develop capacities for manufacture of strategic electronics within the country.

3. To promote a vibrant and sustainable ecosystem of R&D, design and engineering and innovation in Electronics.
4. To develop high-quality electronic products at affordable prices for inclusive adoption and deployment to improve productivity, efficiency and ease of operations in other sectors.
5. To promote environmentally friendly global best practices in the use and disposal of electronic products.

III. OBJECTIVES

1. To create an eco-system for a globally competitive ESDM sector in the country to achieve a turnover of about USD 400 Billion by 2020 involving investment of about USD 100 Billion and employment to around 28 Million people at various levels.

2. To build on the emerging chip design and embedded software industry to achieve global leadership in VLSI, chip design and other frontier technical areas and to achieve turnover of USD 55 Billion by 2020.

3. To increase the export in ESDM sector from USD 5.5 Billion to USD 80 Billion by 2020.

4. To significantly enhance availability of skilled manpower in the ESDM sector. Special focus for augmenting post graduate education and to produce about 2500 PhDs annually by 2020.

5. To create an institutional mechanism for developing and mandating standards and certification for electronic products and services to strengthen Quality Assessment infrastructure nationwide.

6. To develop an appropriate security ecosystem in ESDM for its strategic use.

7. To create long-term partnerships between EDSM industry and strategic sectors like Defence, Space, and Atomic Energy etc.

8. To become a global leader in creating Intellectual Property (IP) in the ESDM sector by increasing fund flow for R&D, seed capital and venture capital for start-ups in the ESDM and nanoelectronics sectors.

9. To develop core competencies in sectors like automotive, avionics, industrial, medical, solar, Information and Broadcasting etc through use of ESDM in these sectors.

10. To use technology to develop electronic products catering to domestic needs and conditions at affordable price points.

11. To expedite adoption of best practices in e-waste management

12. To create specialized governance structures within Government to cater to specific needs of the ESDM sector including high velocity of technological and business model changes.

13. To facilitate loans for setting up ESDM units in identified areas

IV. STRATEGIES

1. Creating eco-system for globally competitive ESDM sector

1.1 To provide attractive fiscal incentives across the value chain of the ESDM sector through a Modified Special Incentive Package Scheme (M-SIPS) to eliminate the disability costs in manufacturing on account of infrastructure gaps relating to power, transportation etc. and to mitigate the relatively high cost of finance etc.

1.2 To facilitate setting up of Semiconductor Wafer Fab facilities and its eco-system for design and fabrication of chips and chip components.

1.3 To provide Preferential Market Access for domestically manufactured/ designed electronic products including mobile devices, SIM cards with enhanced features, etc. with special emphasis on Indian products for which IPR reside in India to address strategic and security concerns of the Government consistent with international commitments.

1.4 To provide incentives for setting up of over 200 Electronic Manufacturing Clusters (EMCs) with world class logistics and infrastructure and easy to do business facilities.

a. To provide assistance to setting up of “Greenfield EMCs” and upgradation of “Brownfield EMCs”

b. EMCs to use Information Technology Investment Region (ITIR) infrastructure wherever available.

c. The benefits of National Manufacturing Policy and National Investment and Manufacturing Zones (NIMZs) to be available for EMCs.

1.5 To establish a stable tax regime (both at the Central and State level) conducive to attract global investments and to encourage electronics sector through appropriate fiscal incentives and taxation mechanisms.

a. To provide for a 10 year stable tax regime for ESDM sector.

b. To create an Inter-ministerial Working Group to clarify technical issues relating to electronic products.

c. To declare mobile phones specifically and other electronics products for data communication as goods of special importance under the Central Sales Tax Act.

1.6 To aggressively market India as an investment destination for ESDM among leading Nation and Companies.

1.7 The loans for procuring computers and related peripherals including software by individuals and small businesses to be included in priority sector lending.

2. Promotion of Exports

2.1 To focus on exports to generate volumes and economies of scale by providing requisite incentives and by streamlining procedures and logistics to facilitate import of components/sub-systems and export of products.

a. To extend special focus under the Focus Products Scheme to an expanded list of items under the ESDM sector including Electronics Manufacturing Services industry.

b. DTA sales of ITA-1/zero duty electronics products to be treated as physical exports and extended all the benefit of export schemes.

c. Create incentives for relocation to India of electronic hardware manufacturing units facing cost pressures in developed countries.

d. To globally market and showcase chip design, product design and embedded software industry capabilities.

e. To promote export of electronics products in emerging regions like Africa, South America, and Asia among others.

3. Human Resource Development

3.1 To work closely with Private Sector, Universities and other Institutions of learning and to design programmes to ensure that adequate trained and skilled manpower is available to the industry.

a. To facilitate enhancement of the number of graduates and other skilled manpower by suitably increasing capacities in colleges/ITIs and Polytechnics through public and private sector investments.

b. To support creation of capacities within academic institutions to enhance the production of adequate number of PhDs and post-graduates for supporting the growth of chip design and embedded software and board/hardware design industry in the country.

c. To encourage setting up of skill-oriented courses and training programmes for electronic designs along with hands-on laboratories enabling graduates from other disciplines to migrate to ESDM.

d. Creation of a specialized Institute for semiconductor design;

e. Extending Special Manpower Development Programme for Very Large Scale Integration (VLSI) chip design to include larger number of colleges and students leveraging the National Knowledge Network;

f. To create an institutional mechanism for the faculty development in various ESDM related subjects.

g. To collaborate with national and international institutions for development of new skills and courseware on latest manufacturing technologies and products in ESDM sector.

4. Developing and mandating standards

4.1 To curb inflow of sub-standard and unsafe electronic products by mandating technical and safety standards.

a. To develop Indian standards to meet specific Indian conditions including climatic, power supply and handling conditions etc., by suitably reviewing existing standards.

b. To mandate technical standards in the interest of public health and safety

c. Set up an institutional mechanism within Department of Information Technology for mandating compliance to standards for electronics products.

d. To develop a National Policy Framework for enforcement and use of Standards and Quality Management Processes.

e. Strengthening the lab infrastructure for testing of electronic products and encouraging development of conformity assessment infrastructure by private participation.

f. Creating awareness amongst consumers against sub-standard and spurious electronic products.

5. Cyber security

5.1 To create a complete secure cyber eco-system in the country, careful and due attention is required for creation of well defined technology and systems, use of appropriate technology and more importantly development of appropriate products & solutions. The priorities for action will be suitable design and development of indigenous appropriate products through frontier technology/product oriented research, testing & validation of security of products meeting the protection profile requirements needed to secure the ICT infrastructure and cyber space of the country.

6. Strategic Electronics

6.1 To promote manufacturing capacities for sourcing ESDM in strategic sectors - Defence, Atomic Energy, Space, etc.

a. To create long-term partnerships between domestic ESDM industry with strategic sectors for sourcing electronic products domestically.

b. Defence offset obligations for electronic procurements to be met through ESDM products.

7. Creating eco-system for vibrant innovation and R&D in ESDM sector including nanoelectronics

7.1 To create an Electronic Development Fund to promote Innovation and IP and R&D, commercialization of products, etc. in the ESDM, nanoelectronics and IT sectors by providing appropriate funding/incentives to Industry/Academic/R&D institutions.

a. To facilitate IP development by Indian industry, academic and R&D institutions.

b. To set up a “Fund of Funds” to create need based “Daughter Funds” for various innovation and manufacturing stages. All Funds to be professionally managed.

c. To given special thrust to innovation and R&D for Green Technologies, Convergence and Broadband technologies.

d. To promote entrepreneurship in ESDM sector in active collaboration with Industry, Industry Associations and Academia by ensuring availability of Angel Funds and Venture Capital Funds.

e. To set up VLSI specific Incubation Centres in four different cities in the country in association with Software Technology Parks of India (STPI)/Academic Institutions/Industry.

f. To design and develop India Microprocessor for diverse specific/strategic applications.

8. Electronics in Other Sectors

8.1 Automotive Electronics: To develop a Centre of Excellence for the development of Microcontroller Units (MCUs), Micro-electro-mechanical systems (MEMS) and other advanced electronic devices to enable India to consolidate India's position as one of the global auto hubs.

8.2 Avionics: To support the growth of aviation industry by facilitating the development of research and development and outsourcing of engineering design and related software for avionics and Maintenance, Repair and Overhauling of avionics in the country.

8.3 LED: To encourage the usage of LED lighting solutions especially in rural markets through innovative products like solar LED lamps, public places like street lighting, traffic lights etc. to promote the manufacture of LED and LED lights.

8.4 Industrial Electronics: To develop a Centre of Excellence for innovation in Industrial Electronics with focus on making affordable standardized products which help India to maintain its growth in industrial segments in which it has core competence, including textiles, food processing, steel, engineering and electrical gods like motors, compressors, inverters, etc.

8.5 Medical Electronics: To consolidate the design and development of affordable medical electronic device industry and to develop downstream manufacturing activities through sector specific cluster.

8.6 Solar Photovoltaics: To build manufacturing capacity of solar photo-voltaics to support the generation of 20 GW of solar power by 2020.

8.7 Information and Broadcasting: To create an eco-system for manufacture of set-top boxes and other broadcast equipment in the country as part of the digitalization of the broadcast network of the country.

9. Handling e-waste

9.1 To facilitate environment friendly e-waste handling policies

a. To create a mechanism with industry to streamline the implementation of e-waste (Management and Handling) Rules, 2011 including restrictions on usage of hazardous substances as per global best-practices.

b. To help streamline procedures to prevent e-waste dumping in the country.

c. To facilitate implementation of Extended Producers Responsibility under the e-waste (Management and Handling) Rules, 2011 for electronic hardware manufacturers as well as recyclers.

d. To promote development of e-waste recycling industry for domestically produced e-waste.

e. To create a specific thrust within Electronic Development Fund for the development of IPR and electronics products in green technologies.

10. Governance Structures

10.1 To set up a National Electronics Mission with industry participation to evolve programmes in pursuit of the laid down policies and also to create Institutional mechanisms to advance the implementation of various programmes aimed at achieving the objectives enumerated in this policy and to promote India as an Electronics Hardware Manufacturing Hub and suitably market "Brand India" in Electronics.

10.2 The Department of Information Technology to be renamed as Department of Electronics and Information Technology (DeitY)

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