

## SUBMISSION OF COMMENTS

### NATIONAL ELECTRONICS POLICY (DRAFT) 2018

CUTS International welcomes the draft National Electronics Policy (NPE) for 2018 issued by Ministry of Electronics & Information Technology (MeitY). The Electronics & System Design Manufacturing (ESDM) was selected as one of the 25 priority sectors under the 'Make in India' initiative announced in 2014. Investments in Electronic Manufacturing registered a growth rate of 27% in 2017.<sup>1</sup> Mobile Phones, one of the dominant sub-sector, witnessed a jump of 60% in volume terms.<sup>2</sup> The nation is home to 105 mobile/ancillary manufacturing units, providing employment to 4 lakh people directly.<sup>3</sup>

However, as observed during the NPE 2012 tenure also, ESDM manufacturing has mostly being assembly-driven and is still import-intensive, which means that the overall value addition in the sector has not improved even with significant initiatives such as 'Digital India' and 'Make in India' announced in 2014. The draft NPE 2018 policy's target of achieving USD 400 billion by 2025, was to be achieved by 2020 as per NPE 2012 Policy. With broad vision and objectives, undefined outlines and targets, the policy lacks the required catalytic effect which may support in propelling the nation's ICT sector. Since sectoral growth has not been impactful, which is also due to many legacy issues and challenges both at policy level and in day-to-day operations, the NPE 2018 policy would need provide significant push to India's potential as a country to become a global leader in ESDM manufacturing by firming up its approach and improving existing system deficiencies.

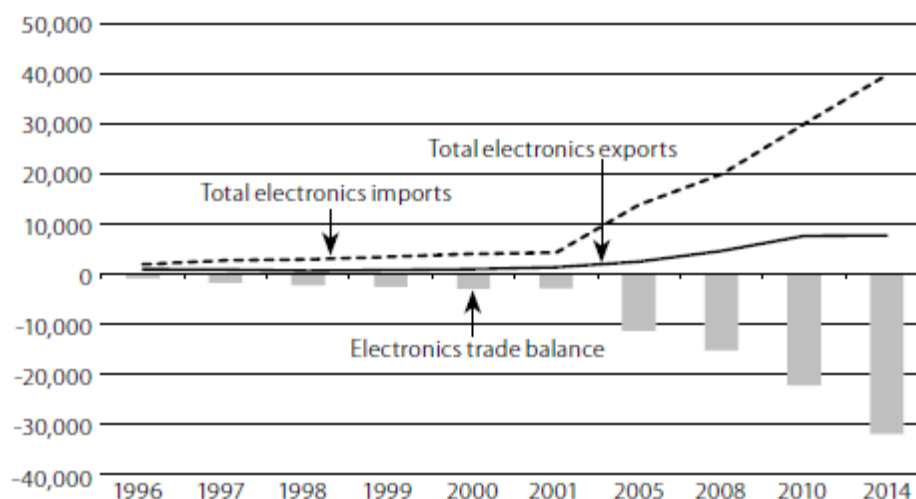


Figure 1: Trends in India's Overall Electronics Trade, 1996-2014 (Source: Smitha Francis, EPW)

The post-liberalisation era, especially after India signed the ITA-1 agreement in 1996<sup>4</sup>, led to a negative impact on India's electronics export trade, depicted in the above figure<sup>5</sup>, which created 3.2% of India's total manufactured exports in 1996. Though the sector recorded growth from 2001 to 2010, it experienced consistent decline after 2010 and the share of electronics in manufactured exports dropped to 2.7% in 2014. However, the share of electronics imports in total manufactured imports, which was at about 5% in 1996, increased continuously. Even though the growth in electronics imports became weak after 2011, the share of electronics in manufactured imports increased again from 2012 and stood at 9.3% in 2014.

<sup>1</sup> Estimates from Make in India Website are accessible at <<http://snip.ly/vvxpq1>>

<sup>2</sup> Ibid

<sup>3</sup> Ibid

<sup>4</sup> WTO Information Technology Agreement (ITA) 1996 is accessible at <<http://snip.ly/68qilw>>

<sup>5</sup> India's Electronics Manufacturing Sector: Getting the Diagnosis right - Article by Smitha Francis, published in Economic & Political Weekly, is accessible at <<http://snip.ly/qwklhd>>

The need for large market and scale directly translates into the necessity for increased focus by policymakers on making India to become **The Global Hub** for electronics manufacturing, instead of focusing only on manufacturing for India. To put this global strategy in perspective, it is worth noting that while India's Domestic Demand for electronic goods was approximately \$64 billion in 2014-15, the global market demand during the same period was \$2 trillion.<sup>6</sup>

Consequently, policymakers must prioritize in making India a global player by enabling cost parity and streamlining preferential market-access measures to provide the required impetus for both domestic and international original equipment manufacturers, so as to increase production within the country exponentially. The increased production and simultaneous capability build-up will also create opportunities for Indian SMEs to grow as component manufacturers and suppliers to local factories, further benefitting and propelling the job creation efforts of government as well as industry.

However, there are few critical issues that are plaguing the sector and creating barriers for India to achieve **The Globe Hub** strategy:

1. **Cost Disparity leading to Unviable Exports:** Currently, there is about **5% cost differential**<sup>7</sup> in most electronic products manufactured in India for Exports, when compared with existing global nodes such as China, Malaysia and Thailand.
2. **Difficulty in Doing Business:** Ease-of-business climate in the country is a big limiting factor in decision-making by large manufacturers to enter India.
3. **Preferential Market Access (PMA) Policy:** While the PMA policy's value-addition is based on Bill of Material (BoM) percentage, majority of components are semiconductor origin that do not have component manufacturing ecosystem in the country.
4. **Standardisation of Electronics Products:** It is critical that for **The Globe Hub** strategy to succeed, Indian standards, certification and testing mechanism are harmonised with global standards and best practices. Otherwise, standard-setting in siloes will hamper the growth of Indian Electronics Manufacturing.
5. **Low Emphasis on 'Design in India':** In order to contribute to the larger pie in the global value chain, the focus needs to be 'designing in India' because of the total value addition, 90% contribution comes from non-manufacturing activities, while only 10% contribution comes from manufacturing.

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<sup>6</sup> 'Make in India Strategy for Electronic Products' Paper by Niti Aayog is accessible at <<http://snip.ly/szdc5t>>

<sup>7</sup> Estimates from MAIT are accessible at <<http://snip.ly/4wi51a>>

## 1. Cost Disparity leading to Unviable Exports:

Currently, there is about **5% cost differential**<sup>8</sup> in most electronic products manufactured in India for Exports, when compared with existing global nodes such as China, Malaysia and Thailand.

#	Landed Cost Element	India vs. China / Malaysia / Thailand Comparison (based on 2016 estimates)
1.	Inbound freight for shipping components into India factory	<ul style="list-style-type: none"> <li>Unfavorable as cost differential stands at 3% of Bill of Material (BoM) cost</li> <li>Compared to global/regional benchmarks, India is farther away from component factories and the shipping rates are more expensive due to lower volume flowing into India-specific transportation lanes vs. the ones going to "mega factories" in Malaysia, Thailand, Mexico, etc.</li> </ul>
2.	Transformation cost of Raw Material into Finished Goods	<ul style="list-style-type: none"> <li>India factories lack scale compared to China factories;</li> <li>Advantageous labor rates in India are offset by fully burdened cost of facilities &amp; electricity</li> </ul>
3.	Outbound freight for shipping out finished goods	<ul style="list-style-type: none"> <li>Unfavorable as cost differential stands at 2% of BoM cost</li> <li>Due to low export volumes compared to global benchmarks, the logistics rates are slightly higher. Higher exports volume is needed to offset.</li> </ul>

In addition to the above-mentioned constituents of landed supply chain cost, there are switching costs that companies will bear to move manufacturing from existing factories to India locations. The costs will show up as:

- Cost of setting up India factories
- Loss of scale in existing factories as most companies are already oversubscribed in their global manufacturing network

**Note:** **5% cost differential** is based on high volumes that are observed in low-medium complexity portfolio. For high complexity products which are generally low volume, the disability factor would go up much higher.

An export-oriented strategy is essential for the high-end electronics manufacturing sector to achieve the necessary volumes to be globally competitive, thereby creating larger number of jobs, building capabilities within the country and creating pull for local component suppliers to establish and grow.

### **SOLUTION: THROUGHPUT-BASED INCENTIVES**

- To accelerate India as a manufacturing hub, the right quantum of incentives should be offered to make India more lucrative vis-à-vis existing benchmarks.
- Current landed cost impediment of serving India demand from India vs. imports is approximately 5% of BoM cost for most IT products.

<sup>8</sup> Supra Note 5

- Offering 5% throughput incentives enables supply chain entry into India and offering top-up incentives above this 5% leads to supply chain acceleration.
- Moreover, these incentives need to be offered in SEZ/EOUs, as this operating construct allows the right ease of operations required to enable “**The Global Hub**” strategy.
- At present, global companies addressing enterprise/service provider industry verticals in India cannot benefit from current EMC/MSIPS schemes that offer 25% capex subsidy, key reasons being that existing capacity of both captive & outsourced manufacturing plants is under-utilized. Hence, there is no compelling reason for companies to add more capacity, especially in the current macro-environment where most global companies are over-subscribed in their global network.
- On the contrary, throughput based incentives work under the principles of “incentivize as you grow”. Moreover, throughput based incentives are a sure shot approach of creating revenue turnover with targeted incentives outflow from Government which can be capped by time horizon or run rate volumes achieved.
- A targeted 5% “throughput based” incentives, over a period of 5 to 10 years, would ensure that global electronics OEMs could consider manufacturing in India without losing the existing cost & margin structure.

### **Country Example offering Throughput-based incentives:**

Despite China being a leading global manufacturing destination, the mega factories are concentrated along the east coast provinces. As a result, the inland provinces, especially Chong Qing, Chengdu, etc. face freight disadvantages compared to the coastal provinces. This is analogous to the impediment faced by India factories vis-à-vis mega factories in S.China (Sheznhen, Doumen, etc.), Malaysia (Penang), Thailand. To create a compelling proposition to the electronics sector in Chong Qing, the provincial government offered logistics subsidy to offset the higher cost of freight (inbound component & outbound finished goods) vis-à-vis mega factories in coastal provinces. Every fiscal quarter, the contract manufacturers and captive plants of foreign-owned companies are offered logistics subsidies based on the throughput volume achieved every fiscal quarter. Such throughput based incentive allowed OEMs to award businesses to Contract Manufacturers in Chong Qing while retaining the same cost/margin baseline of Shenzhen / Doumen.

## 2. Difficulty in Doing Business

Ease-of-business climate in the country is a big limiting factor in decision-making by large manufacturers to enter India. While the government has taken substantial measures to provide fast-tracking and ease-of-business for companies looking to invest in the country, similar focus and urgency is needed to resolve day-to-day operational issues companies face while dealing with the Government. Few such issues<sup>9</sup> are listed below.

#	BARRIERS	WHY?	SUGGESTIONS
1	Road Permits	Impedes ability to deliver quickly to customers. The IT industry largely operates on a build to order model due to differing needs of customers and rapid technological change. It is not possible to stock transfer customer specific material to other states for local billing and so most shipments to commercial customers need road permits. On the other hand, it is feasible to directly import into the consuming state for further sale obviating need for road permits.	Exempt IT products from need for road permits/e-way bills for interstate movement.
2	Logistics	Speed is very slow, non-competitive and technologically backward compared to other countries.	Infuse technologies that automate processes and improve productivity
		Container shipments stuck in Mumbai for weeks to reach to Delhi ICD due to congestion. There is no enough capacity for movement.	Improve capacities across the land-rail-road-air infrastructure value chain
		Although 90% of customs clearance happens in a day, sometimes these clearances happen in late evenings making the logistics management difficult to meet short timelines.	Review customs processes to allow clearance within 2 hours
3	Labor laws	Experiences shows that productivity of organized labor is low, which leads to difficulty in enforcing meritocracy and efficiency in shop floor due to cumbersome procedures for disciplinary actions.	Review labor law provisions relating to disciplinary actions
		Exit barriers and potential long term liabilities on account of cumbersome procedures and need for Government approvals to close factories make it difficult for factories to manage closures.	Review labor law provisions with respect to closure of factories
		Inability to adjust manpower and labor costs to seasonality and business upturns and downturns	Allow flexibility to hire temporary labor without restrictions as long as labor is paid at a rate commensurate to the skills and experience

<sup>9</sup> MAIT Electronics Manufacturing Summit 2018 Report is accessible at <<http://snip.ly/ghfrx6>>

4	Component Ecosystem	Lack of component suppliers is heavily impacting Make in India initiatives, with less volumes being produced domestically. For this very reason, completely knocked down (CKD) and semi-knocked down (SKD) versions of electronic devices are imported in the country and merely assembled.	<p>Provide through-put based incentives to key component suppliers with riders like phased rebates for 5 years, penalties for negative production, etc.</p> <p>Central Government should directly negotiate with big players for investments and take commitments for localization by offering incentives</p>
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### 3. Preferential Market Access (PMA) Policy:

One of the main themes of PMA policy in the electronics sector is to focus on high local value-addition norms (50%+) calculated in terms of BoM percentages.

The NITI Aayog’s Report<sup>10</sup> states that, “A common belief among policy makers is that the higher the domestic value added in a product the better. This belief often leads countries to curb the exports of primary inputs (for example cotton and iron ore in the case of India) and protect the final good (for example, cotton clothes and steel). This is an erroneous approach. **High value added is not virtue in itself if the product is not competitive in the world markets.** It will simply not get produced on a large enough scale to make a dent in employment. On the other hand, a product may have only a small value added but if it is globally competitive, it can be produced on a mass scale with large number of jobs created. China is sometimes derided for adding just \$7 to the iPhone, which then sells for several hundred dollars. But it is forgotten that China produces hundreds of millions of these phones, which add up to a significant number of good jobs for its workers. **It is not important how much value per unit of a product a country adds. What matters is how much total value it adds.**”

While the PMA policy’s value-addition is based on BoM%, majority of components are semiconductor origin (about 80% of BoM as illustrated in table below<sup>11</sup>) that do not have component manufacturing ecosystem in the country. Hence, PMA value-addition norms of 50%+ for electronic products are unachievable.

Figure 2: An Illustrative Set Top Box BoM

Commodity category	Component	Suppliers (Incl. global leaders)	Present in India – Y/N	Indicative Sizing
1 Plastics & mechanicals	•Mechanical fabrication (base cover, sheet metal, ...)	•Flextronics, Supreme	•Y	15% of costed BoM
	•Plastic fabrication	•Rosti, G-Plast, Nypro	•Y	
	•Cables / wires	•Amphenol, Molex, FCI, Volex	•Y	
2 Electro-mechanical (elect + specialty)	•Caps & Resistors (thru-hole)	•Vishay	•Y	5% of costed BoM
	•Heat sinks	•Auto ancillary (e.g. Jindal extruders)	•Y	
	•Batteries & power supplies	•Laird Tech, Murata	•Y	
	•Connectors	•Tyco, Molex, FCI, Amphenol	•Y	
	•Printed Circuit Brd. (2-4 lyrs)	•AT&S, Epitome, Ascent	•Y	
3 Semi-conductor (aka Silicon)	•Caps & resistors (SMT)	•Belfuse, Delta, Lineage, Panasonic	•N	80% of costed BoM
	•Inductors & magnetics	•Delta, Jan Mao	•N	
3 Semi-conductor (aka Silicon)	•Communications module	•Broadcom, Marvell, Maxim	N	80% of costed BoM
	•Diodes	•Diodes Inc, Fairchild, ST Micro, ...		
	•Linear Voltage Regulator	•Maxim, TI, National Semi, Linear Tec.		
	•Logic, Memory	•NXP, Hynix, Samsung, Fairchild, TI		
	•Chipsets, Logic devices	•Freescale, Fairchild, Broadcom, PMC		
	•Timing devices	•Maxim, Pericom, Kyocera, Analog		
	•Transistor	•Fairchild, Central Semiconductor		

The PMA policy prescribes domestic manufacturing criteria at a ‘product’ level. Currently manufacturing all the products in India may not be feasible or possible from a technology, infrastructure and commercial parameter for any investor or manufacturer willing to Make in India. Global supply chain implies that no site manufactures the entire portfolio of products and only a set of products are manufactured at each facility based on defined parameters

Evolution of the supply-chain & manufacturing eco-system in mature countries allude to the fact that products with very high-end technology, complex manufacturing processes and low volume would continue to be imported until the required supply and manufacturing ecosystem is developed and fully evolved to support local manufacture of such hi-end products and demand growth makes manufacturing viable.

<sup>10</sup> Supra Note 4

<sup>11</sup> Supra Note 5

To enable Export-oriented electronics manufacturing, PMA policy needs to change the value-add norms (currently based on BoM%) to allow market access to manufacturers based on achieving the following stages (based on globally accepted norms of "substantial transformation") which can be physically verified as:

- Stage 1: Final Assembly & Test (FA&T);
- Stage 2: Printed Circuit Board Assembly (PCBA); and
- Stage 3: Local sourcing of components (based on cost, delivery, quality parity)

Achieving Stage 1 of substantial transformation would allow qualification under PMA. The OEMs would commit to develop the manufacturing process over the following three stages over the course of next few years' dependent on the evolution and maturity of the component ecosystem. Also, presence of such global manufacturers in India will create a large pull-effect towards promotion of Indian component eco-system. It's important to note that we need to achieve significant volumes in Stage 1, which will catalyze movement to Stage 2 and encourage component manufacturing (due to large end-product volumes) leading to Stage 3 and higher value-addition.



#### 4. **Standardisation of Electronics Products:**

On this aspect, the Niti Aayog's report states that, "Before we rush to forcing our standards in the domestic market, we need to create a business-friendly ecosystem and grow larger. Premature adoption of standards can scuttle the growth of the industry prematurely. One way to see this is to ask whether the adoption and enforcement of a local standard in mobile telephony in the early 2000s would have permitted the phenomenal expansion of mobile phones that we saw in the last decade."

It is critical that for **The Global Hub** strategy to succeed, Indian standards, certification and testing mechanism are harmonised with global standards and best practices. Otherwise, standard-setting in siloes will hamper the growth of Indian Electronics Manufacturing. As highlighted in our briefing paper on Compulsory Registration Order (CRO)<sup>12</sup>, such instruments have widespread impacts, and affect multiple stakeholder groups in different ways. A sub-optimal regulation has the potential to increase the cost of administration and compliance, have unintended outcomes and limits the likelihood of achievement of its objectives.

Furthermore, it is important that government incentivises setting up a good testing lab infrastructure in the country which are capable of certifying to international standards and practices. STQC-International Common Criteria Certification Scheme is one such example where India can grant international Common Criteria certificates on security aspects.

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<sup>12</sup> The curious case of CRO Standards in the ICT Sector' Briefing Paper is accessible at <<http://snip.ly/rqxthi>>

## 5. Low Emphasis on 'Design in India':

India aims to enter the global manufacturing value chain for ICT equipment, which is necessary for meeting India's social security needs such as jobs, along with enhancing consumer welfare. However, in order to contribute to the larger pie of this global value chain, focus needs to emphasize upon 'designing in India' because of the total value, 90% contribution comes from non-manufacturing activities and only 10% contribution comes from manufacturing activity. In other words, it is imperative for India to invest in 'innovation', if it wants to reap maximum benefits from emerging technologies such as 5G-ecosystem, artificial intelligence, machine learning, cloud computing, internet of things, etc.

Innovation has been the change driver around the world - intervening to provide accessible and affordable solutions to meet ever-shifting consumer needs. Examples from around the world clearly depict the role played by innovative solutions in increasing national economic growth and improving standards of living.

China, for example, has recorded significant growth in gross domestic product (GDP) over the past few decades. South Korea has also vastly improved its economic status since the 1980s, by promoting the inward transfer of foreign technology and by developing its domestic capacity to digest and improve through reverse engineering and foreign licensing—followed by significant investments in R&D. Thus, what is that we need to do for India to become an innovation hub? Why India lags behind in innovation and what we should do in future to rectify this?

For instance, in the "innovation-commercialisation-profit-investment in R&D-innovation" continuum, "investment in R&D" is being regarded as the major road block and the root problem in India. Firms do not tend to invest in R&D. Therefore, policy focus should be to incentivise "investment in R&D" and not mere incentivising manufacture and enhancing custom duty barriers.

## CONCLUSION

### 'Whole of Government' Systems' Approach<sup>13</sup>

The ICT Electronics industry, just like any industrial system, is a complex system that requires many parts to function well and in harmony: flows of investments for growth, development of skills, regulation of trade, etc. Therefore, it requires policies for many functions: investment policies, trade policies, labor policies, taxation policies, etc. Development of these policies requires experts in the subjects. It is customary to assign responsibility for the development of each of these policies to a ministry or department. However, the interactions amongst the policies must be understood and managed to ensure that the entire system delivers its desired outcomes.

### Cost-Benefit Analysis for Policy Coherence<sup>14</sup>

Regulatory instruments, governing the ICT electronics sector in India, have widespread impacts, and affect multiple stakeholder groups in different ways. A sub-optimal regulation has the potential to increase the cost of administration and compliance, have unintended outcomes and limits the likelihood of achievement of its objectives. The above-mentioned implementation issues are projecting significant limitations of existing regulatory and policy missions. Therefore, it is of paramount importance to understand its impacts, proposed or in operation, to achieve favourable outcomes in the form of policy coherence.

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<sup>13</sup> A New Industrial Policy for India: Back to the Drawing Board' Co-Authored by CUTS International & Arun Maira, is accessible at [<http://snip.ly/hizg7f>](http://snip.ly/hizg7f)

<sup>14</sup> CUTS CCIER work on Regulatory Impact Assessment is accessible at [<http://snip.ly/8co8wr>](http://snip.ly/8co8wr)