GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 725
TO BE ANSWERED ON: 05.12.2025

BUILDING DOMESTIC SEMICONDUCTOR RESEARCH AND MANUFACTURING CAPACITY

725. SHRI RAJINDER GUPTA:

Will the Minister of ELECTRONICS AND INFORMATION TECHNOLOGY be pleased to state:

(a) whether Government is taking focused steps to build domestic capability in semiconductor research, design, and chip manufacturing;
(b) if so, the details thereof alongside the strategies for attracting international partnerships and promoting indigenous innovation;
(c) the progress made in this regard so far;
(d) the key infrastructure gaps and workforce development issues identified;
(e) the details of steps taken to forge collaboration with academia, global technology leaders, and Startups; and
(f) the proposed roadmap to strengthen India's resilience in critical electronics supply chains for the future?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a) to (f): India has emerged as a major electronics manufacturing hub with a six-fold increase in production, eight-fold increase in exports of electronics goods, 28 times increase in production of mobile phones and 127 times increase in export of mobile phones over the past decade. As per industry estimates, more than 25 lakh people are employed in the electronics sector.

To cater to the growing demand of electronics manufacturing, it is imperative to develop the semiconductor ecosystem and electronic components industry in the country.

In line with this, the Government is taking focused steps to build domestic capability in semiconductor research, design, and chip manufacturing by way of implementing a series of coordinated policies and schemes as following:

1. **Semicon India Programme'** has been announced with a total outlay of ₹76,000 Crore for the development of semiconductor and display manufacturing ecosystem in the country. This Programme provides fiscal support as following:

i) **For setting up of Silicon Complementary Metal-Oxide-Semiconductor (CMOS) based Semiconductor Fabs in India** - 50% of the project cost on a *pari-passu* basis.
ii) **For setting up of Display Fabs in India** - 50% of Project Cost on a *pari-passu* basis.
iii) **For setting up of Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including Micro-Electro-Mechanical Systems) Fab/ Discrete Semiconductor Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / Outsourced Semiconductor Assembly and Test (OSAT) facilities in India** - 50% of the Capital Expenditure on a *pari-passu* basis.
iv) **For semiconductor design**, financial support is extended under the Design Linked Incentive (DLI) Scheme, which provides a "Product Design Linked Incentive" of up to 50% of eligible costs and a "Deployment Linked Incentive" of 6% to 4% of net sales turnover over a period of five years. In addition, the scheme provides chip design infrastructure support to eligible applicants, including access to EDA tools, IP cores, and fabrication support.

Till date, the Government has approved ten (10) semiconductor manufacturing projects across 6 States, with a cumulative investment of around ₹1,60,000 Crore. Also, under the DLI Scheme, fiscal support has been approved for 24 proposals with a cumulative investment of around ₹900 Crore to design chips and System on Chip (SoCs) for applications across various sectors which include satellite communication, drone detection, surveillance camera, power management for Internet of Things (IoT) devices, LED driver, IoT and medical applications, broadband application, smart meter, gas sensors, and general-purpose microprocessor Intellectual Property (IP) cores for edge AI etc.

2. The **Chips to Start-ups (C2S) Programme** has been initiated for capacity-building across the country to address the issue of workforce talent gap and design infrastructure in the semiconductor design area. C2S Programme aims to generate 85,000 number of industry-ready manpower at B.Tech, M.Tech, and PhD levels specialized in semiconductor chip design area. So far, more than 67,000 students have been trained under C2S Programme.

An access of advance chip design tools has been enabled to about 300 institutions across the country. Chip designs from participating institutions are invited on a quarterly basis for fabrication at SCL Mohali. A total of 122 designs were submitted by 46 institutions across India. Out of these, SCL has successfully fabricated 56 student-designed chips and delivered them to the respective institutions.

Further, Ministry of Electronics and Information Technology (MeitY) supports R&D projects at academic and research institutions across the country in the area of chip design and manufacturing. These efforts have resulted, among other outcomes, in the successful design, development and fabrication of multi-core microprocessors based on open-source Instruction Set Architecture (ISA).

3. **International partnerships and collaboration with academia and global technology leaders:** The Government of India has been regularly engaging with other countries, global industry leaders and academia to establish semiconductor supply-chain and innovation partnerships, including but not limited to the following – USA, Japan, European Union, Singapore,

Netherlands, IBM Private Limited, Purdue University and Lam Research. The broad details of these collaborations are at **Annexure**.

4. **Electronics Component Manufacturing Scheme (ECMS)** has been announced by MeitY on 8th April 2025 with an outlay of ₹22,919 Crores. The scheme promotes manufacturing of sub-assemblies (& Display), Passive components, electro-mechanical components, PCB, Li-ion cells (for digital applications) & Enclosure (for Mobile, IT Hardware products and related devices). The scheme also supports the manufacturing of aforementioned components & sub-assemblies and capital equipment for electronics manufacturing. The scheme offers differentiated incentives viz. (a) turnover-linked incentive (b) capex incentive (c) hybrid incentive [i.e. combination of both (a) and (b)], depending on the disability faced by the industry. Till date, total 24 applications across 9 states with a total investment of ~₹12,700 Crore have been approved under the scheme.
With the support of other government policies such as the Production Linked Incentive (PLI) scheme, the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS), and Phased Manufacturing Programme (PMP), Modified Electronics Manufacturing Clusters (EMC 2.0), electronics manufacturing in India has expanded significantly in the last 10 years.

The companies approved under these Schemes including Semicon India Programme tie up with various global and local partners to develop long term supply chain ecosystem in the country.
All these initiatives are a step towards strengthening India's resilience in electronics supply chain.

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Annexure

Broad details of the international partnerships and collaboration by the Government of India with academia and global technology leaders

i. **MoU with USA** to establish semiconductor supply chain and innovation partnership to advance resilient semiconductor supply chains and leverage complementary strengths.
ii. **Memorandum of Cooperation (MoC) with Japan** to strengthen cooperation between Japan and India towards the enhancement of semiconductor supply chain like semiconductor manufacturing, R&D, capacity building, workforce training.
iii. **MoU with European Union** to deepen cooperation on semiconductor ecosystem, supply chains and innovation and leverage complementary strengths by exchanging best practices with regard to respective semiconductor strategies and programs.
iv. **MoU with Singapore** to enhance cooperation in semiconductor supply chains, R&D, business partnerships and workforce development, while promoting joint initiatives to boost resilience and growth in the semiconductor industry.
v. **MoU with Netherlands** to strengthen and enhance cooperation in the field of Semiconductors and related emerging technologies such as photonics, quantum, cyber-security technologies and AI.
vi. **MoU with IBM India Private Limited** for areas including R&D, Skill Development, Investment/Funding support, Business development etc.
vii. **MoU with Purdue University** for skilled workforce development and joint R&D in the field of semiconductors and microelectronics.
viii. **MoU by ISM with IISc Bangalore and Lam Research** to train the faculty of universities/ institutes aimed at imparting necessary skills to ~60,000 Indian engineers in the next 10 years through Lam Research's Semiverse solution which is a virtual fabrication technology lab.

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