

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 5578
TO BE ANSWERED ON: 06.04.2022

SEMICONDUCTOR CHIP DESIGNING AND MANUFACTURING

5578. DR. G. RANJITH REDDY:

Will the Minister of Electronics and Information Technology be pleased to state:

- (a) whether the Government is aware that India is the leader only in chip designing and not in the manufacture of chips/semiconductor and if so, the details thereof;
- (b) whether semiconductor fabrication capacity and technology is available only to limited companies in the world;
- (c) if so, the details of the companies that have such cutting edge technology along with the countries of their origin;
- (d) the details of the efforts being made by the Government through Production Linked Incentive (PLI), etc. to get the aforesaid technology;
- (e) the status of semiconductor manufacturing since mooted the proposal and bringing it under PLI; and
- (f) the time by which the Government is considering to get first semiconductor chip manufactured in the country?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI RAJEEV CHANDRASEKHAR)

(a): Yes, Sir. India is one of the leading centers for global semiconductor design companies. Most global semiconductor design companies have set up design R&D innovation centers in India owing to exceptional semiconductor design talent pool making up to 20% of world's semiconductor design engineers and high number of design Patents/ IPR registered in India.

(b) and (c): Semiconductor supply chains are marked by geographical concentration with 75% of global capacity in East Asia. There are only few companies that hold the cutting edge fabrication technologies in the world and the capability to establish and operate semiconductor fabs based on advanced technologies. IDMs such as Samsung (South Korea), Intel (USA), SK Hynix (South Korea) and Foundries such as TSMC (Taiwan), Global Foundries (USA), UMC (Taiwan) hold majority of the market share for semiconductor fabrication. Such a concentration represents various risks to the global electronics and semiconductor value chains. Building Indian capabilities in semiconductor manufacturing is an imperative for industrial growth, digital sovereignty, technological leadership, national security, self-reliance and for India's goals to be a significant player in the global electronics and semiconductor value chains.

(d): Government is very focused on its important objective of building the overall semiconductor ecosystem and ensure that, it in-turn catalyses India's rapidly expanding electronics manufacturing and innovation ecosystem. The vision of Atmanirbhar Bharat in electronics & semiconductors was given further momentum by the Union Cabinet, chaired by the Hon'ble Prime Minister, approving the Semicon India programme with a total outlay of INR 76,000 crore for the development of semiconductor and display manufacturing

ecosystem in our country. The programme aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem. This will serve to pave the way for India's growing presence in the global electronics value chains.

Following four schemes have been introduced under the aforesaid programme:

- i. **Scheme for setting up of Semiconductor Fabs in India** provides fiscal support to eligible applicants for setting up of Semiconductor Fabs which is aimed at attracting large investments for setting up semiconductor wafer fabrication facilities in the country. Following fiscal support has been approved under the scheme:
 - 28nm or Lower - Up to 50% of the Project Cost
 - Above 28 nm to 45nm - Up to 40% of the Project Cost
 - Above 45 nm to 65nm - Up to 30% of the Project Cost
- ii. **Scheme for setting up of Display Fabs in India** provides fiscal support to eligible applicants for setting up of Display Fabs which is aimed at attracting large investments for setting up TFT LCD / AMOLED based display fabrication facilities in the country. The Scheme provides fiscal support of up to 50% of Project Cost subject to a ceiling of INR 12,000 crore per Fab.
- iii. **Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities in India:** The Scheme provides a fiscal support of 30% of the Capital Expenditure to the eligible applicants for setting up of Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including MEMS) Fab and Semiconductor ATMP / OSAT facilities in India.
- iv. **Design Linked Incentive (DLI) Scheme** offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design. The scheme provides "Product Design Linked Incentive" of up to 50% of the eligible expenditure subject to a ceiling of ₹15 Crore per application and "Deployment Linked Incentive" of 6% to 4% of net sales turnover over 5 years subject to a ceiling of ₹30 Crore per application.

In addition to the above schemes, Government has also approved modernization of Semi-Conductor Laboratory (SCL), Mohali as a brownfield Fab.

In order to drive the long-term strategies for developing a sustainable semiconductors and display ecosystem, a specialized and independent "India Semiconductor Mission (ISM)" has been set up. The India Semiconductor Mission will be led by global experts in semiconductor and display industry. It will act as the nodal agency for efficient and smooth implementation of the schemes for setting up of Semiconductor and Display Fabs.

(e) and (f): Under Semicon India Programme, Government has received 3 applications for setting up of Semiconductor Fab units in the country. The applications received under the Semicon India Programme for manufacturing of chips are under examination. Further, Semiconductors manufacturing is very complex and technology intensive sector with huge capital investment, high risk, long gestation and payback periods, and rapid changes in Technology which require sustained investments. Presently, India is at formative stage of developing its semiconductor supply chain ecosystem. The manufacturing of semiconductor chips in semiconductor fab units will depend on technology, capacity and availability of semiconductor supply chain ecosystem.