GOVERNMENT OF INDIA

MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY

RAJYA SABHA

STARRED QUESTION NO. *66

TO BE ANSWERED ON: 03.12.2021

MANUFACTURING OF SEMICONDUCTORS IN THE COUNTRY

***66. SHRI K.J. ALPHONS:**

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

(a) the steps that have been taken by Government to design semiconductors in the country;

(b) the budget allocation in the current year's budget for the above;

(c) the steps that are envisaged for setting up Semiconductor Fabrication (FAB) facilities for manufacturing adequate amount of semiconductors in the country; and

(d) whether Government is aware that setting up of such facilities is critical for AtmaNirbhar Bharat?

ANSWER

MINISTER FOR ELECTRONICS AND INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAV)

(a) to (d): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO *66 FOR 03.12.2021 REGARDING MANUFACTURING OF SEMICONDUCTORS IN THE COUNTRY

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(a): Government is fully cognizant of the importance of semiconductor design and manufacturing for India becoming an electronics manufacturing hub of the world in the post-covid scenario. Semiconductor design is a highly knowledge intensive field and needs exceptionally skilled manpower and tools. India has availability of huge talent pool for semiconductor design and high number of design Patents / IPR are produced in the country by design engineers. A vibrant design ecosystem in the country will lay the foundation for the development of indigenous chipsets, systems, and electronic products. This is an important step towards meeting India's future requirements in the strategic, industrial, and commercial sectors where the electronic content is rising steadily.

Government is focused on broadening and deepening the Electronics System Design and Manufacturing (ESDM) sector with Semiconductor design as one of the focus areas.

The major on-going initiatives in the area of design of Semiconductors are:

i. Special Manpower Development Programme for Chips to System Design (SMDP-C2SD) was initiated by Ministry of Electronics and Information Technology (MeitY) in year 2014 at 60 academic institutes across the country with an outlay of Rs. 99.72 crore for duration of 7 years. 150

Application Specific Integrated Circuits (ASICs) have been designed under this programme which are fabricated at Semi-Conductor Laboratory (SCL) and other foundries abroad.

ii. MeitY also supports projects at various R&D organizations for incubation as well as design & development of ASICs / System-on-Chips (SoCs) for societal and strategic applications. Following are the major activities taken up for chip design:

a. Various state-of the-art ASICs / SoCs such as indigenous Microprocessors, NavIC Receiver, Bluetooth Transceiver, etc., have been designed and developed for societal and strategic applications. Under the Microprocessor Development Programme, a family of 32-bit / 64-bit SHAKTI, VEGA and AJIT processors have been designed and developed by IIT Madras, C-DAC and IIT Bombay, respectively, using Open Source ISA (Instruction Set Architecture).

b. Fabless Chip Design Incubator (FabCI) has also been setup by MeitY at IIT Hyderabad in year 2016 with an outlay of Rs. 23.73 crore for duration of 5 years for providing design infrastructure, incubation support and technical mentorship to semiconductor design start-ups.

(b): The total budget allocation for chip design related activities / programmes in the current financial year is Rs. 100 crore.

(c): Government is cognizant of the importance of semiconductor manufacturing for AtmaNirbhar Bharat and it has been making serious efforts to set up semiconductor wafer fabrication facilities in the country. Currently, semiconductor wafer fabrication facilities for strategic requirements are available at Semi-Conductor Laboratory (SCL), Mohali; Gallium Arsenide Enabling Technology

Centre (GAETEC), Hyderabad and Society for Integrated Circuit Technology and Applied Research (SITAR), Bengaluru. Semiconductor FABs are highly capital intensive and must deal with constantly changing technology. Further, the semiconductor fabrication capability for leading / cutting edge technology nodes is available with only few companies globally.

The Government has approved the following projects for development of semiconductors:

I. The project for "Establishment of Gallium Nitride (GaN) Ecosystem Enabling Centre and Incubator for High Power and High Frequency Electronics" is being implemented by Society for Innovation and Development (SID) under the auspices of Indian Institute of Science (IISc) at Centre for Nano Science and Engineering (CeNSE), Bengaluru at the total project cost of Rs. 298.66 crore.

II. An application for setting up of Assembly, Testing, Marking and Packaging (ATMP) of NAND Flash memory has been approved under the Production Linked Incentive (PLI) Scheme for large scale electronics manufacturing.

III. An application for discrete semiconductor devices, including transistors, diodes, thyristors, etc. and System in Package (SIP) has been approved under the Production Linked Incentive (PLI) Scheme for large scale electronics manufacturing.

IV. Following incentives are available to companies for setting up of Semiconductor Fabrication (FAB) facilities in India:

(i) A financial incentive of 25% on capital expenditure for setting up of semiconductor fabrication units under the Scheme for Promotion of

manufacturing of Electronic Components and Semiconductors (SPECS).

(ii) Capital goods for setting up of Semiconductor FAB are exempted from Basic Customs Duty (BCD).

(iii) Investment linked deduction under Section 35AD of the Income-tax Act.

(iv) Deduction of expenditure on research and development as admissible under Section 35(2AB) of the Income-tax Act.

(v) New domestic companies making fresh investment in manufacturing and starting operations before March 31, 2023 have an option to pay corporate income tax at reduced rate of 15%.

(d): Yes, Sir. Government is very aware that building a robust and innovative semiconductor ecosystem in the country is critical for becoming a global electronics manufacturing hub and for AtmaNirbhar Bharat.

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