GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
STARRED QUESTION NO. *131
TO BE ANSWERED ON: 02.08.2024

SEMICONDUCTOR MANUFACTURING

***131. SHRI VIVEK K. TANKHA:**

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

(a) the estimated breakup of weightage (in value terms) of the key components (such as design, testing, assembly, etching, etc) of the global value chain for semiconductor manufacturing;

(b) the current semiconductor design workforce in the country, key institutions for skill development in semiconductor design, the projected number of semiconductor design engineers required in the years to come; and

(c) the present capacity of assembly and testing of semiconductor chips in the country and the steps being taken by Government to augment the capacity?

ANSWER

MINISTER OF ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI ASHWINI VAISHNAW)

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

STATEMENT REFERRED TO IN THE REPLY TO RAJYA SABHA STARRED QUESTION NO *131 FOR 02.08.2024, REGARDING SEMICONDUCTOR MANUFACTURING

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(a) to (c): As per industry estimates, value-addition by key components of semiconductor value-chain is as under:

Key component	Value addition(in Percentage)
Design	50
Wafer fabrication; and Assembly, Testing, Marking and Packaging	30
Electronic Design Automation ('EDA')& Intellectual Property (IP) cores	04
Equipment andtools	11
Materials	05

As per the SemiconIndia Future Skills Talent Committee report, in 2022, around 1.25 Lakh semiconductor design engineers were working in India. In order to meet the growing requirement of semiconductor design workforce in India, Chips to Start-up (C2S) Programmewas initiated in year 2022. Under the Chips to Startup (C2S) programme being implemented at 113 academic institutions/ R&D organizations/ Start-ups/ MSMEs, 85,000 number of high-quality and qualified engineers are being trained in several areas. These include Very large-scale integration (VLSI) and Embedded System Design as well as development of 175 ASICs (Application Specific Integrated Circuits), working prototypes of 20 System on Chips (SoC), 30 FPGA based designs and 30 IP Cores over a period of 5 years.Besides, SMART Lab has been setup at NIELIT Calicut under C2S Programme with state-of-the-art FPGA (Field Programmable Gate Arrays) hardware resources to impart training to about 1,00,000 engineers across the country in VLSI and Embedded System design areas. Further, All India Council for Technical Education (AICTE) has launched the following model curriculum for UG, Diploma, Minor Degree in Semiconductor domain on 18.02.2023:

i. B. Tech in Electronics Engineering (VLSI Design and Technology)
ii. Diploma in IC manufacturing
iii. Minor Degree in Electronics Engineering (VLSI Design and Technology)

4 semiconductor units with cumulative investment of Rs 1,48,116 Cr have been approved under the Semicon India Programme. The proposed capacity of these units is around 6.8 crore units per day. Besides, few companies are already engaged in advanced semiconductor packaging in India. The current installed capacity of these facilities is estimated to be around 10.2 lakh units per day.

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