

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 2290
TO BE ANSWERED ON: 02.08.2023

DEEP TECH ENGINEERS

**2290. SHRI MANNE SRINIVAS REDDY:
SHRI KANUMURU RAGHU RAMAKRISHNA RAJU:
SHRI KOMATI REDDY VENKAT REDDY:**

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

- (a) whether there will be a requirement of an additional pool of at least 20 lakh 'deep tech' engineers by 2030 to meet the growth aspirations for the semiconductor and electronic design manufacturing sectors in the Country and if so, the details thereof;
- (b) whether it is a fact that lack of high quality talent with deep tech expertise is a challenge for the Government to meet the growth targets for the electronics and semiconductor sector;
- (c) if so, the details thereof and if not, the reasons therefor;
- (d) whether the 20 lakh 'deep tech' engineers would be needed from diverse disciplines and the requirement for electronic engineers alone would be over two lakh by 2030; and
- (e) if so, the details thereof and the present status thereon?

ANSWER

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

(a) to (e): India is emerging as a trusted player in the rapidly expanding global electronics and semiconductor value and supply chains. Through various PLI Schemes and other policies, the Government has been catalysing the electronics manufacturing and design segments of the digital economy. In addition, Government has also approved the Semicon India Programme with the total outlay of INR 76,000 crore to catalyse the semiconductor and display ecosystem in the country. Both these are and will be the important measure for India's growth in the global electronics and semiconductor value chains.

The Government is approaching both these segments as an ecosystem approach and has identified global standard talent development as an important requirement of this ecosystem and have initiated a number of skilling and academic initiatives to ensure the development of the required capacities and capabilities amongst the young Indians aiming for careers and opportunities in electronics and semiconductor sector. To foster global standard talent development, following initiatives have been taken:

- i. To develop a roadmap for "India as a Semiconductor Talent Nation", "Semicon India Future Skills Talent Committee" was constituted in August 2022 with the representatives from Semiconductor Industry, Academia and Government. As per the Report of this committee, an estimated, around 12 lakh manpower will be required by 2032 in ESDM sector, and additional 2,75,000 manpower will be required in Semiconductor chip design sector; 25,000 in Semiconductor fabrication and 29,000 in ATMP facilities, respectively in the country in next 10 years covering Diplomas, Under Graduates, Masters and PhDs. As per the report, additional talent requirement will include diverse disciplines such as VLSI Design and Technology, Material Science, Applied Physics, Chemical Science, Process and Industrial engineering.
- ii. All India Council for Technical Education (AICTE) has launched the model curriculum for UG, Diploma and Minor Degree in Semiconductor domain as a step towards creation of Talent pool in Semiconductor domain. The courses at Diploma and UG

level will reduce the time gap to make students industry ready. Semiconductor design and technology specific curriculums in Diploma and Engineering, have been designed according to Semiconductor industry needs.

- iii. Semicon India Future Skills / Chip to Startup (C2S) Programme, has been initiated to create 85,000 number of highly qualified global talent in the field of semiconductor chip design over a period of 5 years.
- iv. India Semiconductor Mission (ISM) has signed MoU with Purdue University, USA to enable collaboration for development of skilled workforce through curation of specific courses/ academic programs and specialized R&D programs.
- v. MoU has been signed between Indian Institute of Science, Bengaluru and Lam Research, USA, a Semiconductor Equipment Manufacturer, to train workforce through its Semiverse Solution virtual platform aiming to expedite India's semiconductor education and workforce development goals in next 10 years.
