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## TODAY'S IMPORTANT CURRENT AFFAIRS

### UPSC MAINS

Date: 15.05.2025

### INDIA SEMICONDUCTOR MISSION

**Source:** The post is based on the article published in “The Hindu” on 15.05.2025.

**In News:** India Semiconductor Mission

**Syllabus:** Mains – GS III (SCIENCE AND TECHNOLOGY)

#### India Semiconductor Mission (ISM)



The India Semiconductor Mission (ISM) is a flagship government initiative launched in 2021 under the Ministry of Electronics and Information Technology (MeitY) with the goal of **developing a comprehensive semiconductor and display ecosystem in India**. The mission is backed by a substantial financial outlay of ₹76,000 crore (approximately \$10 billion), positioning India to become a significant player in the global semiconductor industry.

#### Key Objectives

- ❖ **Develop a Full-Stack Ecosystem:** ISM aims to establish capabilities across the semiconductor value chain, including design, manufacturing, packaging, and testing.

- ❖ **Reduce Import Dependence:** Currently, India imports 65–70% of its electronic components, mainly from China. ISM seeks to boost domestic production and reduce this reliance.
- ❖ **Promote Technological Sovereignty:** The mission is driven by the strategic importance of semiconductors for national security, economic growth, and technological self-reliance.
- ❖ **Support R&D and Innovation:** ISM provides support for research and development in semiconductor technology, design, and materials, including grants and collaborations with academia and industry.
- ❖ **Foster Global Partnerships:** The mission has established Memoranda of Understanding (MoUs) with countries such as the USA, EU, Japan, and Singapore to facilitate technology transfer, investment, and integration into global supply chains.

## Implementation and Key Components

ISM operates as an independent business division within the Digital India Corporation and has full administrative and financial powers. It serves as the nodal agency for the efficient implementation of the Semicon India Programme.

## Major Schemes under ISM:

- ❖ **Semiconductor Fabs:** Financial support for setting up semiconductor fabrication plants in India.
- ❖ **Display Fabs:** Incentives for establishing display manufacturing units.
- ❖ **Compound Semiconductors and ATMP/OSAT:** Support for compound semiconductor fabs, silicon photonics, sensors, and assembly, testing, marking, and packaging (ATMP/OSAT) facilities.
- ❖ **Design Linked Incentive (DLI) Scheme:** Encouragement for semiconductor design and indigenous IP generation.

## Recent Developments

- ❖ **New Manufacturing Facilities:** In May 2025, the Union Cabinet approved a new semiconductor manufacturing facility—a joint venture between HCL and Foxconn—near Jewar airport in Uttar Pradesh. This unit will focus on display driver chips, with an investment of ₹3,700 crore and a capacity to process 20,000 wafers per month.
- ❖ **Multiple Approved Projects:** As of 2025, five semiconductor manufacturing projects have been approved, including one fabrication facility and four ATMP/OSAT units, with a cumulative investment of around ₹1,52,000 crore. These are expected to be completed within 4–6 years.

- ❖ **Focus on Talent and R&D:** The government is investing in talent development and R&D, supporting projects in nanotechnology, chip design, and semiconductor materials at academic and research institutions.

### **Strategic Importance and Market Impact**

India's semiconductor market was valued at \$45 billion in 2023 and is projected to exceed \$100 billion by 2030, driven by rising demand for electronics such as smartphones, laptops, electric vehicles, and defense systems. ISM is crucial for:

- ❖ Creating a self-reliant electronics manufacturing sector.
- ❖ Integrating India into global semiconductor supply chains.
- ❖ Enhancing national security and economic resilience.

The India Semiconductor Mission represents a transformative step in establishing India as a global hub for semiconductor manufacturing, design, and innovation. With robust government backing, international collaborations, and a focus on both infrastructure and talent, ISM is set to play a pivotal role in shaping the future of India's electronics and technology landscape.