



India's First 3nm Chip Design Centres

[Source: TH](#)

The **Union Minister for Electronics and Information Technology** launched India's first **3-nanometre (3nm) chip** design centres in **Noida and Bengaluru**, positioning the country among a select few nations at the forefront of **chip technology**.

- In another development, the Union Cabinet has approved the establishment of a **display driver chip** manufacturing unit in **Jewar, Uttar Pradesh (UP)**.
 - This is the **first semiconductor fabrication unit in UP** and the **6th approved** under **Phase I of the Indian Semiconductor Mission (ISM)**, with production set to begin by **2027**.
- The launch of a new **semiconductor learning kit** designed to strengthen practical hardware skills among engineering students was also announced.
 - Over 270 academic institutions, which have already received access to advanced **Electronic Design Automation (EDA)** software tools through the [India Semiconductor Mission](#), will also receive these hands-on kits.
- **Other Initiatives:**
 - **Chips to Startup (C2S) Programme**
 - [Production Linked Incentive scheme \(PLI\)](#)
 - [Digital RISC-V \(DIR-V\) program](#)
 - [Modified Special Incentive Package Scheme \(M-SIPS\) for Semiconductors](#).
- **3nm Chip Technology:** 3nm chip technology incorporates more [transistors](#) than 5nm and 7nm chips, offering **higher performance, improved energy efficiency, and lower heat generation**, making them crucial for **advanced computing, AI, and mobile devices**.

SEMICONDUCTORS

Semiconductors are materials having conductivity between conductors and insulators

EXAMPLES

- **Pure Elements:** Silicon and Germanium
- **Compounds:** Gallium Arsenide and Cadmium selenide

SIGNIFICANCE

- Essential to almost all sectors of the economy – **aerospace, automobiles, communications, clean energy, information technology and medical devices** etc.

SEMICONDUCTORS AND INDIA

- **India Imports from:** China, Taiwan, USA and Japan
- **Indian Semiconductor Market:** Expected to reach **USD 55 bn** by **2026**

SCHEMES

- ↳ **Production-Linked Incentive (PLI) scheme**
- ↳ **Design Linked Incentive (DLI) Scheme**
- ↳ Scheme for Promotion of Manufacturing of Electronic Components and Semi-conductors (SPECs)

OBJECTIVES

- ↳ Encourage semiconductor and display manufacturing in the country.
- ↳ Nurture >20 domestic companies in semiconductor design
Achieve a turnover of > Rs.1500 crore in next 5 years
- ↳ Manufacture electronics components and semiconductors

INDIA'S SEMICONDUCTOR MISSION (ISM)

VISION

- Build a **vibrant semiconductor** and **display design** and **innovation ecosystem**

LAUNCHED

- 2021

NODAL MINISTRY

- Ministry of Electronics and Information Technology (MeitY)

TOTAL FINANCIAL OUTLAY

- Rs 76,000 crore

COMPONENTS

- Scheme for setting up of Semiconductor Fabs
- Scheme for setting up of Display Fabs
- Scheme for setting up of Compound Semiconductors/Silicon Photonics/Sensors (including MEMS) Fabs/ Discrete Semiconductors Fab and Semiconductor ATMP/OSAT
- DLI Scheme



Read More: [Semiconductor Chip Manufacturing Technology.](https://www.drishtiias.com/printpdf/india-s-first-3nm-chip-design-centres)