

India Semiconductor Mission 2.0

A Major Push in Budget 2026 towards Semiconductor Self-Reliance

Posted On: 07 FEB 2026 1:13PM by PIB Delhi

Key Takeaways

- Union Budget 2026–27 allocates ₹1,000 crore for **India Semiconductor Mission (ISM) 2.0**.
- As of December 2025, **10 ISM projects worth ₹1.60 lakh crore** approved across six states.
- India's semiconductor market projected to reach **\$100–110 billion by 2030**.

Introduction

The **Union Budget 2026–27** marked a decisive moment for India's technology ambitions with the announcement of **India Semiconductor Mission 2.0**. The new phase signals a clear policy push to deepen domestic semiconductor capabilities at a time when chips underpin every critical digital and industrial system. ISM 2.0 will focus on producing semiconductor equipment and materials in India, designing full stack Indian semiconductor intellectual property, and fortifying both domestic and global supply chains. A **provision of Rs. 1,000 crore** has been made for ISM 2.0 for FY 2026–27, with a strong emphasis on industry led research and training centres to drive technology development and create a future ready skilled workforce.

India Semiconductor Mission 2.0

Announced in Union Budget 2026–27



₹1,000 Crore

Allocated for 2026–27 to strengthen research, training, and domestic chip manufacturing capabilities

Source: Ministry of Electronics and IT

Semiconductors are the backbone of modern electronics, powering computers, mobile devices, telecommunications, automobiles, defence systems and artificial intelligence. India has made steady progress in consolidating earlier investments into a full-stack value chain of its semiconductor ecosystem under ISM 1.0, expanding design capabilities and advancing fabrication, assembly and testing infrastructure across the country. This momentum reflects the broader vision of *Aatmanirbhar Bharat* and India's transition from policy formulation to production readiness. Building on these gains, ISM 2.0 seeks to consolidate India's position as a reliable and competitive participant in the global semiconductor network.

Sectoral Outlook: India's Semiconductor Ecosystem



India is steadily emerging as a global semiconductor hub. Large scale investments, expanding manufacturing capacity, and platforms such as SEMICON India 2025 reflect growing global confidence in India's semiconductor journey. The domestic chip market is witnessing rapid growth. As per industry estimates, the size of the Indian semiconductor market was about \$38 Bn in 2023, \$45-\$50 billion in 2024-2025 and is expected to reach **\$100-\$110 Bn by 2030**. This expansion is anchored in the national vision of Make in India and Make for the World, positioning India as both a manufacturing base and a global supplier.

The foundation of this growth was laid with the approval of **India Semiconductor Mission 1.0** by the Union Cabinet in December 2021. The Mission is supported by an incentive framework of **₹76,000 crore**, offering fiscal support of up to 50 per cent for silicon fabs, compound semiconductor facilities, assembly and testing units, and chip design. As of December 2025, **10 projects with a total investment of ₹1.60 lakh crore** have been approved across 6 states. These include silicon fabrication units, silicon carbide fabs, advanced and memory packaging facilities, and specialised assembly and testing infrastructure. Together, they are shaping a resilient domestic semiconductor ecosystem.

By **2029**, India is expected to achieve the capability to design and manufacture chips required for nearly **70–75 per cent of domestic applications**. Advancing on this foundation, the next phase under **Semicon 2.0** will focus on advanced manufacturing, with a clearly defined roadmap to achieve **3-nanometre and 2-nanometre technology nodes**. By **2035**, India aims to be among the **top semiconductor nations globally**.

Approved Semiconductor Manufacturing Projects

1. **Micron Technology Inc.** is establishing semiconductor manufacturing facility in Gujarat with an investment of Rs.22,516 crore. Micron's facility in India will enable assembly and test manufacturing for both DRAM and NAND products and address demand from domestic and international markets. The production capacity is around 14 million units per week.
2. **Tata Electronics Private Limited (TEPL)** is establishing semiconductor manufacturing facility in Gujarat with an investment of Rs. 91,526 crore. The fab facility will be set up in technology partnership with PSMC, Taiwan. The production capacity of the project would be around 50,000 wafer starts per month (WSPM).
3. **Tata Electronics Private Limited (TEPL)** is establishing semiconductor manufacturing facility in Assam with an investment of Rs.27,120 crores. The facility will use indigenous semiconductor packaging technologies with a production capacity of 48 million units per day.
4. **CG Power and Industrial Solutions Limited** is establishing semiconductor manufacturing facility in Gujarat with an investment of Rs. 7,584 crore. The facility will be set up as a joint venture partnership with Renesas Electronics America Inc., USA, and STARS Microelectronic, Thailand.
5. **Kaynes Technology India Limited (KTIL)** is establishing semiconductor manufacturing facility in Gujarat with an investment of Rs. 3,307 crores. The facility will have the capacity to produce more than 6.33 million chips per day.
6. **Vama Sundari Investments (Delhi) Private Limited (VSIPL)** is establishing semiconductor manufacturing facility in Uttar Pradesh with an investment of Rs 3,706 crores. The production capacity would be around 20K wafers per month/36 million chips per month.
7. **3D Glass Solutions Inc. (3DGS)** is establishing semiconductor manufacturing facility in Odisha with an investment of Rs. 1,943 crores. The Proposed installed capacity for glass panel substrate production, assembly and Heterogeneous Integration (3DHI) is around 5800 panels per month, 4.20 million units per month, and 1100 units per months respectively.
8. **SiCSem Private Limited** is establishing semiconductor manufacturing facility in Odisha with an investment of Rs. 2,066 crores. The production capacity is 5,000 wafers/month, and the packaging capacity is 8 million units/month.
9. **Continental Device India Private Limited (CDIL)** is expanding its semiconductor manufacturing facility in Punjab, with an investment of Rs. 117 crores. The facility will manufacture high-power discrete semiconductor devices. The production capacity will be around 158.38 million units/annum
10. **Advanced System in Package Technologies Private Limited (ASIP)** is establishing semiconductor manufacturing facility in Andhra Pradesh, with an investment of Rs. 480 crores. The production capacity of the facility would be around 96 million units/annum.

These facilities are expected to meet the growing chip requirements of key sectors such as consumer appliances, industrial electronics, automobiles, telecommunications, aerospace, and power electronics. Notably, several approved proposals are leveraging indigenous technologies for the assembly, testing, and packaging of semiconductor chips. This shift reflects India's move towards deeper technological capability and reduced dependence on external systems, strengthening its position in the global semiconductor value chain.

Schemes under ISM
• Semiconductor Fabs Scheme: Provides up to 50 per cent fiscal support for setting up semiconductor wafer fabrication units, covering advanced and mature technology nodes. • Display Fabs Scheme: Offers up to 50 per cent financial support to establish AMOLED and LCD display fabrication units in India. • Compound Semiconductors and ATMP/OSAT Scheme: Supports compound semiconductor and chip assembly, testing and packaging units with up to 50 per cent capital assistance. • Design Linked Incentive Scheme: With an outlay of ₹1,000 crore, supports chip design startups and MSMEs through R&D support and incentives of up to ₹15 crore per company.

Anticipated Impact of Semiconductor Programme in 2026–27

India's semiconductor programme has been recalibrated in response to intensifying global competition and the concentration of advanced chip technologies among a limited number of players. Several countries with established semiconductor ecosystems are offering aggressive incentives, making it necessary for India to refine its approach. The modified programme therefore focuses on strengthening financial support for investments across semiconductor manufacturing, display fabrication, and the design ecosystem.

For 2026–27, the Modified Programme for Development of Semiconductor and Display Manufacturing Ecosystem in India has a total financial outlay of **₹8,000 crore**. The programme aims to accelerate capital investment, generate high quality employment, and expand domestic capabilities across fabrication, packaging, and chip design. The projected outcomes for the year are outlined below.

Projected Targets under ISM for 2026–27:

Scheme	Key Indicator	Projected Target
Modified Scheme for Semiconductor Fabs (Fabs to be Supported – 1)	Investment during the year	₹4,000 crore
	Employment generated	1,500 persons

Modified Scheme for Compound Semiconductors, Silicon Photonics, Sensors, Discrete Fabs and Assembly, Testing, Marking, and Packaging (ATMP)/ Outsourced Semiconductor Assembly and Test (OSAT) (Units to be Supported – 9)	Investment by units during the year	₹11,000 crore
	Employment generated by supported units	3,000 persons
Design Linked Incentive Scheme (Design companies to be supported – 30)	Semiconductor IP cores to be developed	10
	Semiconductor design manpower employed	200 persons

Together, these outcomes reflect a strong push towards scaling domestic manufacturing, deepening design capabilities, and creating a skilled workforce to support India's long term semiconductor ambitions.

Why the India Semiconductor Mission Matters

Semiconductors have become critical to the functioning of modern economies. Though rarely visible in everyday life, microprocessors quietly power systems that keep societies running. **As highlighted in the Economic Survey 2025–26**, they form the backbone of energy networks, financial markets and telecommunications. They enable manufacturing units, hospitals, transport systems and satellites. A reliable supply of semiconductors is therefore essential for economic stability and continuity across sectors.

Recent global disruptions have underscored this dependence. The COVID-19 pandemic exposed serious weaknesses in semiconductor supply chains, with shortages affecting more than 169 industries worldwide. Production delays and rising costs followed, slowing economic activity across countries. These shocks revealed the risks of relying on a narrow set of suppliers. Today, the semiconductor industry is dominated by a few countries, including Taiwan, South Korea, Japan, China and the United States. Taiwan alone produces over 60 per cent of the world's semiconductors and nearly 90 per cent of the most advanced chips, leaving global supply chains vulnerable to external shocks and geopolitical tensions.

In response, major economies are recalibrating their strategies. The United States, the European Union, Japan and South Korea have launched national initiatives to strengthen domestic chip manufacturing and diversify supply chains. India is positioning itself within this global shift as a trusted and reliable partner. The India Semiconductor Mission responds directly to this moment. By building domestic capacity across design, manufacturing and innovation, ISM represents a critical step towards self-sufficiency and technological sovereignty, while strengthening India's role in a more resilient global semiconductor ecosystem.

At the core of this strategy lies a strong focus on semiconductor design and talent development, which together form the foundation of technological self-reliance.

Strengthening India's Semiconductor Design Ecosystem

Since its launch in December 2021, the Design Linked Incentive Scheme has played a pivotal role in transitioning from capacity creation to technological depth in India. The scheme focuses on nurturing domestic innovation, supporting early-stage companies, and creating the foundation for a vibrant fabless ecosystem. It has also helped bridge the gap between academic research and industry application, strengthening India's position in the global design landscape.

Key Achievements under the DLI Scheme (as of January 2026):

- The programme currently supports 24 semiconductor design startups across the country.
- Startups under the scheme have attracted nearly ₹430 crore in venture capital funding, reflecting growing investor confidence in India's design ecosystem.
- Advanced **Electronic Design Automation (EDA)**, the national chip design platform, has enabled access to high end design tools, with approximately 2.25 crore tool hours recorded.
- Around 67,000 students and over 1,000 start up engineers are actively using these tools for chip design and development.
- In academia, 122 designs have been taped out, with 56 chips fabricated at 180 nm at the Semiconductor Laboratory in Mohali.
- Startups have completed 16 tape outs, resulting in six chips fabricated at advanced foundry nodes, including technologies as advanced as 12 nm.
- Academic institutions have filed 75 patents, while startups have filed 10 patents, indicating a growing culture of innovation and intellectual property creation.

Looking ahead, the programme is set to scale further, with a target of enabling at least 50 fabless semiconductor companies in the next phase, reinforcing India's ambition to emerge as a global hub for semiconductor design and innovation.

Advancing Indigenous Microprocessors and Core Semiconductor Technologies

Microprocessors form the foundational layer of modern digital infrastructure, powering devices and systems across telecommunications, mobility, healthcare, industry, defence, and space. Recognising their strategic importance, India has made focused investments to build sovereign capabilities in advanced processor design as a core pillar of semiconductor self-reliance.

A key milestone in this journey is the launch of **DHRUV64**, a fully indigenous 64-bit microprocessor developed by **C-DAC** under the **Microprocessor Development Programme (MDP)**. Built on modern architectural principles, DHRUV64 delivers improved efficiency, multitasking capability, and reliability, enabling its deployment across sectors such as 5G infrastructure, automotive electronics, industrial

automation, consumer devices, and the Internet of Things (IoT). Its development provides India with a secure, homegrown processor platform, reducing long-term dependence on imported chips—particularly significant given that India consumes nearly **20 per cent of global microprocessor output**.

DHRUV64 builds on a growing portfolio of indigenous processors, including SHAKTI, AJIT, VIKRAM, and THEJAS, collectively forming the foundation of an Indian processor ecosystem. Developed under the Digital India RISC-V (DIR-V) Programme, these processors leverage the open-source RISC-V architecture, eliminating licence costs and enabling collaborative innovation across academia, startups, and industry. The rollout of DHRUV64, alongside the ongoing development of DHANUSH and DHANUSH+ System on Chips variants, strengthens India's R&D ecosystem, accelerates product prototyping, and expands opportunities for domestic design talent.

Together, these initiatives position microprocessors not merely as components, but as strategic enablers of India's digital sovereignty—supporting innovation, securing critical infrastructure, and anchoring the country's long-term ambitions in the global semiconductor value chain.

Development of Semiconductor Talent Pipeline

A strong semiconductor ecosystem depends as much on people as on infrastructure. India has therefore adopted a comprehensive approach to build a large, skilled and industry ready talent base across design, manufacturing and advanced packaging. The emphasis is on early exposure to chip technologies, practical training, and continuous upskilling aligned with evolving industry requirements.

- **Chips to Start up Programme:** The Chips to Start up programme enables access to the latest electronic design automation tools across 397 universities and startups. Using these tools, chip designers from more than 46 universities have designed and fabricated 56 chips at the Semiconductor Laboratory in Mohali.
- **Academic Programmes under All India Council for Technical Education (AICTE):** Specialised academic programmes have been introduced to integrate semiconductor education into mainstream engineering. These include a B Tech in Electronics Engineering with focus on VLSI design, a diploma in integrated circuit manufacturing, and a minor degree in Electronics Engineering covering VLSI design and technology. Together, these programmes aim to produce graduates equipped with industry relevant skills.
- **SMART Lab at NIELIT Calicut:** The Skilled Manpower Advanced Research and Training Lab at NIELIT Calicut supports large scale training in semiconductor technologies. The initiative targets one lakh engineers across the country, with more than 62,000 engineers already trained, significantly strengthening the national talent pool.
- **Industry Partnership with Lam Research:** A large-scale training programme in nanofabrication and process engineering is being implemented in partnership with Lam Research. The focus is on building specialised skills for (ATMP) and advanced packaging facilities. The programme aims to generate 60,000 trained professionals over the next ten years.
- **FutureSkills PRIME Programme:** FutureSkills PRIME is a joint initiative of MeitY and NASSCOM designed to position India as a global digital talent hub. It focuses on skilling, reskilling and upskilling in emerging technologies, including semiconductors. Courses are developed with industry inputs and delivered through an online portal that enables learners to access training anytime and earn recognised skill certificates aligned with their aspirations.

Together, these initiatives are creating a robust and future ready semiconductor workforce, positioning India to sustain long term growth across the full chip value chain.

Conclusion

India Semiconductor Mission 2.0 marks a decisive shift from ecosystem creation to ecosystem consolidation and global integration. By deepening support for manufacturing, design, and advanced skills, ISM 2.0 positions semiconductors as a strategic national capability—central to economic resilience, digital infrastructure, and technological sovereignty. The enhanced budgetary support in 2026–27 provides the momentum required to accelerate execution, crowd in private investment, and scale domestic capacity across the full semiconductor value chain.

Looking ahead, ISM 2.0 lays the foundation for India to emerge as a trusted hub for semiconductor design, manufacturing, and innovation. With a clear roadmap for advanced nodes, strong design incentives, and a growing talent pipeline, India is poised to progressively reduce external dependencies while contributing to more resilient global supply chains. The Mission thus anchors India's long-term ambition to be among the world's leading semiconductor nations in the coming decade.

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