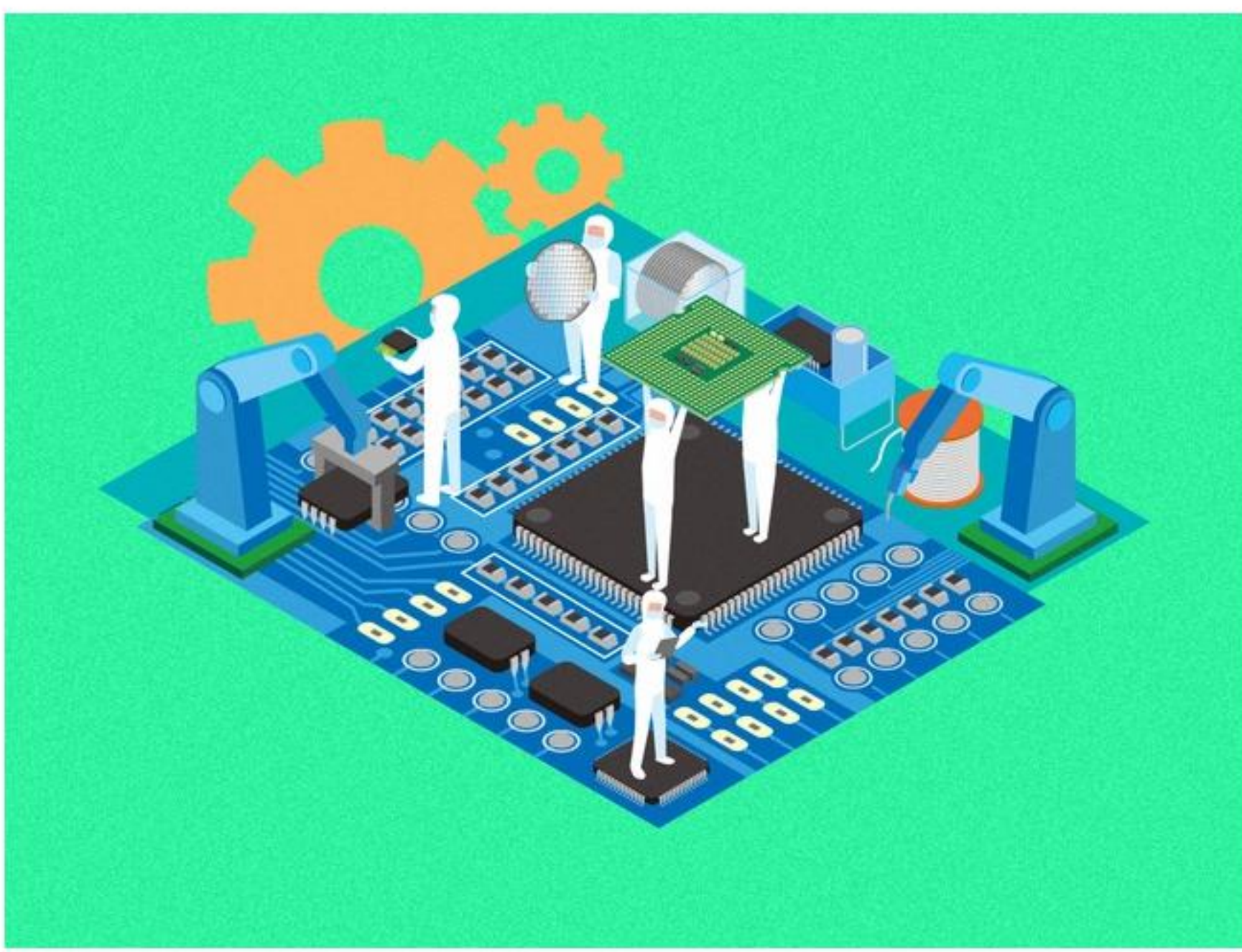


## ETtech Opinion: India on its way to becoming self-reliant in semiconductors

### Synopsis

India has already launched the 'Semiconductor Mission' and approved the 'Semicon India' programme with an investment of Rs 76,000 crore under the production-linked incentive scheme for the growth of semiconductor and display manufacturing.



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In the 75th year of Independence, India is making several resolutions to build a new future. One that stands out is the collective aim of the country and its leadership to become self-reliant and a beacon of global development, whether it be in education, healthcare, defence, agriculture, technology or manufacturing.

In this pursuit, India has added a new goal – to become self-reliant in electronics system design and manufacturing (ESDM), with a special focus on [semiconductor manufacturing](#), an area that has far-reaching geopolitical ramifications. Chips are ubiquitous in electronics – from washing machines and smartphones to cars, drones and military systems.

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The need to have a strong ecosystem at home has become a worldwide phenomenon, with Western and Eastern countries alike investing in, expanding and upgrading [chip manufacturing](#) to thwart shortages experienced over the past two years because of covid-induced disruptions and the geopolitical situation.

India, too, has scaled up its strategies, and in the words of Prime Minister Narendra Modi aims to transform itself from a chip taker to a chip maker by creating capital, infrastructure and a highly skilled workforce.

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The mission requires systems to secure a reliable semiconductor supply chain for production equipment, raw materials, chemicals and precision tools, among other essentials, for sustained manufacturing. Strategic steps are also being taken to encourage, incentivise and facilitate indigenous intellectual property generation and transfer of technology, and forge international collaborations for training, skilling, R&D and commercial linkages.

### The Karnataka impetus

Karnataka has been a leader in innovation, skilling, technology and manufacturing across sectors, and the state is confident it can lead India to become a semiconductor production hub.

It is important to acknowledge that Karnataka was the first state in India to introduce a semiconductor policy, way back in 2008-2009. Today, we are the country's largest chip design hub, with over 85 fabless chip design units. The state is home to 50% of India's electronic product companies and 40% of electronic design firms.

The state government has signed a memorandum of understanding (MoU) with the Israel-based International Semiconductor Consortium (ISMC) for semiconductor fab manufacturing. With an estimated investment of Rs 22,900 crore, this is expected to create 1,500 direct and 8,500 indirect jobs.

Plans are not restricted to chip fabs and the ISMC, which will be the country's first and largest chip-making plant. Karnataka has also set in motion initiatives to attract companies looking to set up assembly, testing, marking and packaging (ATMP) plants.

We are already in talks with several companies and many have come forward with outsourced assembly and test and ATMP plans. The state is aggressively pursuing them to build a complete semiconductor manufacturing ecosystem.

Crucial to our plans to make India 'Atmanirbhar' (self-reliant), is the state's ESDM policy and the ESDM special incentive scheme, which aim to incentivise businesses and in the long run help the country increase its share in manufacturing, thereby decreasing dependence on global supply chains.

The scheme also caters to another key aspect of building sustainable ecosystems, especially for a sector like semiconductor manufacturing. This involves infusing capital and encouraging high-value skilling and research to cater to 70% of India's chip designers based out of Karnataka.

### The way forward

The country has an exceptional semiconductor design talent pool, which comprises up to 20% of the world's semiconductor design engineers. Moreover, almost all of the top 25 global semiconductor design companies have design or R&D centres in India.

The things to do now is to move forward with expediting larger investments, building robust infrastructure, ensuring a quality workforce, and putting greater stress on incentivising areas such as patent registration, marketing, R&D grant, capital subsidy, quality certification, prototyping cost, interest subsidy, land conversion fee, concessional registration, and power tariff.

For our dream of self-reliance in this critical sector to come true, every state must work in tandem, for it is our joint efforts, learnings and knowledge-sharing that will take India ahead and make her self-reliant.

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