

New Silicon Frontier - Uttar Pradesh's Semiconductor Strategy Attracts Global Investment

If Oil was the 'king' in the 19th century, Data was the 'King' in the 20th century, then it is a widely accepted fact that 'Semiconductor Chips' is the new 'King' in the 21st century.

Semiconductors are the mighty brains behind the advance technologies that are transforming the world. The major technological sectors of the world are now dependent on Semiconductors for their technical expertise and intellect. Semiconductor manufacturing is pivotal for modern progress across various industries. It enhances the efficiency of devices like Smartphones, Laptops, Computers, & Medical Equipment. In simple words, the evolution of the modern technology is accelerated by the Semiconductor Industry.

Some other benefits & path breaking features of Semiconductors:

- Semiconductors are extensively used in modern Medical devices, Clean Energy, Modern Transportation, Electronic Equipment, Data servers, Gaming Hardware, etc. in fact Semiconductors are the backbone of Modern technology.
- Semiconductors spurs Innovation in Artificial Intelligence, Internet of Things, Quantum Computing & Machine Learning & other disruptive technologies.
- Semiconductor revolution has made electronic devices smaller, faster, & more reliable.
- Without Semiconductors, the technology that we count on every day would not be possible, they are all around us from cars to computers, from phones to planes, from medical equipment to military equipment.

As the world is acknowledging the power of these chips, the semiconductor industry is now the world's most important component of electronics sector. India, particularly the state of Uttar Pradesh, has made significant investments in this sector and is taking big strides in developing world-class infrastructure and state-of-the-art manufacturing facilities.

Well, there are numerous distinct achievements recorded by Uttar Pradesh during the past seven years. But the most aspiring and ambitious goal of the state government is to establish Uttar Pradesh as the global semiconductor manufacturing hub and it is going to be realized soon, including the development of the associated technologies like Artificial Intelligence, Internet of Things, Machine Learning, Quantum computing, etc.

Uttar Pradesh government is developing world-class infrastructure and ecosystem to facilitate the seamless manufacturing of quality Semiconductor Chips and associated technologies. To further amplify these effort, the UP government revealed a dedicated 'Uttar Pradesh Semiconductor Policy 2024' in February 2024.

Main Highlights of this Path-Breaking Policy:

- Capital Subsidy: 50 % of the Capital subsidy approved by GOI.
- Interest Subsidy: Interest subsidy of 5% per annum (on ROI) to units with investment up to ₹200 Cr. on the loan obtained from the scheduled Banks/ financial Institutions will be reimbursed to maximum of ₹1 Cr. per annum per unit for 7 years (Maximum ₹7 Cr. per unit).
- 75% subsidy on the purchase of first 200 acres of land on the current sector rates on purchasing land from state agencies.

- Dual Power Grid network shall be provided to the FAB units established in the state. The cost of one grid power to be imburshed by the state government.
- Land Rebate on setting up of compound semiconductors/ Silicon Photonics Sensor Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP)/OSAT Facilities on prevailing Land rates:
- 75% Subsidy on the first 200 acres of land on prevailing sector rates on purchasing land from state agencies.
- On additional purchase of land for the unit or for the ancillary units 30% subsidy shall be allowed.
- 30% subsidy on the additional purchase of land or ancillary units.
- 100% exemption from Stamp Duty & Registration Fees on purchase/ lease of the land.
- 100% exemption from the Electricity Duty for a period of 10 years.
- 50% exemption from transmission/wheeling charges on interstate purchase of power.
- Faculty training/ technical workshops/ awareness programs/lectures up to ₹60 Lakhs per year for 5 years to enhance semiconductor skills & talent development activities.
- Internship support for B.Tech & M.Tech graduates up to 500 students per year for 5 years; ₹20,000 support per student.
- To hire World-class talent in the state, one time grant to hire such talent will be provided for a period of 12months to a limit of ₹1 Cr. per unit.
- 25% Cost reimbursement of setting up the standalone R&D Center subject to a maximum of ₹10 Cr. to such R&D centers that have minimum Eligible Capital Investment of ₹20 Cr.
- Up to 50% of the total Center of Excellence project cost will be borne by the UP govt. to establish Centre of Excellence.
- 75% reimbursement of the Patent registration fees subject to maximum ₹10 Lakhs for acquiring domestic patents & subject to maximum ₹20 Lakhs for acquiring international patent.
- Other Non-Fiscal incentives & reimbursements are given under this Policy. Please refer to the original policy document at: <https://invest.up.gov.in/uttar-pradesh-semiconductor-policy-2024/>.
- India has high mettle in semiconductors manufacturing sector and Uttar Pradesh has geared up itself to tap the huge potential of the booming semiconductor industry. The State is now taking giant leaps in Industrial & infrastructural development. The facts to support Uttar Pradesh's growth story are:
 - It has been accorded the "Achiever state" status in the Ease of Doing Business (EoDB) rankings and Logistics Ease Across Different States Survey (LEADS) in 2022 and 2023.
 - It is the state with highest numbers of expressways in India.
 - It is the state with highest number of operational metro rails in maximum cities in India.
 - It is the state with highest number of airports in India.
 - It is the largest manufacturer of mobile phones in India (65% of the total Mobile Manufacturing in India).
- India is aiming high to become the global hub for semiconductor industry, manufacturing & technological development. To realize the dream of Atmanirbhar Bharat and position India as a global hub of ESDM (Electronics System Design & Manufacturing), the government of India (GoI) had introduced a Modified program for Semiconductors and Display Fab Ecosystem. The main modifications made to made this scheme more comprehensive are:
 - Giving fiscal support of up to 50% of project cost on *pari-passu (equal & proportional distribution) basis for all the technology nodes under the Scheme for setting up of Semiconductor fabs in India.
 - Fiscal support of 50% of the total project cost on *pari-passu (equal & proportional distribution) basis under the scheme for setting up of display fabs.

- Fiscal Support of 50% of capital expenditure on *pari-passu (equal & proportional distribution) basis under the scheme for setting up Compound Semiconductors/Silicon photonics/ Sensors Fab/ and Semiconductor ATMP/OSAT facilities in India

These initiatives by the government reflect the importance of Semiconductor Industry & the efforts being made by the government to leverage the growth and take the leadership position in global technology.

Once nascent, India's Semiconductor Industry is now a powerhouse poised to dominate the global semiconductor industry. India is now leaping high into semiconductor manufacturing & innovation related technologies. Some interesting facts and figures about the phenomenal upsurge of Indian Semiconductor Industry according to Invest India (National Investment Promotion and Facilitation Agency) are that by 2028, the Indian semiconductor market size is projected to reach worth \$80.3 billion mark. The projected Annual CAGR for the Semiconductor market in India is 17.10% between 2023 & 2028.

Recently, three new Semiconductor manufacturing units have been started on March 13, 2024. This move highlights India's mission to establish itself the Global Semiconductor Chips Manufacturing Hub. Additionally, schemes of government of India, like the Electronics Manufacturing Clusters (EMC), Modified Special Incentive Package Scheme (MSIPS), and Production Linked Incentive (PLI) are driving investment and fostering innovation in India and specifically in Uttar Pradesh, where the state government is leaving no stone unturned to establish world class semiconductor fabs, display units, chip manufacturing units, etc. in the state. The state is also supporting global semiconductor manufacturers, like Samsung, Tata Electronics, etc.

As Uttar Pradesh is gearing up to claim its share of the booming Semiconductor industry, the government is focusing on the development of state-of-the-art infrastructure and manufacturing of the raw materials used for making high-quality Semiconductor Chips.

The state government fully recognizes the critical role of Semiconductors in technological upgradation. Uttar Pradesh is committed and is developing a conducive ecosystem where the manufacturing units of Global Semiconductor Tech giants will thrive. These are the farsighted initiatives taken to establish Uttar Pradesh as a global electronics manufacturing Hub.