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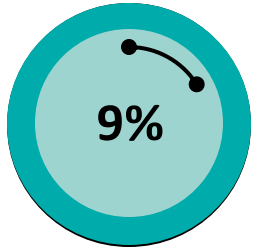


Uttar Pradesh

**The State with Compelling Investment
Opportunities in Semiconductor Sector**

The context : India is expected to be ~\$ 8tn economy and a \$100 bn semi conductor market by 2030

The Indian semiconductor market expected to grow at a CAGR of ~20% over the next decade, accounting for ~17% of the global market driven by a strong domestic demand across sectors - Automotive, Consumer Electronics and Telecom

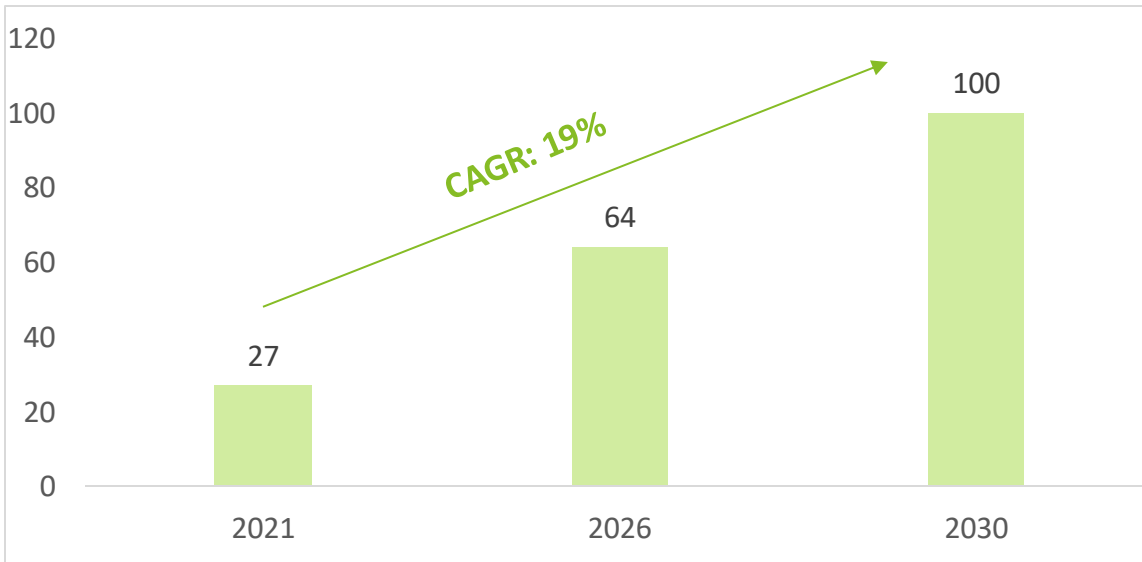


Only 9% of India's semiconductor components were locally sourced in 2021. **17% local sourcing** expected by 2026



80% of the total revenue in Indian semiconductor industry stemmed from mobile phones, smart wearables, IT and other industrial components

Market size (US\$ Bn)



Key growth drivers

- **Auto and EV industry** currently the fifth largest and is expected to become third-largest in the world by 2030. Indian EV industry is expected to expand at a CAGR of 36%. Largest market for semiconductors
- **Smartphones and consumer electronics** US\$71.17 Bn. in 2021 expected to grow at a CAGR of 6.5% from 2022 to 2030. India is the second largest smartphone manufacturer in the world
- **Telecom** 5G expected to drive growth. Current market is more than \$2 billion and it is expected to grow at a CAGR of 34% for the period 2021-2026
- India's display panel market is estimated to reach US\$19 Bn by 2025.

Source: IESA report on Semiconductor Manufacturing Supply Chain & India Semiconductor, Deloitte analysis

To enable the growth of the industry, the Government of India has announced a \$10 Bn incentive program for semiconductor and display manufacturing

Significant interest from domestic and global investors for the program. ~\$21 Bn investment proposals for 28nm to 65nm semiconductor fabrication plants submitted

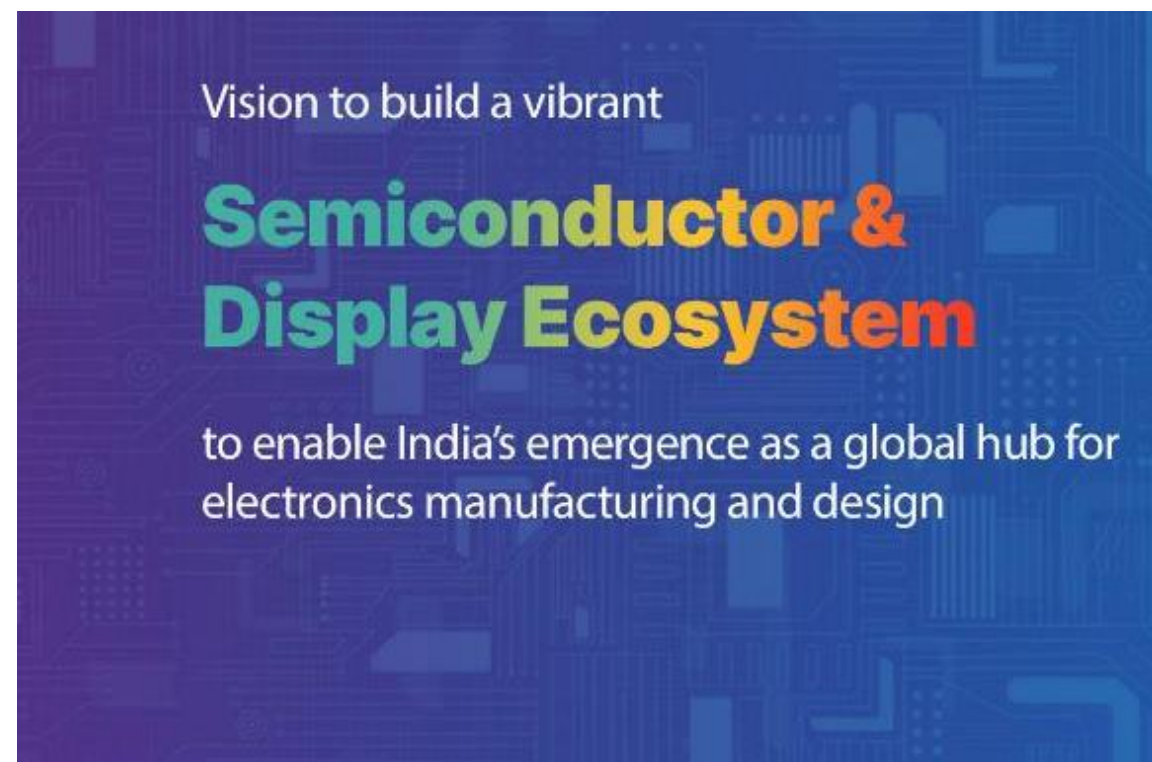
Attractive fiscal incentives across the value chain

1	Semiconductor fabs <ul style="list-style-type: none">Fiscal support of 50 per cent of project cost shall be provided across all technology nodes for setting up of Semiconductor Fabs
2	Display fabs <ul style="list-style-type: none">Fiscal support of up to 50% of project cost, for manufacturing TFT, LCD or AMOLED based display panels
3	Compound semiconductors, silicon photonics and ATMP / OSAT facilities <ul style="list-style-type: none">Fiscal support of 30% of the capex
4	Design Linked Incentives <ul style="list-style-type: none">Targeted for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design(s)

Source: Ministry of Electronics and IT

India Semiconductor Mission (ISM)

ISM is a specialized and independent business division with administrative and financial autonomy to drive India's strategies for developing semiconductors and display manufacturing ecosystem



Leading Indian businesses are actively exploring semiconductor investments, in partnership with global semiconductor majors.

The Union Cabinet approved (February 2024) the establishment of three semiconductor units under 'Development of Semiconductors and Display Manufacturing Ecosystems in India



- Tata Electronics Private Limited will set up a semiconductor fab with **50,000 wfsm capacity** in partnership with Powerchip Semiconductor Manufacturing Corp (PSMC), Taiwan.
- This fab will be constructed in Dholera, Gujarat with an investment of **INR 91,000 crore**.
- **Segments covered:**
 - High performance compute chips with 28 nm technology
 - Power management chips for electric vehicles (EV), telecom, defence, automotive, consumer electronics, display, power electronics, etc. Power management chips are high voltage, high current applications.



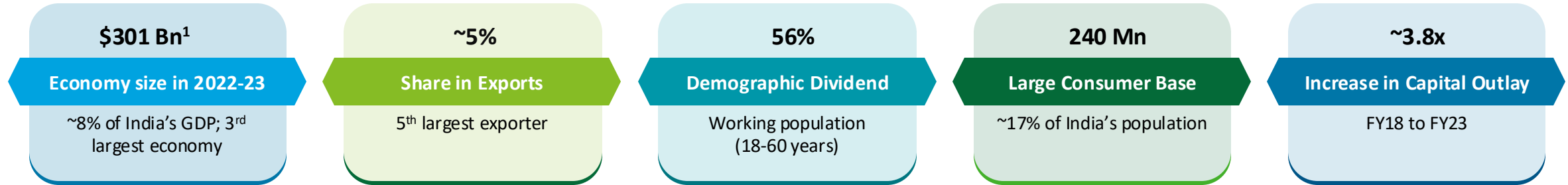
- Tata Semiconductor Assembly and Test Pvt Ltd ("TSAT") will set up a semiconductor unit (**ATMP unit**) in Morigaon, Assam with an investment of **INR 27,000 crore**.
- TSAT semiconductor is developing indigenous advanced semiconductor packaging technologies including **flip chip and ISIP** (integrated system in package) technologies.
- **Capacity:** 48 million per day
- **Segments covered:** Automotive, electric vehicles, consumer electronics, telecom, mobile phones, etc.



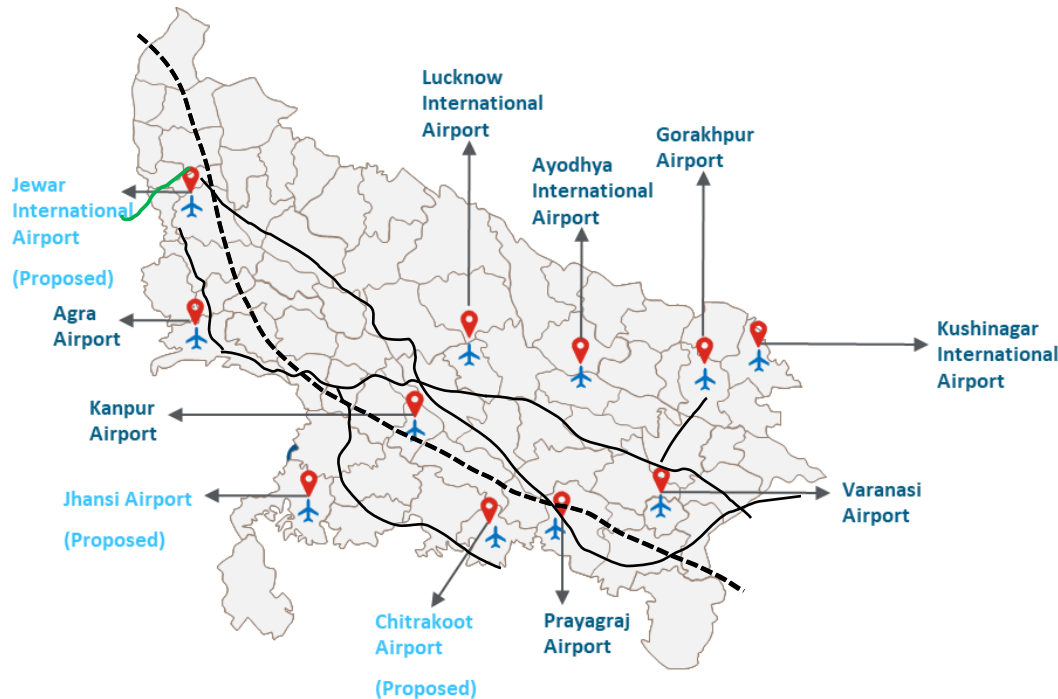
- CG Power, in partnership with Renesas Electronics Corporation, Japan and Stars Microelectronics, Thailand will set up a semiconductor unit (**ATMP unit for specialized chips**) in Sanand, Gujarat with an investment of **INR 7,600 crore**.
- **Capacity:** 15 million per day
- **Segments covered:** The CG power semiconductor unit will manufacture chips for consumer, industrial, automotive and power applications

UP – State with Robust and Resilient Economy

UP is #1 State having best-in-class infrastructure with connectivity to industry and economic hubs in India.



Wholesome Infrastructure



- Maximum number of airports with **#5 international airports**, and **#16 domestic airports**
- Rank # 1** in terms of network of Expressway in the country
- Largest network of roads** (> 400,000 kms)
- Largest railway network** (> 16,000 kms)
- Dedicated Freight Corridors** (EDFC with highest catchment area - ~57% & WDFC – ~10%) in the State
- Vast network of **Metro Rail Systems** (5 Operational, 2 under-construction). First **Rapid Rail Transport System** in India (Delhi to Meerut under-construction)
- 1st to have **multi modal waterways terminal** on river ganga (5 freight villages planned)

¹Exchange rate assumed as \$1 = INR 75
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— Expressways
 - - EDFC
 — WDFC

Semiconductor

UP is currently the largest exporter of consumer electronics in India and is considered as a potential hub for semiconductor design and R&D offices

Advantage UP



UPEM Policy 2022 providing capital subsidies, land allotment, infrastructure support, and skill development programs.



Access to **adequate transportation infrastructure** for supply of raw materials and shipping of finished goods.



Access to **seaports & airports** for export and import fulfillment



Uninterrupted **supply of good water quality (potable water)**, 24x7 power



Skilled labor availability (training centers, courses, workshops, etc.)



Research and Development Support: Support for technology upgradation, innovation, and product development.



Collaboration with industry associations & organizations to address industry challenges, drive sectoral growth, and create a conducive ecosystem.



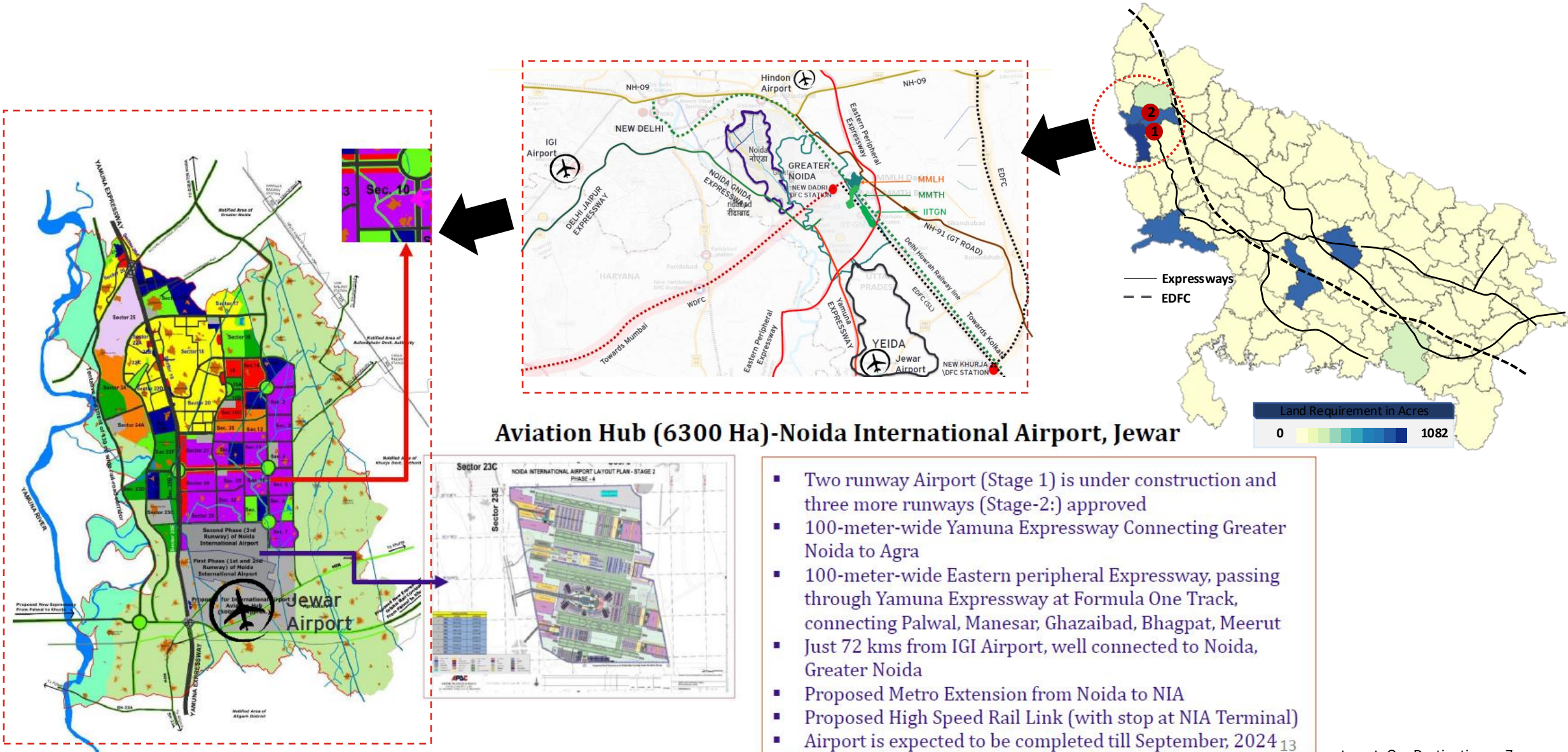
1000 Acres of land identified next to Jewar airport dedicated for *Semiconductor manufacturing units*

Key Investment Opportunities

- **3 Electronics Manufacturing Clusters (EMC)** focusing on mobile manufacturing, consumer durables, Drone, **Semiconductor (FAB)** defense electronics, Robotics, IoT etc. to be setup
- **Semiconductor design** - Embedded software development, VLSI design and Hardware/board design
- **Semi-conductor wafer fabrication manufacturing**, Light Emitting Diode (LED) manufacturing and Liquid Crystal Display (LCD) manufacturing
- **Semiconductor manufacturing zones** within ESDM and Auto hubs, with essential supporting infrastructure to also host ancillary & downstream industries:
 - Ancillary industries: Polymer processing, Metals, Chemicals
 - Downstream industries: Consumer electronics, Aerospace, Automotive

Semiconductor

Noida Region as a preferred destination for Semiconductor Units



Semiconductor

EMZ Park Site Available infrastructure

Electricity

- Electric Substation of capacity 765/400/220 KV(3000 MVA) at Janhagirpur is functional.
- Electric Substation of capacity 220/132/33 KV (383MVA) at Sector-32 is under construction.
- Electric Substation of capacity 220/132/33 KV (486MVA) at Sector-24 is under construction.
- Electric Substation of capacity 220/132KV (180MVA) at Sector-18 is under construction.
- Electric Substation of capacity 220/132 is proposed in Sector-28

Power Grid Line

- Government in process of installation of 2 transmission lines

Water

- Water Availability through Dayanatpur Distributary
- Regulator at Dayanatpur Distributary has been made.
- Water for Construction through STP at Sector-29 & through Dayanatpur Distributary.
- Two Rainy wells of each capacity of 8MLD are proposed for uninterrupted water supply for 365 days 24/7

Waste Management

- A STP(Sewerage Treatment Plant) of 60MLD Capacity is under construction near to industrial sector-29 (2.5 km from Sector 10) ☐ Common ETP is proposed in Semiconductor & EMC Sector ☐ Solid Waste Management(SWM) is proposed in industrial sector

Support from Government: Key Policy Highlights

Understanding India Semiconductor Mission 2022-27)

Indian Semiconductor Mission 2022-27

- A comprehensive program for the development of semiconductors and display manufacturing ecosystem in India was approved by Government of India with an **outlay of ₹ 76,000 crore**
- The programme aims to provide attractive incentive support to companies / consortia that are engaged in Silicon Semiconductor Fabs, Display Fabs, Compound Semiconductors / Silicon Photonics / Sensors (including MEMS) Fabs / Discrete Semiconductor Fabs, Semiconductor Packaging (ATMP / OSAT) and Semiconductor Design
- **Individual state governments semiconductor policies will serve as an add on to the GoI's ISM policy**



Semiconductor Fabs



ATMP & OSAT facilities



Display Fabs

Fiscal support from GoI	50 % of CAPEX	50 % of CAPEX	50% of project cost
Capital Investment Threshold	Minimum Capital Investment of ₹20,000 crore	>₹100 crore for Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including MEMS)/ Discrete Semiconductors Fab	Minimum Capital Investment of ₹10,000 crore
Revenue Threshold	Minimum Revenue of ₹7,500 crore	N.A.	Minimum Revenue of ₹7,500 crore
Technology	300 mm	150 / 200 mm or more	Generation 8 or above for TFT/LCD Generation 6 or above for AMOLED
Capacity	>40,000 wafers per month	500 or more Wafer Starts / Month	> 60,000 Panels / month for TFT/LCD > 30,000 Panels / month for AMOLED

Support from Government: Key Policy Highlights for semiconductor units*

Uttar Pradesh Semiconductor Policy 2024



Establish Uttar Pradesh as a hub of semiconductor ecosystem



Aiding chip manufacturing Eligibility Criteria Projects qualified under any of the following schemes of India Semiconductor Mission by the GoI:

- Setting up of Semiconductor & Display Fabs in India.
- Setting up of Compound Semiconductors/Silicon Photonics Sensors Fab and Semiconductor ATMP/ OSAT facilities in India.



Capital Subsidy : 50% additional Capital Subsidy on the capital subsidy approved by GOI



Interest Subsidy: @5% p.a. for units with investments up to INR 200 crore, with a maximum limit of INR 1 crore p.a. per unit for 7 years



Land Subsidy for Compound Semiconductors/Silicon Photonics Sensors Fab and Semiconductor ATMP/OSAT facilities: 75% subsidy on the first 200 acres of land purchased from state agencies, and 30% subsidy on additional land purchases for the unit/ancillary units.



Stamp duty exemption: 100% exemption on the purchase/lease of land.



Electricity duty exemption: 100% exemption on electricity duty for 10 years.



Dual power grid provision (FAB units) with the state government reimbursing the cost of one grid (lower of the two), while the investor bears the cost of the other grid.



Transmission and wheeling charges exemption: 50% exemption on wheeling charges/transmission charges for Intrastate power purchases for 25 years.



Skilling and training support: Upto INR 60 lakhs pa for 5 years for faculty training, technical workshops, awareness programs, and expert lectures (total of INR3 crore).



Internship support for up to 500 students per year for 5 years, with INR 20,000 support per student under the CM Internship Scheme. One-time support of up to INR 1 crore per unit for hiring world-class talent for 12 months.



Standalone RSD Centre: Reimbursement of 25% of the setup cost, capped at INR 10 crore, subject to conditions.



Center of Excellence (COE) establishment support: Up to 50% of the total COE project cost (maximum of INR 10 crore) borne by the Government of UP. Option to avail subsidy for setting up R&D Centre or COE.



Reimbursement of **patent registration fees** at a rate of 75%, up to a maximum of INR 10 lakh for domestic patents and INR 20 lakh for international patents.



Industrial housing development assistance: 10% of the cost of developing workers' housing (within a 10 km radius of the unit premises) or INR 10 crore, whichever is lower, provided in 7 equal annual installments.



Detailed Incentives under UP Industrial Investment & Employment Promotion Policy 2022



UP Industrial Investment & Employment promotion policy (IIEPP) 2022: Project categories

Eligible units and investment criteria

Type of unit	Eligible capital investment (ECI)*	Eligible Investment Period
Large scale industrial unit	Above INR 50 Cr but below INR 200 Cr	Earlier of commencement of commercial production or 4 years
Mega scale industrial unit	INR 200 Cr or above but below INR 500 Cr	Earlier of commencement of commercial production or 5 years
Super Mega scale industrial unit	INR 500 Cr or above but below INR 3000 Cr	Earlier of commencement of commercial production or 7 years
Ultra Mega scale industrial unit	INR 3,000 Cr or above	Earlier of commencement of commercial production or 9 years

3 options for Industrial Undertakings to apply for Investment Promotion Subsidy ('IPS')

Capital subsidy in the form of -		
<ul style="list-style-type: none"> Base capital subsidy + Employment generation booster + Export booster + Ecosystem support booster 	<div style="background-color: #008000; color: white; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">OR</div>	 <p>Net SGST reimbursement</p>
		<div style="background-color: #008000; color: white; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">OR</div>
		 <p>30% Top up on Production Linked Incentive (PLI) schemes of GoI</p>

* Investment thresholds for various categories may be considered for revision by the UP Government

IPS* Option – 1 Capital Subsidy available along with additional booster subsidy

Base capital subsidy				
District/ Region	Gautam Buddha Nagar & Ghaziabad	Madhyanchal & Paschimanchal	Bundelkhand & Poorvanchal	Annual capping
Large units	10% of ECI over 10 years	12% of ECI over 10 years	15% of ECI over 10 years	INR 5 crores
Mega units	18% of ECI over 12 years	20% of ECI over 12 years	22% of ECI over 12 years	INR 10 crores
Super Mega units	20% of ECI over 15 years	22% of ECI over 15 years	25% of ECI over 15 years	INR 50 crores
Ultra – Mega units	22% of ECI over 20 years	25% of ECI over 20 years	30% of ECI over 20 years	INR 150 crores

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Employment booster						
Minimum employment →	Category – I	Subsidy	Category – II	Subsidy	Category – III	Subsidy
Mega units	At least 300 (225 for women employee)	2% of ECI	> 600 (450 for women employee)	3% of ECI	> 900 (675 for women employee)	4% of ECI
Super Mega units	At least 600 (450 for women employee)		> 1200 (900 for women employee)		> 1800 (1200 for women employee)	
Ultra –Mega units	At least 1500 (1125 for women employee)		> 3000 (2250 for women employee)		> 4500 (3375 for women employee)	

*IPS – Investment Promotion Subsidy

Note: Capital subsidy shall be computed based on Gross Capacity Utilization Multiple (GCM)

IPS* Option – 1 Capital Subsidy available along with additional booster subsidy

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Export booster

% production of input →	Category - I	Subsidy	Category – II	Subsidy	Category – III	Subsidy
Mega units	≥ 25% production for export	2% of ECI	≥ 50% production for export	3% of ECI	≥ 75% production for export	4% of ECI
Super Mega units						
Ultra – Mega units						

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Ecosystem booster for procuring raw material / input from a manufacturing unit within UP

% production of input →	Category - I	Subsidy	Category – II	Subsidy	Category – III	Subsidy
Mega units	≥ 40% but less than 60%	2% of ECI	≥ 60% but less than 75%	3% of ECI	≥ 75%	4% of ECI
Super Mega units						
Ultra – Mega units						

Note – Annual ceiling along with booster subsidy shall be capped at INR 15 Cr for mega, INR 75 Cr for super mega and INR 210 Cr ultra mega units

IIEPP Option – 2 and 3 : Net SGST reimbursement or PLI Top Up

Option – 2 Net SGST reimbursement

Particulars		Large	Mega	Super mega	Ultra mega
Annual reimbursement %		100% up to 6 years	100% up to 12 years	100% up to 14 years	100% up to 16 years
Annual ceiling	Gautam Buddh Nagar & Ghaziabad	16% of ECI	7% of ECI	6% of ECI	5% of ECI
	Madhyanchal & Paschimanchal	18% of ECI	17% of ECI	14% of ECI	13% of ECI
	Bundelkhand & Poorvanchal	20% of ECI	25% of ECI	21% of ECI	19% of ECI
Overall ceiling	Gautam Buddh Nagar & Ghaziabad	80% of ECI	80% of ECI	80% of ECI	80% of ECI
	Madhyanchal & Paschimanchal	90% of ECI	200% of ECI	200% of ECI	200% of ECI
	Bundelkhand & Poorvanchal	100% of ECI	300% of ECI	300% of ECI	300% of ECI

Option – 3 Incentive linked with Production Linked (PLI) scheme of GoI

Units	% Incentive on PLI of GoI	Overall Capping
Large, Mega, Super mega and Ultra mega	30%	100% of ECI



FDI, Fortune Global 500 & Fortune India 500 Companies Investment Promotion Policy, 2023

Eligibility Criteria:

- ✓ Projects with Foreign Direct Investment (FDI) Capital Investment of above ₹100 crores.
- ✓ Projects with Capital Investment of more than ₹100 crores by companies included in the list of Fortune Global-500 and Fortune India-500, subject to Negative list.

UP FDI and Fortune 500 Policy 2023 – Fiscal Incentives

Major benefits

Capital subsidy

- 25% of *ECI (excluding land cost) in Gautam Buddha Nagar and Ghaziabad regions
- 30% of ECI (excluding land cost) in Paschimanchal and Madhyanchal regions
- 35% of ECI (excluding land cost) in Bundelkhand and Purvanchal regions

Capital Subsidy will be provided in 7 equal annual instalments with annual capping of INR 100 crores

SGST reimbursement/ refund

- **Option A - Net SGST reimbursement on sales:**
 - 100% of net SGST paid for 10 years
 - Annual capping: Upto 10% of ECI, Overall capping: Upto 100% of ECI (excluding land cost and capital subsidy)
- **Option B - Input SGST refund on capital goods:** 100% SGST refund in 5 annual instalment (Applicable only in case of inverted duty structure)

Note: Option to choose any one out of A and B is available

Land subsidy

- Upto 75% in Paschimanchal and Madhyanchal region
- Upto 80% in Bundelkhand and Purvanchal region

Other fiscal benefits



- **Stamp Duty & Registration Fees:** 50% - 100% exemption/ reimbursement
- **Electricity Duty:** 100% exemption from for 5 years
- **Skill development subsidy:** Upto INR 5,000 p.m. per person for 5 years (max. 500 persons)

- **Green Industry Incentives:** 50% capital subsidy on the cost of Effluent Treatment Plant capped at INR 2.5 crores
- **Industrial Housing Incentives:** Reimbursement upto 10% of the cost of development of workers' housing or dormitory for 7 years overall capped at INR 10 crores

- **R&D incentives:** Reimbursement upto 25% of the cost of standalone R&D centre capped at INR 10 crores (with minimum capital investment of INR 20 crores)
- **Centers of Excellence (CoE):** Grant upto 50% of the project cost capped at INR 10 crores per project
Note: Option to choose any one out of above is available

- **Logistics Subsidy:** Reimbursement upto 50% of the transportation cost on import capped at INR 2 crores per unit (in case of shifting of existing plant from international or domestic locations to UP)
- **Patent cost:** Reimbursement upto 75% of the cost capped at INR 10 lakh (for domestic) and INR 20 lakh (for international)

Comparison of major fiscal incentives across relevant UP policies

Policy	UP Industrial Policy 2022 	UP FDI Policy 2023 
Minimum investment	Large: > INR 50 Crores Mega: INR 200 crores Super Mega: INR 500 crores Ultra Mega: INR 3000 crores	INR 100 Crores (either through FDI or the company should be in Fortune 500 Index)
Capital Subsidy on Fixed Capital Investment ('FCI') (Note 1)	10% to 42% on FCI in 10 to 20 annual instalments	25% to 35% on FCI excluding land cost (in 7 annual installments)
Net SGST reimbursement (Note 2)	100% for 6 years to 16 years	100% Net SGST for 10 years
PLI Top Up	30% top up on Central Government PLI incentives	Not available
Land Subsidy	Land cost included in FCI for capital subsidy purposes	75% to 80% rebate on land cost
Overall ceiling on incentives	100% of ECI (Eligible Capital Investment)	100% of FCI

Overall, FDI Policy could yield maximum incentives for a manufacturing project involving FDI of at least INR 100 Crores

Note 1: Capital subsidy % varies based on location of the project and investment size

Note 2: Net SGST represents the amount of SGST deposited in cash (after utilizing the available input tax credit) on supplies made within Uttar Pradesh. The eligibility period varies depending upon location and investment size

Common benefits available in sectoral policies

- Capital subsidy of upto 50%
- Infrastructure subsidy upto 50% of project cost
- Skill development incentives to enhance employability and meet skill requirements of industries upto 100%
- Stamp duty exemption upto 100% depending upon the region
- Land subsidy upto 25%
- Electricity duty exemption upto 100%
- Other benefits such as trademark registration reimbursement, patent fees reimbursement etc. depending upon the policy

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