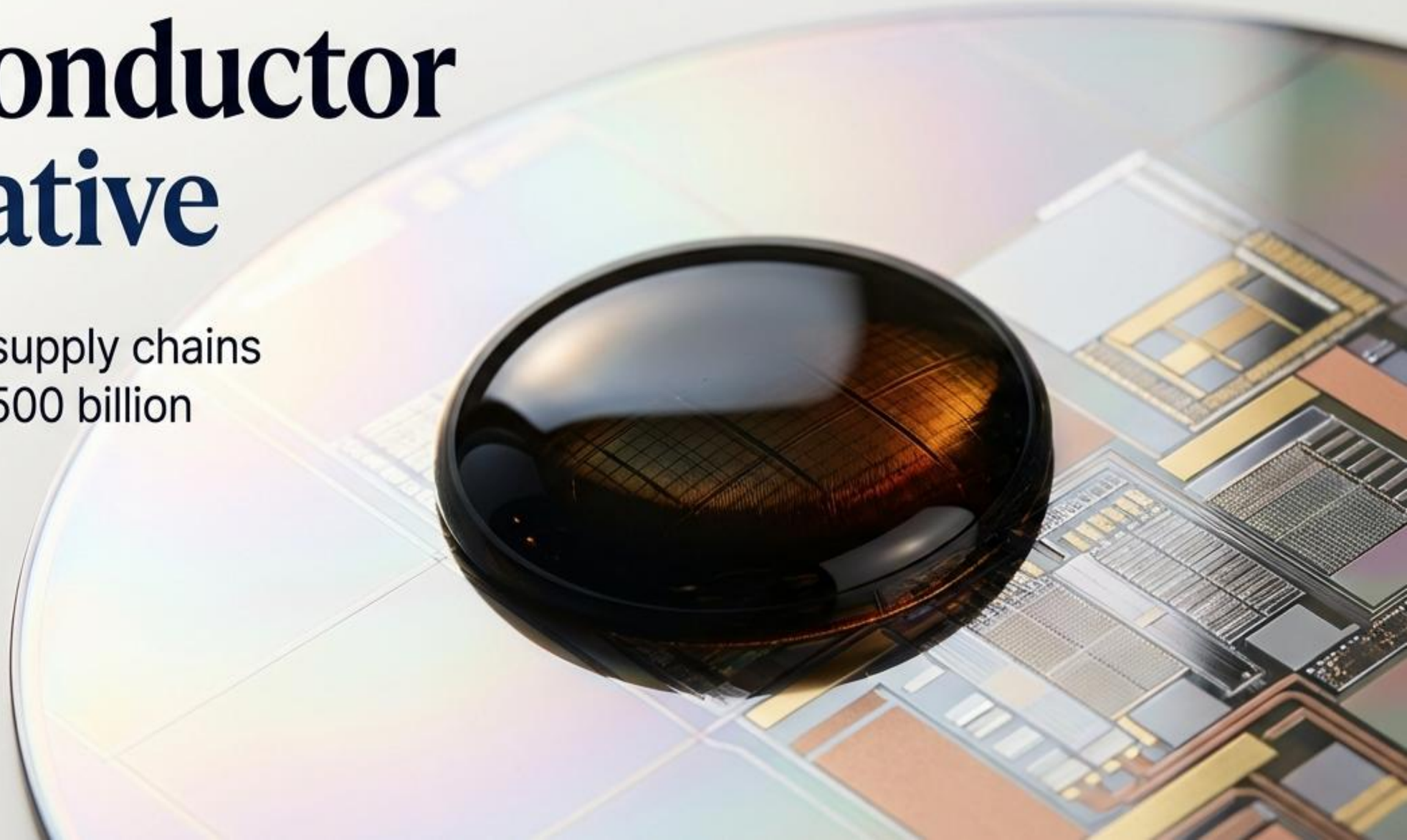
India's Semiconductor Imperative

Securing global supply chains and building a $500 billion digital future.



Semiconductors are the new oil of the 21st century

- Chips act as the brain and beating heart of the modern digital ecosystem.
- They power everything from satellites and advanced medical equipment to smartphones and AI.
- Current production is heavily concentrated in just five regions, creating immense global vulnerability. Access is a critical priority for civilian life and national security.

95%

Currently, India imports almost all its chips from China, Taiwan, South Korea, and Singapore.

95% import reliance exposes a critical vulnerability

Technological Sovereignty

Ending dependence on foreign control centers.

Economic Resilience

Securing foundations for a rapidly expanding digital economy.

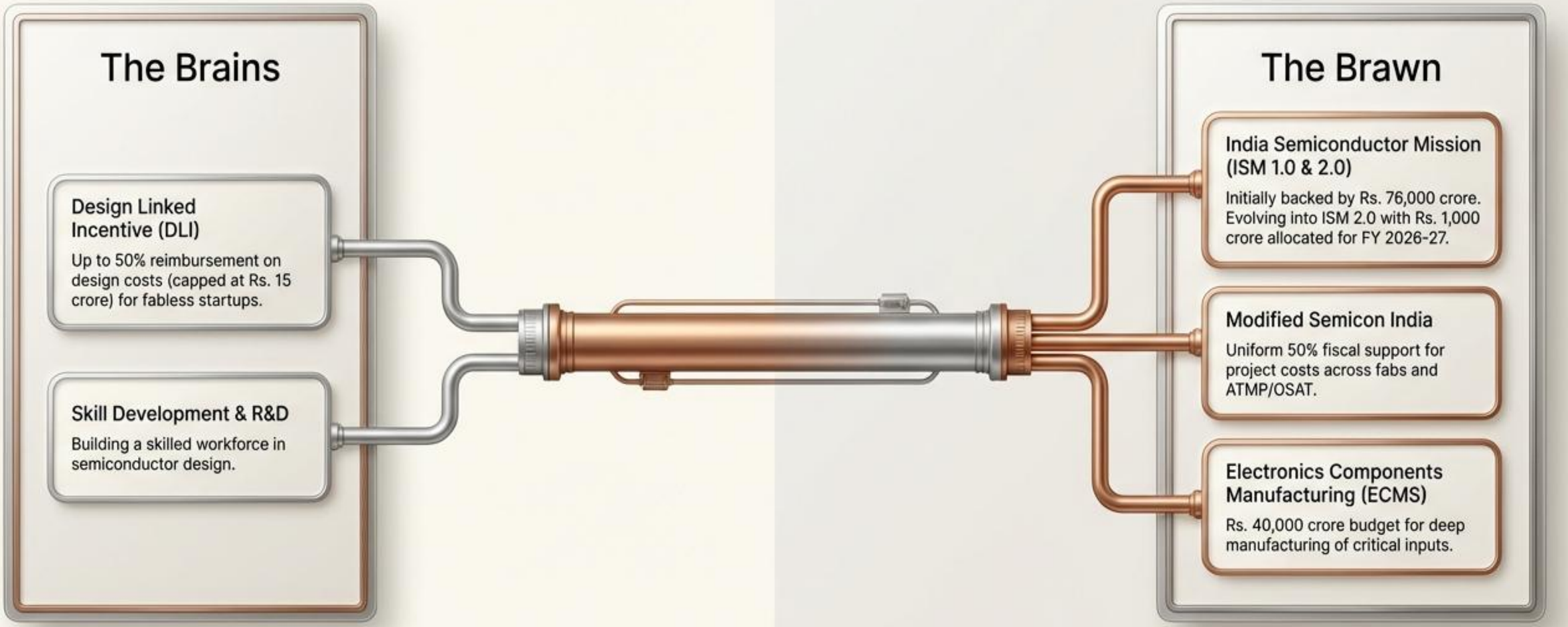
Global Value Chains

Establishing India as a credible, competitive participant globally.

Transitioning from a chip consumer to a chip creator

The Government of India has introduced a series of targeted fiscal support, ecosystem development measures, and industry-led research initiatives. This is a calculated, strategic acceleration to build a robust, end-to-end semiconductor manufacturing base domestically.

A comprehensive fiscal framework drives the ecosystem



The $19 billion development pipeline is already in motion

10

Major semiconductor projects approved and underway

Rs. 1.60 Lakh Crore

Total investment outlay (approx. $19 billion)

6

Indian states actively hosting construction and development

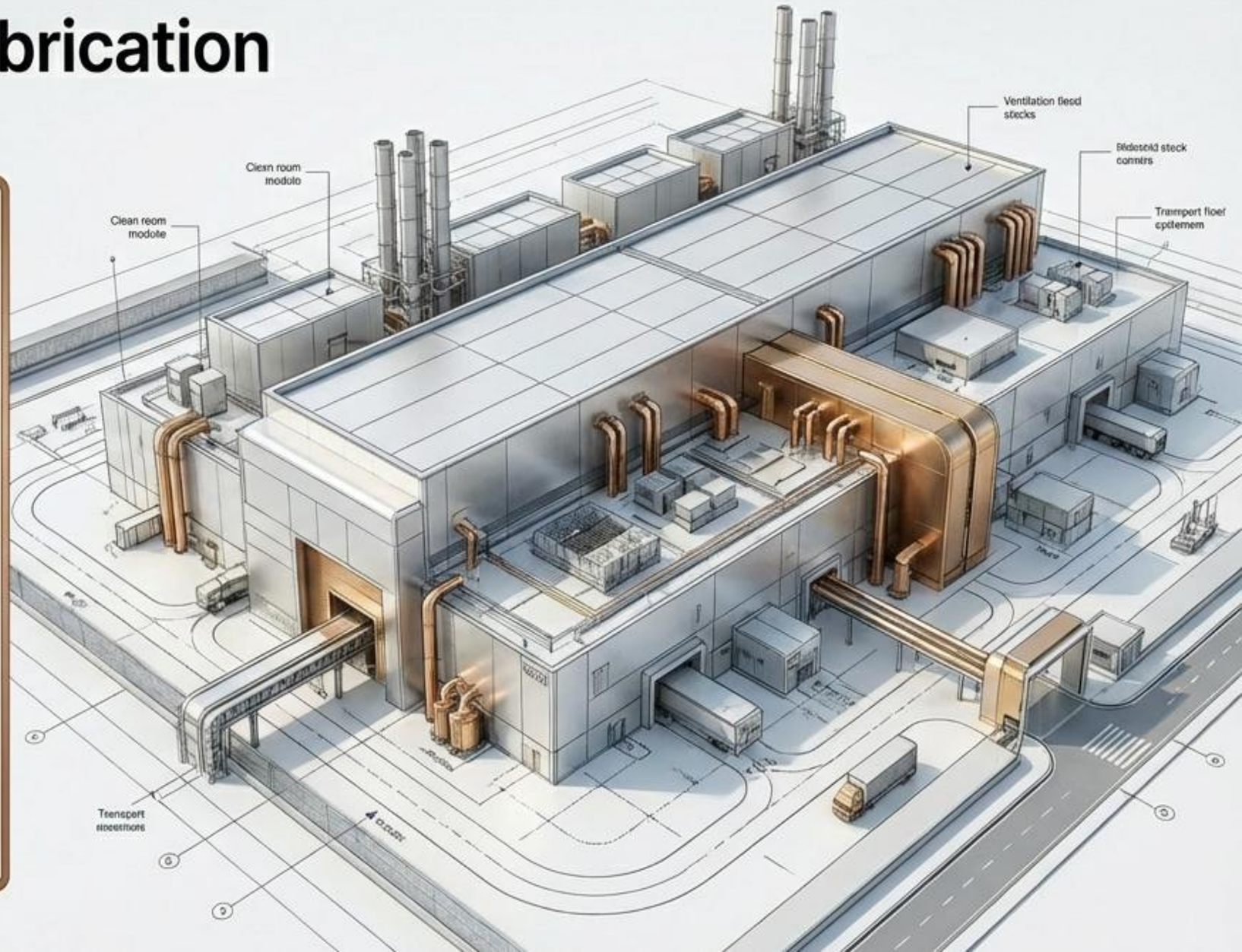
The Crown Jewel: Large-Scale Chip Fabrication

Partners: Tata Electronics & PSMC

Location: Dholera, Gujarat

Investment: Rs. 91,000 crore (India's largest semiconductor project)

Output Profile: Chips for power management, display drivers, and microcontrollers.



Scaling advanced packaging and testing infrastructure

Micron Technology

Sanand, Gujarat

Rs. 22,516 crore investment. Advanced DRAM and NAND wafers for AI and data centers.

Tata Electronics

Jagiroad, Assam

Rs. 27,000 crore investment. Capacity of 48 million chips per day.

CG Power JV

Sanand, Gujarat

Joint venture with Renesas and Stars Microelectronics for automotive/industrial chips.

HCL-Foxconn JV

Jewar, Uttar Pradesh

Display-driver and packaging facility starting production around 2027.

Kaynes Semicon

Sanand, Gujarat

Millions of chips per day capacity, currently in phased ramp-up.

Securing high-value specialized and compound technologies

SiCSem

Bhubaneswar, Odisha

India's first commercial Silicon Carbide (SiC) plant. Operational by 2027–28 for EVs, defense, and renewables.

3D Glass Solutions

Advanced packaging and embedded glass substrates. Introducing glass interposers and 3D heterogeneous integration for 5G.

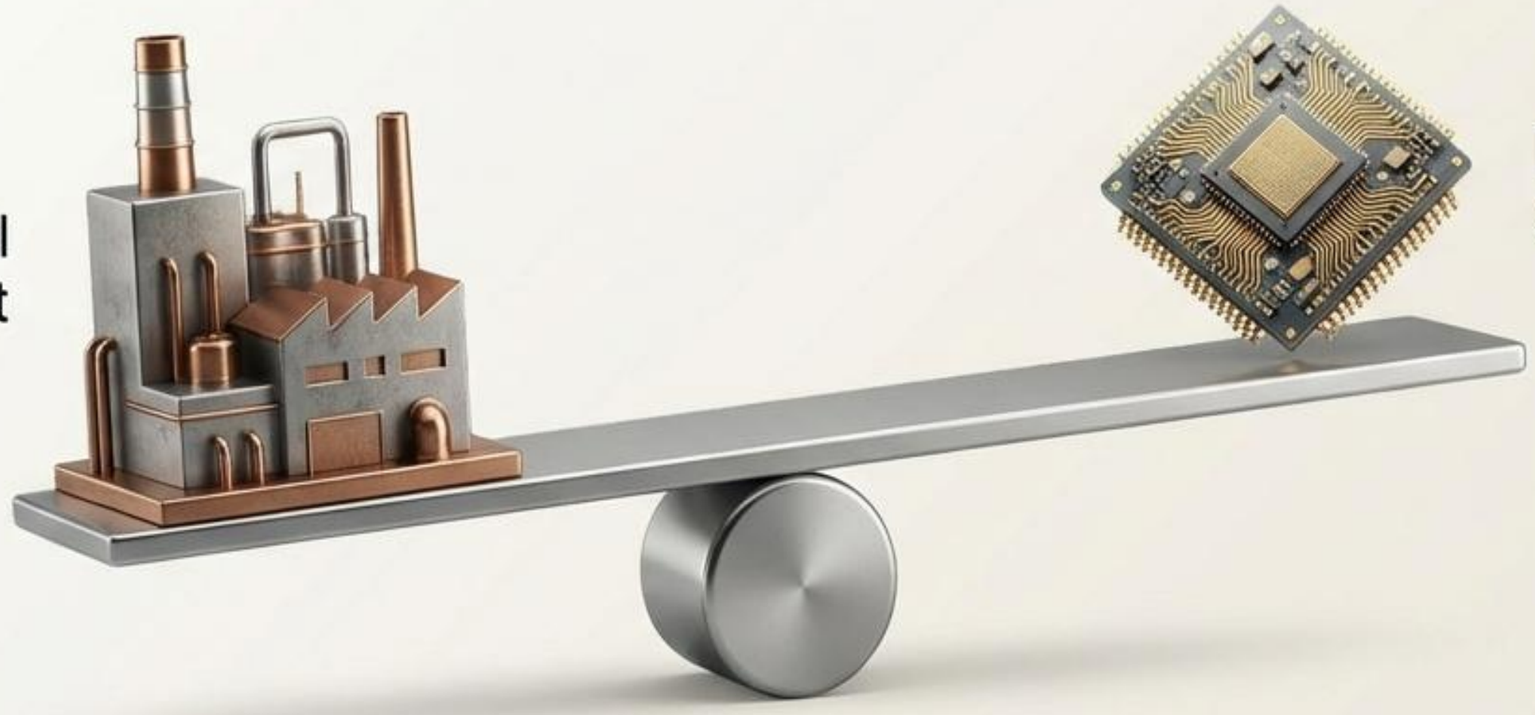
Continental Device India (CDIL)

Mohali, Punjab

Expanding discrete semiconductor lines to produce high-power MOSFETs and IGBTs in silicon and silicon carbide.

The Reality: Scaling requires navigating extreme industrial complexity

Immense Capital Constraint



Rapid Innovation & Thin Margins

The path from consumer to creator is far from guaranteed. The semiconductor industry is governed by razor-thin margins, rapid innovation cycles, and geopolitial friction. Success demands flawlessly managing infrastructure reliability, a highly specialized workforce, and global supply chains.

Confronting capital intensity and supply chain vulnerabilties

Capital Intensity

Building a single advanced Fab can cost over $10 billion. Despite 50% government subsidies, private partners must deploy billions amidst long gestation periods and the constant risk of shifting global demand.

Supply Chain Vulnerability

Success requires a deep network of specialty chemicals, ultra-pure gases, silicon wafers, photoresists, and precision machinery. The domestic ecosystem remains underdeveloped, requiring complex navigation of a fierce global subsidy race.

Bridging the talent deficit and managing ecological impact

85,000 – 100,000

The Talent Gap:

The Talent Gap: The chemistry and physics of growing chips requires specialized experience. India must train 85,000 to 100,000 specialized technicians and engineers by 2030.

Environmental Friction: Manufacturing mandates massive water and energy consumption alongside strict chemical waste management. Securing sustainability adds significant project significant project complexity.

Driving the future with a rapidly expanding talent pool

Global Challenge: The world faces a shortage of 1 million semiconductor professionals by 2030.

India's Progress: Already ahead of schedule, with over 65,000 engineers trained under the C2S program in record time.

> India is no longer waiting for the bus, but is now actively driving the future of the global talent pipeline.

– Union Minister Ashwini Vaishnaw

The 2030 Objective: A $500 billion semiconductor ecosystem

The Near Term (2026)

The very first Made in India chips will begin rolling out from the Sanand and Dholera clusters.

The Long Term (2030)

Targeting $500 billion in manufacturing. Backed by ISM 2.0, India's policies are a definitive commitment to becoming the world's most reliable high-tech partner.

From Black Gold to Digital Diamonds

"Oil was black gold, but chips are digital diamonds. The day is not far when the world will say—Designed in India, Made in India, Trusted by the World." — Prime Minister Narendra Modi, Semicon India 2025