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Published in Fortune India May 05, 2025 | 10:47 AM IST

India missed Intel twice. Can it afford to fumble Tesla's chip play?



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Article Content:

Tesla's much-anticipated entry into India's electric vehicles (EV) market appears to be opening new, unexpected doors in the country's nascent semiconductor ecosystem. According to people familiar with the matter, Tesla has started early exploratory conversations around sourcing semiconductor packaging and assembly services from India for its EVs. These are preliminary engagements, with no confirmed contracts yet.

But the very fact that Tesla is evaluating Indian players marks an important moment: it signals a growing recognition of India's potential role in the global semiconductor value chain, even as the country's chipmaking ambitions are still taking root.

Why Tesla is exploring India for semiconductor packaging

At the heart of the move is Tesla's push to secure the supply chain for its EVs. The ongoing US-China trade tensions, including tariffs on semiconductors, have prompted companies to diversify their supply chains. Sourcing chips from India can help Tesla mitigate risks associated with tariffs and ensure a more stable supply chain.

Today, modern vehicles are increasingly reliant on semiconductors for managing a multitude of functions, right from engine control to advanced driver-assistance systems. And while the exact number of chips in a car varies, on average, it contains between 1,000 and 3,000 semiconductor chips. And even more in EVs

The global semiconductor shortage during the COVID-19 pandemic, which left automakers like Ford with thousands of unfinished cars piled up in lots, exposed the fragility of automotive supply chains. Since then, companies like Tesla have become far more proactive in securing chip supplies well in advance. Given that semiconductor manufacturing operates on long lead times—with orders often placed years ahead—Tesla's efforts to localise and



diversify its chip supply chain are part of a broader strategy to avoid production bottlenecks and maintain resilience in an increasingly uncertain global market.

According to Danish Faruqui, CEO of Fab Economics, a US-based semiconductor consultancy firm, Tesla's need to source chips from India is tied to the fact that the company wants to insulate itself from the tariffs.

"It is not only due to supply chain resiliency, but tariff insulation also that Tesla is scouting for semiconductor fabrication and packaging supply out of India," he said.

India's upcoming chip testing and packing facilities, such as Micron and CG Power's plants in Gujarat and Tata Electronics' packaging facility in Assam, are beginning to create the foundational capabilities needed to support these ambitions.

But, this does not mean Tesla will replace its current set of chip suppliers.

"Tesla relies on leading global chipmakers like Infineon, STMicroelectronics, NXP, Texas Instruments, and ON Semiconductor for its power management and vehicle control systems. These firms have strong design and fabrication capabilities. However, the packaging and testing phase—known as OSAT (Outsourced Semiconductor Assembly and Test)—offers opportunities for localisation, particularly in India," pointed out Manish Rawat, semiconductor analyst, Techinsights.

Rawat added that Indian OSAT companies such as SPEL, Tata OSAT, and Kaynes Semicon could enter the supply chain as subcontractors for packaging and testing. The tariff tensions between China and the US also indicate that the wafers will need to be supplied from Japan or Taiwan. But in the long run, India needs to attract wafer manufacturing companies for local production.

"While specific supplier replacements would depend on various factors, India-packaged power chips could potentially supplement or replace components sourced from regions facing geopolitical tensions, tariffs or supply chain disruptions. This move would help Tesla to enhance its supply chain resilience," said Devroop Dhar, co-founder and managing director at Primus Partners.