Agency for Science, Technology and Research
SINGAPORE

FACTSHEET

RIE Flagship in Semiconductors and NSTIC (Power Electronics)

Overview

Singapore will invest **S$800 million** into the RIE Flagship in Semiconductors. First announced at the RIE2030 press conference on 5 December 2025 by Senior Minister Lee Hsien Loong, the Flagship aims to position Singapore as a strategically important semiconductor R&D node by deepening capabilities in high-impact technology areas, strengthening alignment across the ecosystem, and accelerating the path from research to industry outcomes.

In addition, Singapore will invest **S$60 million** to establish the National Semiconductor Translation and Innovation Centre for Power Electronics (NSTIC (Power Electronics)), with core capabilities in next-generation power electronics.

Why semiconductors matter

Semiconductors remain a key pillar of Singapore's economy, contributing **close to 7% of GDP**. As global demand driven by AI and advanced computing continues to grow, strengthening the parts of the semiconductor value chain where Singapore can create differentiated value will reinforce Singapore's role as a trusted and reliable partner for companies to innovate and ride the AI wave. This makes Singapore more appealing as a global location to site higher value-added activities and creates opportunities for our local enterprises to be integrated into the supply chain, in turn supporting the creation of good jobs and skills for Singaporeans.

What is the RIE Flagship in Semiconductors?

The RIE Flagship in Semiconductors will adopt a national-level coordinated, portfolio-based approach to bring together Singapore's publicly funded semiconductor R&D efforts under a shared strategic direction.

It will focus on key areas of semiconductor research and innovation that are important to Singapore's long-term competitiveness and where Singapore has established strengths, such as in advanced packaging and advanced photonics. With the growing demand for energy-efficient, high-performance power solutions, power electronics will be another focus area that we will invest in.

Why NSTIC (Power Electronics)

As global electrification accelerates, traditional silicon can no longer meet the high-voltage, high-thermal requirements of fast-growing sectors such as data centres and high-performance electric vehicles.

To bridge this widening performance gap, we are accelerating the transition to Silicon Carbide (SiC) and Gallium Nitride (GaN). These wide-bandgap materials can deliver higher voltage handling, faster switching, and extreme thermal resilience, enabling system sizes to be shrunk while dramatically reducing energy waste. This transition underpins more efficient, resilient, and competitive power electronics systems.

The **S$60 million investment in NSTIC (Power Electronics)** will add next-generation power electronics to the portfolio of technologies under the NSTIC umbrella. NSTIC (Power Electronics) will house the world's first open-innovation 8-inch (200mm) silicon carbide (SiC) R&D pilot line alongside specialised research and engineering expertise. This facility will facilitate seamless technology transfer of SiC device processes to manufacturing, support rapid prototyping and be accessible to public and private sector users. It will also forge partnerships between industry and academia to drive translation of wide bandgap semiconductor technologies towards scalable production and commercialisation, strengthening Singapore's position in energy efficient next generation power electronics. NSTIC (Power Electronics) is expected to commence by April 2026.

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