Semiconductor Ecosystem SINGAPORE

Main Stakeholders

POLICYMAKING

- 1. Ministry of Trade and Industry
- 2. National Research Foundation (NRF)
- 3. Economic Development Board (EDB)
- 4. The Agency for Science Technology and Research (A*STAR)

RESEARCH ORGANISATIONS

- A*STAR Institute of Microelectronics (IME) 1.
- 2. A*STAR Institute of Materials Research and Engineering (IMRE)

INSTITUTES OF HIGHER LEARNING (IHLS)

- Nanyang Technological University Singapore (NTU) 3.
- 4. National University of Singapore (NUS)
- 5. Singapore University of Technology and Design (SUTD)
- 6. Singapore Institute of Technology (SIT)

INDUSTRY ASSOCIATIONS

Singapore Semiconductor Industry Association 1. (SSIA)

INDUSTRY (NON-EXHAUSTIVE)

- 2. AEM (Equipment, Back-end)
- 3. AMD (IC Design)
- 4 Applied Materials (Equipment, Front-end)

Chip Strategy

National AI Strategy 2.0 (updated in December 2023): Aimed at strengthening the country's position as a global AI leader. It introduces three key shifts from the initial strategy [1], [2], [3]:

- AI as a Necessity
- **Global Focus**
- Systems Approach

Collaboration for Enhanced Partnerships for Capability Transformation (PACT) (introduced in 2010, enhanced 2020): Aimed at supporting collaborations between larger companies and SMEs [4]

First RIE (Research, Innovation and Enterprise) Flagship project to advance Singapore's semiconductor and microelectronics R&D. [5]



- ASE Group (Assembly & Test) 5.
- ASM (Equipment, Front-end) 6
- 7. Besi (Equipment, Back-end)
- Broadcom (IC Design) 8.
- 9. GlobalFoundries' Fab 7H (Wafer fabrication)
- 10. Infineon (Assembly & Test)
- JCET STATS ChipPAC (Assembly & Test) 11.
- 12. KLA (Equipment, Front-end)
- MediaTek (IC Design) 13.
- 14. Marvell (IC Design)
- 15. NVIDIA (IC Design)
- 16. Qualcomm RF360 (Wafer fabrication)
- 17. STMicroelectronics (Wafer fabrication and Assembly & Test)
- 18. UMC (Wafer fabrication)
- 19. UTAC (Assembly & Test)

R&D Emerging Priorities

To remain a critical node in the global semiconductor value chain. Key R&D topics include heterogenous integration, wide bandgap semiconductors (e.g. SiC. GaN), sensors and actuators (e.g. MEMS), mmWave and beyond, edge AI, and advanced photonics.

Funding Instruments

Singapore's S\$25B (=19.5B USD) RIE 2025 Plan (2021–2025), equal to 1% of GDP, supports R&D across four key areas: (I) Manufacturing, Trade and Connectivity, (II) Human Health and Potential, (III) Urban Solutions and Sustainability, and the (IV) Smart Nation and Digital Economy. Planning for RIE 2030 is underway to further boost innovation. [6], [7], [8]

Relations with the EU

EU-Singapore Digital Partnership (Dec. 2022) [9]: Both sides aim to collaborate on advanced research, including advanced packaging, to boost semiconductor supply chain resilience and address key areas like as semiconductors, trusted data flows and data innovation, digital trust, standards, digital trade facilitation, digital skills for workers, and the digital transformation of businesses and public services.

EU-Singapore Digital Trade Agreement (2024) [10]: Establishes binding rules on trade in goods and services enabled by electronic means to facilitate bilateral trade relations

France-Singapore Digital and Green Partnership (DGP)(March 2022) [11]: Part of Singapore's strategy to forge global partnerships helping companies, especially SMEs, tap into digital and green growth opportunities.

Singapore-Germany Strategic Partnership (Nov. 2024): Structured in five pillars i) Political, Defence, Cybersecurity, and Intelligence Cooperation, ii) Trade, Investment, Transport, and Digitalisation, iii) Climate. Green Economy, and Energy Transition, iv) Research, Science, Technology, and Innovation, and v) Multilevel Cooperation for the Future. For the semiconductor landscape, it supports joint tech development, including quantum, and talent exchange. [12]

Singapore EDB - Netherlands' Brabant Development Agency (BOM) MOU (May 2025): EDB and BOM will collaborate with partners across sectors to advance deeptech, such as semiconductors, photonics, quantum, and advanced manufacturing, as well as digital technologies like AI, data science and cybersecurity. [13]

Consult [14] for updated information on Market and Production Share.

Demand by Application



The distribution is the average for South-East Asia. Source: DECISION Etudes & Conseil



Source: DECISION Etudes & Conseil



International Cooperation

On Semiconductors

ICOS has received funding (2023-2025) from the European Union's Horizon Europe research and innovation programme under GA No 101092562

Market and Production Share