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THAILAND INVESTMENT REVIEW

Issue 1/2025



SEAMLESS SYNERGY:

Thailand's Semiconductor
Journey Ahead

BOI NET APPLICATION

January-March 2025 (Q1)













Total Investment
822 Projects
USD 13.22 Billion

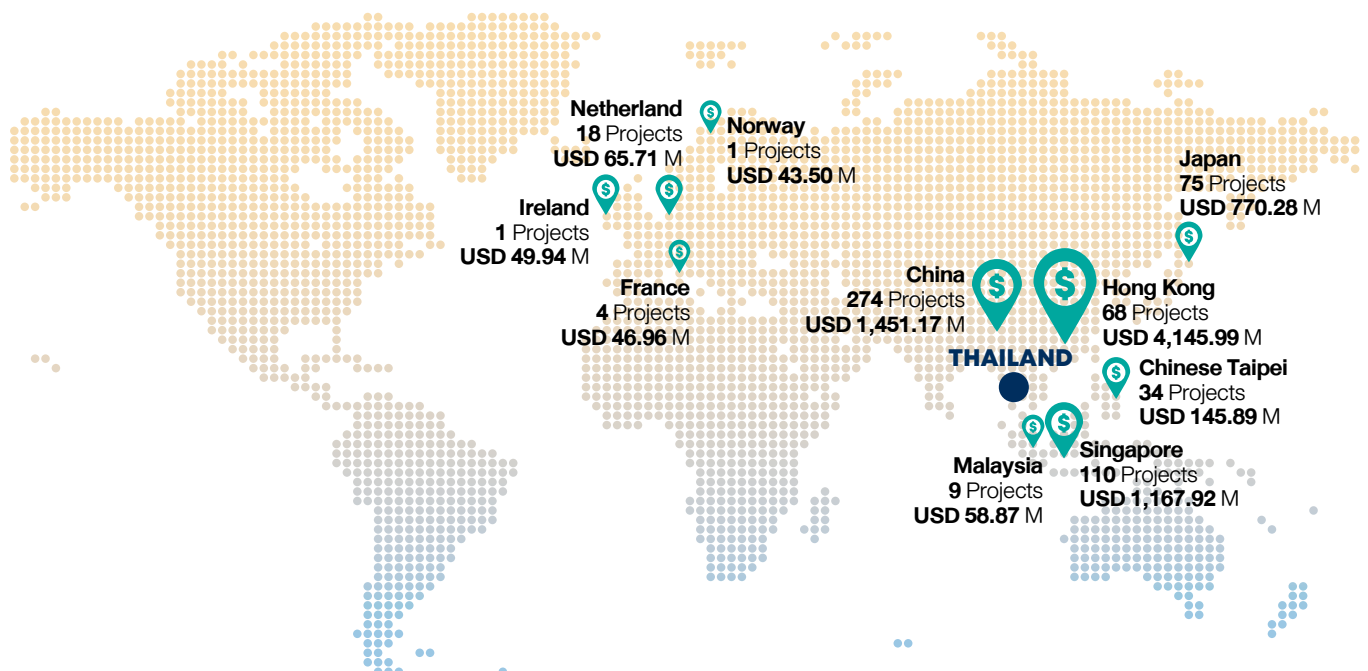


Total Foreign Investment
618 Projects
USD 8.21 Billion

FOREIGN INVESTMENT BY TARGET SECTORS

First S-Curve	New S-Curve
 Electronics 117 Projects USD 2,691.97 M	 Digital 24 Projects USD 2,613.57 M
 Automotive & Parts 70 Projects USD 712.67 M	 Medical 9 Project USD 145.55 M
 Petrochemicals & Chemicals 75 Projects USD 390.31 M	 Automation & Robotics 9 Projects USD 55.74 M
 Agriculture & Food Processing 25 Projects USD 144.05 M	 Aerospace 3 Projects USD 55.15 M
 Tourism 4 Projects USD 105.68 M	 Biotechnology 2 Projects USD 3.80 M

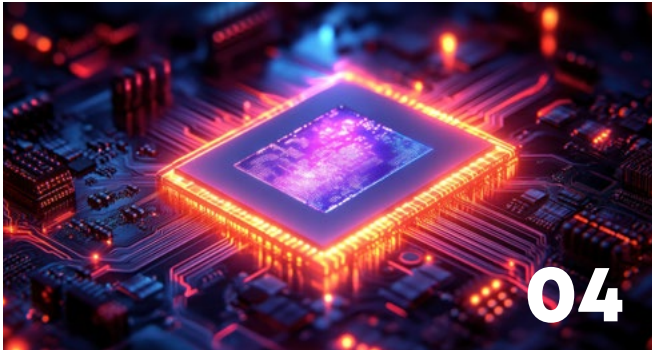
FOREIGN INVESTMENT BY MAJOR ECONOMIES



Unit: USD (1 USD = 32.5999 THB as of 13 June 2025)

Note: Investment projects with foreign equity participation from more than one economy are reported in the figures for both economies. Statistics on net applications are adjusted whenever applications are returned to applicants due to insufficient information. For more details, please visit www.boi.go.th

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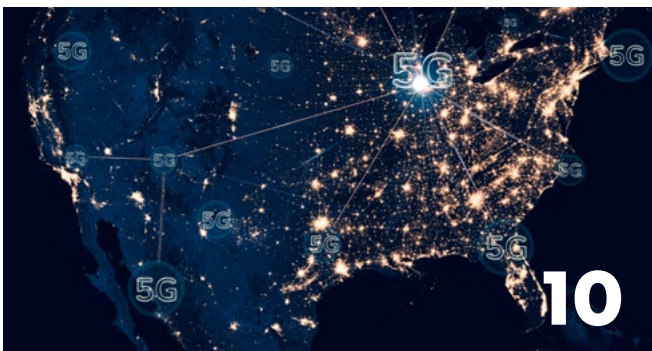
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Thailand's Semiconductor Journey Ahead



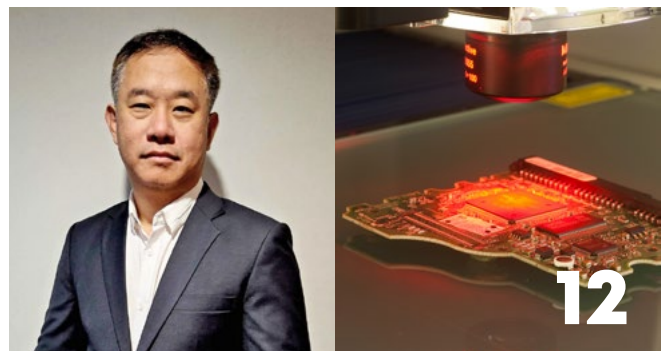
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Thailand's Semiconductor Journey Ahead

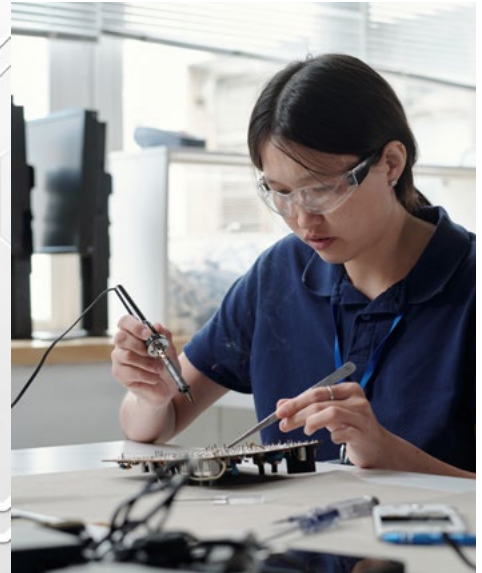
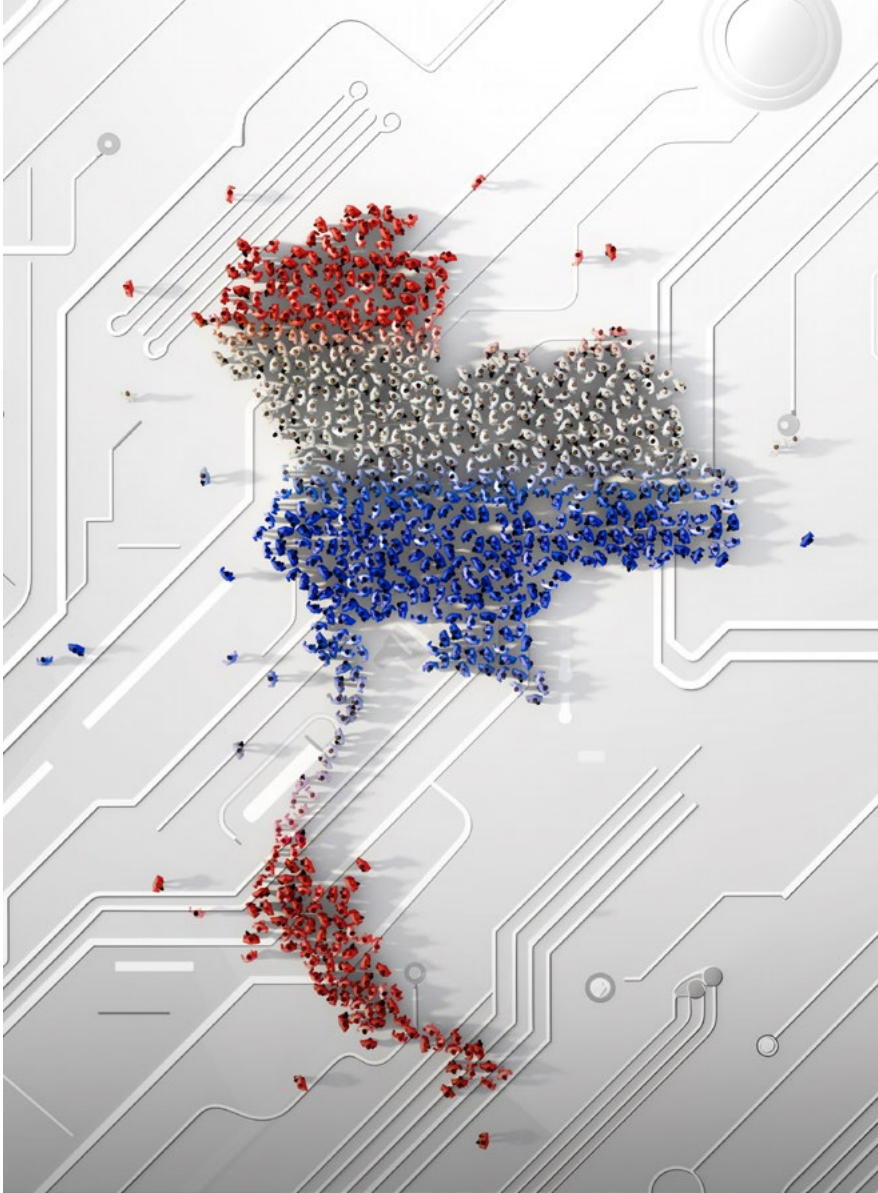
As the world progresses into an era characterized by rapid technological advancements, traditional industries are undergoing significant transformations—most prominently seen in the electronics sector. At the heart of this shift are semiconductors—the critical enablers powering smarter, faster, and more efficient electronic devices. From traditional electronics to AI-driven systems, semiconductors are the foundation of the intelligent operational technologies shaping today's cutting-edge landscape. While Thailand's semiconductor sector is poised for growth, it faces external challenges—including rising global trade tensions.

Over the past decades, Thailand's semiconductor industry has primarily concentrated on the back-end semiconductor, particularly in integrated circuit assembly, testing, and packaging (ATP) and downstream supply chain activities including electronic manufacturing services (EMS). Today, however, the country is making strategic moves toward the front-end semiconductor which involved wafer fabrication and IC design. Meanwhile, the country also focuses on advanced

manufacturing processes which including advanced packaging activity.

One key enabler of this transition is the Thailand Board of Investment (BOI), which offers competitive financial subsidies, tax incentives, and investment facilitation to attract high-value investments. Complementing these incentives is the Thai Microelectronics Center (TMEC), operated under the National Science and Technology Development Agency (NSTDA) of

the Ministry of Higher Education, Science, Research and Innovation (MHESI). TMEC has established a dedicated R&D foundry capable of performing surface micromachining and standard integrated circuit (IC) processing. Currently, the center is actively developing prototypes for commercialization, including CMOS ICs, MEMS, sensors, and the integration of MEMS and sensors with CMOS ICs.



Central to this momentum is Thailand's competitive edge in the semiconductor race—what it calls **Seamless Synergy**—a well-integrated ecosystem that combines skilled talent, strategic partnerships, advanced infrastructure, and strong government support. At present, Thailand has maintained a workforce of more than 600,000 experienced individuals in the electrical and electronics industries¹. Anchored by leading academic institutions and industry-aligned training, a sizable workforce has been extensively upskilled/reskilled and train for advanced electronics and semiconductors, while ongoing collaborations with global leaders from Japan,

Taiwan, Europe, and the U.S. accelerate technology transfer and innovation. The country's robust infrastructure ensures seamless logistic network and stable utilities. On the industrial side, Thailand ranks among the top global exporters of PCBs and PCBA's, a testament to its strong downstream manufacturing base. Coupled with proactive government support—Thailand is building a future-ready semiconductor ecosystem deeply embedded in the global value chain.

To accelerate its semiconductor ambitions, Thailand has established the National Semiconductor Board, chaired by the Prime Minister, to steer national strategy and ensure

cross-ministerial coordination. The board is laying the foundation for Thailand to become a regional hub for semiconductor and advanced electronics manufacturing. In parallel, the government is addressing the talent pipeline challenge by launching the Semiconductor Sandbox Program—a nationwide initiative implemented in partnership with over a dozen universities and leading private sector players, is a cornerstone of MHESI's comprehensive strategy to develop 80,000 highly skilled semiconductor professionals by 2030, in addition to upskilling, internships, advanced academic pathways, the establishment of national training centers, and international scholarships.

Amid shifting trade dynamics, Thailand's drive to build a seamlessly synergized semiconductor ecosystem is not just timely—it is essential. The country is blending bold investments, strategic partnerships, and robust government backing to future-proof the position as an ultimate destination for global semiconductor investors. Explore the story inside. ■

¹ <https://eiu.thaieei.com/#section4>

Precision in Progress: Thailand's Semiconductor & Advanced Electronics Landscape

While the semiconductor industry remains anchored in a globally interdependent supply chain—dependent on East Asia for over 75% of key materials like silicon wafers and specialty chemicals, the U.S. for design, and Europe—particularly the Netherlands—for manufacturing equipment—Thailand is positioning itself as a competitive node in the value chain, leveraging its strategic location, strengthening industrial supply chain, and government-backed support to attract investments in advanced electronics and semiconductors.

As the global technology race intensifies, Thailand is solidifying its position as a key player in the electronics sectors. The nation is advancing along the global supply chain with precision, adapting to volatile trade dynamics, and strengthening its domestic capabilities in high-quality manufacturing.

From export dominance to next-generation collaboration among government, academia, and industry, Thailand is no longer merely participating in the global tech game—it is actively engineering its own tomorrow, shaped not only by resilience and innovation, but also by a strategic push to elevate its electronics

industry. The country is moving up the value chain in semiconductors and advancing its capabilities in high-end electronics, all while driving progress through precision, policy focus, and national ambition. This ambition is reflected in the establishment of the **National Semiconductor Board** last year, which was tasked with formulating a strategic roadmap for the sector.

From Export Engine to a Strategic Node

Once a manufacturing-driven export engine, Thailand's electronics sector is steadily positioning itself as a strategic player in the global supply chain—advancing the economy

through high-value production and integration into global production network ecosystems. Rather than focusing solely on export volume, the industry now emphasizes advanced technologies and specialized applications. Manufacturers are supplying tailored components for automotive electronics, smart medical devices, and AI-ready systems—including data centers, marking a shift from mass production to precision-driven output for next-generation industries.

Thailand's integrated circuit (IC) exports reflect this move toward higher-value manufacturing, with strong demand from growing sectors like electric vehicles, cloud computing, and smart devices. Meanwhile, the country's hard disk drive (HDD) segment maintains global prominence, ranking second after China and contributing 17.14% of the world's HDD export value in 2024, according to Trademap¹.

Expanding beyond IC and HDD advancements, Thailand's printed circuit board (PCB)



¹ https://www.trademap.org/Country_SelProduct_TS.aspx?nvpm=1%7c%7c%7c%7c%7c847170%7c%7c%7c6%7c1%7c1%7c2%7c2%7c1%7c2%7c1%7c%7c1



industry has also emerged as a foundational pillar of next-generation electronics. As the core component in electric vehicles, telecommunications, medical devices, smart appliances, and automation systems, PCB production is seeing significant investment and expansion.

Over the past three years (2022–2024), more than 130 PCB and PCBA manufacturers, along with key material suppliers such as Copper Clad Laminate and Prepreg producers, have received investment promotion from the Thailand Board of Investment (BOI), with total investments exceeding USD 5.5 billion.² This surge in investment has positioned Thailand as the leading PCB producer in ASEAN and among the top five globally. Major Taiwanese manufacturers, including ZDT, Unimicron, Compeq, WUS, Gold Circuit, Unitech, and Dynamic, have established cutting-edge facilities across Prachinburi, Ayutthaya, and Samut Prakan, specializing in High-Density Interconnect PCB, Flexible PCB, and Multilayer PCB for AI-driven applications and advanced electronics. With production lines set to begin operations in 2025, Thailand's growing role in the

global PCB supply chain further solidifies its position as a high-tech manufacturing hub.

Challenge, Change, and Competitiveness

After pandemic disruptions and a worldwide chip shortage, the industry is recalibrating. Demand is rebounding, but risks persist: excess inventories, geopolitical tensions, and intensifying competition, particularly amid U.S.-China trade and tech rivalries.

Thailand's semiconductor and HDD industries are demonstrating resilience. From 2025 to 2027, IC production is projected to grow by 6.0–7.0% annually, with exports expected to rise by 8.0–9.0%, according to Krungsri Research.³ This growth is driven by global demand for computing, smartphones, electric vehicles, and high-performance chips for AI and data analytics.

Building on this momentum, Thailand's IC industry saw a strong rebound in early 2025, with exports climbing from USD 783.55 million in January to USD 928.35 million in March, while production increased from USD 785.07 million to USD 929.77 million over the same period. This renewed growth is reinforcing Thailand's

transition toward higher-value chip production, particularly in memory chips and power semiconductors for electric vehicles.

For HDD, the outlook is equally promising. HDD output is expected to increase by 7.0 to 8.0 percent annually through 2027, while export value is projected to rise by 8.5 to 9.5 percent. Although solid-state drives (SSDs) have been gaining market share, HDDs remain the storage solution of choice for data centers, where cost per gigabyte is still a critical factor. Thailand's major HDD manufacturers, such as Seagate and Western Digital, are responding with next-generation products, including smaller, high-capacity drives. With global investment in AI and data centers expected to surpass USD 300 billion in 2025 alone, Thailand's HDD industry is well positioned to benefit from the data storage boom.

Looking back at 2024 alone, BOI projects submitted in electronics and electrical appliances surged by over 60 percent in number, reaching nearly 231 billion baht. These investments have catalyzed a broader push into higher-value activities—including front-end manufacturing, backend semiconductor production, and

² https://www.boi.go.th/upload/content/PR33_2568.pdf

³ <https://www.krungsri.com/en/research/industry/industry-outlook/hi-tech-industries/electronics/io/Electronics-2025-2027>



smart electronics—and are laying the groundwork for emerging industrial sectors such as electric vehicles (EVs), automation, and digital health.

Further underscoring this shift, Thailand is now moving into front-end semiconductor manufacturing. The country's very first front-end fab project—led by FT1, a joint venture between state-owned oil and gas giant PTT and Hana Microelectronics—is valued at USD 345 million (11.5 billion baht). The facility is expected to begin producing 6- and 8-inch silicon carbide wafers for power semiconductors as early as 2027, leveraging advanced technology from South Korea. Analog Devices has also chosen Thailand for the expansion of its IC Design Center and Wafer & IC Testing operations. Complementing the front-end investment, Sony Group has invested USD 66 million (10 billion yen) to expand backend semiconductor production at its Sony Device Technology (Thailand) Ltd. facility in Pathum Thani. The plant now serves as a key production center for the assembly of core products within Sony's Imaging & Sensing Solutions

business. Its operations include the assembly of image sensors for automotive applications and display devices, as well as the mass production of laser diodes for data center applications—supporting the growing global demand for advanced data facilities. These operations officially commenced in February 2024.⁴

In early 2025, Infineon Technologies further expanded its footprint in Thailand by breaking ground on a new backend semiconductor production facility in Samut Prakan, just south of Bangkok. The newly established investment project will support the production of power modules—critical components for battery energy storage systems (ESS), data centers, and electric vehicles (EVs). The first building is scheduled to begin operations in early 2026, with further ramp-up to be managed flexibly in response to market demand.

In response to shifting global market dynamics, Thailand's advanced electronics sector is undergoing a strategic transformation. As global supply chains realign and inventory imbalances are addressed across

major production hubs, Thai manufacturers are accelerating technological advancements and expanding their market reach. While China and the U.S. remain essential export destinations, broadening trade partnerships and investing in diversified markets will be crucial for long-term resilience and sustained growth. To support this direction, the Thai government has placed increased focus on the quality of new investment projects—ensuring that essential production processes are conducted within the country and encouraging an appropriate proportion of Thai to foreign personnel in manufacturing activities. These aim to promote value-added investment through the adoption of advanced manufacturing technologies and to strengthen the development of local supply chains. Altogether, these approaches are critical to sustaining Thailand's position in the global electronics and semiconductor supply chain, ensuring continued growth and competitiveness amid evolving economic and geopolitical challenges.

Innovative Ecosystems, Talent, and Institutional Strength

Thailand's semiconductor success cannot rest on exports alone. What distinguishes its current phase of growth is a deliberate shift toward ecosystem development, innovation-led investment, human capital enhancement and government support.

However, physical infrastructure is only one part of the equation. Human capital is the real engine that will power Thailand's next leap. In 2024, a total of 76,299 students graduated in STEM fields—including science, mathematics, engineering,



⁴ <https://www.sony-semicon.com/en/news/2024/2024032801.html>, <https://asia.nikkei.com/Business/Tech/Semiconductors/Sony-opens-66m-Thailand-fab-for-driver-assist-image-sensors>



and information and communication technology (ICT)—across all academic levels, from bachelor’s to doctoral programs⁵, according to statistics from the Ministry of Higher Education, Science, Research and Innovation (MHESI).

To propel the semiconductor industry’s growth, the Ministry of Higher Education, Science, Research, and Innovation (MHESI) has outlined a clear roadmap to address workforce gaps. By the next five years, 80,000 high-skilled workers across all levels will be trained and produced specifically for Thailand’s semiconductor and advanced electronics industry. It is worth noting that fifteen leading Thai universities are collaborating with international partners to design semiconductor curricula, train engineers, and offer advanced research opportunities.⁶ The goal is to produce a workforce that is not only large in number but equipped with specialized skills for IC fabrication, system integration, and design innovation.

Recognizing the need for coordinated industry advocacy, the Thai Semiconductor Industry Association (THSIA) was established in November 2024.⁷ With founding members from companies like Analog Devices, Silicon Craft Technology, Delta Electronics, and FT1 Corporation, THSIA represents a united voice for the sector. Its objectives include promoting industry-academic collaboration, developing R&D capabilities, and attracting both domestic and foreign investment. The association is also expected to foster technology transfer, knowledge sharing, and a unified platform for Thailand to participate more actively in global supply chain discussions.

To turn strategic positioning into real industrial impact, Thailand is working closely with global semiconductor and electronics companies to localize advanced manufacturing processes, co-develop R&D centers, and scale workforce reskilling programs in

areas such as chip design, automation, and smart electronics assembly. Leading multinationals have already committed to new investments in production facilities and frontend and backend operations.

Supporting this momentum are government-backed incentives, including up to 13 years of corporate income tax exemption and import duty exemptions for machinery and raw materials used in export production—covering the entire value chain from upstream and midstream to advanced OSAT (back-end) operations. Exclusively for upstream (front-end) fabs, additional financial support is available for qualified capital expenditures. This marks a clear shift: Thailand is no longer just a manufacturing base—it is enabling end-to-end value creation across Southeast Asia’s electronics and semiconductor supply chain. ■

⁵ https://info.mhesi.go.th/homestat_cgt.php

⁶ <https://www.nstda.or.th>

⁷ <https://o2oforum.com/economics-thsia-thai-semiconductor-industry-association/>



Why Thailand: The Premier Investment Hub for Semiconductors and Advanced Electronics Amid Global Tariff Uncertainties

In today's tech-driven world, semiconductors and advanced electronics serve as the backbone of innovation, fueling a wide spectrum of emerging technologies—from artificial intelligence, electric vehicles (EVs), and 5G networks to hyperscale data centers and renewable energy technologies.

Thailand is no exception. As it experiences a surge in digital transformation and sustainability efforts, the semiconductor demand is increasing sharply—driven by the rapid expansion of digital infrastructure, the rise of smart manufacturing, and the government's strategic commitment to achieving carbon neutrality.

In 2024, Thailand drew a record-breaking \$33.8 billion in BOI investment applications—the highest in over a decade. Notably, this surge was largely driven by foreign direct investment (FDI), particularly in high-value segments such as backend semiconductor assembly, printed circuit board (PCB) manufacturing, and hyperscale data centers, underscoring Thailand's rising status as a premier global investment destination.

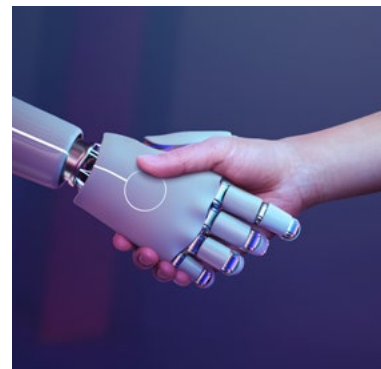
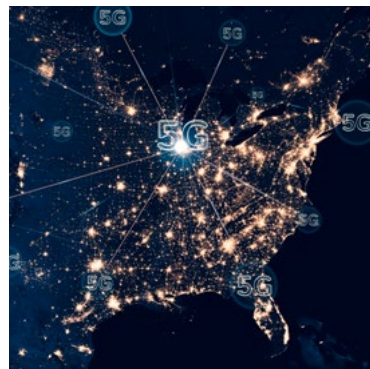
Adding to this, Thailand's robust network of 17 Free Trade Agreements (FTAs) with 24 partner countries provides semiconductor investors access to a market of 680 million people within ASEAN and serves as a gateway to major economies such as China and India. This includes the European Union, with which Thailand is engaged in ongoing trade negotiations expected to conclude in 2025—further enabling investors to fully capitalize on Thailand's competitive advantages.

Amid heightening concerns over recent U.S. tariff adjustments and their impact on the global trade landscape, multinationals are reevaluating their supply chains to reduce risk and improve resilience while the Thai Government sees this challenge as a timely opportunity to modernize the economic structure—prioritizing the semiconductor industry.

A landmark move came with the establishment of National Semiconductor and Advanced Electronics

Policy Committee (Semiconductor Board) on October 25, 2024,¹ chaired by the Prime Minister. The purpose of the Committee is to set direction, roadmap, and goals for the development of semiconductors and advanced electronics industries, emphasizing the integration of efforts from key government agencies and industry giants. The board is charting Thailand's strategic move into higher-value semiconductor supply chain like chip design, wafer fabrication, and advanced packaging and testing. Coupled with its status as the world's 12th largest electronics exporter², Thailand is already attracting global leaders like NXP Semiconductors, Western Digital, and Delta Electronics—strongly positioning itself as the next semiconductor powerhouse.

Game-changing semiconductor investments are already underway, marking the dawn of a new era in advanced electronic manufacturing for Thailand. At the forefront is FT1 Corporation Ltd, a bold joint venture between Hana Microelectronics and PTT Group, building Thailand's first Silicon Carbide (SiC) wafer



¹ <https://osos.boi.go.th/EN/news/2136/Thailand%E2%80%99s-New-Semiconductor-Board-Approves-Framework-of-National-Strategy-and-Skilled-Workforce-Development-to-Prepare-for-500-Billion-Baht-Expected-Foreign-Investment-Wave/>
² www.trademap.org

fabrication facility. Building on this momentum further, Infineon Technologies (Thailand) Ltd. is launching an advanced packaging facility for power modules and a high-tech R&D center for microelectronics. On the frontier of sensing technology, Sony Device Technology (Thailand) Ltd. is developing a backend facility for ICs used in sensors and laser diodes. These major projects are more than milestones—they are proof of Thailand's fast-paced rise as a regional powerhouse in semiconductors and advanced electronics.

Beyond proactive policy moves, the Thailand Board of Investment (BOI) is further turning up the heat to make Thailand a premier destination for semiconductor investment. With the appeal of comprehensive incentives tailored to the capital-intensive semiconductor industry, very front-end operations like wafer fabrication receive up to 13-year corporate income tax (CIT) exemptions, and up to 8-year exemptions are granted for back-end processes such as wafer sorting, assembly, and IC testing. In addition, zero import duties on machinery, raw materials for export production, and R&D materials are provided, significantly lowering operational and setup costs. Not to mention, Thailand's Competitiveness Enhancement Fund adds an irresistible appeal for front-end investors by offering tax breaks of up to 15 years and financial support for capital expenditure (CAPEX), R&D, and comprehensive talent development.

Recognizing the industry's reliance on skilled personnels, the government, through the Ministry of Higher Education, Science, Research, and Innovation (MHESI), has approved a Sandbox Program for the semiconductor and advanced electronics industry since 2024. The program is a collaboration between 15 educational institutions and seven private companies, including Infineon, ADI, Hana Microelectronics, Delta, and PTT.

This pioneering initiative is designed to turbocharge Thailand's talent pipeline through short-, medium-, and long-term workforce training—custom-built to meet the evolving demands of the industry. The first wave of students will kick off in the 2025 academic year, with 90 enrolled at KMITL, 60 at Prince of Songkla University, and 40 at Kasetsart University—ready to be groomed into industry-ready professionals from day one.

The momentum does not stop there. In parallel, at least two leading engineering schools—KMUTNB and Chulalongkorn University—are rolling out non-

sandbox semiconductor engineering programs in 2025, enrolling an additional 80 and 40 students, respectively.

These efforts form a part of Thailand MHESI's goal to cultivate over 80,000 skilled professionals in semiconductors and advanced electronics by 2030—ensuring a resilient and future-ready workforce that meets investor needs and strengthens Thailand's competitive edge in the global supply chain.

Yet mentioned, international collaboration is another powerful talent development mechanism. Through the KOSEN model with Japanese higher education institutions, Thailand is beginning to see the fruits of the efforts—the first batch of 24 Mechatronics Engineering students graduated last year, while another 746 students are currently enrolled in joint programs with top-tier local partners like KMITL and KMUTT. Additionally, Mahanakorn University of Technology (MUT) is pushing the boundaries through strategic alliances with world-class institutions such as Imperial College London, Arizona State University, the University of Southampton, and the University of New South Wales. These partnerships are not only raising the bar for engineering education in Thailand but are also shaping a globally competitive talent pool.

Complementing Thailand's push for talent and innovation is the commitment to pursuing a sustainable future and carbon neutrality, with the semiconductor sector on board, Thailand's electricity authorities (EGAT, MEA, and PEA) have launched the Utility Green Tariff (UGT) mechanism to meet growing industrial demand for renewable power. Under UGT1, a non-source-specific program, about 2,000 GWh of green electricity per year is available, backed by I-REC certificates. Registration for the first batch closed earlier this year. Upcoming phases—UGT2 (source-specific power) and Direct PPA—will offer more tailored options.

As Thailand moves towards becoming a global semiconductor and advanced electronics powerhouse, the convergence of strategic policy, robust incentives, clean energy, and world-class talent development is undeniable. Thailand is positioning itself as the premier destination for semiconductor investments. As global supply chains evolve in response to shifting trade dynamics, Thailand's forward-thinking approach presents a wealth of opportunities, aligning with global trends. Invest in Thailand today and be at the forefront of building tomorrow's technology. ■

Thailand's Semiconductor Ambitions: Building a Complete Ecosystem for the Future

Thailand has set its sights on developing a comprehensive semiconductor and advanced electronics industry, recognizing it as vital to the nation's long-term economic advancement. To turn this vision into reality, the Thai government established the National Semiconductor and Advanced Electronics Policy Committee—known as the **Semiconductor Board**—on October 24, 2024. Chaired by Prime Minister Paetongtarn Shinawatra, this committee is responsible for formulating a national roadmap that provides clear policy direction and ensures effective implementation across the sector.

The Semiconductor Board gives us a strong national direction, and with key ministries and agencies working together, we can make the policy actionable.”

Dr. Wutthinan Jeamsaksiri
Senior Researcher at Thai Microelectronics Center (TMEC)
and a key member of the Semiconductor Board

To better understand the opportunities and challenges shaping Thailand's growing semiconductor landscape, we spoke with **Dr. Wutthinan Jeamsaksiri**, a Senior Researcher at the Thai Microelectronics Center (TMEC) and a key member of the Semiconductor Board. He shared his perspective on TMEC's strategic missions, the government's coordinated approach, and how Thailand is positioning itself in the global value chain.



TMEC's Vision: Creating a Complete Semiconductor Ecosystem

Thailand's Microelectronics Center (TMEC) has set a bold vision to create a complete and integrated ecosystem for the semiconductor and advanced electronics industry within the country. *"We believe building a full ecosystem will lead to real income distribution derived from the capabilities of people in the country,"* said Dr. Wutthinan, a senior researcher at TMEC.

Over the past decade, TMEC has pursued this vision through three core missions:

Mission 1: Creating B2B products, such as producing wafers for sensors or other applications, to supply industries or companies that need these types of products.

Mission 2: Doing B2C (Business-to-Consumer), which directly aligns with the vision. This means creating products domestically beyond just wafers, involving linking up with industry players for IC design, chip design, downstream activities like chip packaging, PCB/PCBA, product design, and ultimately, end-user products such as drones, mobile phones, or robots, to be created in Thailand.

Mission 3: Developing human resources to support the industry's growth. This involves preparing and building people in this field to meet the needs of the industry and sharing government resources (like infrastructure, machinery, facility labs, etc.) for human development, research, skill enhancement, and providing industry access to necessary tools.

TMEC's mission directly align with the Semiconductor Board's vision of creating a comprehensive and interconnected ecosystem. By fostering strong connections across upstream, midstream, and downstream businesses, TMEC is playing a key role in driving innovation and supporting the development of advanced products such as drones, smartphones, robots, and AI-powered technologies.

Coordinated Strategy and National Policy Direction

To accelerate ecosystem development and ensure alignment between the public and private sectors, the Semiconductor Board has established two key

subcommittees: one focused on strategic development, chaired by the Secretary-General of the Thailand Board of Investment (BOI), and another dedicated to human resources development, chaired by the Minister of Higher Education, Science, Research, and Innovation (MHESI).

Dr. Wutthinan, who also serves on the strategic development subcommittee, emphasized that these efforts reflect the kind of coordination and policy alignment the Semiconductor Board is now tasked with strengthening. *"The Semiconductor Board gives us a strong national direction, and with key ministries and agencies working together, we can make the policy actionable,"* he stated.

He further noted that the more important question is not simply about which specific areas to prioritize, but how to effectively build out the entire ecosystem using available resources. *"While all parts of the supply chain*

should ideally be developed together, difficult choices must be made based on resources and circumstances. However, our goal remains unchanged which is to complete the chain as quickly as possible and create suitable ecosystem for incoming investors."

As part of this pragmatic approach, Thailand is actively identifying specific semiconductor segments, such as sensors, Micro-Electro-Mechanical Systems (MEMS), and photonic devices, which align closely with the growing global demand driven by AI technology. *"These targeted product streams represent viable opportunities that the government's resources can realistically support thus enhancing the attractiveness and feasibility of investment initiatives,"* he explained.





Thailand's Strategic Position and Investor Appeal

Thailand's appeal to foreign investors, particularly in the advanced PCB and PCBA sectors, is growing rapidly. This trend has been driven by companies relocating from China and Taiwan in recent years. *"We're seeing real momentum—many PCB and PCBA firms have chosen Thailand because of our geopolitical stability, skilled workforce, and reliable infrastructure,"* he noted.

In addition to this, Thailand is now attracting interest from upstream investors, including prominent names such as Infineon and ADI. Moving forward, the country's strategic focus is on attracting investments in upstream activities such as IC design and wafer fabrication, with the goal of building a fully integrated production chain. The Thai government's recent allocation of approximately USD 300 million

reflects its strong commitment to advancing this critical sector.

A key strength driving growth within the industry is the potential of Thai talent, which matches the skill levels found in leading semiconductor nations. This strong foundation provides investors with confidence that Thailand possesses both the human resources and the infrastructure needed for sustainable industry growth.

"Compared to other countries in the region, Thailand presents a well-rounded option. Our public utilities—electricity and water—are more stable and reliable than those in Vietnam. Malaysia focuses more on upstream activities, while Singapore targets niche, high-value investments. Thailand, on the other hand, offers a broader and more balanced middle ground," he added.

Fostering a Stronger Production and R&D Ecosystem in Thailand

Thailand is strategically enhancing its production and R&D capabilities through a series of coordinated initiatives. The Board of Investment (BOI) plays a crucial role to provide substantial financial incentives and tax benefits. Additionally, significant efforts are underway to streamline regulatory processes, enhance administrative efficiency, and improve investor support mechanisms.

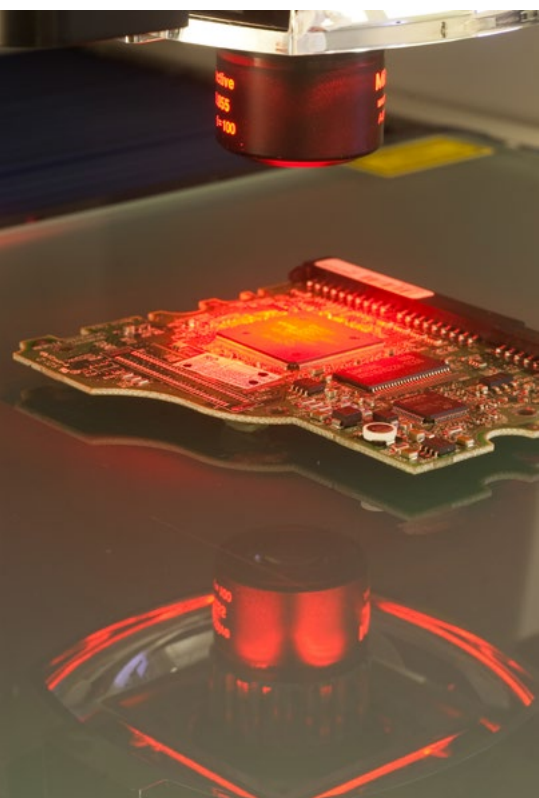
Another one of the key drivers is the Ministry of Higher Education, Science, Research, and Innovation's (MHESI) Sandbox program, which aims to adapt university curricula to meet the practical and evolving needs of the semiconductor and advanced electronics industries.

"One of the challenges is that universities often focus on upstream areas that don't exist in Thailand, but our industry right now is mostly downstream and midstream," explained Dr. Wutthinan. *"So, we are trying to adjust curricula and reskill/upskill people for the current industry, while also preparing people for future upstream development."*

While MHESI focuses on developing human resources, TMEC is playing a complementary role by collaborating closely with universities, integrating academic personnel into active research projects, thereby aligning educational outcomes directly with industry demands. These proactive measures, combined with Thailand's presence at global semiconductor events, significantly enhance the country's appeal to international investors.

TMEC also leads efforts to strengthen both manufacturing and R&D capabilities. *"We facilitate critical infrastructure sharing and foster B2B and B2C industry engagement,"* said Dr. Wutthinan. *"This not only supports manufacturing excellence but also encourages innovation and technological advancement. Our collaborative approach—with both domestic and international stakeholders—ensures effective resource utilization and drives comprehensive ecosystem development."*

Looking ahead—Thailand is steadily turning its semiconductor vision into reality, with a national roadmap underway—expected to be formalized this year—and full government backing laying the foundation for a resilient, future-ready ecosystem. ■





Infineon Technologies: Powering the Future of Semiconductors from Thailand



One of the factors behind Infineon's expansion was the growing pool of skilled talent viewed as essential to supporting the scale and complexity of semiconductor production."

Mr. Wei Khoe Lim
Senior Vice President and Managing Director
of Infineon Technologies Thailand

Strongly rooted in power systems and IoT, Infineon Technologies AG has grown into one of the world's most influential names in semiconductors. Headquartered in Germany, the company is powering the global shift toward decarbonization and digitalization. Its technologies enable greener energy, smarter mobility, and more secure IoT solutions—touching nearly every aspect of life. Today, with a global team of over 58,000 employees, Infineon posted impressive revenues of approximately €15 billion in the 2024 fiscal year. The company is listed on both the Frankfurt Stock Exchange and the OTCQX International over-the-counter market in the U.S., and it held its position among the top two automotive semiconductor companies in every region last year.



Earlier this year, Infineon Technologies (Thailand) took steps forward to optimize its offerings and diversify its manufacturing footprint by breaking ground on a new semiconductor backend production site in Samut Prakan, just south of Bangkok. To gain deeper insight into Infineon's journey in Thailand, we spoke with Mr. Wei Khoe Lim, Senior Vice President and Managing Director of Infineon Technologies Thailand, who shared the key reasons behind the company's decision to invest in the country.

Powering Electronics - Our Journey in Thailand

As part of its global strategy, Infineon Technologies has chosen Thailand as a hub for manufacturing expansion. This decision reflects the company's long-term vision and commitment to supporting the growing demand for semiconductor solutions, driven by strong decarbonization and climate protection efforts. The investment primarily supports the increasing demand for Power Module in e.g. industrial applications and renewables. Infineon is also setting up a state-of-the-art R&D center to power microelectronics innovation here in Thailand.

When expanding its manufacturing footprint, Infineon takes a holistic approach, carefully weighing a wide range of factors. These include operational costs, supply chain resilience, space availability for diversification, the maturity of the local ecosystem, talent availability, and government policy support. Following a thorough evaluation, Thailand stood out as a top choice—meeting all these dimensions.

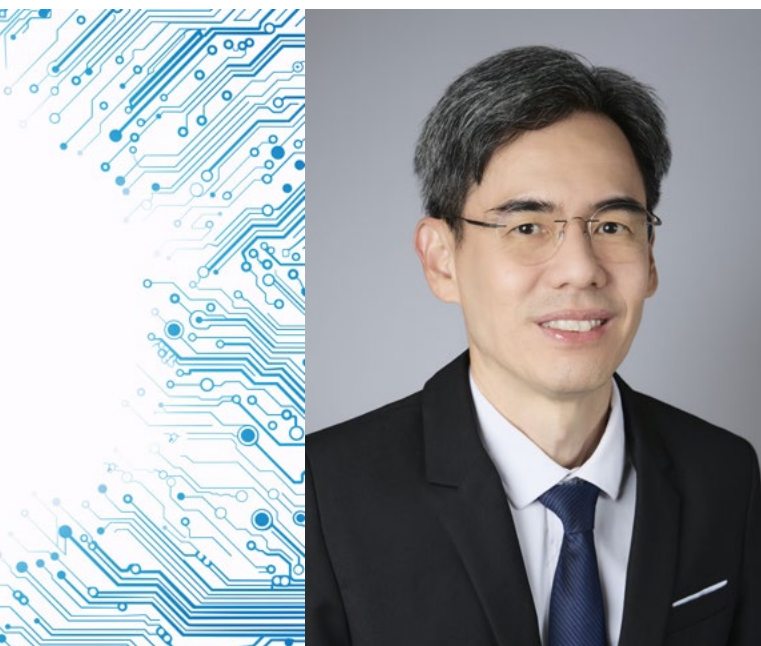
“The Thai government policy has been very supportive and we appreciate the effort of creating a favorable business environment. It also helps to enhance the regional semiconductor industry ecosystem”

Thailand's strategic location in Southeast Asia, coupled with a rapidly developing economy and robust infrastructure, makes it an ideal base for high-value manufacturing. The country has a well-established electronics and semiconductor ecosystem, supported by government initiatives that encourage innovation and investment in advanced technology. One of the factors behind Infineon's decision was the growing pool of skilled talent viewed as essential to supporting the scale and complexity of semiconductor production.

Inspired by the pace of Thailand's economic and industrial development, Infineon is proud to be part of this transformative journey—powering electronics and shaping the future, together. By strengthening its operational presence in Thailand, Infineon reinforces its global manufacturing network and contributes to the growth of Southeast Asia's technological landscape. This strategic move ensures that Infineon remains at the forefront of semiconductor innovation, while delivering long-term value to its stakeholders and partners across the region.

Scaling Support: Enabling Infineon's Expansion in Thailand

“The Thai government policy has been very supportive and we appreciate the effort of creating a favorable business environment. It also helps to enhance the regional semiconductor industry ecosystem,” said Mr. Wei Khoe Lim, Senior Vice President and Managing Director of Infineon Technologies Thailand. This sentiment reflects Infineon's strong and collaborative relationship with the Thai government, that has also reinforced the company's confidence in Thailand's long-term potential.





From a policy perspective, Infineon appreciates the government's clear and supportive stance toward the semiconductor and advanced electronics industries. Thailand's proactive approach is exemplified by the establishment of the National Semiconductor and Advanced Electronics Policy Committee in December 2024. This strategic framework is designed to attract foreign investment, cultivate a skilled workforce, and position Thailand as a regional hub for semiconductor manufacturing.

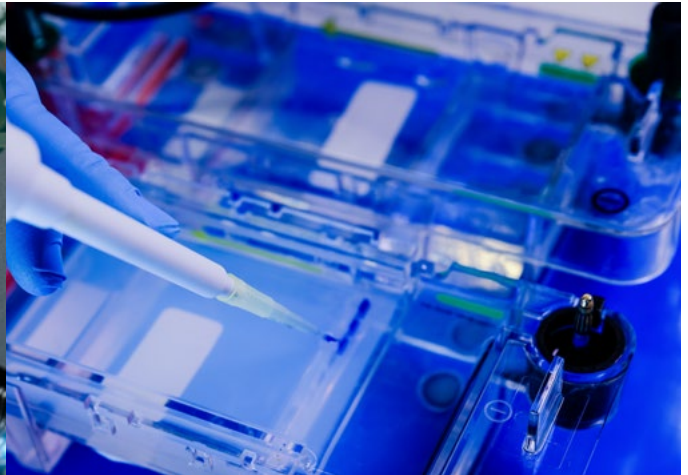
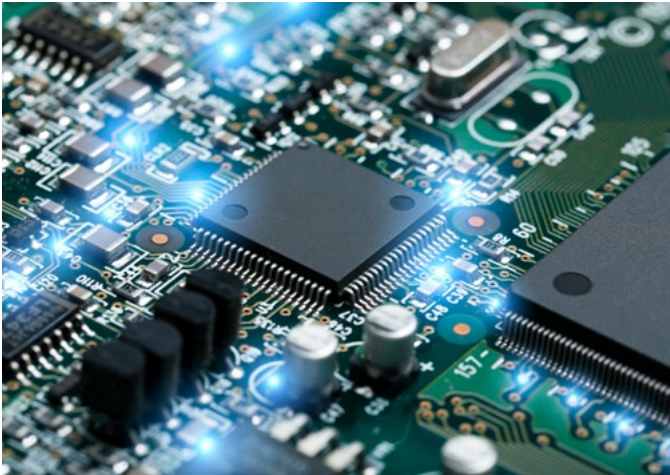
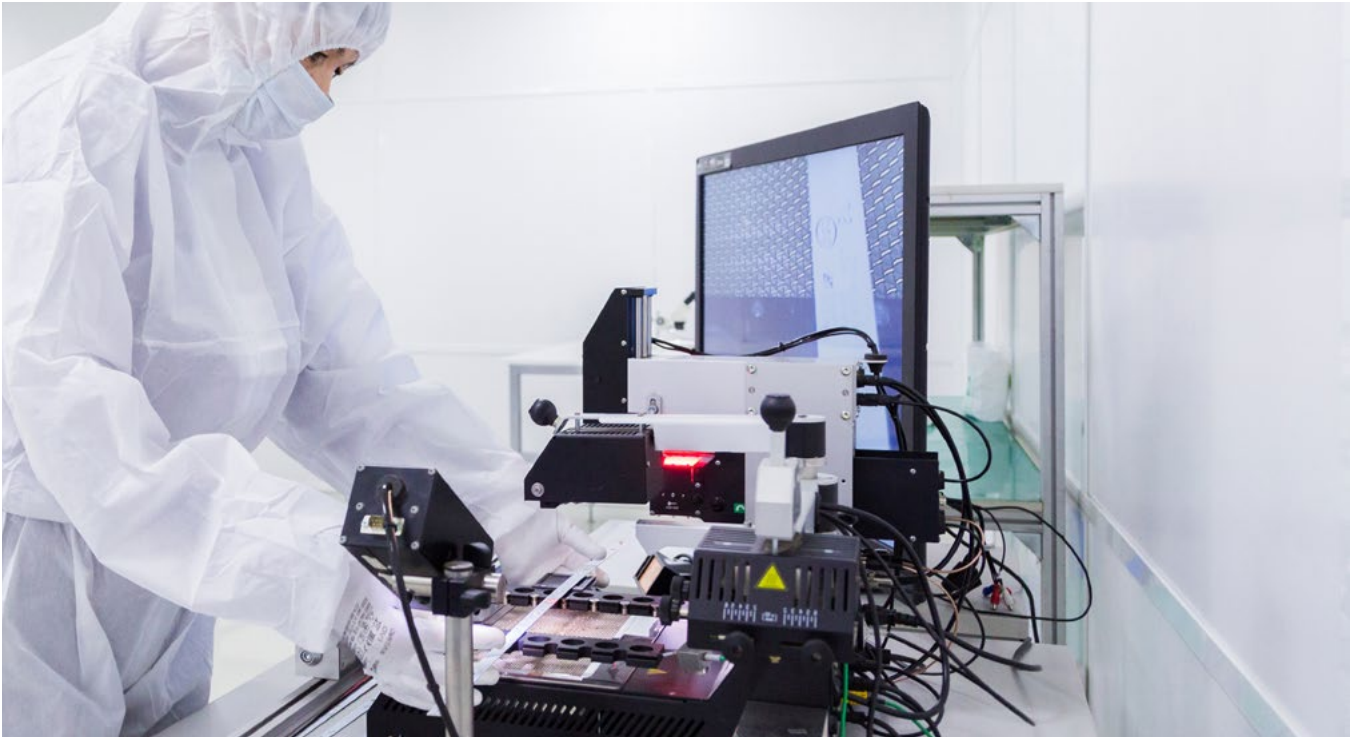
While strong policy backing and infrastructure support have laid a solid foundation, operational process streamlining has also now emerged as a key factor in enhancing the country's competitiveness on the global stage. The call for government process efficiency is not unique to Infineon—it is a central concern for many high-tech investors evaluating long-term opportunities in the region. Encouragingly, progress is underway. The Thailand Board of Investment (BOI) has implemented important regulatory enhancements to simplify and accelerate the investment process. Notably, the e-Investment Promotion System allows for the fully digital submission and tracking of applications, and not to mention visa and work permit facilitation through its one stop center.

Future-Ready Through Collaboration

Infineon is actively shaping the future of Thailand's semiconductor ecosystem. Through partnerships with local suppliers, universities, and research institutions, the company is fueling a robust talent pipeline and building a more agile, resilient supply chain ready for the demands of tomorrow.

"One of the key initiatives we've undertaken is partnering with universities to help building a strong talent pipeline," said Mr. Wei Khoe Lim. "As we are launching a new production facility, having access to skilled workers is essential—without them, growth is simply not possible. This collaboration helps to ensure a steady flow of qualified talent to support our long-term development."

Actively partnering with leading science and engineering schools and key national agencies. Through co-developed curricula, advisory roles, and hands-on internship and sandbox programs at institutions like King Mongkut's Institute of Technology Ladkrabang (KMITL), King Mongkut's University of Technology North Bangkok (KMUTNB), Chulalongkorn University, and Burapha University, the company ensures that students gain industry-oriented skills that are needed to follow a career in the microelectronic area. Infineon also engages in



thought leadership, including guest talks and board participation, to bridge academia and industry. At the national level, its collaborations with Thailand Science Research and Innovation (TSRI) and National Science and Technology Development Agency (NSTDA) focus on advancing AI and semiconductor innovation and shaping workforce strategies.

More Than Manufacturing: Partnering for the Future of Semiconductors

Infineon's expansion in Thailand is aligned with its mission to address the increasing global demand for smart, efficient, and reliable semiconductor solutions. Creating these solutions is essential for driving innovation across key areas—ranging from energy efficiency and mobility to renewable energy and industrial automation.

In light of the continuing global demand for advanced semiconductor technologies, Southeast Asia has emerged as a pivotal region for high-tech manufacturing – thanks to the strong government backing, and the growing pool of skilled talents.

As deepening its presence in Thailand, Infineon sees the country as more than just a manufacturing location– it's a strategic partner in shaping the future of the semiconductor industry. *“For us, working closely with the BOI offers great advantages in terms of support and facilitation,”* Mr. Wei Khoe Lim shared. *“Our qualification building has been running for nearly six months now, and the main building will be completed by the end of this year. Without the BOI's support, this progress wouldn't have happened so quickly,”* he added. ■

THAI ECONOMY AT A GLANCE

Key Economic Figures



GDP (2024)
USD 526 Billion



GDP per Capita (2024)
USD 7,496 / Year

GDP Growth



Source: NESDC
(Data as of Feb 2025)

Unemployment (2024)



Inflation (2024)



Source: NESDC
(Data as of Feb 2025)

Investment Growth



Export Value of Goods Growth



Source: NESDC
(Data as of Feb 2025)

Market Profile (2024)



US\$ Approximate
USD 10.38-12.32

Source: Ministry of Labour



Export Figures

Export value (USD million)

Jan-Dec 2022: 305,433
Jan-Dec 2023: 301,453
Jan-Dec 2024: 323,583
Jan-Apr 2025: 110,888

Top 10 Export Markets (Jan-Apr 2025)

Rank	Value (USD Million)	Share
United States	21,565.85	19.45%
China	12,749.93	11.5%
Japan	7,918.62	7.14%
India	6,157.17	5.55%
Malaysia	4,415.92	3.98%
Vietnam	4,170.34	3.76%
Hong Kong	3,972.67	3.58%
Australia	3,805.14	3.43%
Singapore	3,383.05	3.05%
Indonesia	3,343.07	3.01%

Top 10 Exports (Jan-Apr 2025)

Goods / Products	Value (US\$ million)	Share
Vehicles and Parts	11,245.30	10.14%
Computers and Parts	10,902.31	9.83%
Jewelry Products	9,849.79	8.88%
Rubber Products	5,298.51	4.78%
Machinery and Parts	3,571.94	3.22%
Refined Fuel	3,554.96	3.21%
Plastic Pellets	3,276.16	2.95%
Integrated Circuits	2,967.65	2.68%
Chemical Products	2,821.95	2.54%
Air Conditioning Machine and Parts	2,655.86	2.4%

Exchange Rates (As of 13 June 2025)



Source: Bank of Thailand

Tax Rate

Corporate Income Tax: 0 – 20%
Personal Income Tax: 5 – 35%
VAT: 7%
Withholding Tax: 1 – 15%

Source: the Revenue Department
(As of March 2025)

ABOUT BOI

The Office of the Board of Investment (BOI) is the principle government agency that operates under the Prime Minister's Office for the purpose of encouraging investment in Thailand. We at the BOI serve as the professional contact points for investors, providing them with useful investment information and services. We offer business support and investment incentive to foreign investors in Thailand, including tax and non-tax incentives. A few non-tax incentives include granting land ownership to foreigners and facilitating visas and work permits. Besides serving the needs of overseas investors, we also offer consultation services to Thai investors who are interested in investment opportunities abroad.

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