

# Technology Market Scan

## ASIA-PACIFIC

### CHINA

#### Guidelines to promote AI education

China's Ministry of Education has recently issued two guidelines to promote artificial intelligence (AI) education in primary and secondary schools by building a tiered, progressive, and spiraling general AI education system, prohibiting students from independently using open-ended content generation at primary schools and banning teachers from using generative AI as a substitute for their core teaching responsibilities.

The release of the two documents - the guidelines for AI general education in primary and secondary schools (2025) and the guidelines for the use of generative AI in primary and secondary schools (2025) - marks a significant initiative to scientifically and systematically promote AI education across all levels of schooling, further implement the cultivation of innovative talent with AI literacy and offers a Chinese solution to respond to technological transformation in the global education sector, CCTV News reported.

The guidelines for AI general education aim to establish a comprehensive, scientifically grounded AI education system, which centers on AI literacy through the adoption of a spiral curriculum designed to realize the development from cognitive enlightenment to creative practice, CCTV reported. At the primary level, the focus is on sparking interest and building foundational cognitive understanding. During the junior high school period, AI education will reinforce students' understanding of technical principles and foundational AI applications. At the senior high level, emphasis is placed on systems thinking and innovation.

According to the AI general education guidelines, the goal is to cultivate stu-

dents' core competencies for adapting to an intelligent society, the AI education system will cultivate talent with AI literacy characterized by an integrated development in terms of knowledge, skills, thinking, and values which includes the development of technological innovation thinking, critical thinking, human-AI collaboration skills, AI literacy, and a strong sense of social responsibility, People's Education magazine reported.

By implementing a coordinated mechanism involving "curriculum restructuring, integrated resources, innovative assessment, and empowered teacher training," this initiative aims to transition AI education from localized pilots to nationwide implementation, ultimately establishing a Chinese-style model of AI general education for primary and secondary schools, CCTV reported.

<https://www.globaltimes.cn/>

#### Patent applications hit record high

Patent applications from China reached a record high in 2024, according to a report released by the European Patent Office (EPO), showing a strong presence of Chinese companies in the European technology market. The report said Chinese companies and researchers filed 20,081 patent applications last year at the EPO ranking 4th worldwide, accounting for 10.1 percent of total applications there, following the US (47,787 applications), Germany (25,033 applications), and Japan (21,062 applications).

Patent filings from China have grown steadily over the past decade. While growth slowed in 2024, up only 0.5 percent compared to 2023, applications from China have more than doubled since 2018; and more than quadrupled since 2014. China's innovation momentum remains strong. Huawei Technologies led the Chinese rankings, placing second overall at the EPO in 2024 behind Samsung, followed by LG, Qualcomm, and RTX.

In addition to Huawei (4,322 applications), five other Chinese companies ranked in the top 50 applicants at the EPO, showcasing China's robust innovation capabilities and active participation in European patent applications. The list includes CATL at number 14, with 1,163 European patent applications, ZTE at 16, with 999 applications, Xiaomi at number 20, with 763 applications, Vivo Mobile at 28, with 622 applications and finally Tencent at number 49, with 446 European patent applications.

The report also noted a surge in patent filings from China related to battery technologies. Chinese firms saw the strongest growth in electrical machinery, apparatus, and energy, up 32.2 percent in 2024 year-on-year. This was thanks to a surge from China in patent applications for battery-related technologies (+79 percent), with four Chinese companies now among the top 15 applicants in battery technologies (up from two in 2023): CATL, Eve Energy, BYD, and Zhuhai CosMX Battery.

<https://www.globaltimes.cn/>

### INDIA

#### R&D spending doubles over the last decade

India's Gross Expenditure on Research and Development (GERD) has more than doubled over the past decade, rising from Rs. 60,196 crore in 2013-14 to Rs. 1.27 lakh crore, according to Union Minister Jitendra Singh. Speaking at the DISHA event at the India Habitat Centre on Monday, the Union Minister of State (Independent Charge) for Science and Technology highlighted the significant growth in India's R&D investments under Prime Minister Narendra Modi's leadership. He attributed this increase to the government's commitment to fostering innovation in key sectors like artificial intelligence, biotechnology, and quantum computing.

"The future economy of India will be shaped by home-grown innova-

tions in deep-tech areas such as AI, biotechnology, and quantum computing,” Dr. Singh said. He emphasised that government-backed initiatives have been instrumental in driving scientific advancements and positioning India as a global leader in technological innovation.

Dr. Singh also highlighted India’s evolving intellectual property (IP)-driven innovation ecosystem, which is supported by academia, industry, and startups. He credited the government’s push for research and development (R&D) as a key factor in this progress, stressing the importance of transitioning innovations from labs to industries in the pursuit of self-reliance, or ‘Atmanirbhar Bharat.’

Dr. Singh lauded the DISHA Program—an initiative aimed at Developing Innovations, Successful Harnessing, and Adoption—as a vital step toward creating a knowledge-based economy. The program supports faculty members and students working on disruptive technologies, ensuring India stays at the forefront of global innovation.

<https://ddnews.gov.in/>

## 6G patent filings

India entered amongst the top six countries globally in 6G patent filing, said Chandra Sekhar Pemmasani, the Minister of State for Communications at the BHARAT 6G 2025 conference. The country has sanctioned over Rs 300 crore (USD 35.14 million) for over 111 research projects, marking a significant milestone in pursuing 6G technology. “6G will operate on TeraHertz frequency bands, enabling data rates up to one terabit per second, 100 times faster than 5G,” the minister added.

According to a release by the India Brand Equity Foundation (IBEF), the adoption of 6G technology will “create entirely new industries and revolutionise existing ones” and is expected to contribute Rs 85,37,000 crore (USD 1 trillion) to India’s economy by 2035.

<https://economictimes.indiatimes.com/>

## MALAYSIA

### National blockchain infrastructure launched

Malaysia has launched its national Malaysian Blockchain Infrastructure (MBI), which is a core component of Malaysia’s National Blockchain Roadmap. MBI is a partnership between MIMOS Berhad (Malaysian Institute of Microelectronic Systems), the national applied research and development (R&D) centre under the Ministry of Science, Technology, and Innovation (MOSTI), as well as Malaysian e-government solutions provider MY E.G. Services Berhad (MYEG). The infrastructure has been built on blockchain technology by Malaysia-based company Zetrix, which has developed blockchain applications that have been deployed by governments and enterprises around Asia.

In a joint release, MIMOS and MYEG said MBI was the foundation layer that would allow developers and businesses to build secure, scalable blockchain-based services without needing to navigate the technical complexity of individual blockchain platforms like Ethereum, Solana, and enterprise networks. This would simplify the creation of blockchain applications, and MBI was expected to cater to a broad range of use cases, such as supply chain traceability and digital identity. Both the public and private sectors could also build applications catering to decentralised finance and tokenisation of digital assets, the statement said.

<https://govinsider.asia/>

### Funding for R&D, commercialisation, and innovation ecosystem

The government, through funding agencies under the Ministry of Science, Technology, and Innovation (Mosti), has channelled RM1.37 billion in financing or investment to startups and Small and Medium Enterprises (SMEs) from 2016 to 2024. According to the ministry, it aims to strengthen the financing ecosystem of Malaysia’s research and development (R&D) as well

as commercialisation and innovation (C&I), which contributed to an increase in RM1.76 billion in funding, generating a return of up to 4.9 times for every ringgit invested.

Mosti, in a statement, said the financing programme had a major impact on the country through the creation of 17,282 highly skilled job opportunities, contributing RM12.99 billion to the country’s GDP, with 360 intellectual properties marketed and the production of 170 products or services of disruptive technology. “As of Dec 31, 2024, a total of 4,319 startups were registered on the MyStartup portal operated by Cradle Fund Sdn Bhd (Cradle),” said Mosti.

The funding agencies under MOSTI are Cradle, Kumpulan Modal Perdana (KMP), Malaysian Technology Development Corporation (MTDC), Malaysia Debt Ventures Berhad (MDV), VentureTECH (VT), NanoMalaysia Berhad (NMB) and Malaysian Bioeconomy Development Corporation Sdn Bhd (BEC).

<https://theedgemalaysia.com/>

### Community-based rooftop solar aggregation scheme

In a landmark move to boost decentralized renewable energy adoption, Malaysia’s Ministry of Energy Transition and Water Transformation (PETRA) has launched the Community Renewable Energy Aggregation Mechanism (CREAM) — the nation’s first structured rooftop solar aggregation program.

The initiative enables homeowners to lease or rent out their rooftop spaces to third-party developers, who will then install solar photovoltaic (PV) systems to generate green electricity for nearby users. The electricity generated will be supplied to local commercial and domestic consumers located within a 5-kilometer radius, as specified in the program’s framework published by the Energy Commission.

These localized energy clusters will be facilitated by registered Local Energy Generators and Aggregators (LEGA), who are tasked with both developing the rooftop solar infrastructure and managing the contractual agreements with homeowners. This model is designed to create community-scale energy ecosystems while minimizing the

complexity typically associated with individual installations.

<https://solarquarter.com/>

## PHILIPPINES

### National AI strategy to boost inclusive innovation

The Department of Science and Technology (DOST) is moving forward with a proposed National Artificial Intelligence Strategy aimed at promoting ethical, inclusive, and accessible innovation across the Philippines. Speaking during the 2025 National Innovation Day celebration on April 30 at Novotel Manila, DOST Secretary Renato Solidum Jr. emphasized the need for a unified approach to AI development that serves real societal needs.

The strategy outlines a national framework for developing and deploying AI technologies through 2028. It centers on five pillars: infrastructure, workforce, innovation, ethics and policy, and deployment. These efforts are meant to support AI applications in areas such as agriculture, education, smart cities, creative industries, and national security.

<https://www.manilatimes.net/>

## REPUBLIC OF KOREA

### International patent applications in 2024

For the fifth consecutive year, the Republic of Korea ranks fourth in the number of international patent applications under the Patent Cooperation Treaty (PCT), with the figure rising 7.1%. The Korean Intellectual Property Office (KIPO) on March 17 said the Republic of Korea filed 23,851 applications last year to rank behind the top three in China, the U.S., and Japan in that order. Among the top five, the U.S. (minus 2.8%), Japan (minus 1.2%), and Germany (minus 1.3%) saw negative performance in the category, while the Republic of Korea showed strong growth.

By company, Samsung Electronics ranked second with 4,640 PCT applications, and LG Electronics fourth with

2,083. The former's increase of 18.2% was the highest among those in the top 10. The nation also had four universities ranked in the top 20: Seoul National (fifth), Hanyang (15th), Korea (18th), and Yonsei (20th).

<https://www.korea.net/>

### Global R&D investment

The Republic of Korea ranked No. 5 in terms of the amount of research and development (R&D) investments by the country's businesses in 2023, with Samsung Electronics standing as the world's top R&D investor in the chip industry, a report on the world's top 2,000 investors showed. According to the Korea Chamber of Commerce and Industry's (KCCI) analysis of the European Union's Industrial R&D Investment Scoreboard, the Republic of Korean companies included in the list invested 42.5 billion euros (\$44.1 billion) in 2023, trailing behind the United States, China, Germany and Japan.

Compared to that of 2013, the country's R&D investment grew 2.2 times from 19.3 billion euros, pushing up the rankings two spots from No. 7 to No. 5. During the same period, however, the number of the Republic of Korean companies included in the top 2,000 R&D investor list declined from 54 to 40, as 405 Chinese firms made their entry into the list over the past decade.

<https://www.koreatimes.co.kr/>

### Fund to boost private investment in innovation

The Ministry of SMEs and Startups announced on April 24 the establishment of the Startup Korea Fund (SkoFund) for 2025, with a projected scale of 600 billion won. This venture fund, primarily driven by the private sector, marks a significant shift in the Republic of Korea's approach to fostering innovation and entrepreneurship. Unlike traditional parent fund investment projects where the parent fund is the main contributor, SkoFund incentivizes private sector participation by offering priority loss compensation, making them the primary contributors at 70%.

This year, SkoFund will see participation from 30 private contributors, investing over 250 billion won. The parent fund

will match this with an investment of 170 billion won, creating an initial parent fund of 420 billion won. The Ministry plans to select an operator (GP) by May to establish a sub-fund with a total scale of 600 billion won. Notable participants include major corporations such as POSCO Holdings, LX Semicon, and GS Engineering & Construction, as well as overseas institutions like CMIC and Tokyo Seikyo Center.

<https://www.businesskorea.co.kr/>

### Corporations with IP report higher revenue per employee

Corporations with intellectual property (IP) recorded an average revenue per employee that is 20.9% higher than those without. The Korea Institute of Intellectual Property and the Korea Development Institute (KDI) published a report on the 21st titled 'Analysis of corporate revenue performance based on intellectual property rights.' This report is based on research commissioned by the National Intellectual Property Commission, which is led by the president, and the Korean Intellectual Property Office. It analyzed the big data of operational information from 228,617 domestic corporations from 2010 to 2023 to assess the impact of intellectual property rights on corporate revenue.

According to the report, corporations holding intellectual property rights such as patents, trademarks, and designs had higher revenues. Corporations that held only one type of intellectual property reported 18.9% higher revenue per employee, those with two types had 27.1%, and those with all three types had 32.7% more. On average, they had 20.9% higher revenue than corporations without intellectual property rights.

The scope of intellectual property rights also influenced revenue. Corporations holding only one intellectual property right had 15.4% higher revenue per employee compared to those without any. In contrast, those holding between 2 and 19 rights reported 24.1% higher, and those with over 100 rights had 50.3% higher revenue. The report explained that 'the quantitative expansion of intellectual property rights significantly contributes to

corporate growth.' It also noted that corporations that filed overseas applications had 27.3% higher revenue than those without.

<https://biz.chosun.com/>

## THAILAND

### AI strategy to become a regional hub

The National AI Committee has outlined its strategic direction to position Thailand as a regional hub for AI development and to drive national economic growth. Digital Economy and Society Minister Prasert Jantararungtong, who also serves as deputy chairman of the committee, said that the committee has developed a comprehensive plan to prepare Thailand across various dimensions—particularly focusing on the development of a skilled AI workforce.

The government aims to train no fewer than 10 million individuals as AI users, 90,000 as AI professionals, and 50,000 as AI developers within the next two years. In addition, the committee will promote investment in digital infrastructure, including cloud systems, data centres, GPU-based computing systems, and the development of an open-source AI platform.

<https://www.nationthailand.com/>

### Direct PPAs for renewable energy procurement

Thailand is set to introduce a direct power purchase agreement (PPA) framework, allowing businesses to buy renewable energy directly from producers, such as solar farms. The move aims to accelerate the country's transition to clean energy and create a more competitive energy market.

Prime Minister Srettha Thavisin has directed authorities to develop the PPA framework with a completion target set for the end of the year. The announcement was made during a mobile Cabinet meeting in Phayao, where the government reiterated its commitment to advancing clean energy initiatives.

The decision follows discussions between U.S. Commerce Secretary Gina

Raimondo and Thai officials during her recent visit. Raimondo underscored the importance of direct PPAs in enabling businesses to lower their carbon footprint and access renewable energy more efficiently. In response, Srettha assured that a clear PPA policy would soon be in place to support both international and domestic enterprises in their sustainability efforts.

<https://solarquarter.com/>

### Draft law to promote solar power usage

Thailand's Department of Alternative Energy Development and Efficiency (DEDE) has announced a public hearing on the Draft Act on Promotion of Solar Power Usage, aimed at simplifying regulatory procedures and accelerating solar PV adoption across the country.

The proposed legislation seeks to eliminate bureaucratic bottlenecks and reduce costs associated with installing solar photovoltaic systems, particularly for commercial and industrial consumers. If enacted, the law is expected to benefit building owners opting for solar installations for self-consumption, as well as developers operating under build-transfer-operate models, such as EPC and O&M arrangements.

In a significant regulatory shift, the Draft Act builds on recent reforms introduced through a Ministerial Regulation that removed the requirement to obtain a Ror. Ngor. 4 factory license for solar rooftop installations outside industrial estates—regardless of capacity. The new legislation expands this approach beyond rooftop systems, offering a broader regulatory overhaul for solar projects.

<https://solarquarter.com/>

## VIET NAM

### National semiconductor strategy

The Vietnamese government has approved a 12.8 trillion VND (\$500 million) investment to establish a high-tech semiconductor fabrication plant, marking a major step in developing a domestic chip industry and secur-

ing supply chain resilience. Aiming to strengthen its position in the global semiconductor supply chain, Viet Nam has announced its first government-backed chip manufacturing plant and incentives to boost domestic R&D, innovation, and production capabilities.

With government funding of up to 12.8 trillion VND (\$500 million), Viet Nam is taking concrete steps toward establishing a small-scale semiconductor fabrication plant to support national defence, high-tech industries, and research needs. To accelerate semiconductor research, design, and production, Viet Nam will invest in a state-supported semiconductor fabrication facility, reinforcing its long-term vision for technological self-sufficiency by 2050. Recognizing the strategic importance of semiconductors, Viet Nam is launching its first government-backed chip fabrication plant, setting the stage for future growth in advanced electronics and AI-driven technologies.

<https://vietnamnet.vn/>

### Solar Feed-in Tariffs in 2025

On April 10, 2025, the Ministry of Industry and Trade (MOIT) issued Decision 988/QĐ-BCT ("Decision"), updating Viet Nam's feed-in tariff (FiT) rates for solar power projects. These tariffs, effective under the framework of Circular 09/2025/TT-BCT issued on February 1, 2025 ("Circular"), will apply throughout 2025. While FiTs have been part of Vietnam's renewable energy policy toolkit for several years, the latest update introduces some notable changes to how tariffs are structured and calculated.

Most significantly, the Decision introduces separate tariffs for solar power projects that incorporate battery energy storage systems (BESS). This development reflects a growing policy emphasis on grid flexibility and energy reliability. The tariff rates also vary depending on the geographic location—North, Central, and South Vietnam—to reflect the differing solar radiation levels. Power purchase agreements (PPAs) under the new FiTs will be signed between project developers and the state utility, Vietnam Electricity Group (EVN), as per existing regulatory procedures.

Viet Nam's FiT program has evolved significantly over the past decade. The country first introduced feed-in tariffs to stimulate investment in solar and wind energy, offering stable, long-term returns for private investors. As of December 2023, the **introduction of De-**

**creed No. 19/2023/TT-BCT** revised this mechanism, laying the foundation for the current approach.

Under this decree, FiTs now cover a wide array of renewable projects, including ground-mounted and floating solar, as well as onshore and

offshore wind. The decree exempts legacy projects that began commercial operations before January 1, 2021 (for solar) and November 1, 2021 (for wind), from the new pricing framework.

<https://www.vietnam-briefing.com/>