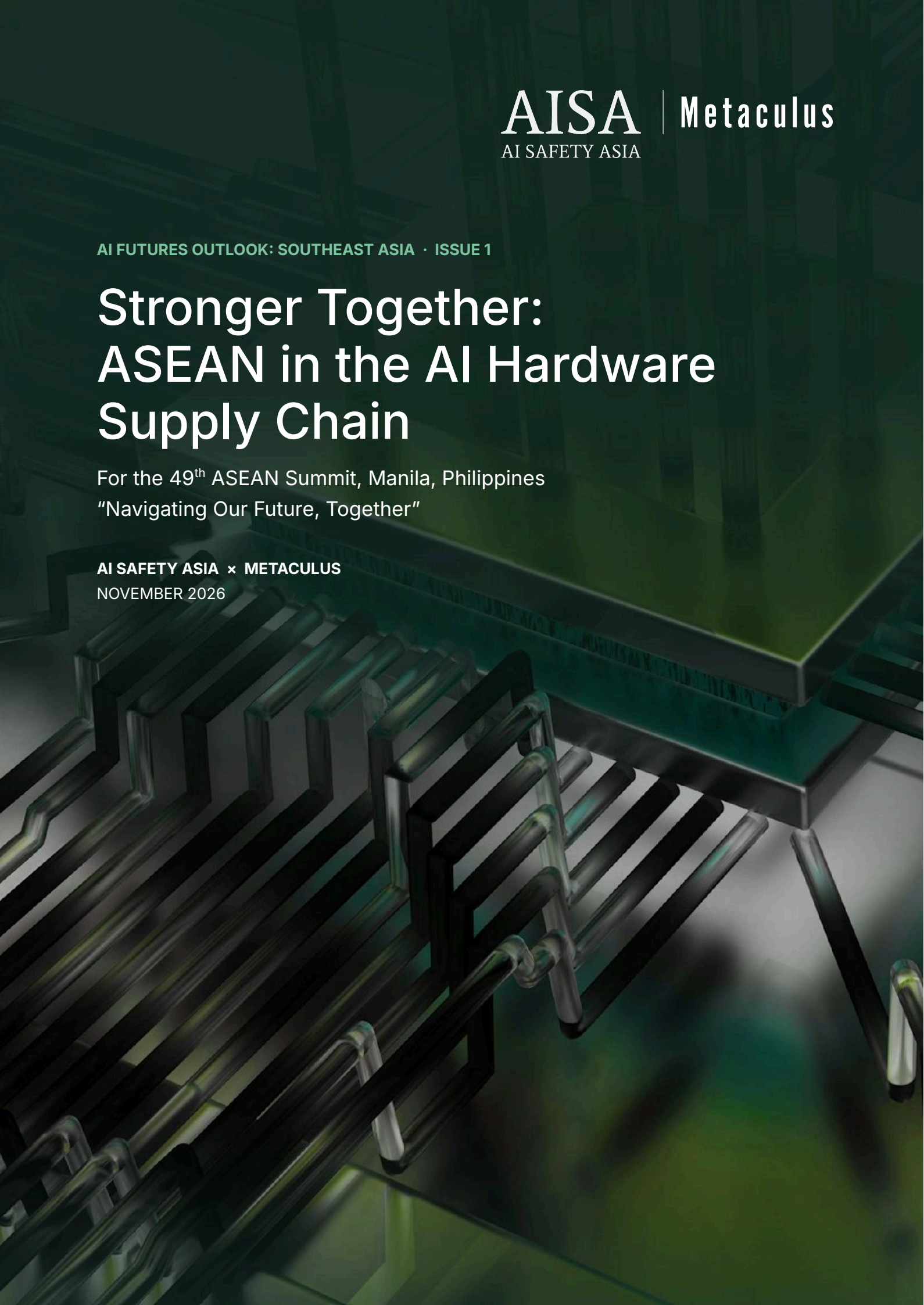
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AI FUTURES OUTLOOK: SOUTHEAST ASIA · ISSUE 1

Stronger Together: ASEAN in the AI Hardware Supply Chain

For the 49th ASEAN Summit, Manila, Philippines
"Navigating Our Future, Together"

AI SAFETY ASIA × METACULUS
NOVEMBER 2026



Overview

The AI hardware that the world increasingly depends on comes from only a few places, and Southeast Asia is a key part of that supply chain. The region's members specialise in networking equipment, processors and controllers, other integrated circuits, chip-making equipment, memory chips and servers. In five of these six product groups, the three largest supplier economies provide more than half of what the rest of the world imports. Vietnam is the world's largest exporter of networking equipment, Singapore builds chip-making tools, Malaysia assembles and tests chips, Thailand makes optical components and the Philippines exports integrated circuits. Indonesia mines a fifth of the world's tin, used in chip solder,[1] and hosts the region's first shared supercomputer.[2] Vietnam and Singapore already rank in the top two in one group each. Counted together, ASEAN is a top-two source in four of the six groups and a top-three buyer of processors and other integrated circuits. With over 680 million people, it is also an important market for data centres and AI adoption.[3] In Manila this month, members signed a digital economy agreement and completed the signing of an enhanced power-grid memorandum, and a regional semiconductor roadmap was finalised (section 4).

What the region supplies

US$356 bn

exported outside ASEAN in 2025 in chips, chip-making tools, networking gear and servers, for AI and many other uses. More than double the 2019 figure. Gross trade, including re-exports.[4]

Why it matters: AFISS, ASEAN's framework for the chip supply chain, aims to turn the region from a back-end service provider into a fully integrated production base, building on existing plants and skills.[5]

What it buys

Top 3

buyer of processors and other integrated circuits from outside the region, with members combined. They spent at least US$163 bn in 2025, behind only China and Hong Kong, a re-export hub.[4]

Why it matters: Coordination could strengthen ASEAN's negotiating position. About half of its processor and server imports from outside the region come from a single economy.

How it ranks together

2 of 6 → 4 of 6

product groups with a top-two supplier to the rest of the world: two counting the largest single member, four counting ASEAN as one source (figure 1).

Why it matters: Together, members are among the top two suppliers of both processors and other integrated circuits. In these two groups, no member ranks above third alone. In supercomputing, the region rises from 20th to 13th.[6]

Each member state brings something different. Together they make ASEAN one of the largest sources in the world's AI hardware supply chain. But export share alone is not influence. That comes from what members bring to the table: their market, and the land, power and skills that plants and data centres need. By building on those strengths and negotiating as a region, members can have more say over the terms of their role.

Outlook (AI forecasts, section 4): exports of this hardware roughly double from 2025 to 2027, to about US$760 bn, but the chance of a common ASEAN position on AI infrastructure in 2027 is put at 36%.

Counted together, ASEAN is a top-two source in four of six product groups

Share of the rest of the world's imports, 2025

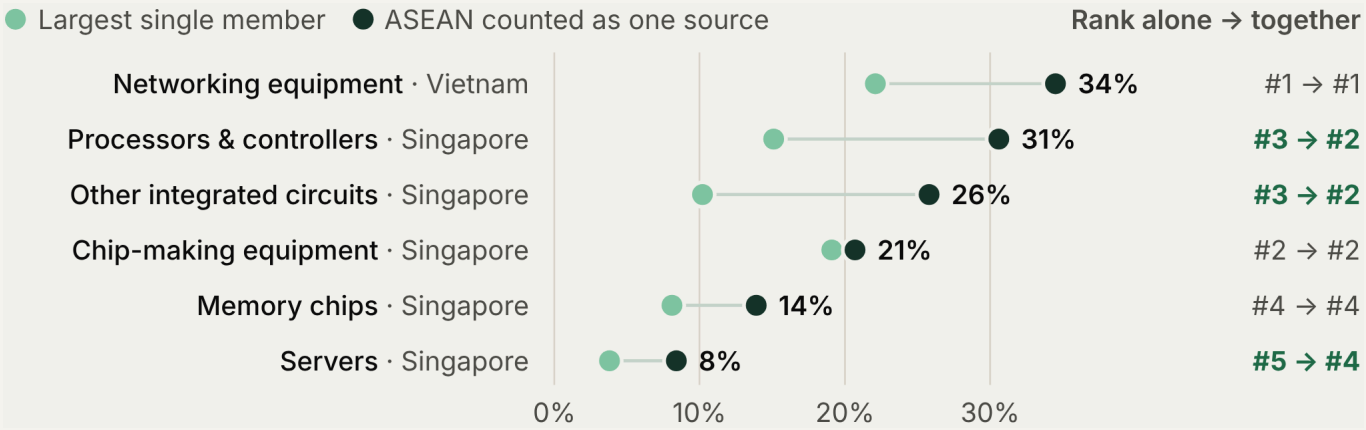


Figure 1. 'The rest of the world' is the 93 economies outside ASEAN with monthly 2025 import data; China is not among them. Adding China's annual 2025 imports, ASEAN is still first in networking and second in processors and chip-making equipment, with smaller shares of chips (see Method). Without Singapore, it is still first in networking and third in processors and other integrated circuits. Source: UN Comtrade.[4]

1 How much the region matters to the AI supply chain

Five members rank among the world's top ten exporters

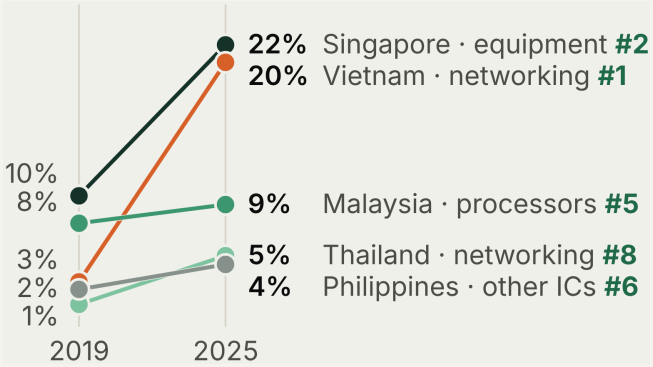


Figure 2. Share of world exports to all destinations, including China and other members; # is the world rank in 2025. Each colour marks one member; Vietnam (orange) rose fastest, from 3% to 20%. The 2025 chip shares may be slightly high because some exports to China are not yet recorded. Singapore, Malaysia and Vietnam account for 86% of members' exports in these groups. Indonesia, the region's largest economy, trades much less in them, as do Brunei, Cambodia, Laos, Myanmar and Timor-Leste. Later issues may look at what they offer in data centres, power, minerals and skills. Source: UN Comtrade.[4]

Established regional strengths: Vietnam leads world exports of networking equipment, Thailand makes optical transceivers for big cloud data centres,[7] and Malaysia does about 13% of the world's chip assembly, testing and packaging.[8]

Raw materials: Malaysia refines 11% of the world's rare-earth metals, and Indonesia and the Philippines together mine nearly three-quarters of the world's nickel.[1]

Made here by global firms: chip-making tools made in Singapore, including by Applied Materials,[9] and, from early 2027, high-bandwidth memory for AI chips packaged at Micron's new plant there.[10]

Mostly done elsewhere: the most advanced chips and high-bandwidth memory are made mainly in Taiwan and South Korea, and the leading AI chips are designed mainly in the United States.

> AI-related goods drove more than 70% of early-2026 export growth in Malaysia, the Philippines, Thailand and Vietnam.[11] Yet in chips the region buys about as much from the rest of the world as it sells, about US$200 bn each way; its net exports come mainly from networking equipment. Production can also shift within a few years, as Vietnam's rise in networking shows, so acting together and moving into higher-value steps would help the region keep its role and gain more say.

2 What members can do together

1

Build on what each member does well

Support the industries members already have and help others develop theirs through supplier contracts and training, so new plants strengthen one regional supply chain instead of duplicating each other.

AFISS already aims to bring together "each Member State's comparative strengths".[5]

2

Share computing and power

Give researchers across the region time on national supercomputers, keeping a share for members with little computing power,[11] as the ASEAN–Korea facility in Indonesia is designed to do.[2] Plan data-centre power together so supply stays reliable.

The ASEAN Power Grid already carries Laos's hydropower to Singapore via Thailand and Malaysia.[12, 13]

3

Measure and negotiate together

Publish regional figures every quarter, including what each member gains in research time, supplier contracts, trainees and power traded. Agree common terms for plants, data centres and AI services the region hosts and buys, for example, more than one supplier and the right to switch.

ASEANstats and the ASEAN Economic Community Council could take this on.

3 Capacity is concentrated, but it could be shared

3.1 Compute

233 PFlop/s

of supercomputing in ASEAN on the June 2026 TOP500 list, about five times its November 2024 level, while the whole list grew 60%.



- Singapore 121
- Vietnam 87
- Thailand 22
- Indonesia 3 (ASEAN–Korea facility)

The TOP500 ranks the 500 fastest supercomputers that report results. On its own, Singapore ranks 20th of the 47 countries on it and Vietnam 22nd. Counted together, the region would rank 13th, though still comprising only about 1% of the list's total. Members could open their national machines to one another's researchers. Most commercial AI clusters do not submit data to this list, so these figures understate the region's AI computing. Source: TOP500.[6]

3.2 Chip-making equipment

US$6.1 bn

imported in 2025, three times the 2019 figure, with 83% going to Singapore

- Singapore 83%
- Other members 17%

These are machines that make chips on silicon wafers. Imports are a rough guide to where chip production capacity is being built, though not proof that factories are running. AFISS's aim of moving the region beyond packaging and testing needs this kind of capacity. Source: UN Comtrade, HS 848620 (see Method).[4]

3.3 Power

US$27 bn

estimated cost of planned cross-border ASEAN Power Grid links in 2025–2040 (2024 dollars), 14 times all such investment since the 1970s, but under a tenth of the region's total grid needs.[1]

Data-centre electricity use is set to double by 2030. The IEA expects it to stay a small share of the region's power, but it clusters in a few hubs, so the strain is local:[1] the 45 data centres operating in Peninsular Malaysia alone have 6.04 GW of grid supply capacity,[14] and in Indonesia grid constraints and connection queues are already slowing expansion.[1] Members already set their own conditions, such as Johor's efficiency screening and Malaysia's planned charge for unused power.[1, 15] Planning data-centre growth and grid investment together, and agreeing rules for cross-border power trade, would connect supply with demand and let power-exporting members, such as Laos, share in the gains.

4 Questions for next year

Forecasts from Autocast, Metaculus's AI forecasting agent; Metaculus community forecasts to follow in the Q1 2027 update.

#	Question	Where it stands	Preliminary forecast	Why it matters
1	ASEAN's exports of the six product groups to economies outside ASEAN in 2027, US$ bn	US$356 bn in 2025. Members other than Singapore up about 65% in January–May 2026 (partial data)	**US$757 bn** (548–1,034)	Whether the region's weight keeps growing. The median is about double 2025: Autocast expects growth to slow after a 2026 surge.
2	Combined computing power (Rmax) of ASEAN-based systems on the November 2027 TOP500 list, PFlop/s	233 in June 2026, 13th among countries if counted together; increased from 45 in November 2024	**255 PFlop/s** (215–501)	Covers only publicly reported supercomputers. Even the median would be about a ninth of today's fastest system.
3	The ASEAN Digital Economy Framework Agreement (DEFA) is in force for at least six member states before 1 January 2028	Signed in Manila on 14 November 2026, with ratification targeted within six months	**67%**	Rules for cross-border data, cloud and digital trade under which the hardware will run.
4	ASEAN sites among the 100 largest AI data centres by computing power (H100 equivalents) in Epoch AI's database, end-2027	5 of 96 sites in November 2026: 4 in Malaysia, 1 in Indonesia	**8 sites** (4–15)	Covers the commercial AI computing that the TOP500 list misses.
5	ASEAN leaders adopt or endorse a common position, standard or principles on AI infrastructure at a 2027 ASEAN Summit	Singapore, the 2027 chair, has named AI adoption and aligned AI governance as priorities	**36%**	In leaders' own hands: negotiating as a region would give members more leverage and investors clearer rules.

For questions 3 and 5, the figure is the probability of 'yes'. For questions 1, 2 and 4, it is the predicted median, with the 80% range in brackets and as the pale band. Forecasts are from Metaculus's Autocast system, which combines three AI forecasters per question. Predictions were made in November 2026.[16] In question 5, "AI infrastructure" means computing capacity for AI, data centres, the power and networks that serve them, and AI chips. "Where it stands" draws on UN Comtrade, TOP500, the ASEAN Secretariat, Epoch AI and Singapore's digital minister.[4, 6, 17, 18, 19, 20]

What comes next

Nov 2026 · Manila

49th ASEAN Summit. DEFA was signed on 14 November.[20] All members have now signed the enhanced ASEAN Power Grid MoU,[21] and a semiconductor roadmap was finalised.[22]

Q1 2027 · Outlook update

Metaculus community forecasts alongside Autocast, plus newer trade data.

2027 · next issues

Later issues may cover compute and data centres, power and critical inputs, and skills and investment.

Annex: Method

Trade. UN Comtrade six-digit monthly data, pulled in September 2026; 2025 is the latest full year, though not every economy has reported it. The groups are processors and controllers (HS 854231), memory (854232), other integrated circuits (854233, 854239), chip-making equipment (848620, wafer-fabrication tools only), networking equipment (851762) and servers (847150). Each is broader than AI hardware: processors include car and appliance microcontrollers, and networking covers all data-transmission apparatus. Values are gross shipments, not value added, and Singapore's include re-exports. For Malaysia from January 2025, UN Comtrade's export figures exceed official total exports by the value of re-exports (US$462 bn against about US$375 bn for all goods in 2025);[23] we use the official basis, which counts re-exports once. For economies that have not reported, we use partners' reports, which is how Taiwan ("Other Asia, nes") and Vietnam (no filings since 2023) enter. The World Bank's export-growth figure uses a broader WTO list of AI-related goods.

Bases. Figure 1 counts flows into the 93 economies outside ASEAN that reported 2025 imports, so every source faces the same buyers; the 84 full-year reporters give the same ranks. Counting Taiwan's purchases from suppliers' reports, ASEAN's ranks hold or rise; counting China's as well (its annual 2025 report), ASEAN stays first in networking and second in processors and chip-making equipment, though its processor share falls from 31% to about 21%; in other integrated circuits it is second or third, depending on how Hong Kong's re-exports are counted. "The three largest supplier economies provide more than half" counts single economies, members included, on the same basis; networking is the exception (48%). The US$356 bn counts all destinations outside ASEAN, and figure 2 all destinations. Vietnam's 2025 exports to China are not included (US$15 bn on China's annual report, published after our pull), while Vietnamese goods re-exported through Hong Kong can be counted twice (Hong Kong imported about US$30 bn from Vietnam). Growth since 2019 is approximate, because Vietnam's figure is its own report for 2019 and partners' reports for 2025: measured the same way in both years, the total rose by about 130%, or 114% without Vietnam. Singapore's 2026 filings stop in February and Thailand's in May, so 2026 growth covers members other than Singapore for January to May. The chip balance (section 1) compares members' exports to and imports from economies outside ASEAN in 2025: US$206 bn against US$197 bn, or US$209 bn against US$224 bn with China's annual report. The buyer rank compares members' combined imports from outside ASEAN with each economy's total imports in 2024 and 2025; it holds without Singapore, and if Hong Kong is left out (it sends over 80% of its chip exports to mainland China), ASEAN is second. "About half" refers to the largest single outside supplier's share, 40–60%, of members' 2025 imports from outside ASEAN, across all members, reporting members only, and reporting members without Singapore. Timor-Leste's trade in these groups is under US$10 million a year.

Compute. Country ranks add up Rmax across all 500 systems on the June 2026 TOP500 list (47 countries), with members' 12 systems added the same way. ASEAN systems totalled 45 PFlop/s in November 2024 and 233 PFlop/s in June 2026, against 11.7 and 18.7 EFlop/s for the whole list; the fastest system reached 2.2 EFlop/s.

Forecasts. Three AI forecasters in Metaculus's Autocast system forecast each question, and their combined forecast is reported.

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AI Safety Asia (aisafety.asia) is a global non-profit, founded in 2024, working to strengthen AI governance across Asia.

Metaculus (metaculus.com) is a forecasting platform that helps organizations make better decisions by turning uncertainties into usable probabilities.

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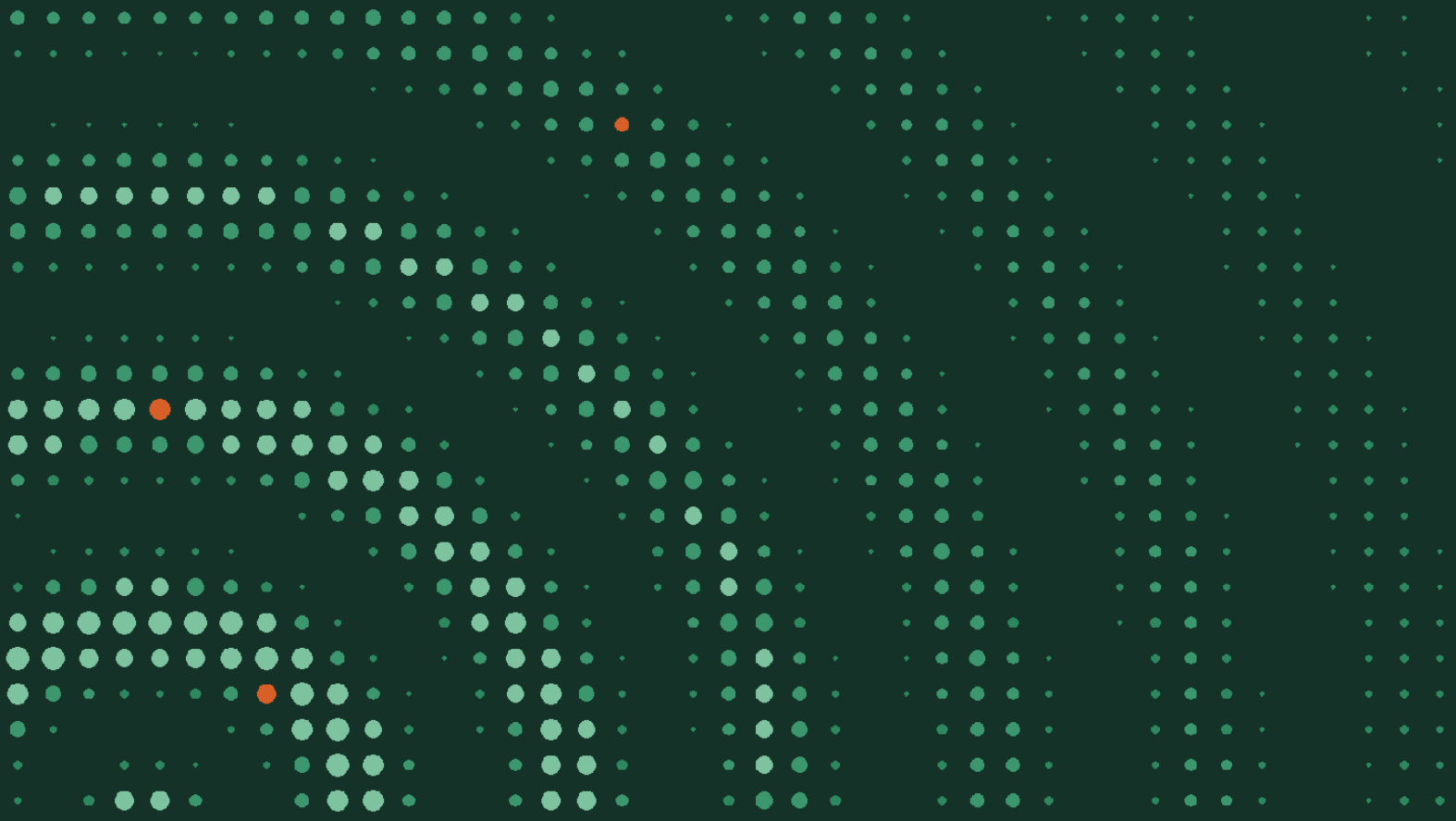
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Strengthening AI governance across Asia.

AI Safety Asia (AISA) is a global non-profit, founded in 2024, working to strengthen AI governance across Asia. AISA helps governments and institutions in Asia turn the influence they already hold into resilient, sovereign capacity and a stronger collective voice, before decisions made upstream become impossible to reverse. We act as a bridge between frontier AI risk and sovereign policy, working through established relationships with senior officials and diplomats.

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