



Part II

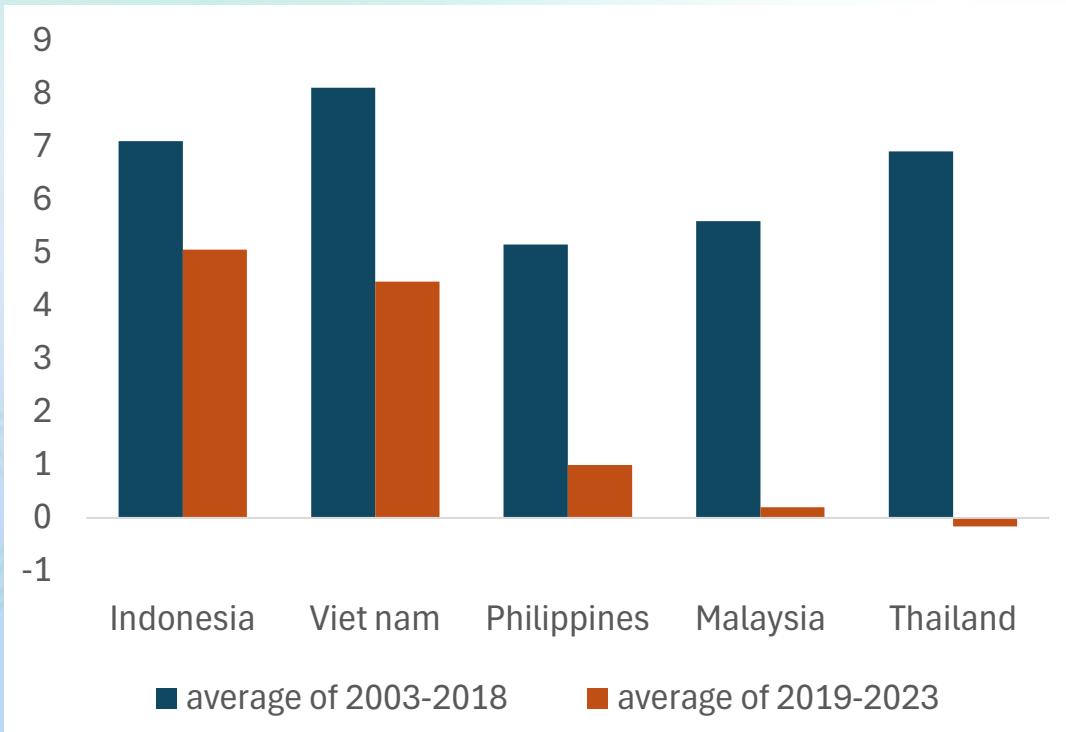
Advanced Green Manufacturing: Unlocking Thailand's Green Growth Engine

Thailand Economic Monitor
February 11, 2026

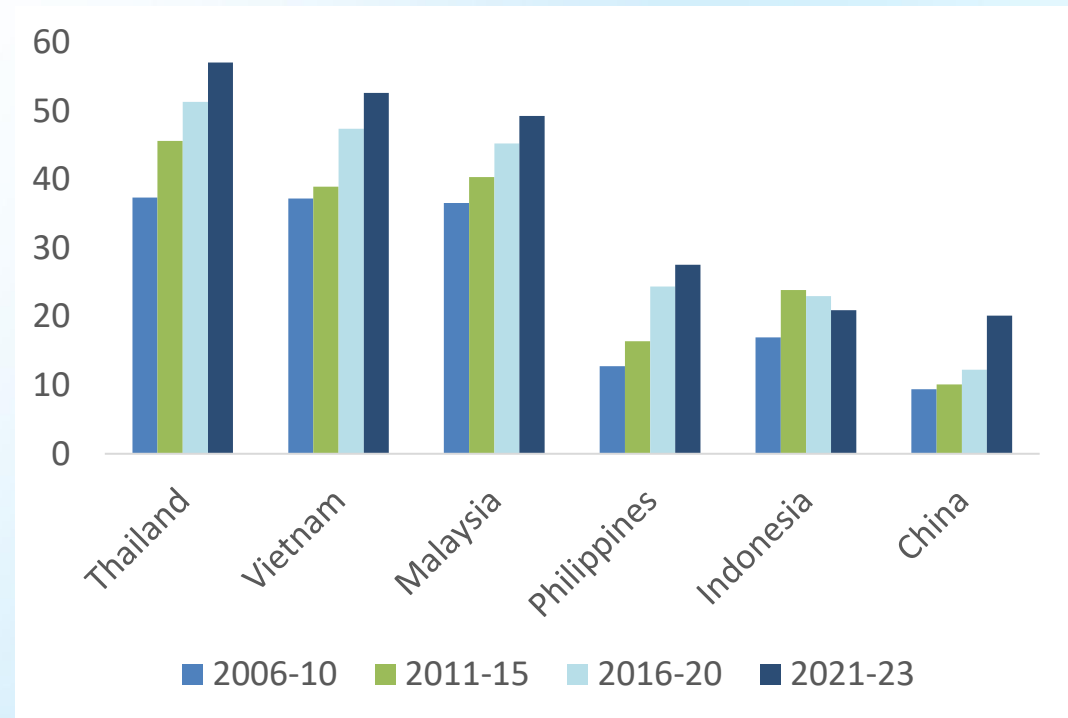


Despite a shift to higher-productivity sectors and strong FDI, productivity gains have lagged, highlighting scope to deepen domestic value added.

Thailand has achieved impressive manufacturing labor productivity growth, but is now experiencing a slowdown
(Manufacturing sector productivity growth, %)



FDI stock was the highest among ASEAN peers
(Stock of inward FDI, % of nominal GDP)



Note: Orange bubbles denote key industries in focus

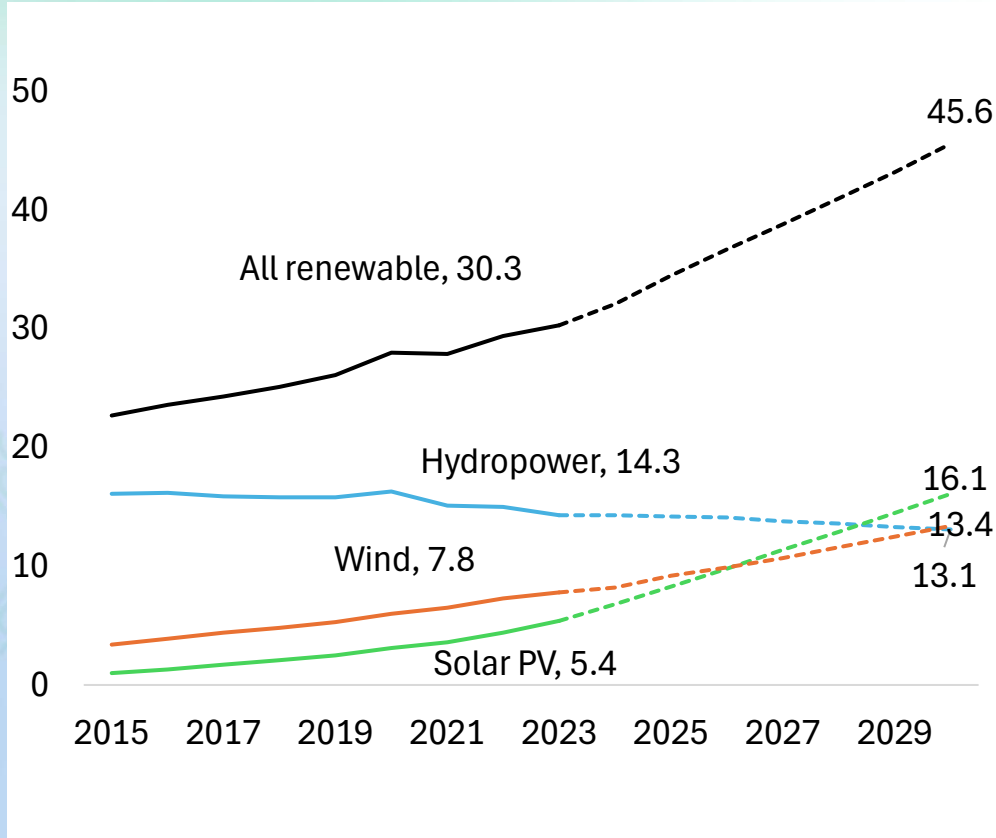
Source: NSO manufacturing firm census; Office of Industrial Economics; World Bank staff calculations

Source: UNCTAD; World Bank staff calculations



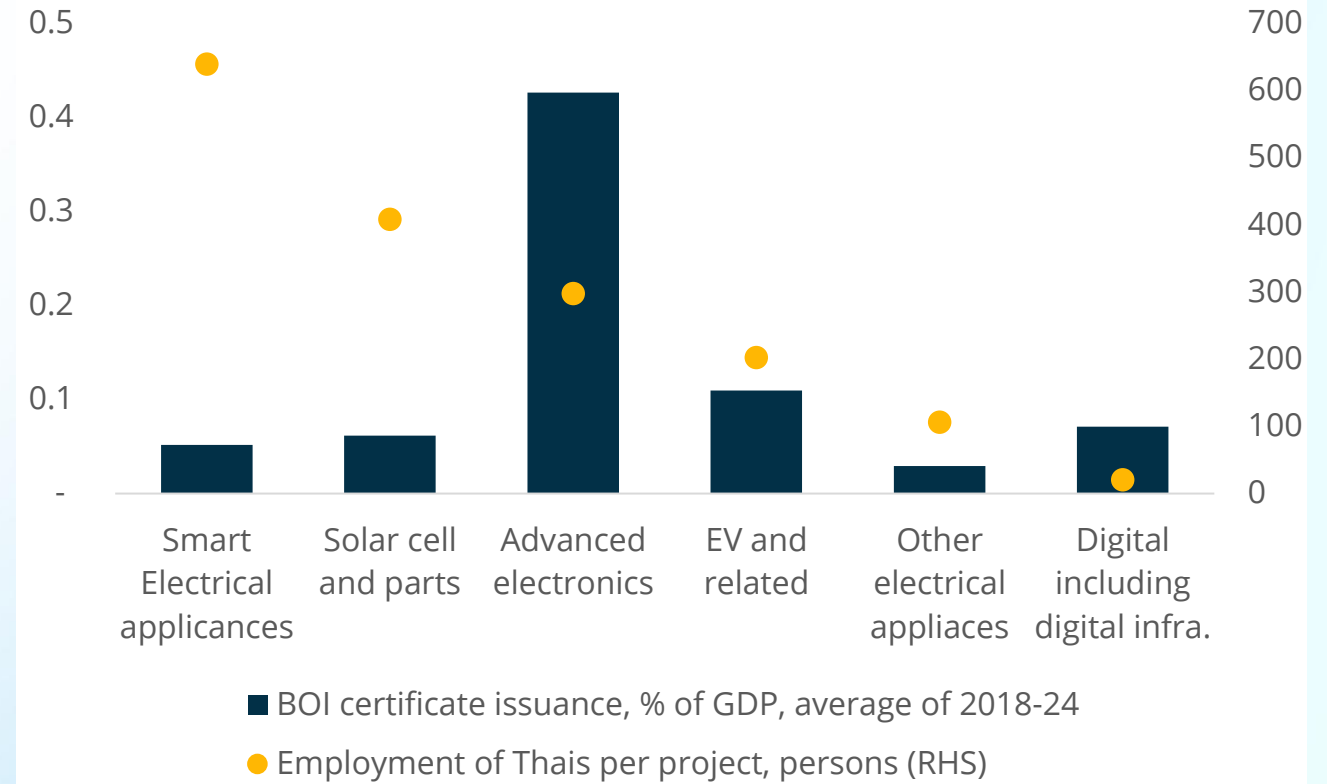
Major global shifts toward advanced manufacturing and de-carbonization will shape Thailand's next phase of development

Global renewable electricity generation is projected to reach near 50% of total



BOI certificate issuance for investment promotion in green industries has risen

(Selected high-tech sectors, Left: % of GDP, Right: expected job creation)



Note: Orange bubbles denote key industries in focus

Source: NSO manufacturing firm census; Office of Industrial Economics; World Bank staff calculations

Note: Employment refers to the expected numbers of job creation indicated in the investment promotion applications

Source: Board of Investment; World Bank staff calculations.



Green products offer strong growth opportunities, conditional on technological progress and commercial uptake

- Sectoral emissions and associated green technologies

Sector	Subsector	Global emissions (%)	Examples of technology	Maturity level
Energy	Electricity / heat	32.0	Solar	Mass market
			Wind plus storage	Mass market for wind; early adoption
	Transportation	15.3	Battery electric vehicles	Niche / mass market
			Battery electric trucks	Early adoption stage
	Industry	13.1	Green ammonia; power-to-liquid fuels	Concept / prototype / demonstration stage
Building	6.3	Green ammonia; power-to-liquid fuels	Concept / prototype / demonstration stage	
Other	8.0	Green ammonia; power-to-liquid fuels	Concept / prototype / demonstration stage	
		Satellite monitoring for large-scale methane leak detection and repair	Demonstration or early adoption stage	
Industrial processes	Industrial processes	6.6	Carbon capture usage and storage; green cement from alternatives	Concept / prototype / demonstration stage
Agriculture, forestry, land use	Agriculture	12.3	Alternative protein	Early adoption stage
	Land-use change & forestry	2.9	precision farming	Niche / mass market
Waste	Waste	3.5	Nature-based solutions	Early adoption stage
			Pyrolysis treatment for chemically recycling plastics	Concept / prototype / demonstration stage

Potential sectors selection:



1. Global market share:
Is the product more productive in a sector relative to other countries?



2. International market growth:
Is this international market growing fast enough to make policy attention worthwhile?



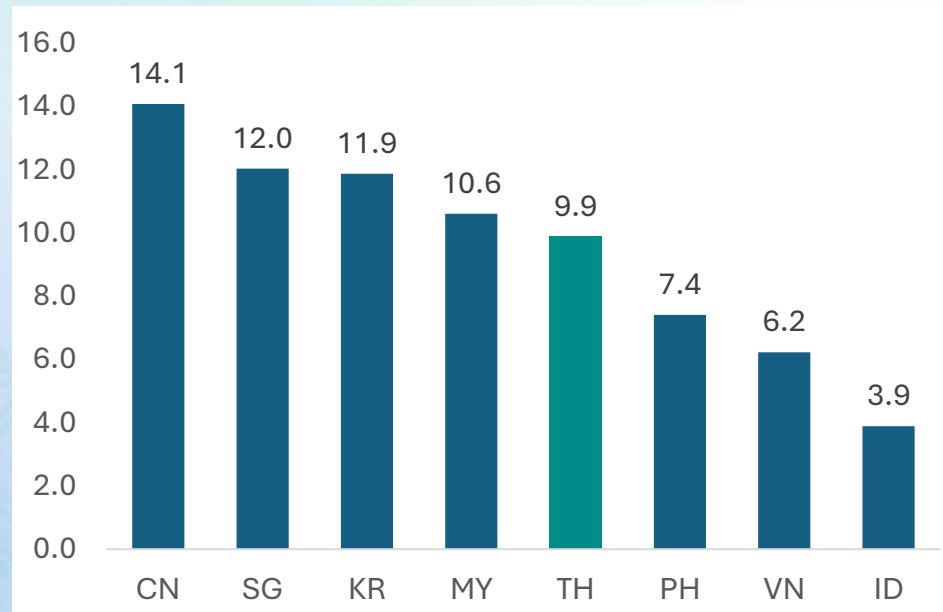
3. Product sophistication:
Which sectors requires similar technology to high tech exporting countries?



Thailand's green exports have been growing and show strong potential for reaching high complexity

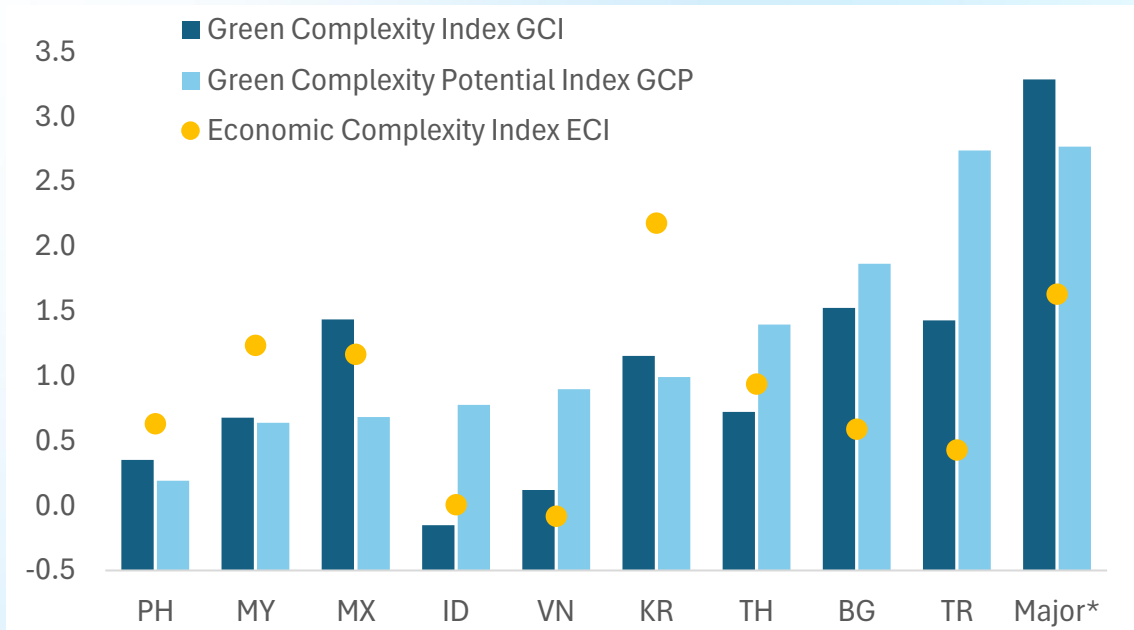
Green product exports as a share of total exports

(% of country's total exports, 2023)



Green Complexity in exports Index and Green Potential Index

(Index)



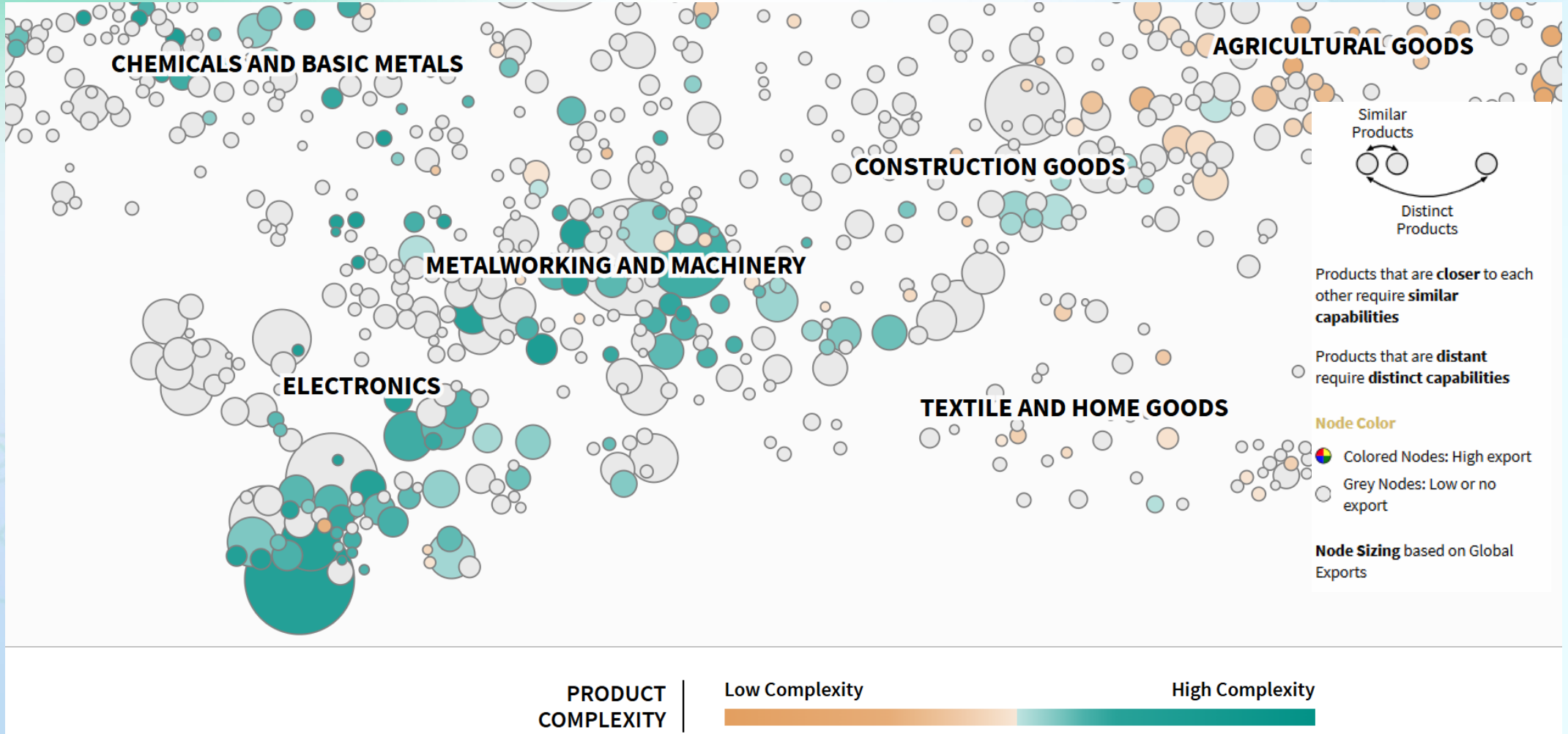
Source: UN Comtrade; CEPII's BACI database; World Bank staff calculations. See [Mealy and Teytelboym, 2022](#)

Note: Green Complexity Potential measures how much potential a country has to diversify into green, complex products in the future based on its existing competitive strengths (or proximity to complex product); Economic complexity index accounts for product complexity index of all product in the country *Major = Major green complexity product exporters, including Germany, Italy, China, USA, Japan, UK, and France



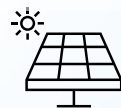
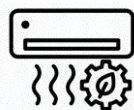
The production base is complex and diversified across major sectors, including electronics, electrical appliances, motor vehicles, and machinery.

- Product complexity of Thailand's product space, 2023





High-opportunity champions are EVs, Solar PVs, and energy efficient air conditioners, based on competitiveness, global demand, and product sophistication



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Which sectors requires similar technology to high tech exporting countries?

Indicators:	Energy efficiency	Renewable energy	Waste water management	Air pollution control	Carbon capture and storage	cleaner technologies
RCA	4.40	1.09	1.02	0.82	0.70	0.37
Global market share	1.71	1.35	1.51	1.00	1.25	0.68
Global import growth	2.09	3.37	2.03	6.47	1.05	9.19
Product complexity	0.37	0.43	0.47	0.79	0.68	0.57
Product potential	High RCA in energy efficient air conditioner	Emerging Solar PV industry with rising global market share	High RCA but low complexity	High product complexity; Rising global demand	investment and regulatory frameworks are insufficient to scale up CCUS	Rising global demand for EV with potential to transform fuel vehicle supply chain

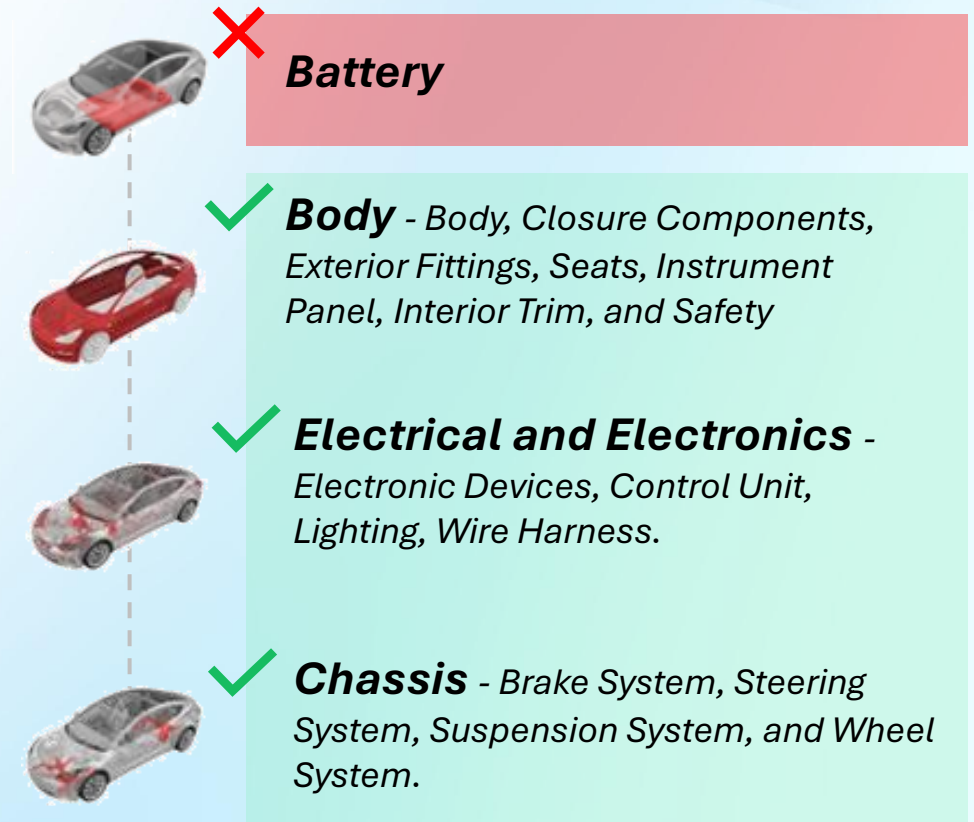
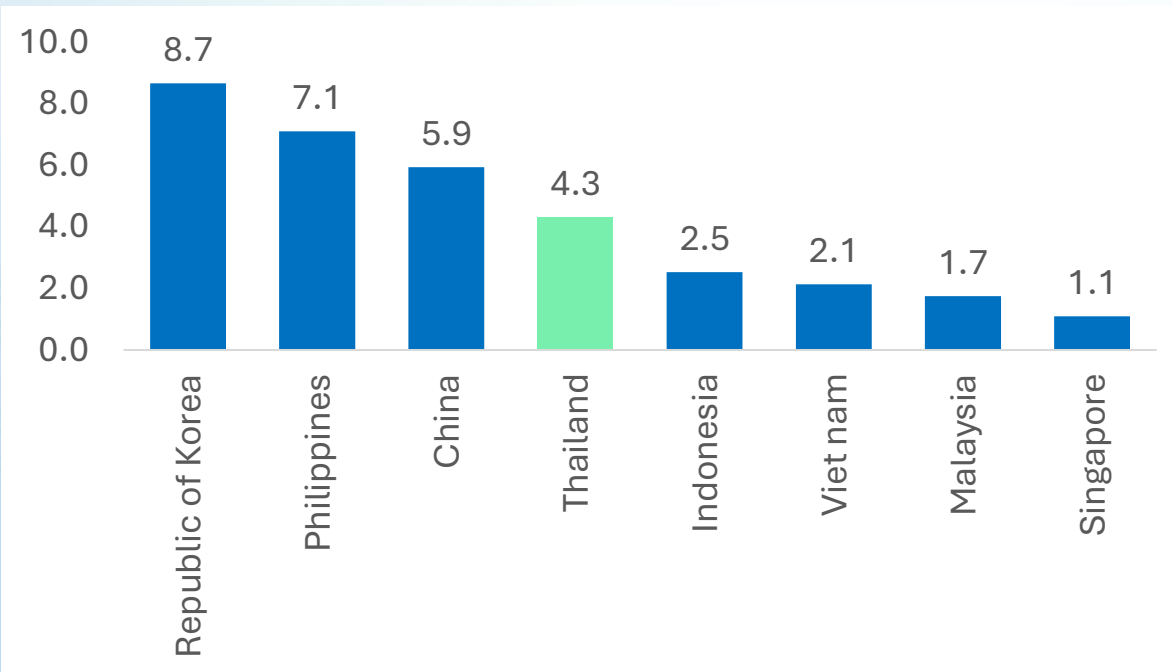


EV: Despite limited battery production, strong automotive supply chain and EV policy drive Thailand's advantage for EV

Thailand has potential to expand EV production and increase exports, leveraging its well-established base in electronics, body, and chassis manufacturing, with current automotive industry accounting for 3.1% of GDP and 9.1% of employment

Broad EV value chain exports which include wider vehicle manufacturing value chain used in either ICE vehicles or EVs

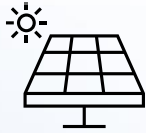
(%, share of total country's exports)



Source: UN Comtrade; CEPII's BACI database; World Bank staff calculations. See [Mealy and Teytelboym, 2022](#)

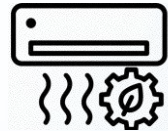
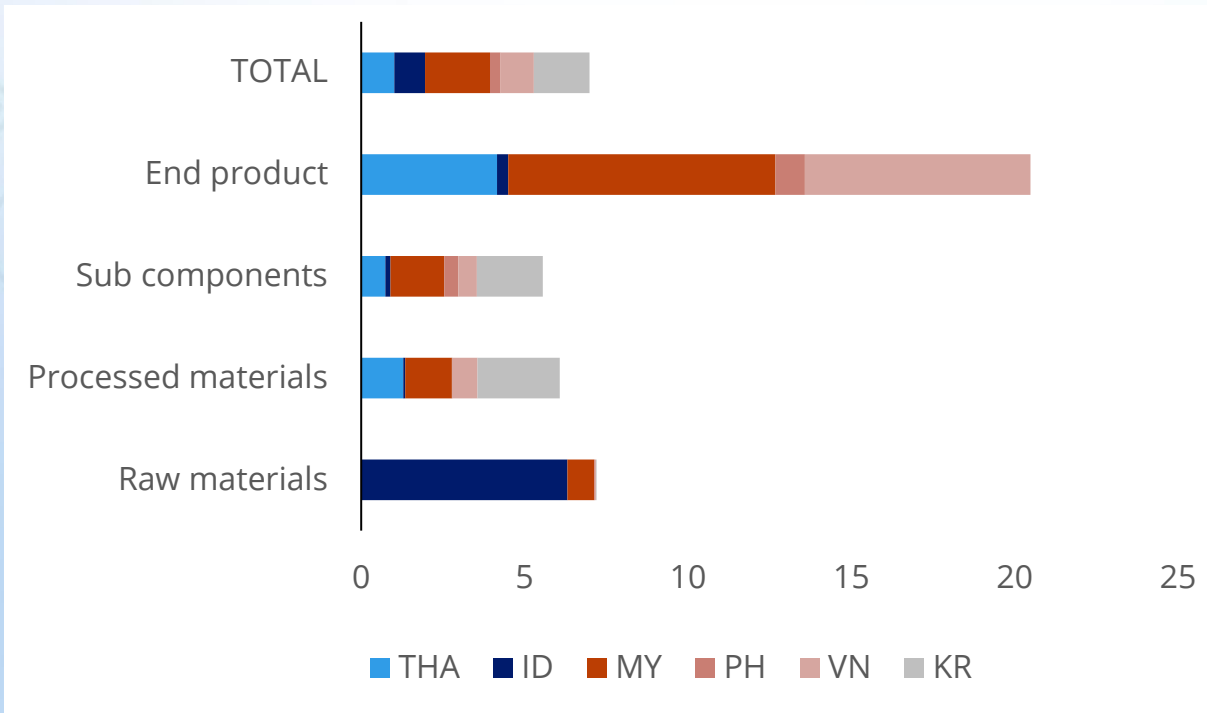
Note: Green Complexity Potential measures how much potential a country has to diversify into green, complex products in the future based on its existing competitive strengths.

Thailand can capture higher value-added solar PV and air-conditioner, by focusing on technology upgrading



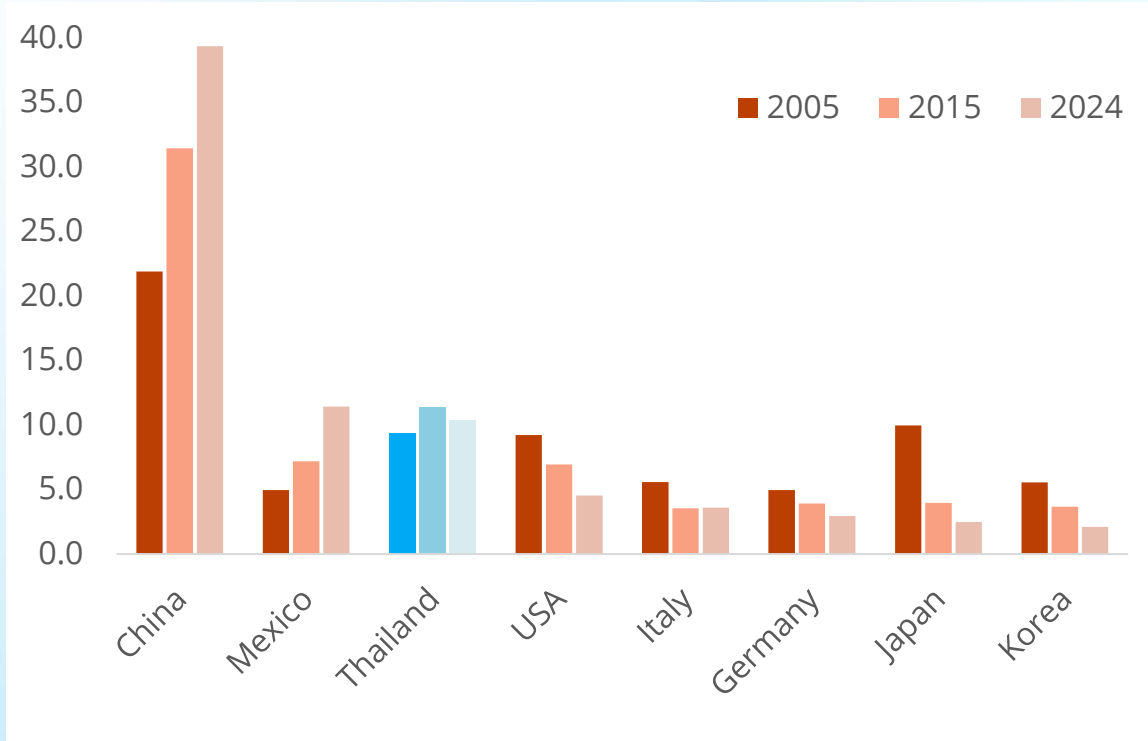
Thailand's comparative strength in Solar PV is reflected in global market shares in processed materials and intermediate components

(% of world exports, only product with Exports>Imports)



Thailand is the world's 3rd largest exporter of air conditioners, driven by energy efficient technology transferred from Japanese firms

(%, global market share)



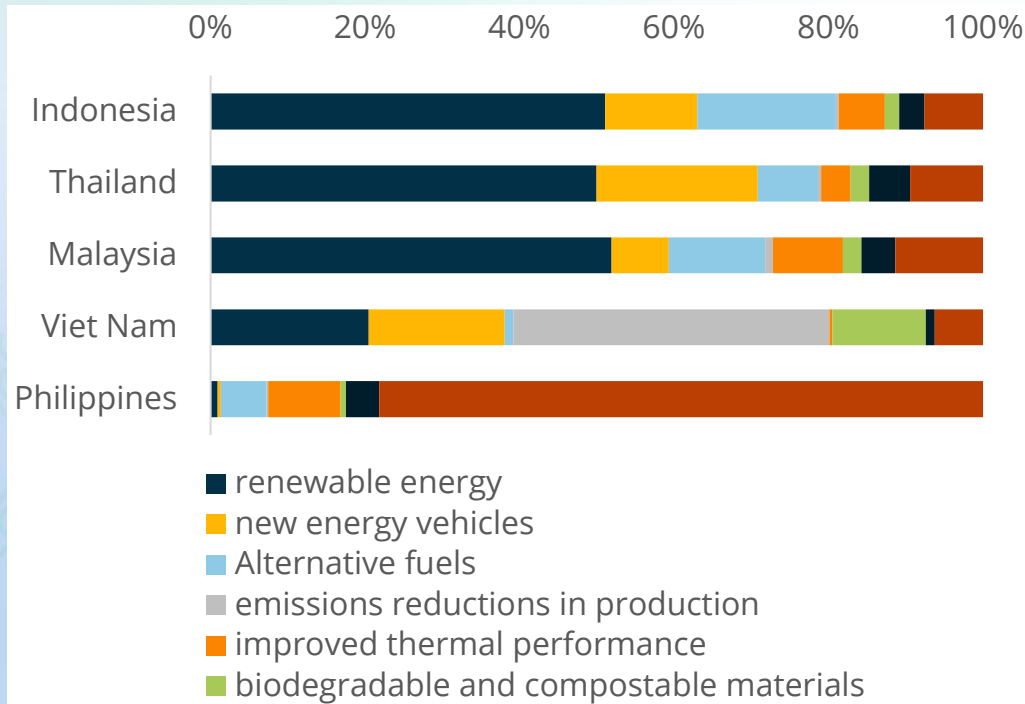
Source: UN Comtrade; CEPII's BACI database; World Bank staff calculations. See [Rosenow and Mealy, 2024](#)



By prioritizing high-skilled investment and innovation, the expansion of green manufacturing exports can deliver sustained gains in GDP and jobs.

LCT Job creations in Thailand focus on renewable energy and new energy vehicles

Share of all online job postings related to LCTs, 2022, % of LCT job openings



Capturing opportunity from rising global demand for **EV, Solar PV, and energy efficient cooling system** ...can lead to important economic gains:

Impact on exports:

+5.7% of GDP higher than baseline in 2035

Impact on GDP growth:

+0.3 ppts of GDP higher than baseline in 2035

Impact on Jobs:

+200,000 jobs higher than baseline in 2035

Source: Mealy and Stapleton “Mapping the emergence of cleantech industries in Southeast Asia” (2025) Note: LCTs are measured using the classification in Bastos et al. (2024) of climate change mitigation technologies. This includes three technologies of wind, solar and EVs



Unlocking low-carbon technology gains depends on three pillars



Pricing signals

Goal: Raises demand for low-carbon technologies and processes

- Create clear market signals by **pricing carbon**, gradually reducing **fuel subsidies**
- Developing **competitive power markets** to support clean energy, including direct renewable Power Purchase Agreements (PPAs)



Domestic supply chains and skills

Goal: Enhances local supplier capacity, increases domestic value added, and supports quality job creation in higher-skill segments

- Strengthen **basic education** for critical thinking & lifelong learning
- Expand **training, certification & scholarships** for EV mechanics, solar installers, and sustainable engineers
- Introduce **talent-attraction & upskilling programs**



Industrial policy for local upgrading

Goal: Ensures FDI drives productivity, IP creation, R&D capability, and skill upgrading

- Align **incentives (e.g., EV 3.5)** with local supply-chain integration
- Require **technology transfer & SME participation** in FDI projects
- Use Competitiveness Enhancement Fund to co-invest in firms that meet **technology transfer and local workforce training criteria**

Thank you