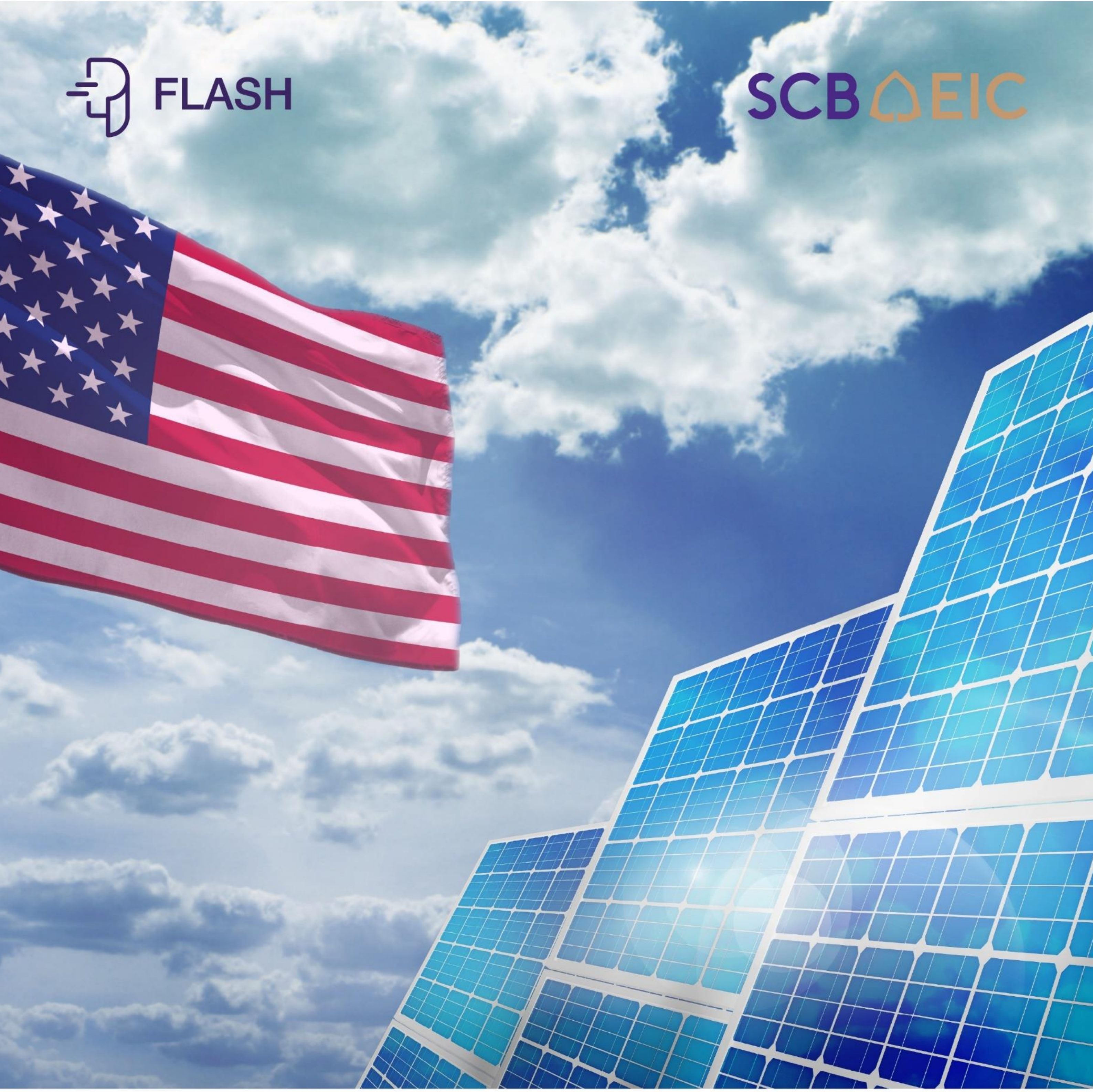

U.S. Imposes Tariffs of up to 972% on Thai Solar Cells, Pressuring Exports to Contract Near Zero by 2026

25 April 2025

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KEY SUMMARY

On April 21, 2025, the U.S. announced the final determinations of anti-dumping (AD) and countervailing duties (CVD) on solar panels and components imported from Thailand. Thai exports of solar panels and components to the U.S., which expanded by more than 47 times during the period 2015–2023, had largely been driven by the relocation of Chinese manufacturers to Thailand. This development led the U.S. to suspect that China was utilizing Thailand as a production base to circumvent tariffs imposed on Chinese exports to the U.S., resulting in the initiation of anti-dumping and countervailing investigations against Thailand since April 2024.

Subsequently, in October–November 2024, the U.S. announced preliminary AD/CVD rates, followed by the final AD/CVD determinations on April 21, 2025. The final combined AD/CVD rates imposed on Thailand were significantly higher than the preliminary rates, ranging from 375.19% to as high as 972.23%. For instance, Sunshine Electrical and Taihua New Energy were subjected to a final duty rate of 972.23%, compared to the preliminary rate of 189.20%. Other Thai companies were assigned a final duty rate of 375.19%, compared to the preliminary rate of 80.72%.

The imposition of such elevated AD/CVD rates by the U.S. is expected to severely impact Thailand's solar cell export industry, given that the U.S. market accounts for approximately 90% of Thailand's total export value of solar panels and components.

SCB EIC Assesses that Thai Solar Panel and Component Exports to the U.S. Are Likely to Contract Near Zero by 2026, Driven by Two Key Factors 1) Loss of Price Competitiveness: Thailand has lost its price competitiveness relative to other Asian producers that are not subject to tariffs, as they were not accused of benefiting from Chinese subsidies or assembling Chinese components for export purposes. These countries include Laos, Indonesia, India, and South Korea. In addition, Thailand faces a significant disadvantage in tariff rates compared to Malaysia and Vietnam, which are subjected to minimum duty rates of only 14.64% and 120.69%, respectively, while Thailand faces a much higher rate of 375.19%. Even general Thai manufacturers encounter tariffs more than ten times higher than those imposed on Malaysian manufacturers. 2) Immediate Impact from Preliminary Tariffs: The impact of the preliminary AD/CVD tariffs has already manifested clearly. Since the preliminary duties were enforced in October–November 2024, Thailand has experienced a sharp decline in its U.S. market share, falling from 28% during the first two months of 2024 to just 6% in the first two months of 2025. Meanwhile, competitors such as Indonesia have expanded their share from 2% to 16%. Consequently, the value of Thailand's solar panel exports to the U.S. contracted by 52% year-on-year in the first quarter of 2025, amounting to only THB 12.623 billion. Given that the final duty rates are significantly higher than the preliminary rates, SCB EIC anticipates that Thai solar panel and component exports to the U.S. will nearly disappear by 2026.

SCB EIC views that Thai manufacturers of solar panels and components can undertake three strategic actions to alleviate the adverse effects of the U.S. tariff measures:

1. Positioning as Midstream Component Suppliers: Thai producers can pivot to supplying midstream components to solar panel manufacturing facilities located in countries less affected by the U.S.–China trade conflict. For example, Thai manufacturers could produce intermediate parts for assembly into solar panels at plants in India.
2. Accelerating Export Market Diversification: Manufacturers should expedite the expansion of exports to countries with strong potential in solar power generation, such as India, countries in the Middle East, Europe, and Australia.
3. Expanding Revenue Streams into Clean Energy Production: Firms should broaden their business into clean energy generation both domestically and internationally, leveraging their cost advantages and accumulated experience in the clean energy sector to diversify and enhance revenue streams.

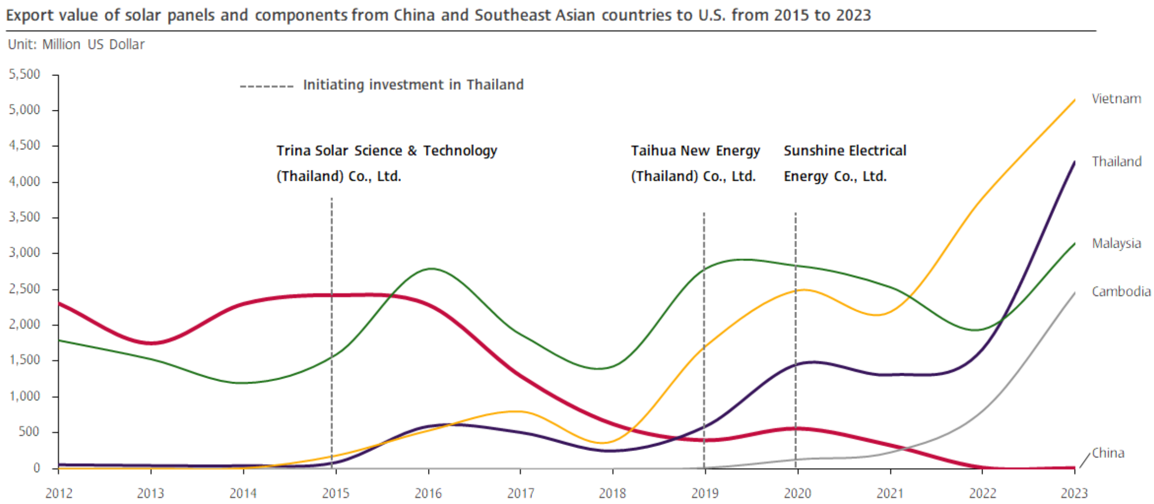
The Government Should Accelerate Investment Promotion Policy Adjustments to Align with the Evolving Global Trade Context At the same time, the government should expedite the adjustment of its investment promotion policies to align with the changing landscape of international trade. In particular, there is a need to enhance the screening and monitoring of manufacturing facilities operating in Thailand to ensure compliance with Thailand's investment promotion regulations, as well as global and partner countries' trade rules. Furthermore, continuous monitoring of projects that may be perceived as "indirect production bases" for countries engaged in trade conflicts, such as China, is crucial. Such measures would ensure that production activities conform to both Thailand's investment promotion framework and the trade regulations of partner countries, thereby reducing the risk of Thailand becoming a target of future trade protectionist measures.

KEY POINTS

On April 21, 2025, the U.S. officially announced the final antidumping (AD) and countervailing duty (CVD) rates on imports of solar panels and components from Thailand, with the final rates being significantly higher than those initially determined at the preliminary stage. The imposition of AD/CVD measures on Thailand stems from the sharp increase in Thai exports of solar panels and components to the U.S. between 2015 and 2023, which rose from USD 89 million in 2015 to USD 4,277 million in 2023 — an expansion of approximately 47 times within just eight years. This exponential growth was largely driven by the relocation of Chinese solar manufacturers to Thailand and other Southeast Asian countries (SEA) (Figure 1). Consequently, the U.S. raised concerns that Thailand could have served as a "transshipment channel" for Chinese products, leading to allegations that Thailand was dumping solar products into the U.S. market. As a result, the U.S. initiated simultaneous dumping investigations against Thailand, Malaysia, Vietnam, and Cambodia beginning in April 2024. On April 21, 2025, the U.S. Department of Commerce announced the final AD rates on Thai solar manufacturers, ranging between 111.45% and 172.68%, higher than the preliminary rates of 57.66%–154.68% announced in November 2024. Moreover, the final CVD rates surged dramatically to 263.74%–799.55%, compared to the preliminary rates of only 0.14%–34.52% announced in October 2024. As a result, Thai exports of solar panels and components to the U.S. are now subject to a total tariff burden of 375.19%–972.23%. Specifically, Trina Solar will be subjected to a combined AD and CVD rate of 375.19%, up from a preliminary rate of 77.99%. Meanwhile, Sunshine Electrical and Taihua New Energy will face a combined duty of

972.23%, compared to their preliminary rate of 189.20%. Other unspecified Thai companies will be subjected to a final combined duty of 375.19%, up from 80.72% (Figure 2).

Figure 1: Export Value of Solar Panels and Components from China and SEA Countries to the U.S., 2015–2023



Source: SCB EIC analysis based on data from Trade Map

Figure 2: Final U.S. Tariff Rates on Thai Solar Panels and Components Set at 375%–972%, Substantially Higher Than Preliminary Rates

AD and CVD investigation Timeline

- April 24, 2024 : Petitions Filed
- October 1, 2024 : CVD Commerce Preliminary Determinations
- November 27, 2024 : AD Commerce Preliminary Determinations
- April 25, 2025 : AD and CVD Commerce Final Determinations
- June 2, 2025 : AD and CVD ITC Final Determinations
- June 9, 2025 : AD and CVD Issuance of Orders

AD and CVD Commerce Determinations of Thailand

Company	AD tariff rate		CVD tariff rate		Total tariff rate (AD+CVD)		Difference between Preliminary and Final Determinations
	Preliminary	Final	Preliminary	Final	Preliminary	Final	
Trina Solar Science & Technology (Thailand) Co., Ltd.	77.85%	**111.45%**	0.14%	**263.74%**	77.99%	**375.19%**	**297.20%**
Taihua New Energy (Thailand) Co., Ltd. Sunshine Electrical Energy Co., Ltd.	154.68%	**172.68%**	34.52%	**799.55%**	189.20%	**972.23%**	**783.03%**
Others	57.66%	**111.45%**	23.06%	**263.74%**	80.72%	**375.19%**	**294.47%**

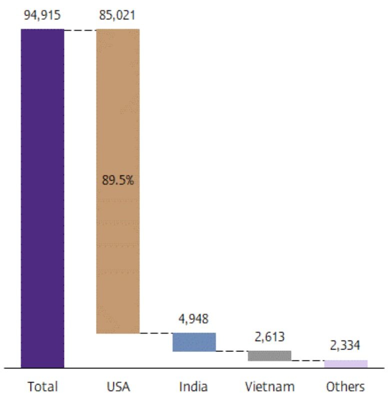
Source: SCB EIC analysis based on data from ITA

The imposition of such elevated AD/CVD rates by the U.S. is expected to severely impact Thailand's solar panel and component export industry, given that the U.S. is a critical export market for these products. In 2024, Thailand's exports of solar panels and components to the U.S. amounted to THB 85.02 billion, accounting for 89.6% of Thailand's total export value in this category. In 2024, there were 16 Thai exporters of solar panels to the U.S.. Sunshine Electrical, **which is now subject to a combined tariff rate of 972.23%, ranked as Thailand's sixth-largest exporter of solar panels to the U.S.** Meanwhile, there were nine Thai exporters of solar panel components to the U.S., with Sunshine Electrical ranking as the seventh-largest exporter in this segment (Figure 2).

Figure 3: The U.S. as the Key Export Market for Thai Solar Panels and Components, with Sunshine Electrical Ranking as Thailand's Sixth-Largest Solar Panel Exporter to the U.S.

Export value of solar panels and components to key trading partner countries in 2024

Unit: Million Baht



Rank of the export value of solar panels to U.S. by company in 2024

RANK	COMPANY
1	CANADIAN SOLAR MANUFACTURING (THAILAND) CO,. LTD.
2	RUNERGY PV TECHNOLOGY (THAILAND) CO., LTD.
3	TRINA SOLAR SCIENCE & TECHNOLOGY (THAILAND) CO., LTD.
4	ZHONGLI TALESUN SOLAR (THAILAND) CO., LTD.
5	OCEAN ENERGY CO., LTD.
6	SUNSHINE ELECTRICAL ENERGY CO., LTD.
7	ENERBLOK (THAILAND) CO., LTD.
8	YANG INDUSTRIAL (THAILAND) CO., LTD.
9	BAJA ELECTROMICS TECHNOLOGY (THAILAND) CO., LTD.
10	LIGHT & HOPE CO., LTD.
11	TRN ENERGY CO., LTD.
12	SUNTOP TECHNOLOGY (THAILAND) CO., LTD.
13	NUMBER KING (THAILAND) CO., LTD.
14	THAI APEX ENTERPRISE CO., LTD.
15	FABRINET CO., LTD.
16	JDEIC CO., LTD.

Rank of the export value of solar cell components to U.S. by company in 2024

RANK	COMPANY
1	M.L.T. SOLAR ENERGY PRODUCTS CO., LTD.
2	CANADIAN SOLAR MANUFACTURING (THAILAND) CO., LTD.
3	TRINA SOLAR SCIENCE & TECHNOLOGY (THAILAND) CO., LTD.
4	RUNERGY PV TECHNOLOGY (THAILAND) CO., LTD.
5	GREENLAND SOLAR ENTERPRISE CO., LTD.
6	PERFECT TRANSIT CO., LTD.
7	SUNSHINE ELECTRICAL ENERGY CO., LTD.
8	GINTECH (THAILAND) CO., LTD.
9	SUNTOP TECHNOLOGY (THAILAND) CO., LTD.

Source: SCB EIC analysis based on data from the Ministry of Commerce

SCB EIC assesses that Thailand's exports of solar panels and components to the U.S. are likely to contract near zero by 2026 due to the loss of price competitiveness in the U.S. market. If the U.S. International Trade Commission confirms the final antidumping (AD) and countervailing duty (CVD) rates as announced on June 6, 2025, Thailand's exports of solar panels and components to the U.S. will experience a sharp and continuous decline, approaching near zero by 2026, due to two key reasons as follows:

1) **Thailand loses price competitiveness in the U.S. market compared to other Asian solar panel and component producers**, namely Laos, Indonesia, India, and South Korea, all of which compete with Thailand and are not subject to AD/CVD duties, as they were not accused of receiving subsidies for the production and assembly of Chinese components for export. Furthermore, when considering the minimum tariff rates under the AD and CVD measures, Thailand is at a considerable disadvantage compared to Malaysia and Vietnam, with Malaysia and Vietnam subjected to minimum rates of 14.64% and 120.69%, respectively, whereas Thailand faces a minimum rate of 375.19%. Moreover, when examining the final tariff rates applied to companies not specifically identified by name, Thailand is subject to significantly higher tariffs than Malaysia, with Malaysia facing a rate of 34.41%, compared to Thailand's 375.19% (Table 1).

Table 1: Final AD/CVD Tariff Rates Imposed by the U.S. on Solar Panel and Component Exporters from Key Competing Asian Countries

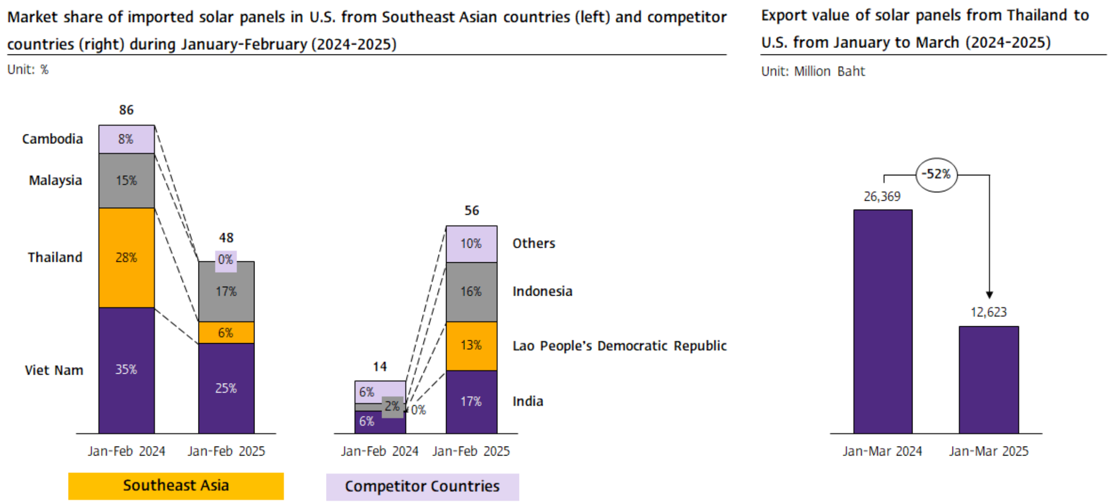
Case	Country	Final AD/CVD Tariff Rate (Minimum / Other Unspecified Companies)	Final AD/CVD Tariff Rate (Maximum)
Subject to AD/CVD	Cambodia	651.85% / 651.85%	3,521.14%
	Vietnam	120.69% / 395.85%	813.92%
	Thailand	**375.19% / 375.19%**	**972.23%**
	Malaysia	14.64% / 34.41%	250.04%
Not Subject to AD/CVD	Laos		
	Indonesia		
	India		
	South Korea		

Source: SCB EIC analysis based on data from Executive Orders by The White House and information from the International Trade Administration (ITA), USA

2) **Clear evidence shows that the preliminary AD and CVD tariff rates imposed on Thailand since late last year have caused Thailand to lose significant market share for solar panels and components in the U.S..** Thailand and other SEA countries have been subjected to CVD tariffs since October 2024 and AD tariffs since

November 2024.When examining the effects of the preliminary AD and CVD tariffs, it is evident that Thailand has experienced a sharp loss of market share in the U.S. market. This is reflected in Thailand's market share for solar panels, which declined to 6% during the first two months of 2025, down from 28% during the same period in 2024 (Figure 3). In contrast, competing countries such as Laos, Indonesia, and India saw clear growth in their market shares. For example, Indonesia's market share rose from 2% in the early months of 2024 to 16% during the first two months of 2025, benefiting from lower import costs to the U.S. compared to other countries. This shift led the U.S. to increase its import proportion from these countries at the expense of Thailand and other SEA nations. The decline in market share contributed to a sharp contraction in Thailand's export value of solar panels and components to the U.S. in Q1 2025, which dropped by 52% year-on-year, from THB 26.369 billion to THB 12.623 billion. **Therefore, given that Thailand's final AD and CVD rates are significantly higher than the preliminary rates, it is highly likely that Thailand's solar panel and component exports to the U.S. will contract to near zero by 2026.**

Figure 4: Market Share of Imported Solar Panels in the U.S. by Southeast Asian (SEA) Countries and Key Competing Countries



Source: SCB EIC analysis based on data from Trade Map and the Ministry of Commerce

SCB EIC views that solar panel and component manufacturers have at least three strategic options to adapt and mitigate the impact of the U.S. tariff barriers:

1. **Positioning as midstream component suppliers to solar panel manufacturing plants in countries minimally affected by the U.S. trade war.** For example, manufacturers that previously exported solar panels to the U.S. using Chinese raw materials could shift to exporting solar components produced from Thai-sourced materials or materials imported from countries without trade issues with the U.S., to destinations such as India, where there is still a shortage of midstream components for assembling solar panels.
2. **Accelerating the expansion of export markets to countries with strong potential for solar power generation.** These include India, countries in the Middle East, Europe, and Australia, where governments actively support infrastructure development for solar power production.
3. **Expanding revenue streams into clean energy generation businesses both domestically and internationally.** Manufacturers can leverage their cost advantages and experience in the clean energy sector to diversify revenues from clean electricity production, which is expected to grow in the future, such as solar power generation businesses involving both ground-mounted systems and rooftop installations (solar rooftop).

At the same time, the government should consider revising investment promotion criteria by placing greater emphasis on mitigating potential risks arising from investment promotion itself. Thailand's experience of being subjected to extremely high U.S. tariffs on solar panels clearly demonstrates that promoting investment alone, without adequate risk mitigation measures, can have adverse consequences for the country. Thus, the government must review the approach to granting investment incentives and strengthen the inspection processes for manufacturing facilities operating in Thailand to ensure compliance with Thailand's investment promotion regulations, as well as global trade rules and the regulations of partner countries. For example, manufacturing operations should be required to utilize production factors, raw materials, and supply chains originating from Thailand in order to better align with the evolving context of international trade. In particular, the government must be vigilant about the risk of Thailand becoming an “indirect production base” for countries involved in trade conflicts. This includes closely monitoring projects that could be perceived as "indirect production bases" for trade-conflict countries, such as China, to ensure that production activities fully comply with Thailand’s investment promotion framework and the trade rules of the countries concerned. Such measures would help prevent Thailand from becoming a target of future trade protection measures and would shield the country from similar trade-related risks going forward.

In summary, the U.S.’ imposition of antidumping (AD) and countervailing duty (CVD) measures, with combined tariff rates as high as 375%–972% on solar panels and components from Thailand, constitutes one of the most severe trade barriers in recent years and is likely to cause Thai exports in this product category to the U.S. to contract almost entirely by 2026. Nevertheless, while these U.S. measures may "close the door" to one market, they simultaneously "open the way" for Thailand to embark on a new beginning with greater caution and sustainability on the global stage.

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