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Chinese New Energy Enterprises "Going Abroad" Series: Sailing to Europe and America

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Preface

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The global energy system is currently undergoing an unprecedented transformation. Driven by carbon neutrality goals, the iteration of renewable energy technologies is accelerating, and the global energy consumption structure is transforming towards low-carbon development and electrification. China's new energy industry—leveraging technological breakthroughs, cost advantages, and supply chain resilience—has become a key driver of the global green transition.

The European and American markets, with their long-standing scale and high profitability, as well as their role in enhancing brand value and serving as key pivots in global strategies, have always been popular destinations for Chinese companies looking to "go global." For China's new energy enterprises, the European and American markets are both "growth engines" and "testing grounds." Europe's demand for green transformation aligns closely with China's technological breakthroughs in new energy, creating incremental market opportunities. On the other hand, frequent policy fluctuations in the new energy sector and tariffs in the United States are forcing Chinese companies to accelerate innovation and implement localised strategies. In the future, as geopolitical competition intensifies, trade barriers rise, and localisation policies become more frequent in the European and American markets, unprecedented opportunities and challenges will arise for the globalisation efforts of China's new energy enterprises.

To support Chinese new energy companies in going abroad, in 2024, KPMG China released two reports on new energy enterprises venturing into Southeast Asia and those heading to the Middle East. This newly released report, "Setting to Europe and America," is the concluding piece of the series. This instalment focuses on the two major developed markets of Europe and the US, concentrating on core sectors such as photovoltaics, energy storage, and wind power, and analysing policy trends, market potential, and competitive landscapes from two dimensions: products "going abroad" and capacity "going abroad." The report aims to help companies navigate their "going abroad" journey and achieve high-quality global development. To this end, the report leverages the advantages of KPMG China and the firm's global network, combining practical experience from industry experts in Europe and the US. It provides actionable references and recommendations through case studies in various areas, including site selection and factory construction, strategic planning, and localised operations.

As the old saying goes, "The sea is vast, and fish can leap." As the global energy landscape undergoes profound adjustments, Chinese new energy enterprises are pursuing a new round of globalisation, transitioning from product exports to "exports" of capacity and technology. As a leading professional service provider, KPMG has been deeply involved in the energy sector for decades. The firm is committed to leveraging its global network covering over 150 countries to deliver localised insights and comprehensive services—including strategic planning, risk management, compliance operations, and resource integration—for Chinese new energy companies. In the years ahead, we look forward to continuing working alongside these enterprises as they pursue their global strategies.

Abstract

The overseas market has become a crucial driver for Chinese new energy companies seeking expansion and growth. To better understand this trend, KPMG China launched the "Series on Chinese New Energy Enterprises Going Abroad," which offers professional market insights and in-depth data analysis and reveals the development potential and business opportunities in major overseas regions that are important to enterprises in the new energy sector.

As the final instalment of the "Series on Chinese New Energy Enterprises Going Abroad," this report aims to provide forward-looking insights and strategic recommendations by analysing the characteristics of the new energy markets in Europe and America, with a view to helping enterprises capture opportunities in these markets and write a new chapter of green energy cooperation with Europe and America. The main insights of the report are as follows:

Europe: the main arena for Chinese new energy enterprises going abroad

With its vast market space, high profitability, and positive policy support, Europe has become the main destination for Chinese new energy companies looking to go abroad. In this region, Chinese companies have demonstrated strong competitiveness in areas such as photovoltaics, energy storage, and wind energy.

Photovoltaics: China's photovoltaic industry once dominated the European market, but its exports declined after 2012 due to the EU's "anti-dumping and anti-subsidy" restrictions on China. After the EU terminated these measures in 2018, China's share of battery and module exports to Europe's photovoltaic market rebounded to 50.7% in 2022, with the Netherlands, Spain, and Germany being the primary markets.

Energy storage: From 2019 to 2023, total battery exports from China to Europe climbed from RMB 26.53 billion to RMB 180.23 billion, before declining slightly in 2024. For energy storage, Germany is the main market. Electricity prices have fallen into negative territory multiple times in Europe, reflecting that energy storage facilities that are primarily focused on household storage are increasingly unable to meet the flexible regulation needs of the grid and power system, suggesting significant potential for growth in large-scale storage demand.

Wind energy: The European wind energy market has a high degree of self-sufficiency, with the localisation rate of wind power equipment manufacturing in Europe standing at 85%. Since 2023, the total amount of wind turbines exported from China to Europe has significantly decreased. In addition to the impact of the cessation of overseas rush installations at certain stages, exports are also to some extent constrained by the EU's continuous strengthening of protection for its local wind power industry through measures such as the *European Wind Charter* and the *Foreign Subsidies Regulation*.

Greenfield investment: Various European countries have intensively launched policies to support the development of domestic photovoltaic upstream and downstream industrial chains, as well as to review Chinese photovoltaic companies, leading to a slowdown in Chinese photovoltaic enterprises building factories in Europe. Due to the strong demand for electrification in Europe and requirements around battery localisation, since 2019, Chinese energy storage companies have been gradually expanding in the European market, fully leveraging the synergies of vertical integration in their industry.

Mergers & acquisitions: According to incomplete statistics, from 2020 to 2024, Chinese photovoltaic, wind power, and energy storage enterprises initiated a total of 20 overseas M&A transactions in the European market, with investment footprints mainly concentrated in Spain and Hungary. These M&A transactions were primarily led by large state-owned enterprises.

US: Under the second Trump Administration, the US remains an incremental market for new energy companies going abroad

Since the start of Donald Trump's second term, his administration has continued to protect the American new energy sector, imposing a 25% tariff on all imported cars and "reciprocal tariffs" on countries around the world, with reciprocal tariffs on China as high as 125%. Additionally, an extra 20% tariff was imposed under the pretext of combating fentanyl, bringing total additional tariffs on China to 145%. (During the preparation of this report, the US's "reciprocal tariff" policy was announced; we have included relevant information in the report but have not yet fully covered its potential impact. Please stay tuned for our forthcoming in-depth analysis and interpretation of the impact of the US's "reciprocal tariffs.") Furthermore, the Trump administration suspended grants for clean energy projects and has considered abolishing the Inflation Reduction Act (IRA), focusing instead on the development of traditional energy sources. Nevertheless, since most of the IRA's clean energy subsidy funds had already been allocated in advance, and with some states still actively investing in clean energy, there is significant resistance to abolishing this law.

Despite the uncertainty brought about by policy changes, the US's new energy market remains attractive. The return of manufacturing, the accelerated development of AI technology, and other factors have driven a significant increase in electricity demand, particularly for photovoltaic and energy storage systems. Additionally, the global trend towards the energy transition and the rapid growth of clean energy investments provide broad space for development in the country's new energy market. Although the Trump administration prioritises traditional energy sources, US states have considerable autonomy in the development of clean energy, and market demand for new energy technologies such as energy storage continues to rise.

Photovoltaics: Due to the previous "anti-dumping and countervailing duties" and Section 201 tariffs imposed by the US on China's photovoltaic product exports, there are currently fewer direct exports of silicon wafers, modules, and other photovoltaic products from China to the US. Therefore, Chinese enterprises have mainly been investing in building factories in Southeast Asia and then exporting products to the US from there.

Energy storage: 70% of lithium batteries imported to the US come from China, and the US is the country's largest export market for lithium batteries. However, under the current US administration, a cumulative tariff of 145% has been imposed on products imported from China. As a result, uncertainty around exports to the US from the new energy industry, such as lithium batteries, has increased.

Wind energy: Due to domestic policy restrictions in the US and high market entry barriers, China's wind energy exports to the US are minimal. In 2023, China only exported USD 1.25 million in wind power equipment to the US. Affected by president Trump's suspension of wind power approvals, Chinese wind power exports to the US are expected to continue to face difficulties in the future.

Greenfield investment: In response to the risks brought by fluctuations in US trade policies, and under the impetus of the IRA, Chinese photovoltaic companies have been making plans to build factories in the US since 2023. With the increasing demand for energy storage batteries in the US, Chinese energy storage enterprises are accelerating the strategic expansion of their production capacity in the US.

Mergers & acquisitions: In recent years, the US government has strengthened its national security review system for M&As involving foreign investment. During Trump's second term, the focus of reviews conducted by the Committee on Foreign Investment in the United States (CFIUS) may have a high degree of continuity with the past. As a result, Chinese energy companies are still taking a wait-and-see approach towards M&As of renewable energy enterprises in the US. Going forward, asset swaps could serve as a model for Chinese new energy enterprises looking to go global in the US.

Chinese new energy enterprises need to address three challenges when "going abroad" in Europe and America and adopt targeted strategies.

Challenges

Challenge 1: The European and American markets have set up "obstacles" for the globalisation efforts of the Chinese new energy industry through "trade barriers + localisation industrial policies." The EU's *Foreign Subsidies Regulation*, US tariffs on China, and the IRA's localisation requirements restrict direct exports, forcing companies to turn to local production capacity.

Challenge 2: Developed markets are associated with high barriers and costs. In developed countries, costs are high, local brands are strong, and hidden costs arising from issues such as compliance and cultural differences increase operational difficulties.

Challenge 3: Local operational capacity is insufficient, with enterprises highlighting issues such as lagging demand response, cross-cultural management conflicts, and weak cost control.

Response strategies

Response 1: Enterprises can diversify production capacity across multiple regions, shifting from "China + 1" to the "+ N" model. Capacity can be distributed across Southeast Asia, Mexico, Eastern Europe and other regions to reduce systemic risks.

Response 2: Companies can implement a technology-brand dual-driver strategy, improve core technologies (such as cell energy density), cultivate a high-quality brand image through certification and compliance, and avoid succumbing to fierce, price-based competition.

Response 3: Enterprises can deeply integrate the industrial chain. From the perspective of vertical integration in the industrial chain, enterprises that are "going abroad" can delve deeper and form an end-to-end closed loop that spans from manufacturing to services and consumption. Meanwhile, from the perspective of horizontal development in the industrial chain, enterprises can strengthen strategic cooperation with related companies.

Response 4: Companies can optimise their post-investment risk control system and build a cross-border internal control framework that covers various issues—from risk identification in respect of host-country policies and market ecosystems, to dynamic adjustments such as compliance adaptation and cost control—with a view to ensuring operational stability.

Contents

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Europe: the main arena for Chinese new energy enterprises going abroad

1.1 The European new energy market is vast and profitable

1.1.1. Clean energy development in Europe is accelerating due to rising decarbonisation targets and energy crises.

As a staunch supporter of efforts to reduce global carbon emissions, the EU has always placed the development of clean energy in a strategically important position. To ensure the achievement of its nationally determined contributions (NDCs)—reducing greenhouse gas emissions by at least 55% compared to 1990 levels by 2030 and achieving carbon neutrality by 2050—the EU proposed a series of policies in 2019 covering energy, carbon pricing, transportation, forest carbon sinks, emissions reduction responsibilities, and financial support, known as the "European Green Deal." Under the guidance of this framework, and in response to the outbreak of the energy crisis, the development of clean energy has accelerated. In October 2023, the EU Council adopted a new Renewable Energy Directive, which includes an indicative additional target that calls for renewable energy to make up 45% of the EU's total energy consumption by 2030, adding 2.5% to the original target of 42.5%[1], and significantly surpassing the previous goal of 32%. This means that the share of renewable energy will double within 10 years, further accelerating the growth of clean energy in Europe.

In addition, the EU is building the world's most stringent carbon emissions regulatory system through measures such as "Fit for 55," the *EU Battery and Waste Battery Regulation*, and the Carbon Border Adjustment Mechanism (CBAM), while also promoting the development of domestic clean technologies through industrial subsidies and resource security policies. In March 2023, the European Commission proposed the *Net-Zero Industry Act* and the *Critical Raw Materials Act*, which aim to ensure that by 2030, the EU's overall strategic net-zero technology manufacturing capacity will be close to or exceed 40% of its annual deployment needs, in order to maintain a leading position globally in green industrial technology.

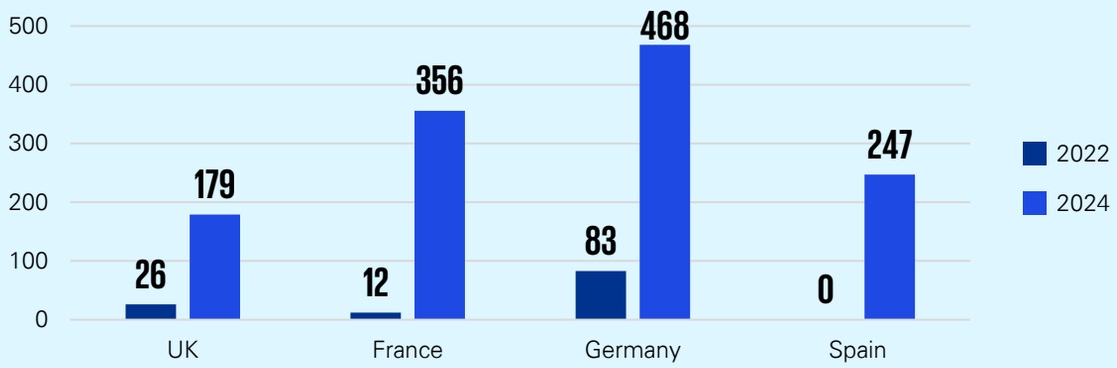
For Chinese new energy enterprises, the "green storm" triggered by the EU presents significant market opportunities. For example, to effectively integrate and consume clean energy, power grids need to undergo intelligent and digital transformation and upgrading, which should lead to large-scale investments across the entire power grid industrial chain.

[1] The EU's renewable energy consumption target will increase to 42.5% by 2030, Sinopec News Network, 6 April 2023 http://www.sinopecnews.com.cn/xnews/content/2023-04/06/content_7062658.html

1.1.2. Frequent issues such as negative electricity prices have caused the EU to plan massive investments to upgrade its power grid.

In recent years, as the share of renewable energy in Europe's power structure has continued to rise, negative electricity prices have been seen frequently, posing numerous challenges to Europe's power market and energy system. In 2024, multiple European countries experienced record-breaking periods of negative electricity prices. According to data from the European Power Exchange (EPEX SPOT), Germany saw negative electricity prices for periods totaling 468 hours in 2024, a year-over-year increase of 60%; France saw negative electricity prices for 356 hours, double the previous year; and Spain experienced negative electricity prices for the first time, for periods totaling 247 hours in 2024 (Figure 1)[2].

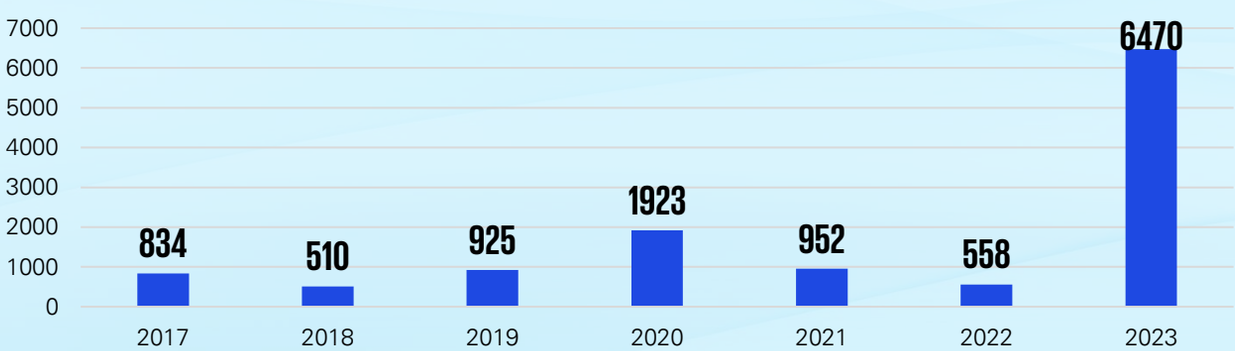
Figure 1 | In 2024, the number of hours with negative electricity prices in some European countries surged compared to 2022



Source: China Energy News, KPMG analysis

Negative electricity prices mainly stem from the instability and intermittency of renewable energy generation. When power generation surges, excess electricity cannot be effectively stored or consumed, causing electricity prices to fall into negative territory, which means power generators pay consumers to take the electricity. This not only causes losses for power suppliers but also has a negative impact on the stable operation of the power market. The occurrence of negative electricity prices drives enterprises to increase investment in energy storage facilities, encourages thermal power companies to pursue technological upgrading to better match grid demand with the instability of renewable energy, and also places higher demands on grid construction. Upgrading grid infrastructure will be a key measure to address the issue of negative electricity prices (Figure 2).

Figure 2 | Number of occurrences of negative electricity prices in Europe in recent years



Data source: Agency for the Cooperation of Energy Regulators, KPMG analysis

[2] Negative electricity prices frequently occur, hindering the development of green power in Europe, China Energy News, 13 January 2025 http://paper.people.com.cn/zgnyb/pc/content/202501/13/content_30052527.html

In addition, the European power grid is expected to soon be upgraded. EU data shows that 40% of its distribution networks are over 40 years old[3]. These aging grids often fail to meet transmission needs when renewable energy sources are connected, limiting the utilisation of renewable energy. As cross-border transmission capacity is set to double, European power grids must adapt to a more digitalised, decentralised, and flexible system. To address the challenges brought by renewable energy and break through the bottlenecks of the energy transition, in November 2023, the EU launched the Grid Action Plan, which includes plans to invest EUR 584 billion in maintenance, improvement, and upgrading for European power grids and related facilities to meet the demand for connecting more clean power to the grid. In this context, the development of the European power grid will inevitably accelerate, providing numerous market opportunities for Chinese companies involved in power transmission and distribution and their upstream and downstream sectors to go global.

1.1.3. European market prices and profit levels are clearly higher than in China.

For example, in 2024, the European energy storage market experienced explosive growth. According to the "European Energy Storage Market Outlook 2024-2028" report released by the European Photovoltaic Industry Association, the installed capacity of large-scale energy storage in Europe was expected to reach 11 GWh in 2024, reflecting significant growth of about 205%[4]. In terms of market prices, the average price for AC-side systems in Europe and Australia is approximately RMB 1.2/Wh, while in Latin America it is RMB 1.0-1.1/Wh, and in the Middle East and North Africa it is RMB 0.9/Wh. In comparison, the average price in China is only RMB 0.6-0.8/Wh. In other words, in respect of energy storage systems, the European new energy market performs significantly better in terms of price and profitability compared to the domestic market (Table 1).

Table 1 **Average prices and profitability of energy storage systems on the exchange side across global markets**

Market	Average price and profitability of the grid-side energy storage system
US	RMB 1.3-1.4/Wh, gross margin of about 40%
Europe/Australia	RMB 1.2/Wh, gross margin of about 30%
Latin America	RMB 1.0/Wh, gross margin of about 30%
Middle East and North Africa	RMB 0.8-0.9/Wh, gross margin of about 25%
China	RMB 0.6-0.8/Wh, gross margin of about 10-14%

Data source: public information, KPMG analysis

The high prices and profitability in Europe's new energy market can be attributed to multiple factors. European consumers pay closer attention to environmental protection and sustainable development, and they are willing to pay higher prices for new energy products. In addition, governments in various European countries use incentive policies, such as tax benefits and subsidies, to promote the development and application of new energy technologies. As a result, for domestic enterprises "going abroad," the European market can provide broad space for development as well as substantial profits.

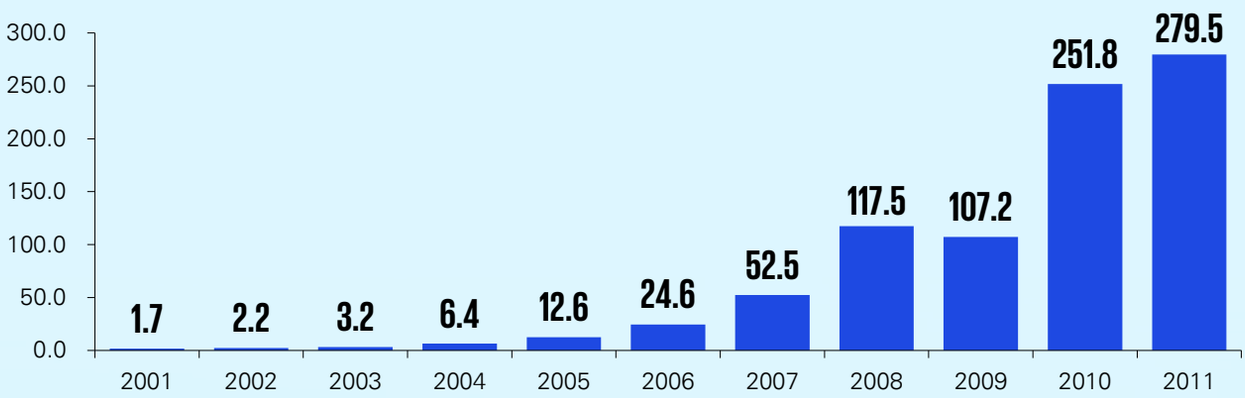
[3] Accelerating the construction and upgrading of the power grid to break through the bottleneck in the energy transition, China National Petroleum Corporation News Centre, 30 January 2024 https://news.cnpc.com.cn/system/2024/01/30/030123874.shtml
[4] "European Energy Storage Market Outlook 2024-2028," Storage World Network, 26 October 2024 https://www.chujiewang.net/cxw/col135/6101

1.2 Products "going abroad": Analysis of major new energy sectors

1.2.1. Photovoltaics: China and Europe are collaborating on energy transition goals, and engaging in both competition and cooperation.

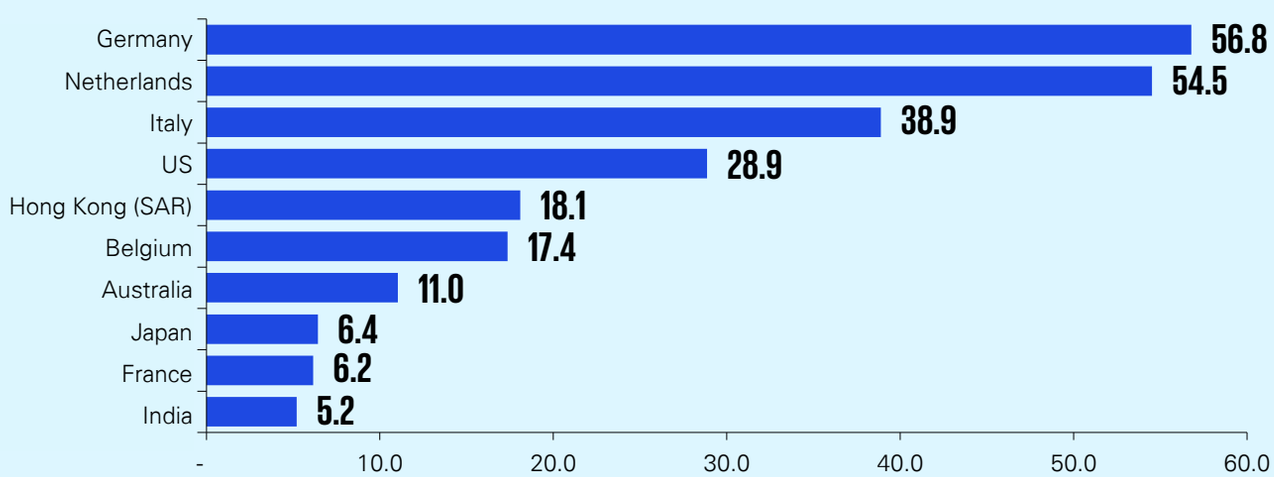
China and Europe have a long history of cooperating in trade and economics, and photovoltaic products have been a key area of these exchanges for a long time. Overall, their cooperation has been mutually beneficial and delivered win-win results, although there have been occasional frictions. After China's accession to the World Trade Organization (WTO), Chinese exporters of photovoltaic products leveraged their significant cost advantages to quickly open up overseas markets, with exports climbing rapidly. In 2011, China became the world's largest exporter of photovoltaic products, exporting a total of nearly USD 28 billion (Figure 3). Europe has been the main target market. According to China's export data for 2011, the top three markets for photovoltaic product exports were Germany, the Netherlands, and Italy (Figure 4). For example, from 2004 to 2012, Germany's cumulative installed capacity of photovoltaic systems expanded from 1,105 MW to 34.1 GW, growing nearly 30-fold, which could not have been achieved without strong support from Chinese photovoltaic products.

Figure 3 | China's photovoltaic product exports[5], 2000-2011, in USD 100 millions



Data source: UN Comtrade, KPMG analysis

Figure 4 | Top 10 countries or regions for Chinese photovoltaic product exports in 2011, in USD 100 millions



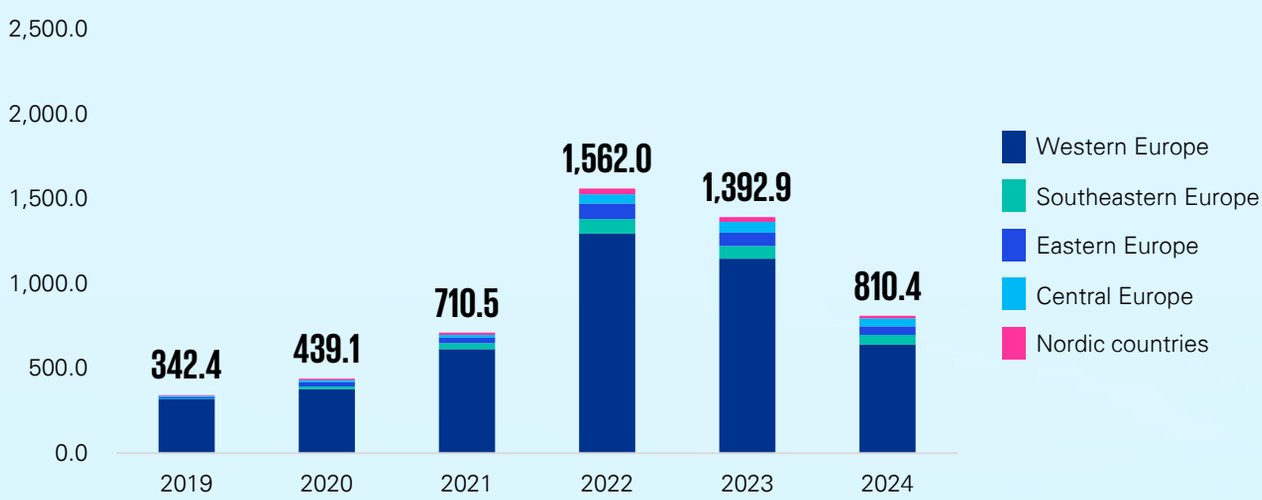
Data source: UN Comtrade, KPMG analysis

[5] The corresponding HS code is 854140

However, due to the rapid growth of China's photovoltaic exports, coupled with rising trade protectionism, the US and Europe initiated anti-dumping and countervailing investigations against Chinese photovoltaic products (referred to as "anti-dumping and countervailing duties") starting from 2012. As a result, Chinese photovoltaic enterprises began to face a colder reception in overseas markets. Data from the China Photovoltaic Industry Association shows that, in terms of value, total exports of photovoltaic products declined by 37.5% and 9.8% year-over-year in 2012 and 2013, respectively. From 2013 to 2018, China's photovoltaic product exports were generally lukewarm. During this period, demand for photovoltaic construction in countries such as Australia, Mexico, and Pakistan began to surge, and these countries gradually replaced Europe as the main market for China's photovoltaic product exports.

Following the EU's announcement in 2018 that it would end the "dual anti-dumping and anti-subsidy" policy on Chinese photovoltaic products, China's exports of photovoltaic products to Europe began to recover. From 2019 to 2022, the year-over-year growth rate of cells and modules[6] exported from China to Europe continued to rise, reaching RMB 156.2 billion in 2022, accounting for about 50.7% of China's total export value that year (Figure 5).

Figure 5 | Solar cells and modules exported from China to Europe from 2019 to 2024, in RMB 100 millions

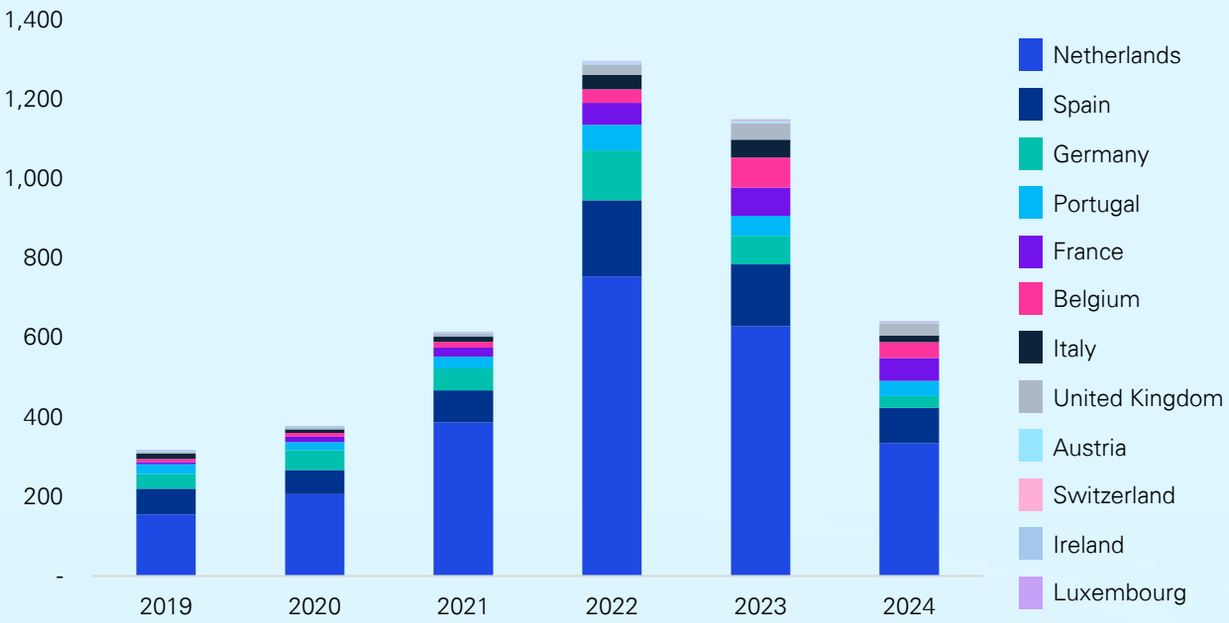


Data source: General Administration of Customs, KPMG analysis

[6] The corresponding HS code for 2019-2021 was 85414020, and the corresponding HS codes for 2022-2024 were 85414200 and 85414300

From a regional perspective, Western Europe—particularly the Netherlands, Spain, and Germany—is the main market for photovoltaics (Figure 6). Among them, from 2019 to 2023, the Netherlands was consistently the top destination for China's solar cell and module exports. In addition to its own high demand for photovoltaic products, the Netherlands also benefits from its well-developed logistics industry, serving as a transshipment point for intra-European photovoltaic trade. According to data gathered by Statistics Netherlands, in 2022, the Netherlands imported a total of 2.4 million tons of solar panels, with 60% being immediately transferred to other landlocked European countries, and 40% used for local installation and storage (for use in the Netherlands or abroad later)[7].

Figure 6 | Solar cells and modules exported from China to Western European countries from 2019 to 2024, in RMB 100 millions



Data source: General Administration of Customs, KPMG analysis

Since 2022, the EU has been actively seeking to reduce its dependence on Russian energy by accelerating the deployment of new energy sources such as photovoltaics. In 2022, the EU introduced policies such as the REPowerEU plan and the EU Solar Strategy, with the aim of doubling solar photovoltaic capacity from 2020 levels to 320 GW by 2025, and then reaching nearly 600 GW by 2030. In 2024, the EU revised the Energy Performance of Buildings Directive, requiring all new residential buildings to be equipped with rooftop photovoltaic systems starting in 2030. Moreover, all new buildings occupied or owned by public institutions must achieve zero emissions by 2028, and all new buildings must achieve zero emissions starting in 2030. Additionally, several EU countries have already initiated photovoltaic subsidy phase-out policies to promote fair market competition[8].

In the long term, both China and Europe share the common goal of seeking energy transformation and have a realistic foundation for maintaining cooperation in the photovoltaics sector, but they also face challenges such as low-price competition and intensified competition in the photovoltaic manufacturing sector.

In terms of low-price competition, Europe experienced a relatively severe oversupply of photovoltaic modules in 2023 and 2024, triggering intense price competition. Research data from EUPD shows that the average price for high-efficiency crystalline modules in Europe in the fourth quarter of 2024 stood at approximately EUR 0.20 per watt, a year-over-year decrease of 31.8%[9].

[7] Development of the Dutch photovoltaic industry, Ministry of Commerce, 20 February 2024, https://nl.mofcom.gov.cn/ztdy/art/2024/art_14ff873743ed44869a664c3f889180b3.html
[8] Europe: Solar panels to be installed on the roofs of all new residential buildings starting from 2030, China General Mechanical Industry Association, 18 March 2024, https://www.cgmia.org.cn/Web/News/Detail/19765
[9] https://eupd-group.com/product/pv-price-inventory-tracker-ees-price-inventory-tracker/

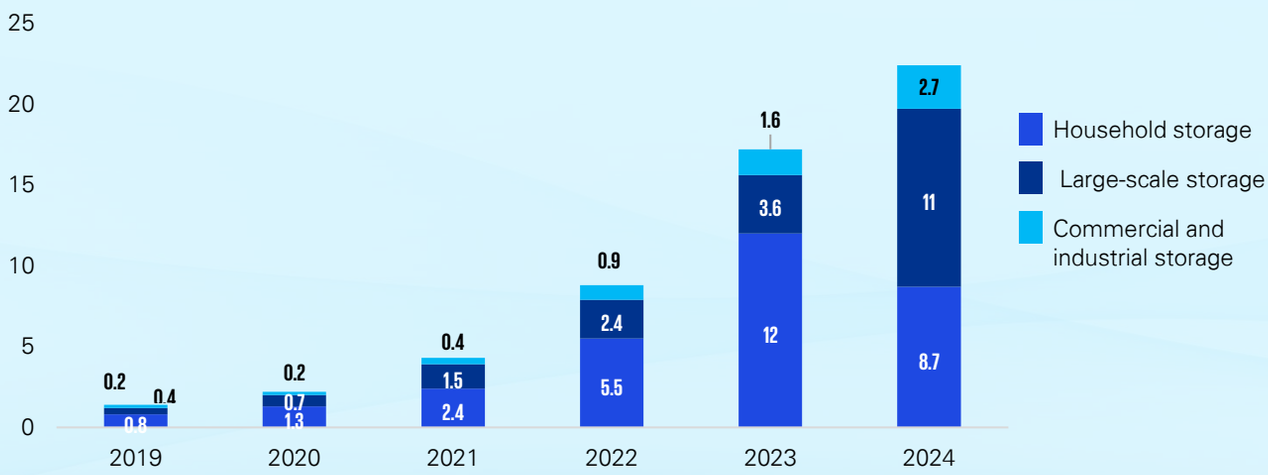
The intensifying competition in photovoltaic manufacturing mainly stems from the EU's strong push for the localisation of its photovoltaic industrial chain in recent years. In this context, Chinese photovoltaic companies can consider relocating more photovoltaic manufacturing capacity to Europe. According to the *Net-Zero Industry Act* announced by the EU in 2023, by 2030, at least 40% of photovoltaic production capacity is required to be localised, and dependency on raw materials from any single country should not exceed 65%. Against this backdrop, some Chinese photovoltaic enterprises have chosen to export photovoltaic equipment and complete silicon wafer production lines and provide services to assist Europe in building its own local production capacity in line with policy guidance.

1.2.2. Energy storage: Exports of household energy storage products to Europe are strong, and the large-scale energy storage market is beginning to show potential.

As Europe continues to advance its energy transition, the generation of renewable energy is continuously increasing, creating huge potential demand for energy storage in its energy system. Going forward, this trend is expected to sustainably drive the trade of energy storage products between China and Europe.

Since 2019, the European energy storage market has seen year-over-year increases in installed capacity, with an average annual growth rate of 87%. By 2024, cumulative installed capacity exceeded 56.3 GWh. Europe is a typical residential energy storage market dominated by household storage systems, due to the fact that electricity prices for residents in most European countries are higher than the feed-in tariffs for household photovoltaic power. The former continue to rise while the latter are gradually decreasing, making the economic benefits of household energy storage increasingly evident. From 2019 to 2023, household energy storage saw the highest new installations and highest average growth rate, with a cumulative installed capacity of 22.0 GWh and an average annual growth rate of about 97%. Notably, in 2024, new installations of household storage systems declined significantly due to falling electricity prices and inventory buildup, while large-scale storage systems saw their new installations exceed those of household storage systems for the first time, indicating their emerging potential (Figure 7).

Figure 7 | New energy storage capacity installed annually in Europe[10] in GWh from 2019 to 2023



Data source: SolarPower Europe, KPMG analysis

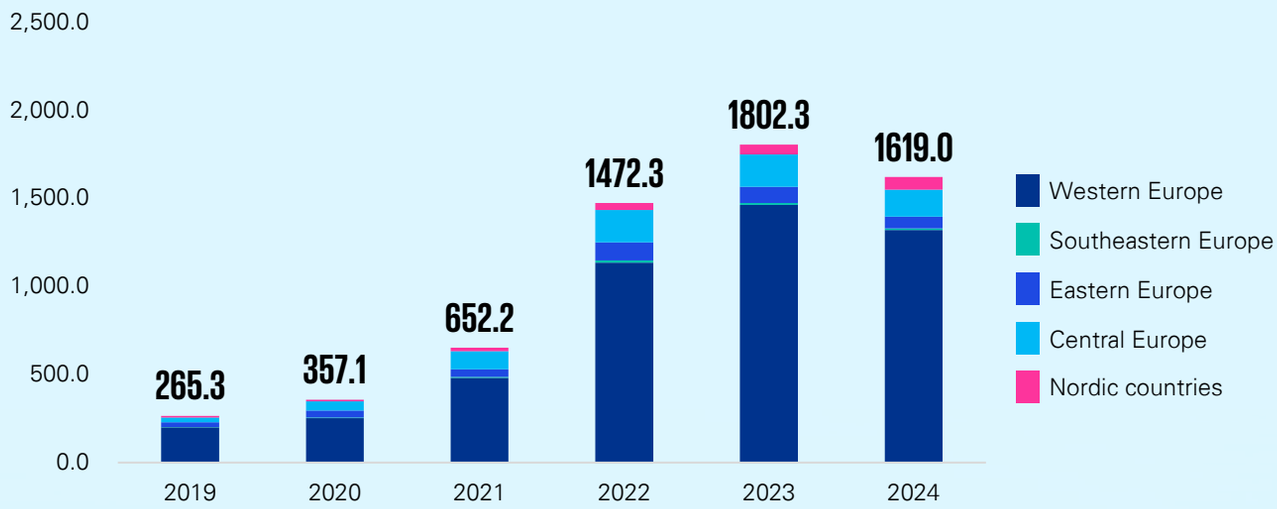
Thanks to the relatively strong demand for energy storage in Europe and the currently low import tariffs on energy storage cells and integrated systems in Europe, exports of energy storage products from China to Europe are trending in a favourable direction. For example, since 2023, Germany has exempted all household photovoltaic storage systems from value-added tax during the procurement, import, and installation processes.

[10] The battery capacity for household storage projects does not exceed 30 kWh; the battery capacity for commercial and industrial storage projects is between 30 kWh and 1000 kWh; and the battery capacity for large-scale storage projects reaches or exceeds 1 MWh

From 2019 to 2023, battery exports from China to Europe[11] climbed from RMB 26.53 billion to RMB 180.23 billion, with a slight decrease in 2024 mainly due to inventory clearance (Figure 8). In Western Europe, Germany is the main market, consistently accounting for a share in excess of 30%, and reaching a historical high of 46% in 2024. According to the "European Market Monitor on Energy Storage (8th Edition)," the German energy storage market is expected to grow from 8 GW in 2023 to 38 GW by 2030, potentially continuing to boost overall demand for energy storage in Europe.

In terms of the different types of batteries, since 2019, the proportion of lithium-ion batteries in China's battery exports to Europe has increased year-over-year, reaching 98% in 2024. This is due to the superior comprehensive performance of lithium-ion batteries, which have high energy storage density, high charging and discharging efficiency, fast response speed, and a high degree of compatibility with energy storage needs.

Figure 8 | Total battery exports from China to Europe, 2019-2024, in RMB 100 millions



Data source: General Administration of Customs, KPMG analysis

Recently, European countries have been introducing policies to support the construction and operation of energy storage projects, including tax cuts and subsidies, which are expected to steadily drive demand for energy storage. For example, in 2024, the UK announced that VAT relief can be independently obtained for household energy storage systems, and Hungary plans to provide up to HUF 5 million in support to families applying to install photovoltaic and energy storage systems starting from 2024[12].

The demand for flexible regulation of power grids and power systems in Europe, under its dependence on renewable energy, is continuously stimulating the large-scale storage market. Meanwhile, major European countries have introduced various policies and regulations covering subsidies, market access, and grid connection permits to support the accelerated deployment of large-scale energy storage. Against this backdrop, the European energy storage market may shift from being driven by household storage to being driven by large-scale storage.

[11] HS code: 85044020
[12] Unveiling the European Household Energy Storage Scene, Carbon Energy Storage, 1 April 2024, https://cn.solarbe.com/news/20240401/87743.html

1.2.3. Wind energy: The localisation rate of wind power manufacturing in Europe is relatively high, and the advantage of Chinese companies lies in their ability to deliver high-quality products at low prices and in a timely manner.

Thanks to extensive wind energy resources and a strong traditional manufacturing foundation, the European wind power industry developed early and has accumulated an array of technology. For a long time, Europe has been able to formulate standards for the global wind power industry. This has also presented a high entry threshold for the export of China's wind power products to Europe; and it is often impossible to directly export standardised complete machines to the local market, which instead require further technical modifications prior to exportation.

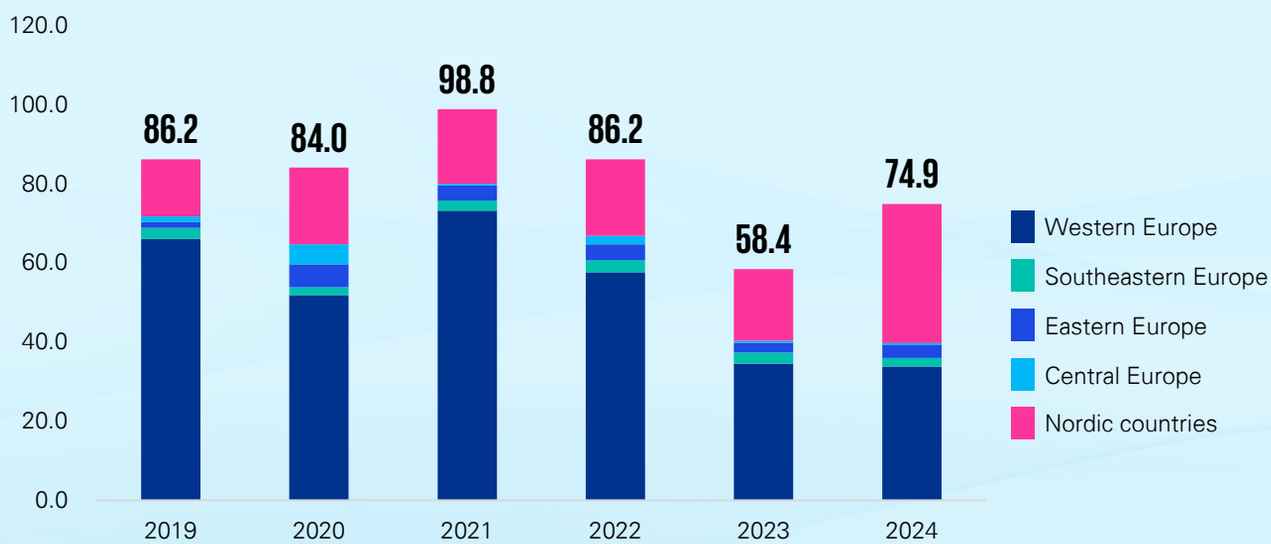
In addition, the European wind energy market is highly self sufficient, and the current penetration rate of Chinese wind power products in the European market remains low. As of October 2023, European wind power equipment manufacturing spans from wind turbine production to component manufacturing, including blades and tower bases, with a localisation rate as high as 85%, and reaching 94% in the offshore market[13].

However, with the continuous improvement of China's wind power technology in recent years, recognition of its products in overseas markets has increased. Coupled with high overall demand for wind energy in Europe, where local wind power products are slightly more expensive and have limited capacity, Chinese wind turbines have gradually opened up the European market thanks to their advantages in terms of being high-quality, affordable, and supplied in a timely manner.

From 2019 to 2022, the total amount of wind turbines and parts exported from China to Europe[14] exceeded RMB 8 billion annually each year, even approaching RMB 10 billion during one year. The main markets are countries with more mature wind energy development, including Western European countries such as Germany, Spain, and France, as well as Denmark in Northern Europe (Figure 9).

Since 2023, the total amount of wind turbine exports from China to Europe has significantly decreased. In addition to the impact of the temporary overseas rush to install wind turbines coming to an end, exports have also been constrained to some extent by the EU's continuous efforts to protect its local wind power industry through measures such as the *European Wind Charter* and the *Foreign Subsidies Regulation*.

Figure 9 | Wind turbines and parts exported from China to Europe from 2019 to 2024, in RMB 100 millions

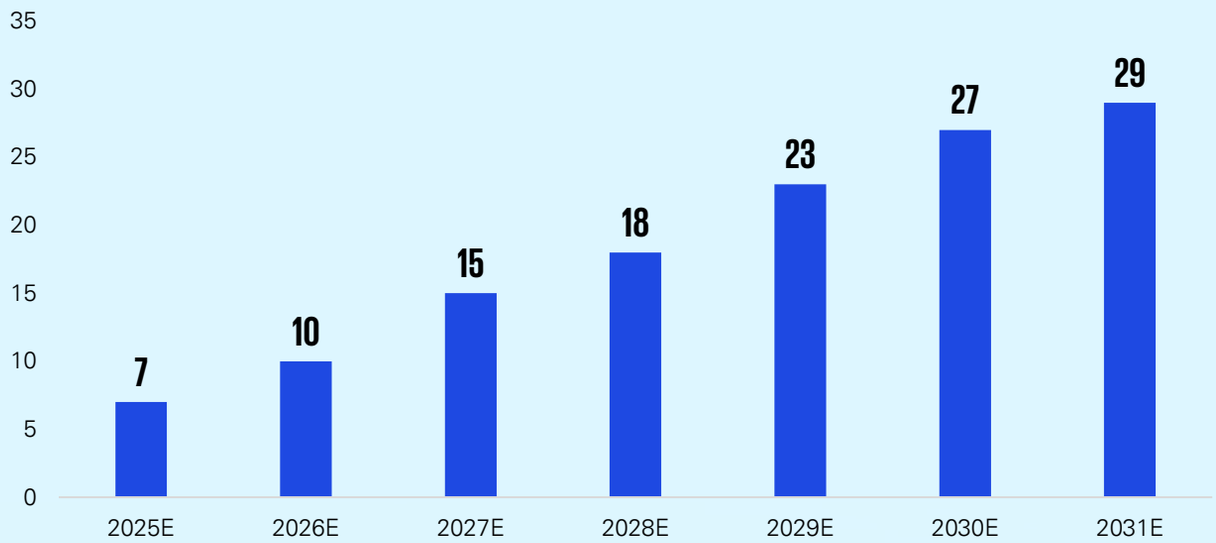


Data source: General Administration of Customs, KPMG analysis

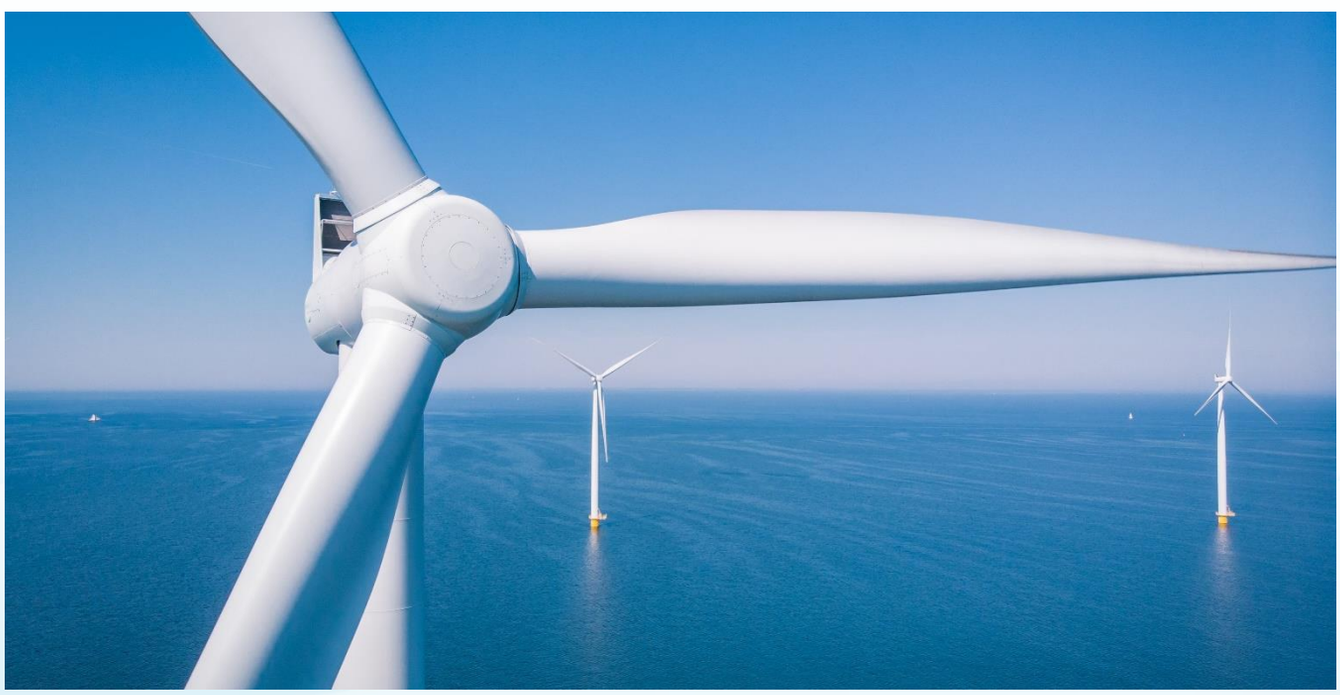
[13] European Wind Power Action Plan, European Commission, 24 September 2023, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0669&qid=1702455143415
[14] The corresponding HS codes are 85023100 and 85030030

In the long term, the potential scale of new wind power installations in Europe is considerable. Chinese wind power companies still have a significant advantage in terms of price and supply, and are expected to continue expanding their presence in the European market. According to the targets set by REPowerEU, Europe needs to add an average of 30 GW of wind power capacity annually until 2030. However, in 2023, new wind power installations in Europe were approximately 18.3 GW, with the EU's 27 member states adding about 16.2 GW, which represents a significant gap from the target[15]. According to the Global Wind Energy Council (GWEC), the annual average of new offshore wind power installations in Europe is expected to reach 18.5 GW from 2025 to 2031 (Figure 10).

Figure 10 | Forecast of new installations of offshore wind capacity in Europe from 2025 to 2031, GW



Data source: GWEC, KPMG analysis



[15] Wind energy in Europe: 2023 statistics and the outlook for 2024-2030, Wind Europe , 28 February 2024, https://windeurope.org/intelligence-platform/product/wind-energy-in-europe-2023-statistics-and-the-outlook-for-2024-2030/

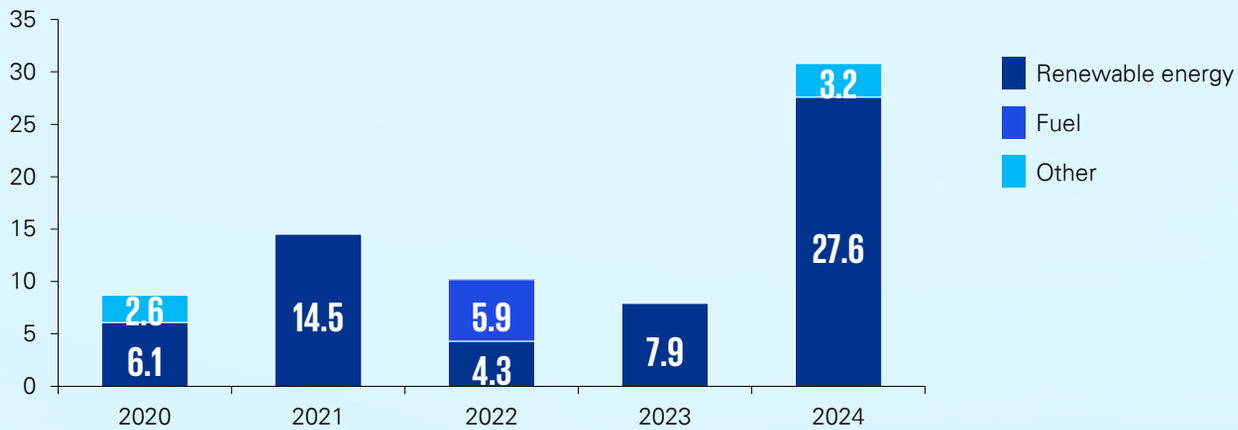
1.3 Capacity "going abroad": Analysis of major new energy sectors

Influenced by international conditions and geopolitical factors, the scale of M&As involving Chinese energy companies in Europe peaked in 2023 and then dropped significantly. In 2024, M&A activity amounted to only USD 300 million. Compared to the slowdown in overseas M&A activity in China's energy sector, greenfield investments have risen in recent years, becoming an important form of foreign investment for Chinese energy enterprises. From 2020 to 2021, Chinese energy greenfield investments grew steadily, but momentum weakened from 2022 to 2023. However, in 2024, greenfield investments recorded a strong rebound, rising back to USD 3.1 billion.

1.3.1 Greenfield investment: Chinese enterprises are actively investing in Europe, contributing to the region's green energy transition.

Europe is one of the main destinations for overseas investments by Chinese energy companies. From 2020 to 2024, the cumulative amount of greenfield energy-related investments reached USD 7.21 billion, with renewable energy accounting for USD 6.04 billion, standing at over 80% of the total energy investment amount (Figure 11).

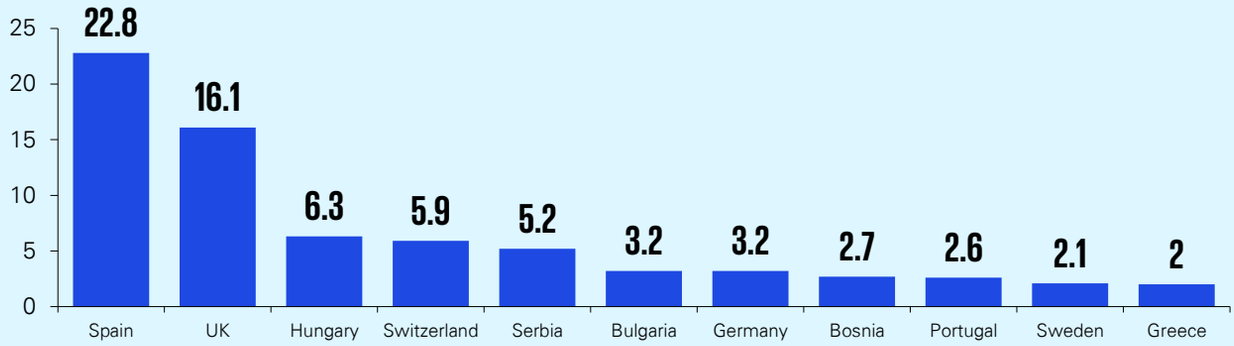
Figure 11 | Chinese enterprises' greenfield investments in the energy sector in Europe, 2020-2024, in USD 100 millions



Data source: American Enterprise Institute, Heritage Foundation, KPMG analysis

From a national distribution perspective, large-scale energy investments are concentrated in countries such as Spain, the UK, Hungary, Switzerland, and Serbia, with 78.1% of investment flowing to these five countries. Among them, Spain has abundant wind energy resources and excellent solar conditions, and the Iberian Peninsula receives ample precipitation, giving the area significant potential for wind power, solar power, and hydropower development. As a result, from 2020 to 2024, Spain received the most investment from Chinese companies, accounting for 31.6% of the total scale of Chinese enterprises' energy investments in Europe. Meanwhile, the UK and Hungary attracted USD 1.61 billion and USD 630 million in greenfield investments, respectively (Figure 12).

Figure 12 | Cumulative amount of greenfield investments by Chinese companies in the energy sector in European countries from 2020 to 2024, in USD 100 millions



Data source: American Enterprise Institute, Heritage Foundation, KPMG analysis

Case One

KPMG assisted Chinese and other Asian new energy enterprises in entering and expanding in the UK market.

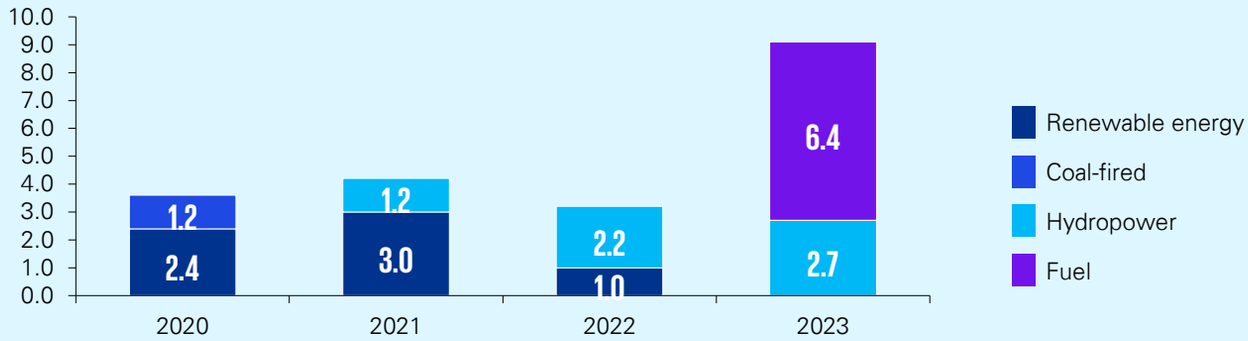
The UK Labour Party government has set a goal for the power system to be fully decarbonised by 2030, which will be achieved through the rapid deployment of renewable energy and other low-carbon technologies. This effort includes expanding the UK's existing mature low-carbon technology sectors, such as wind, solar, and nuclear energy, as well as investing in new low-carbon technologies like floating offshore wind, tidal energy, and hydrogen. Community energy projects will also receive priority support. In addition, the UK government plans to use a new National Wealth Fund to invest in green ports, green hydrogen, green steel, industrial clusters, and super battery factories. These strategic plans present significant opportunities for investors and supply chains from China and other countries.

A Chinese-funded supply chain manufacturing company plans to participate in a large offshore renewable energy project through investment and shareholding, and will provide supply chain equipment and technical support for the project. Through this project, the company hopes to accelerate its strategic goal of entering the UK and European markets. However, as a production-oriented enterprise, it is not familiar with the risks, market policies and regulations associated with investments and acquisitions in the UK and Europe. Under the coordination of KPMG Global China Practice in the UK, the KPMG UK specialist team provided support to the company in respect of investment and acquisition, tax, and legal matters, including market and policy consultation, due diligence, and transaction valuation. During this process, the KPMG UK specialist team analysed the competitive landscape in the UK and Europe, the current and future development trends of relevant energy policies, and the challenges and opportunities they present to the company. The team also identified commercial, compliance, and legal risks during due diligence and transaction valuation, laying a solid foundation for the company's final investment decisions.

In terms of enterprises considering investing in factory construction in the UK, KPMG UK has successfully provided support to several Asian supply chain manufacturing companies, including in respect of site selection, factory business plans, financial models, and applications for government subsidies and tax benefits. For example, when supporting a decision regarding site selection for an Asian company's factory at a UK port, the KPMG UK team conducted a comparative analysis of several alternative ports, including local economic conditions, labour, supporting infrastructure, stakeholders and partners, as well as tax incentives. Moreover, KPMG UK engaged engineers to deliver technical reports and geotechnical assessments, which the team used to analyse construction timelines and costs. Ultimately, KPMG UK's professional analysis report provided strong support for final decision-making regarding site selection. Currently, the KPMG UK team is providing consulting services for the implementation of the factory construction plan and the application for government subsidies for the enterprise.

In addition, with the advancement of the Belt and Road Initiative and the continuous expansion of China's opening-up policy, Chinese energy companies have made significant progress and breakthroughs in the European market in recent years. Through overseas contracting projects, they have participated in the development of the energy infrastructure of multiple countries—both in terms of traditional fossil fuels as well as renewable energy projects, such as wind power, hydropower, and photovoltaic power. In this way, they have been playing an increasingly important role in the global energy sector. According to the latest data, Chinese enterprises' contracted energy projects in Europe were mainly concentrated in the period from 2020 to 2023 (data for 2024 has not been disclosed). During this period, the cumulative amount of engineering contracts in the energy sector undertaken by Chinese-funded enterprises in European countries was USD 2.01 billion, of which the cumulative amount of engineering contracts in the renewable energy sector was USD 640 million, accounting for 31.8% of total energy sector engineering contracts (Figure 13).

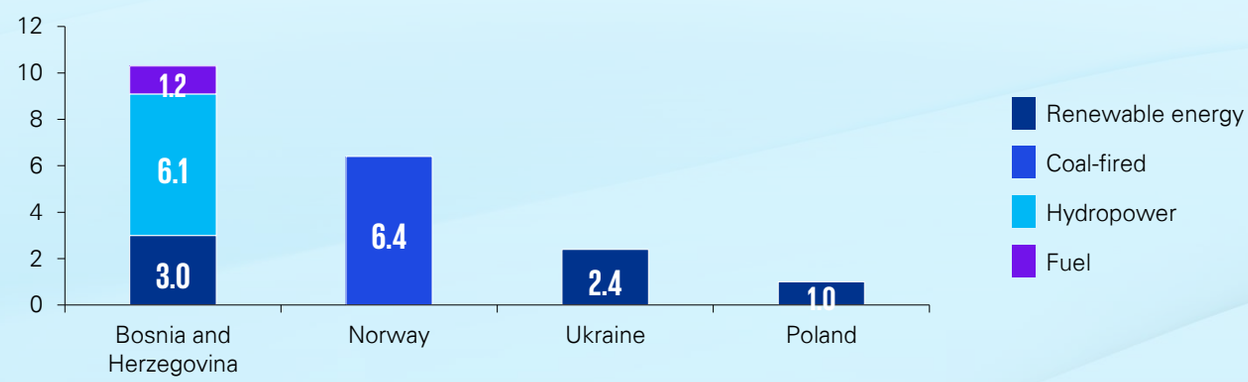
Figure 13 | Engineering contracts in the energy sector undertaken by Chinese companies in European countries, 2020-2023, in USD 100 millions



Data source: American Enterprise Institute, Heritage Foundation, KPMG analysis

From a country perspective, in terms of Chinese companies' cumulative contracted engineering projects in the energy sector, Bosnia and Herzegovina (referred to as BiH), Norway, and Ukraine ranked first, second, and third from 2020 to 2023 (Figure 14). The BiH government vigorously promotes foreign investment and passed the "Framework Energy Strategy of Bosnia and Herzegovina until 2035" in 2018, with the aim of attracting foreign investment in renewable energy through concession agreements. Additionally, under the support of the Belt and Road Initiative and the China and Central and Eastern Europe "17 + 1" framework, several Chinese energy companies have ventured into the wind power and hydropower generation sectors in BiH, becoming benchmark enterprises in the country's clean energy industry. Meanwhile, the oil and gas industry is the pillar of Norway's economy; and over the years, Norway has maintained an open attitude towards foreign companies participating in offshore oil and gas development. Chinese enterprises provide drilling platform services to Norway's national oil companies, and their achievements in energy conservation and emissions reduction have been recognised by the management of the Norwegian Petroleum Directorate. Finally, Chinese companies' energy projects in Ukraine are mainly focused on waste-to-energy power generation, including the Ukrainian Cindrigo 1,000 tons per day (TPD) waste power plant project. After completion and commissioning, this project is expected to improve local environmental conditions and increase the electricity supply.

Figure 14 | Cumulative amount of engineering contracts in the energy sector undertaken by Chinese companies in European countries from 2020 to 2023, in USD 100 millions



Data source: American Enterprise Institute, Heritage Foundation, KPMG analysis

Chinese photovoltaic enterprises' enthusiasm for building factories in Europe is cooling.

Chinese photovoltaic enterprises' enthusiasm for building factories in Europe has clearly cooled compared to emerging markets such as Southeast Asia and the Middle East. According to statistics, in 2024, only four Chinese photovoltaic companies announced plans to build factories in Europe, reflecting the small number and scale of enterprises "going abroad" (Table 2). Huasun Solar is jointly developing solar panel components with an Italian photovoltaic company; Nuocheng Photovoltaic plans to invest EUR 30 million in building a 1 GW battery component factory in Serbia; Dahai Solar is constructing a 2 GW annual production capacity component factory in southern Romania; and Das Solar plans to build a 3 GW photovoltaic component solar panel factory in France. Chinese photovoltaic enterprises are exercising cautious in building factories in Europe for two main reasons. First, governments in various European countries have introduced policies to strongly support the construction of the upstream and downstream segments of local photovoltaic industrial chains; and second, Europe is conducting anti-subsidy investigations against Chinese solar companies based on the *Foreign Subsidies Regulation*. In this context, policy uncertainty, high labour costs, and other risks are causing Chinese companies to slow the pace of factory construction in Europe.

Table 2 **Factories established in Europe by Chinese photovoltaic enterprises from 2023-2024 (incomplete statistics)**

Factory location	Enterprise	Announcement date	Investment amount	Stage	Production capacity
France	Das Solar	November 2024	EUR 109 million	Components	3 GW
Italy	Huasun Solar	August 2024	Undisclosed	Silicon wafers, cells, modules	3 GW
Serbia	Rich PV Group	May 2024	EUR 30 million	Components	1 GW
Romania	Dahai Solar	April 2024	EUR 10 million	Components	2 GW
United Kingdom	China National Building Materials (CNBM)-JETION Solar	August 2023	EUR 215 million	Components	2.4 GW

Source: public information, analysis by KPMG

Energy storage enterprises are building factories in Europe to leverage the synergies of vertical integration.

Based on strong demand in the European electrification market and European requirements for battery localisation, Chinese energy storage enterprises have been setting up operations in the European market since 2019. So far, according to incomplete statistics, eight domestic energy storage enterprises have invested in and built energy storage battery factories in countries with a high degree of grid marketisation and energy storage subsidies, including Germany, Hungary, Italy, and the UK (Table 3). Establishing factories in these countries will help enterprises achieve coordinated growth in business orders, capacity and operating efficiency, enabling them to quickly respond to the needs of key European customers for energy storage batteries, expand into surrounding countries, and accept more orders from nearby customers in Europe.

As Chinese energy storage enterprises continue to invest in R&D and master core technologies across the industrial chain, energy storage cells are being delivered in more diverse formats. For instance, enterprises not only supply energy storage cells and packs to system integrators, but also directly provide self-developed energy storage systems to developers. Their energy storage batteries are widely used in industrial and commercial energy storage, grid-level energy storage, household energy storage, communication energy storage and other fields. In addition, in order to further leverage the synergies offered by vertically integrated industrial chains, Chinese energy storage enterprises and local energy enterprises are pursuing in-depth cooperation in R&D, production, sales and operations in respect of energy storage, vehicle power batteries, battery recovery and other fields.

Table 3 **Cases of Chinese energy storage enterprises building factories in Europe (incomplete statistics)**

Enterprise	Factory location	Investment amount	Battery type	Production capacity
CATL	Hungary	EUR 7.34 billion	Power batteries	100 GWh
	Germany	EUR 1.8 billion	Lithium-ion batteries	14 GWh
AESC	France	EUR 2 billion	Lithium-ion batteries	24 GWh
	United Kingdom	Undisclosed	Power batteries	12 GWh
	Spain	Undisclosed	Lithium-iron phosphate (LFP) batteries	50 GWh
Sunwoda	Hungary	RMB 1.96 billion	Power batteries	-
EVE Energy	Hungary	RMB 9.971 billion	Power batteries	-
Gotion High Tech Co Ltd	Slovakia	EUR 1.234 billion	Power batteries and related raw materials	20 GWh
	Germany	Undisclosed	Lithium-ion batteries	20 GWh
CALB	Portugal	Undisclosed	Lithium-ion batteries	15 GWh
	Germany	Undisclosed	Power batteries	20 GWh
Pylontech	Italy	Undisclosed	Energy storage batteries	1.46 GWh

Source: public information, company announcements, KPMG analysis

Wind power enterprises taking on projects in Central and Eastern Europe and bringing them to fruition have become a new model of cooperation.

With the outbreak of the Russia-Ukraine conflict, Europe is facing climate change challenges and energy security issues. Against this backdrop, European countries have proposed their own offshore wind power development goals. According to a forecast from the European Wind Energy Association (WindEurope), new installed capacity of offshore wind is expected to be close to 10 GW in 2025, enter a new phase of growth by 2029, and reach 31.4 GW in 2030, which would mark the first time that offshore wind capacity exceeded onshore wind capacity. This trend should provide significant momentum for the growth of the global offshore wind power market[16]. At present, Chinese wind power "going abroad" efforts in Europe are dominated by exports of wind turbines. Wind farms and wind power plants are infrastructure projects, often with high investment costs and long construction cycles; and domestic enterprises are increasingly participating in bidding for wind power projects in Europe. In this regard, wind turbine manufacturers and wind power development enterprises form alliances to "go global," and most of them cooperate using the EPC (engineering, procurement and construction) model.

According to incomplete statistics, the contracted projects of Chinese wind power enterprises in the period from 2020 to 2024 were mainly concentrated in Bosnia and Herzegovina, Serbia and other Eastern European countries; and the project with the largest installed capacity was a 300 MW wind power project in Vitero, Serbia (Table 4). Eastern Europe has become a hot spot for wind power project investment in Europe due to its stable, guaranteed return on investment in wind power projects. For example, the Ivovic wind power project is a major national project in Bosnia and Herzegovina and the first energy project invested in by a Chinese enterprise in Bosnia and Herzegovina. It marks the first time that Chinese domestic complete electrical equipment has been applied at a large scale in a new energy project in the Balkans. The localisation rate of equipment across the entire site exceeds 90%, and the goals of "zero accidents" in engineering construction quality and safety and "zero complaints" in environmental protection have been maintained. The project is nearly one year ahead of the construction progress of other local wind farms, which has been referred to as "Ivovic speed"[17].

Table 4 Chinese enterprises undertaking European wind power projects from 2020 to 2024 (incomplete statistics)

Country	Enterprise	Project name	Installed capacity (MW)
Serbia	Power China	Vetro wind project	300.0
	GENERTEC	Black Peak wind power project	150.0
Bulgaria	China Energy Engineering Corporation	300 MW wind power project	300.0
Bosnia and Herzegovina	Power China	Skardemo Watts-Gramock wind power project	231.0
		Derongla Wind Power Project in Bosnia and Herzegovina	168.2
	China National Technical Import and Export Corporation / Power China	Ivovik wind power project	84.0
Croatia	Northern International Group	Suni 156 MW wind power project	156.0
United Kingdom	SDIC Power	Redstone Energy (Benbrack) onshore wind project	67.1
Germany	Mingyang Smart Energy	Bohai Waterkant offshore wind project	18.5

Source: public information, KPMG analysis

[16] Great Wall Securities, December 2024
[17] State Power Investment Corporation's Hainiu Europe's first wind power project has been connected to the grid for power generation, State Power Investment Corporation Hainiu, October 2024, http://www.chinapower.com.cn/flfd/gjxw/20241008/262164.html

H2 Hydrogen (ammonia) companies are using "technology exports" to drive "product exports" and "supply chain exports"

Since 2023, Chinese hydrogen energy companies have been actively promoting a diversified strategy in the European market. They have been accelerating the export of hydrogen equipment while also exploring new paths for international cooperation, including technological collaboration, joint development projects, investment and construction, and setting up joint ventures, leveraging their own technological advantages, industrial chain integration capabilities, and planning and construction experience to support the development of green energy in Europe.

According to incomplete statistics, domestic hydrogen energy companies have been gradually participating more in Europe's "production, storage, and application" industrial chain, covering everything from hydrogen production equipment to comprehensive solution exports. Chinese hydrogen energy enterprises are leveraging "technology exports" to drive "product exports" and "supply chain exports," with the goal of becoming leading domestic industrial chain companies for localised manufacturing in Europe (Table 5). In July 2024, the Spanish government announced that it would provide nearly EUR 800 million in subsidies to seven large-scale green hydrogen projects with a total electrolysis capacity of 652 MW, which is expected to make Spain a key supplier of green hydrogen in Europe. In addition, thanks to the abundance of renewable energy and policy incentives locally, Spain has become an important destination for Chinese green hydrogen companies looking to go global. In the past two years, Longi Hydrogen, Trina Hydrogen, Envision, and Hygreen Energy have engaged in hydrogen projects in Spain.

Table 5 Hydrogen (ammonia) enterprises are diversifying their investments and collaboration in Europe

Factory location	Enterprise	Date	Investment amount	Project	Cooperation format
Spain	Hygreen Energy	September 2024	EUR 2 billion	Construct a factory with an annual production capacity of up to 5 GW consisting of electrolysers and green hydrogen projects	Investment in setting up a factory
Spain	Envision	September 2024	USD 1 billion	Build a zero-carbon hydrogen industrial park and a hydrogen equipment factory	Investment in setting up a factory
Spain	Trina Green Hydrogen	July 2024	Undisclosed	Develop a 160 MW green hydrogen project with Arbro Investment	Investment in setting up a factory
Serbia	FL Renewables	January 2024	EUR 2 billion	Construct a green hydrogen factory with an annual production capacity of 1 million tons, including investment in wind power, photovoltaic, and hydrogen energy projects	Investment in setting up a factory
Germany	GuoFu Hydrogen Energy	September 2023	Undisclosed	Build a hydrogen equipment production and manufacturing base	Investment in setting up a factory
Netherlands	GuoFu Hydrogen Energy	January 2024	Undisclosed	Joint venture with H2 Ecosystems	Joint venture
France	Cockerill-Jingli Hydrogen(CJH)	May 2023	Undisclosed	Joint venture with Technip Energies called RELY	Joint venture
Spain	Trina Green Hydrogen	April 2024	Undisclosed	Strengthen technical development with PROES and optimise transportation and industrial production	Technical cooperation
France	GuoFu Hydrogen Energy	January 2024	Undisclosed	Collaborate with Fives Group on liquid hydrogen cryogenic equipment and technological innovation	Technical cooperation
Sweden	Peric Hydrogen	January 2024	Undisclosed	License pressurised alkaline electrolyser technology for electrolyser production	Technology licensing
Netherlands	SINOHYD	April 2024	Undisclosed	Provide advanced hydrogen solutions for Shell	Technical cooperation
Spain	Longi Hydrogen	June 2023	Undisclosed	Develop a green hydrogen project with Vision Grid Energy	Technical cooperation
Serbia	Peric Hydrogen	Q2 2024	Undisclosed	Integrated equipment supply for hydrogen production and refueling	Product exports
Portugal	Peric Hydrogen	Q2 2024	Undisclosed	Signed a contract for a set of 80 Nm³/h containerised hydrogen production equipment in Portugal	Product exports
Germany	CPU Hydrogen	June 2023	Undisclosed	Collaborate with DCH Group to deploy hydrogen production equipment and hydrogen production systems	Product exports

18. Spain Approves €800 Million Subsidy for 652MW Electrolysis Green Hydrogen Project, Hydrogen Promotion Association, July 2024, https://www.cn-heipa.com/newsinfo/7377848.html

1.3.2. Overseas M&A: Chinese enterprises are prudently pursuing new energy projects in Europe.

In addition to greenfield investments, Chinese new energy companies have been using M&As to expand their renewable energy project business in Europe. However, with the implementation of the EU's *Foreign Subsidies Regulation* in January 2023, Chinese enterprises face a three-level regulatory mechanism featuring anti-foreign subsidy measures, anti-monopoly rules, and foreign direct investment reviews when investing in Europe. As a result, prudently advancing M&As in Europe's renewable energy sector has become one way for Chinese new energy enterprises to go global. According to incomplete statistics, from 2020 to 2024, domestic photovoltaic, wind power, and energy storage companies initiated a total of 20 overseas M&A transactions targeting the European market, indicating that the scale of new energy investments in Europe remains considerable. These enterprises' investment footprints are mainly concentrated in Spain (Figure 15), and the M&A transactions are primarily led by large state-owned enterprises, which account for about 58%. However, as private enterprises deepen their involvement in new energy equipment and technology, they are expected to become the main driver of the new energy sector's push to go global.

Among the M&A transactions, China Three Gorges Europe's acquisition of Spain's Refraction photovoltaic power station at the end of 2024 marked a significant step for its business in the country's clean energy sector, and it provides momentum for the widespread and efficient development of clean energy in Spain. In the wind power sector, Power China acquired a 51% equity stake in the Vetrozelena wind power project in Serbia; it is the first new energy project in Serbia implemented by a Chinese enterprise using the full industrial chain investment model covering clean energy, environmental governance, green buildings, and building materials. Upon completion, the project will have a total installed capacity of 297.6 MW, making a positive contribution to local socio-economic green development. Additionally, to align with corporate strategic plans and the asset-light operational needs of overseas business, in August 2024, Jinko Power sold the Antequera photovoltaic project in Spain to China Huadian Overseas Investment Co., Ltd. This move not only helped the company quickly recover funds and reduce exit risks but also enhanced the company's flexibility and adaptability amid fierce market competition, serving as a new model for Chinese enterprises' "going abroad" strategies.

Figure 15 | Transaction volume of Chinese new energy enterprises acquiring European clean energy enterprises from 2020 to 2024, in USD millions, per deal (incomplete statistics)

Data source: CV source, Mergermarket, Refinitiv, KPMG analysis

Case Two

KPMG assisted a Chinese power enterprise in acquiring Spanish solar photovoltaic power plants.

Since 2020, Spain has been at the forefront globally in attracting investment and deploying renewable energy infrastructure. During this period, Chinese companies have also begun to actively research and invest in Spain's new energy market. As of September 2024, the installed capacity of renewable energy in Spain's power system had reached 80 GW, with photovoltaic power generation accounting for 28 GW and wind power generation for 31 GW. In 2024, Spain updated its National Energy and Climate Plan (NECP) for 2023-2030, setting a target for renewables to account for 81% of the electricity mix by 2030 (higher than the previous target of 74%) and cover 48% of final energy consumption (up from 42% previously), indicating significant potential for renewable energy development. Currently, in addition to traditional solar and wind power generation, an increasing number of Chinese enterprises are also paying attention to Spain's new energy storage market.

A Chinese-funded enterprise decided to invest in a large package of solar photovoltaic power station assets in southern Spain. The projects within the asset package were at different developmental stages, including operational, under construction, and later-stage development. The KPMG Spain team provided support services such as financial and tax due diligence, tax planning, and financial review of transaction purchase & sale contracts during the asset acquisition process.

During the financial due diligence process, KPMG Spain evaluated the reasonableness of capitalising project development costs; analysed how the development costs described in the seller's development agreement, which were related to achieving commercial operations or construction readiness, were reflected in the financial models; checked whether demolition provisions were reflected in the financial statements; and highlighted the impact of signed power purchase agreements (PPAs) on the project valuation. Through these detailed analyses, KPMG provided strong support for the Chinese enterprise's price negotiation in respect of the acquisition, and the enterprise was able to successfully acquire this large asset package, making it one of the most important energy operators in Spain today.

In terms of taxation, the KPMG team also focused on the tax structure in the transaction, ensuring tax compliance and optimising tax planning to minimise tax risks and enhance investment returns. Additionally, the KPMG team assisted the enterprise in reviewing the potential tax burdens of projects and their impact on future cash flows, ensuring that the tax structure of the transaction was beneficial for the long-term development of the company.

In addition to completing this acquisition, the Chinese enterprise also signed a memorandum of understanding with the seller, with a view to collaborating globally on decarbonisation and clean energy projects in the coming years.

02

US: Under the second Trump administration, the US remains an incremental market for new energy enterprises going abroad

2.1 Analysis of the US's new energy policies

While the Biden administration focused on promoting clean energy, the Trump administration has prioritised the development of traditional energy sources, making their energy policy directions markedly different. However, both the Biden and Trump administrations have adopted protectionist trade measures for new energy imports, demonstrating policy consistency on the issue of new energy imports. This reflects the US's long-term considerations about maintaining domestic industrial competitiveness and energy security.

2.1.1 Imposing additional tariffs and setting up trade barriers

The US has been steadily escalating protectionist trade measures against Chinese photovoltaic, energy storage, and new energy products, with the main measures including "anti-dumping and countervailing duties," Section 201 tariffs, Section 301 tariffs, and non-tariff barriers. "Anti-dumping and countervailing duties" refer to the anti-dumping and anti-subsidy investigations initiated by the US against China's exports of crystalline silicon photovoltaic cells in 2012, which involved imposing a countervailing duty of 14.78% to 15.97% and an anti-dumping duty of 18.32% to 249.96%. Section 201 tariffs are trade remedy measures taken by the US against photovoltaic products, starting in 2018 with a global tariff on solar cells and modules at 30%, decreasing by 5% annually over the next four years. In 2018, the US began imposing a 10% tariff on nearly USD 200 billion worth of Chinese imports, including photovoltaic modules, inverters, junction boxes, and back sheets, covering the entire industrial chain. In September 2024, the US adjusted its Section 301 tariff policy on China, raising the tariff rate on photovoltaic cells and modules to 50%, which also covered polysilicon and monocrystalline silicon wafers exported from China.

After taking office, president Trump continued the tariff and trade protection policies engaged by his predecessor. On 4 February 2025, the Trump administration imposed a 10% tariff on products imported from China; on 4 March 2025, the administration levied an additional 10% tariff on China, meaning that the additional tariffs imposed on China by the US amounted to 20% (10% + 10%). On 2 April 2025, Trump signed the "reciprocal tariffs" executive order, announcing that the US would set a 10% "minimum benchmark tariff" for all trade partners and impose higher tariffs on trade partners with larger deficits, including a 34% "reciprocal tariff" on China, which was subsequently increased to 84% and then to 125%. On 22 April, the Trump administration signaled a potential easing of tariffs on China, stating that the tariffs on China were indeed very high and would significantly decrease after an agreement was reached with China. However, the uncertainty in trade policy still posed significant challenges to Chinese exports to the US, including photovoltaic and lithium battery products.

The US also imposed "anti-dumping and countervailing duties" on photovoltaic cells and modules from four Southeast Asian countries (Cambodia, Malaysia, Thailand, and Vietnam[19]). In 2022, the US exempted these four Southeast Asian countries from Section 201 tariffs on photovoltaic products until June 2024. In May 2024, the US Department of Commerce announced an investigation into anti-dumping and countervailing duties for imported crystalline silicon photovoltaic cells (regardless of whether they were assembled into modules) from those four Southeast Asian countries. In November 2024, the US published the preliminary results of its anti-dumping and countervailing duty investigations for the four Southeast Asian countries.

[19] In this passage, the four countries in Southeast Asia refer to Cambodia, Malaysia, Thailand, and Vietnam

The anti-dumping tariff rate ranges from 0-271.3%, and the countervailing tariff rate ranges from 0.14%-292.6%. In April 2025, the US Department of Commerce announced the final ruling results, with anti-dumping tariff rates for Malaysia at 8.59%-81.24%, Thailand at 111.45%-202.9%, Cambodia at 125.37%, and Vietnam at 271.28%. The countervailing tariff rates for Malaysia are 14.64%-168.8%, Thailand at 263.74%-799.55%, and Vietnam at 68.15%-542.64%. Additionally, on 2 April 2025, the US imposed "reciprocal tariffs" of 49%, 24%, 36%, and 46% on Cambodia, Malaysia, Thailand, and Vietnam, respectively. However, on 10 April, the "reciprocal tariffs" were suspended for 90 days for non-retaliating countries, including the four Southeast Asian countries, but there are doubts in the market about whether the US can reach a trade agreement with the four Southeast Asian countries within 90 days.

The US has also imposed tariffs on Mexico, Canada, the EU, and other countries and regions. In June 2024, the US imposed additional tariffs on imported photovoltaic products from Mexico and other countries, raising the tariff rate to 14.25%. On 4 March 2025, the US announced a 25% tariff on products imported from Mexico and Canada, with a 10% rate on energy products imported from Canada. On 6 March, the US adjusted its tariffs against Canada and Mexico, exempting imports that comply with the US-Mexico-Canada Agreement (USMCA) from tariffs; and the 2 April announcement exempted Mexico and Canada from the "reciprocal tariffs" imposed globally. Although the US suspended the "reciprocal tariffs" on the EU and Japan for 90 days, the Trump administration maintained a 10% base tariff globally. These conditions make it extremely difficult for Chinese new energy products to be directly or indirectly exported to the US (Table 6).

Table 6 Tariff policies implemented during the second Trump administration

Additional levy target	Current status	Specific measures
Global	In effect	10% benchmark tariff on all countries
Canada	Partial exemption	Canada is exempt from "reciprocal tariffs"; imported goods that comply with USMCA rules are exempt; for imported goods that do not comply with the USMCA, a 25% tariff is levied based on the existing fentanyl/migration IEEPA order, and if the existing fentanyl/migration IEEPA order is terminated, a 12% tariff will be levied on imported goods that do not comply with the USMCA; a 25% tariff is levied on steel, aluminum, and automobiles
Mexico	Partial exemption	Mexico is exempt from "reciprocal tariffs"; imported goods that comply with USMCA rules are exempt; for imported goods that do not comply with the USMCA, a 25% tariff is imposed based on the existing fentanyl/migration IEEPA order, and if the existing fentanyl/migration IEEPA order is terminated, a 12% tariff will be levied on imported goods that do not comply with the USMCA
China	In effect	An additional 20% tariff has been imposed on imported Chinese goods, along with an additional 125% "retaliatory tariff"; and the exemption for small packages under USD 800 has been cancelled
Cambodia	Not yet in effect	49% "reciprocal tariff," suspended for 90 days
Vietnam	Not yet in effect	46% "reciprocal tariff," suspended for 90 days
Thailand	Not yet in effect	36% "reciprocal tariff," suspended for 90 days
Indonesia	Not yet in effect	32% "reciprocal tariff," suspended for 90 days
India	Not yet in effect	26% "reciprocal tariff," suspended for 90 days
South Korea	Not yet in effect	25% "reciprocal tariff," suspended for 90 days
Malaysia	Not yet in effect	24% "reciprocal tariff," suspended for 90 days
Japan	Not yet in effect	24% "reciprocal tariff," suspended for 90 days
European Union	Not yet in effect	20% "reciprocal tariff," suspended for 90 days

Additionally, the US has also restricted or prohibited the procurement of Chinese new energy products through non-tariff trade barriers. In December 2023, the National Defense Authorization Act was signed into law, prohibiting the US Department of Defense from purchasing batteries produced by six Chinese battery companies: CATL, BYD, Envision, EVE Energy, Gotion High-Tech, and HiTHIUM. Also in December 2023, the details of the Inflation Reduction Act (IRA) were released, stipulating that electric vehicles eligible for tax credits may not contain battery components manufactured or assembled by "foreign entities of concern" (FEOCs), with China listed as a covered nation. In January 2025, the US Department of Defense included CATL and several other Chinese companies on the "List of Chinese Military Companies," restricting specific transactions between the US Department of Defense and the listed companies (Table 7).

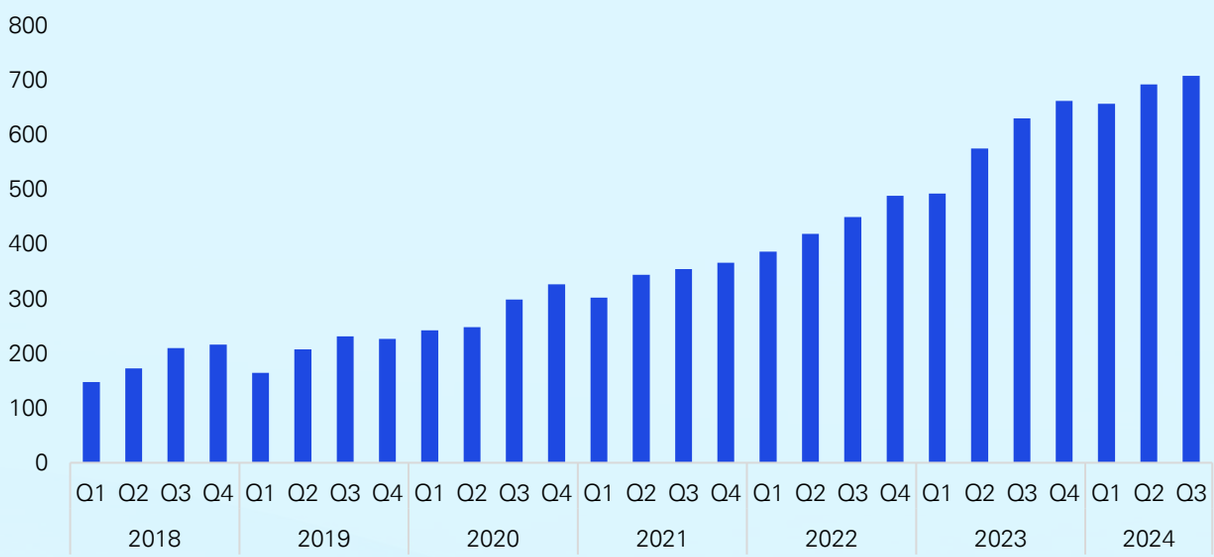
Table 7 US non-tariff trade barriers against Chinese new energy products

Date	Measures	Description
March 2025	Decoupling from Foreign Adversarial Battery Dependence Act	The US House of Representatives passed a bill called the "Decoupling from Foreign Adversarial Battery Dependence Act," which requires the US Department of Homeland Security to prohibit the purchase of batteries from six Chinese battery companies: CATL, BYD, Envision, EVE Energy, Gotion High-Tech, and HiTHIUM. However, the bill still needs to be passed by the US Senate and be signed into law by the president.
January 2025	List of Chinese Military Companies	The US Department of Defense included several Chinese companies, including CATL, on the "List of Chinese Military Companies," restricting specific transactions between the US Department of Defense and the listed companies.
December 2023	National Defense Authorization Act	The bill was signed into law in December 2023 and will take effect in October 2027, prohibiting the US Department of Defense from purchasing batteries produced by six Chinese battery companies: CATL, BYD, Envision, EVE Energy, Gotion High-Tech, and HiTHIUM.
December 2023	A senator proposed banning the use of CATL batteries	US Senator Marco Rubio, along with 26 government officials, wrote a letter to then-US Defense Secretary Austin, requesting that the US Department of Defense revoke the decision to install CATL batteries at Camp Lejeune, leading to the suspension of the energy storage batteries provided by CATL for a military base in North Carolina.
December 2023	Inflation Reduction Act	Batteries manufactured by FEOCs, including those from China, North Korea, Russia, and Iran, are not eligible for full subsidies. The determination is based on overall board seats, voting rights, and equity shareholdings of the company, with the higher proportion being used as the standard.

2.1.2. The end of the Green New Deal and suspension of funding subsidies

The Biden administration, centred around the Inflation Reduction Act (IRA), combined the Infrastructure Investment and Jobs Act with the CHIPS and Science Act to promote green energy development. The IRA aims to achieve a reduction in US climate pollution by 50-52% from 2005 levels by 2030 through the promotion of clean energy, by reducing pollution from buildings, transportation, and industry, and by supporting climate-smart agriculture and forestry. The IRA is the cornerstone of Biden's Green New Deal, supporting domestic new energy industries through production tax credits (PTC) for manufacturing companies, investment tax credits (ITC), subsidies for clean energy funds, and research and development support. According to calculations by the US Department of the Treasury, the IRA is expected to invest USD 369 billion in climate change and new energy projects, mainly involving wind power, photovoltaics, energy storage, new energy vehicles, and other industrial chains, making it the largest investment in addressing climate change in US history[20]. The IRA promotes clean energy investment in the US. A joint study by Rhodium and MIT shows that two years after the implementation of the IRA, companies implementing the act have invested nearly USD500 billion in clean energy, 1.7 times more than the two years before the implementation of the act. This clean energy investment has created over 334,000 new jobs (Figure 16).

Figure 16 | Actual clean energy investment in the US, in USD 100 millions



Data source: Rhodium Group, MIT-CEEPR, KPMG analysis

[20] The Inflation Reduction Act's Benefits and Costs，US Department of the Treasury, 1 March 2024

Case Three

KPMG assisted Asian electric vehicle battery manufacturers in selling tax credits in the US.

An Asian electric vehicle battery and component manufacturer wished to quickly transfer and sell Production Tax Credits (PTC) under Section 45X of the Inflation Reduction Act (IRA) to obtain cash, involving USD175 million in transferable 2023 IRA tax credits. This was the client's first involvement in a US tax credit transfer transaction, requiring full support from professional advisors in the process of entering the transfer market and connect with numerous reliable buyers, establishing market-acceptable terms for purchase and sale agreements, and achieving favourable pricing through negotiations. Regarding the implementation of the IRA in 2022, the client requested assistance from professional advisors to research and organise complex regulations to maximise eligibility for tax credits, ensure compliance, and conduct due diligence on the credit certificates.

KPMG in the US quickly mobilised professionals with relevant expertise and experience to form a dedicated service team to provide the client with a full suite of transaction services, including tax credit transfer brokerage services, tax advisory, credit transfer compliance reviews, and measures to establish buyer confidence in the quality of the clients' transferable tax credits.

The KPMG team fully leveraged its long-standing close cooperation with tax and finance professionals in the buyer market, fully understanding the business needs and transaction motives of the buyer group, and concentrating the sale of the client's tax credits towards reputable, high-quality potential buyers. They promptly recommended tax credit sale opportunities to the most suitable target buyers, significantly accelerating the transfer and monetisation process by providing the best entry point for the successful sale of all the client's credits in a single transaction. At the same time, the KPMG team provided a large amount of up-to-date market information to the client through its extensive real-time market opportunities, effectively supporting price and commercial negotiations.

With strong support from the KPMG professional team, the client locked in a reliable buyer within less than two weeks and ultimately achieved a highest transfer price of USD0.96 for every USD1 tax credit through efficient negotiations on the purchase and sale agreement. This result was attributed to KPMG being a well-known and trusted market representative among the buyer group, increasing buyer interest in the transaction and ensuring the reliability of both parties. The KPMG team, with its comprehensive and rich transaction experience, excelled in considering the terms of the purchase and sale agreement, setting advantageous prices, and conducting thorough due diligence, enabling the client to quickly and reliably realise the transfer of the tax credits, meeting their set price and timeline goals.

The Trump administration has been sceptical about the development of clean energy. On president Trump's first day in office on January 20, 2025, he issued an executive order instructing federal agencies to pause all grants under the IRA and IIJA acts, while reviewing their procedures, policies, and programmes for awarding grants, loans, contracts, or any other such grant funds to ensure compliance with the acts. The executive order gave agencies 90 days to report how the frozen spending aligns with the new administration's energy goals. The executive order signed by Trump also includes terminating the mandate for electric vehicles and revoking an executive order signed under the Biden administration in 2021, which required that half of all new vehicle sales in the US be electric vehicles by 2030. The Trump administration has been critical of this mandate and the EV tax credits in the IRA, which are key components of the bill's spending.

However, most of the IRA clean energy subsidies have already been allocated. In January 2025, White House officials stated that approximately 84% (USD 96.7 billion) of the IRA clean energy subsidies had already been allocated before president Trump returned to the White House, and that these clean energy subsidies cannot be reclaimed by the next administration. Specifically, about 94% (USD 8.8 billion) of the funds provided by the Department of Energy for state efficiency subsidy programmes for home renovations and appliances are already in place; the USDA project aimed at helping electric cooperatives purchase more clean energy has been implemented at a level of 97% and with a scale of about USD9.45 billion; the EPA has assumed obligations of about USD 38 billion, with the greenhouse gas reduction funds fully allocated at 100%[21].

Additionally, repeal of the IRA would require congressional approval, especially given that some members of both the Republican and Democratic parties support the current policies under the IRA, and considering that Republican-led states have made significant investments in clean energy. According to tracking by Rhodium and MIT on clean energy investments, among the top ten states for clean energy investment in manufacturing from the third quarter of 2023 to the third quarter of 2024 (investments in building or expanding factories producing clean energy, clean vehicles, electrified buildings, and carbon management technologies), six are red states controlled by Republicans, while only one is a blue state controlled by Democrats; among the top ten states for clean energy investment in the energy sector (investments in new or existing facilities producing clean energy, capturing CO2 emissions, and for decarbonising industrial activities), three are red states, with Texas leading by a wide margin over other states (Table 8).

Table 8 **Actual investment in clean energy in major US states from Q3 2023 to Q3 2024, in USD 100 millions**

Investment in clean energy manufacturing			Investment in the clean energy sector		
Top 10 states		**political inclination**	**Top 10 states**		**political inclination**
Georgia	90.5	Swing states	Texas	266.5 ▲	Red State
North Carolina	67.4 ▲	Red State	California	125.2	Blue State
Michigan	55.9	Swing states	Arizona	56.48	Swing states
Tennessee	45.9 ▲	Red State	Indiana	29.82 ▲	Red State
Ohio	34.7	Swing states	Florida State	28.43	Swing states
Nevada	31.1	Blue State	Illinois	25.34	Blue State
Kentucky	30.7 ▲	Red State	Georgia	23.91	Swing states
South Carolina	30.6 ▲	Red State	Massachusetts	23.24	Blue State
Texas	22.4 ▲	Red State	Wyoming	21.01 ▲	Red State
Indiana	20.9 ▲	Red State	New Mexico	20.86	Blue State

Data source: Rhodium, MIT-CEEPR, KPMG analysis

[21] Biden protects 84% of IRA clean energy grants from being clawed back, Reuters, 18 January 2025

2.1.3. Unlocking American energy, and vigorously developing oil and gas

The current Trump administration values traditional energy sources and advocates for the vigorous exploitation of oil and natural gas resources to achieve US dominance in global energy. At the beginning of his first term, the president proposed the "American Priority Energy Plan," aimed at promoting US energy independence, lowering energy prices, developing domestic energy resources, and reducing energy imports. During his second presidential campaign, on his first day in office, with executive orders and in his inaugural address, he conveyed a strong reliance on traditional energy sources such as oil and natural gas.

The US government's emphasis on traditional energy is mainly reflected in the following aspects. One is nominating Chris Wright, a senior executive in the fossil fuel industry, as Secretary of Energy. Wright has worked in the fields of nuclear energy, solar energy, geothermal energy, oil, and gas, and is a supporter of fossil fuels, opposing the energy transition. The second is declaring a state of energy emergency for the country. In his inauguration speech, Donald Trump mentioned that the inflation crisis was caused by excessive spending and soaring energy prices, declaring the country to enter an energy emergency and further reducing inflation in the following 12 months by lowering energy costs and other measures. The third is relaxing regulations and promoting the extraction and production of fossil fuels. He pointed out that the United States has a large amount of oil and natural gas and will increase its efforts in oil and gas extraction in the future. The Trump administration revoked over 100 environmental regulations during its first term; in the second term, the US government expressed their intention to accelerate the administrative approval process and quickly approve the construction of new drilling, pipelines, refineries, power plants, and reactors. The fourth is revitalising the coal industry. The first Trump administration revoked the Obama administration's clean energy plan and ordered the Secretary of Energy to stop shutting down coal-fired and nuclear power plants. Donald Trump said in his second term that the coal industry should be revitalised so that all Americans can use affordable energy. In addition, the United States withdrew from the Paris Agreement again on the first day of the second Trump administration. The Biden administration supported the development of clean energy and promoted a green energy revolution, with the administration planning to achieve 100% carbon-free electricity by 2035 and net-zero emissions by 2050 (Table 9). Meanwhile, the current administration's series of energy policies has signalled a shift in US energy policy, from the Biden administration's emphasis on green energy to a preference for traditional energy, and this transition is having an impact on America's new energy industry.

Despite the Trump administration's emphasis on traditional energy sources, the current trends of manufacturing reshoring and accelerated AI development are driving an increase in demand for power infrastructure, particularly for photovoltaic and energy storage systems. At the same time, the global energy transition is an inevitable trend. Therefore, even against the backdrop of a focus on traditional energy, renewable energy in the United States still has vast room for development.

Table 9 Comparison of energy policies between the Trump and Biden administrations

	Trump administration	Biden administration
Energy goal	The US becomes global energy leader	Promote the clean energy revolution
Energy focus	Fossil fuels	Clean energy
Energy regulation	Relax regulations on fossil energy and accelerate the administrative approval process	Phase out subsidies for inefficient fossil fuels
Policy measures	Repeal the Inflation Reduction Act	Subsidise clean energy through the Inflation Reduction Act
Climate stance	Withdraw from the Paris Agreement	Return to the Paris Agreement

Source: collated public data, analysis by KPMG

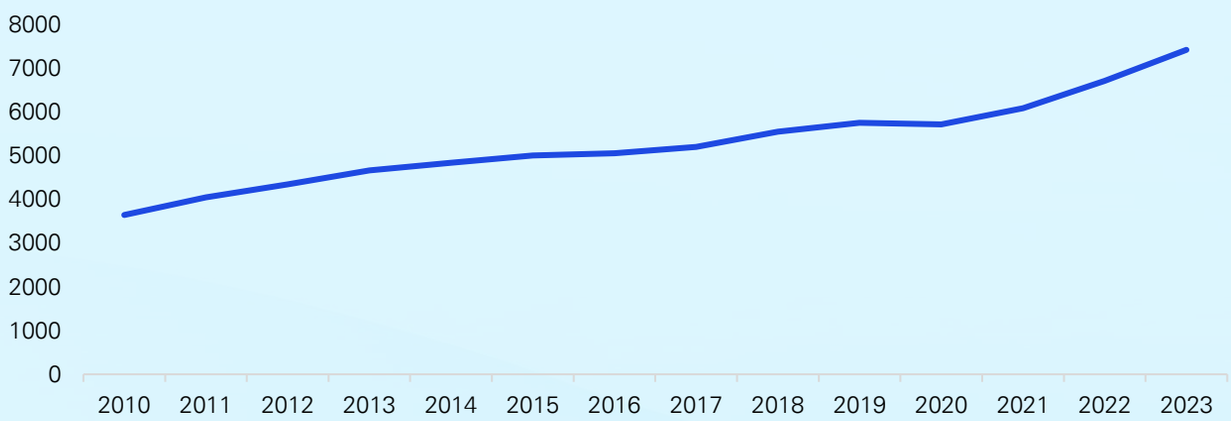
2.2 The US still has appeal for new energy enterprises

Despite the Trump administration's emphasis on traditional energy sources, the current trends seeing manufacturing reshoring and the accelerated development of AI technology are driving an increase in demand for power infrastructure, particularly for photovoltaic and energy storage systems. At the same time, the global energy transition is inevitable. Therefore, even against the backdrop of a focus on traditional energy, renewable energy in the US still has vast room for development.

2.2.1. The return of manufacturing and the accelerated development of AI are driving an increase in electricity demand

The manufacturing reshoring trend in the US is a significant driver of power demand growth. In recent decades, with the advancement of globalisation, US companies moved their production lines overseas to reduce production costs, improve production efficiency, and optimise resource allocation. However, in recent years, due to supply chain instabilities, increased investment in decarbonisation technologies, and policy support from acts such as the Infrastructure Investment and Jobs Act, the CHIPS and Science Act, and the Inflation Reduction Act, US manufacturing has started to reshore, leading to a significant increase in manufacturing investment (Figure 17). In 2023, US manufacturing investment was USD 743.3 billion, a 29.8% increase from 2020. Manufacturing reshoring is not limited to traditional manufacturing sectors but is particularly evident in high-tech and clean energy industries. The construction of new factories, the expansion of production lines, and industrial upgrades have driven the development of related supply chains, including raw material supplies and logistics distribution, thereby increasing demand for electricity.

Figure 17 | US manufacturing investment has seen significant growth in recent years, in USD 100 millions



Data source: Wind, KPMG analysis

At the same time, the explosive development in artificial intelligence (AI) technology is becoming another important driver of growth in electricity demand. With the continuous progress in big data, cloud computing, machine learning, and other technologies, AI is gradually penetrating all industries, becoming a key force for industrial upgrading. The rapid development of AI technology has given rise to a large number of ultra-large-scale data centres, with the expansion of the number and scale of data centres driving an explosive increase in electricity demand. According to predictions by the US Department of Energy, starting from 2023, electricity demand from US data centres (excluding cryptocurrency) will increase by about 13%-27% annually, reaching 325-580 TWh (terawatt-hours) by 2028, accounting for 6.7%-12% of total US electricity demand[22].

[22] US Department of Energy: Data center power demand to grow by about 2-3 times by 2028, Sina.com, 7 January 2025

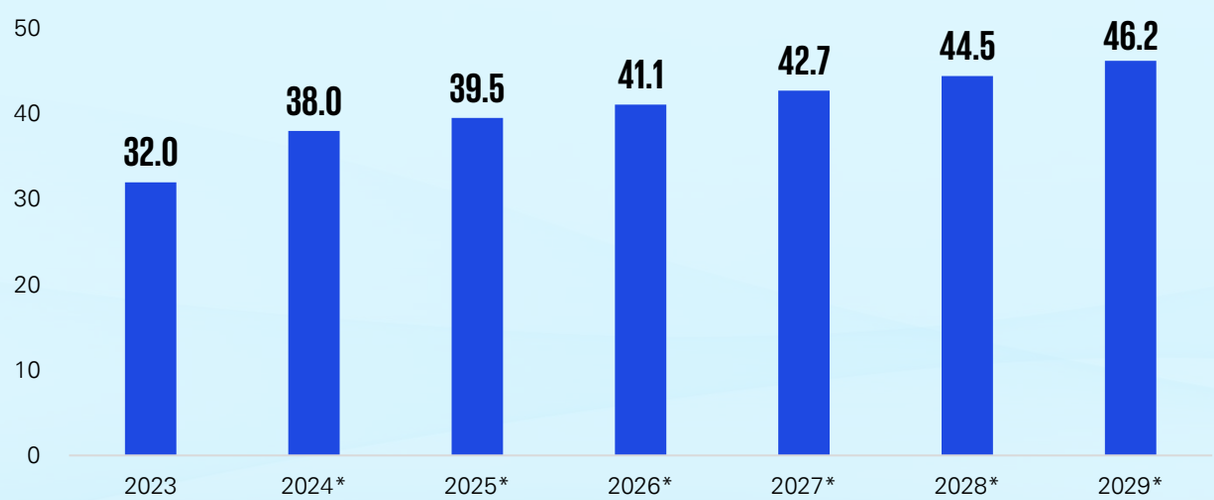
However, in contrast to the rapid growth in electricity demand, the problem of the aging US power grid is becoming increasingly prominent. Most of the US power grid infrastructure is facing serious aging issues, which not only weakens the stability and security of the grid but also makes it difficult to meet growing electricity demands. Power outages and power shortages occur from time to time, causing great inconvenience to residents' lives and industrial production. In May 2024, the US federal government and 21 states jointly launched new policies aimed at quickly repairing and upgrading the current grid to address the increasing electricity demand.

2.2.2. US demand for solar photovoltaics and energy storage continues to grow.

The US government supports the development of the photovoltaic industry through fiscal incentives such as federal investment tax credits and consumption taxes, reducing the investment costs for photovoltaic projects and improving the economic viability of photovoltaic systems, attracting a large number of investors to the market. Continuous breakthroughs in photovoltaic technology, especially the rapid development of HJT (heterojunction technology), have continuously increased the conversion efficiency of photovoltaic modules and gradually reduced production costs, further driving the growth of installed photovoltaic capacity. In addition, the rapid development of artificial intelligence has created a significant demand for electricity, with photovoltaic power plants, and their short construction periods and lack of geographical restrictions, having become an important choice to fill the power gap. According to data from the International Energy Agency (IEA), the newly installed photovoltaic capacity in the US in 2023 was 32 GW, making it the world's second-largest photovoltaic market after China[23].

Although the future growth in new photovoltaic installations in the US is affected by a grid connection backlog, increased tariffs on new energy products, and the current administration's attempt to cancel subsidies for clean energy, the photovoltaic market demand growth rate is expected to slow down but still maintain a growing trend. According to the latest forecast by SEIA and Wood Mackenzie in September 2024, the annual increase in new photovoltaic installations over the next few years will average 4%, and, by 2029, the total installed capacity of photovoltaics in the United States is expected to double to 440 GW (Figure 18)[24].

Figure 18 | New additional photovoltaic capacity (GW) in the US from 2023 to 2029

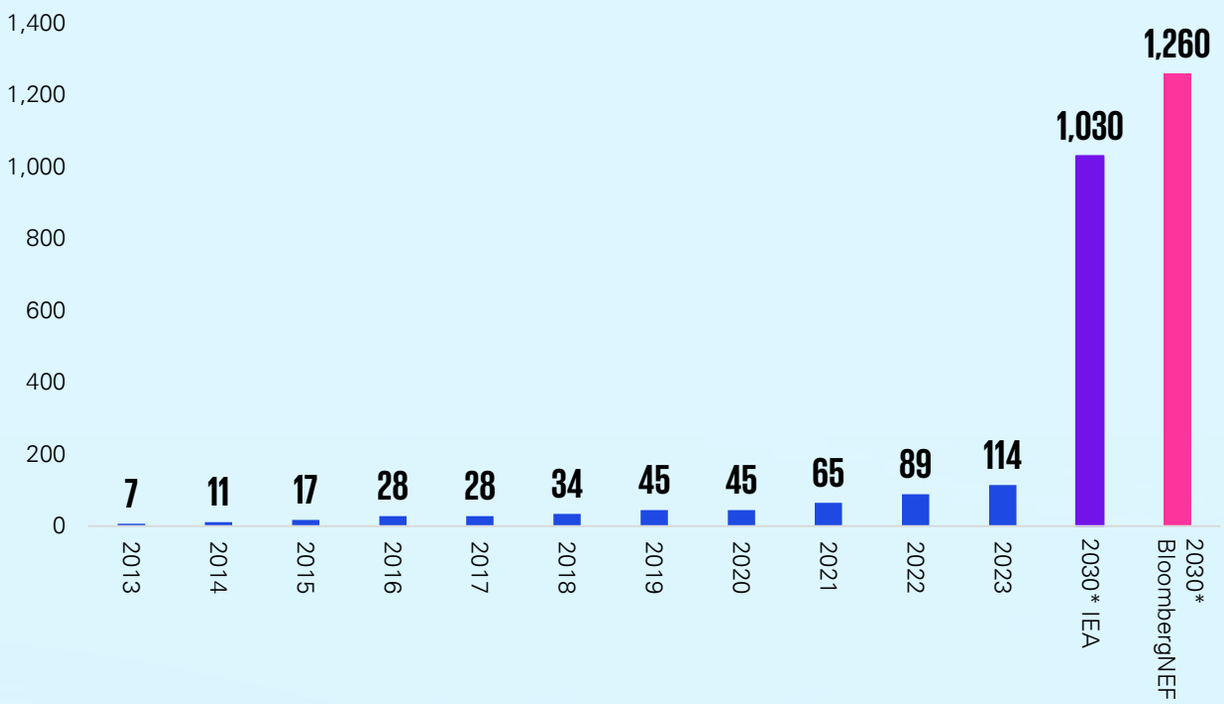


Data source: SEIA, Wood Mackenzie, KPMG analysis
Note: Values for 2024 and onwards are forecasted.

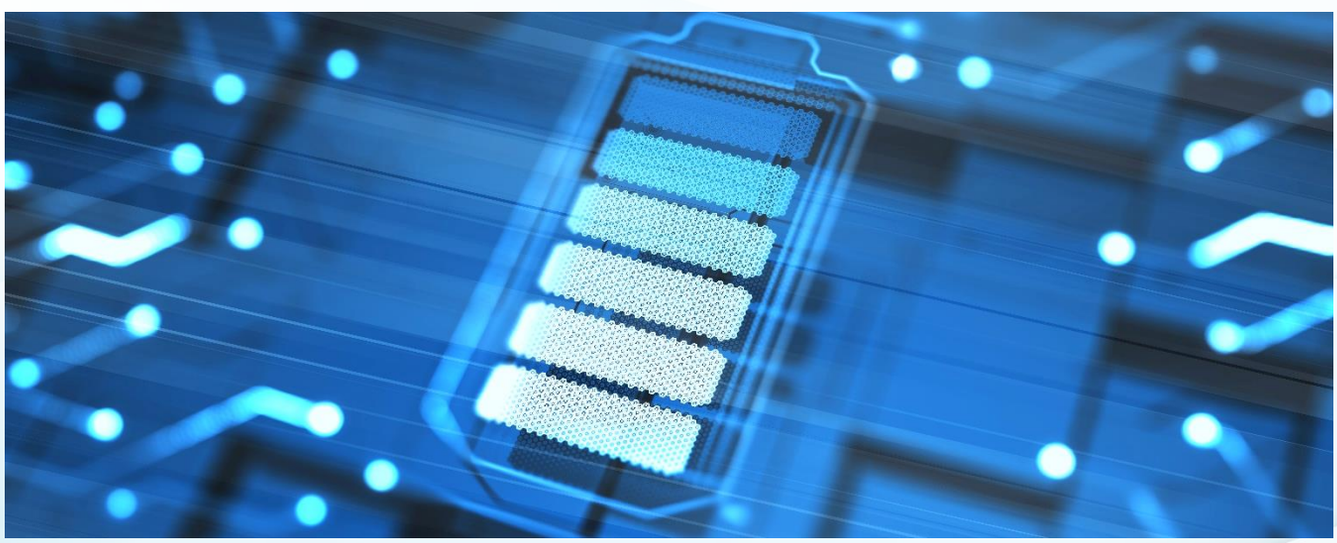
[23] Trends in Photovoltaic Applications 2024, IEA, October 2024
[24] US solar panel manufacturing capacity grows nearly 4x under new federal incentives, 8 September 2024, Wood Mackenzie

As the penetration rate of renewable energy in the United States continues to increase, so does the demand for energy storage systems in the power grid. Energy storage systems can provide regulation when there is an imbalance between supply and demand, enhancing the stability and reliability of the grid. At the same time, the demand for residential energy storage systems is also rapidly increasing, especially in areas with significant fluctuations in electricity prices. Lithium-ion batteries, due to their efficiency and reliability, have become a key option for energy storage. In recent years, the development of lithium-ion batteries in the United States has been rapid, with production capacity increasing from 45 gigawatt-hours in 2020 to 114 gigawatt-hours in 2023. The future potential for the development of lithium-ion batteries in the United States is considerable, with both the IEA and Bloomberg predicting that production capacity will increase to over 1,000 gigawatt-hours by 2030 (Figure 19).

Figure 19 | US lithium-ion battery production capacity (gigawatt-hours), 2013-2030



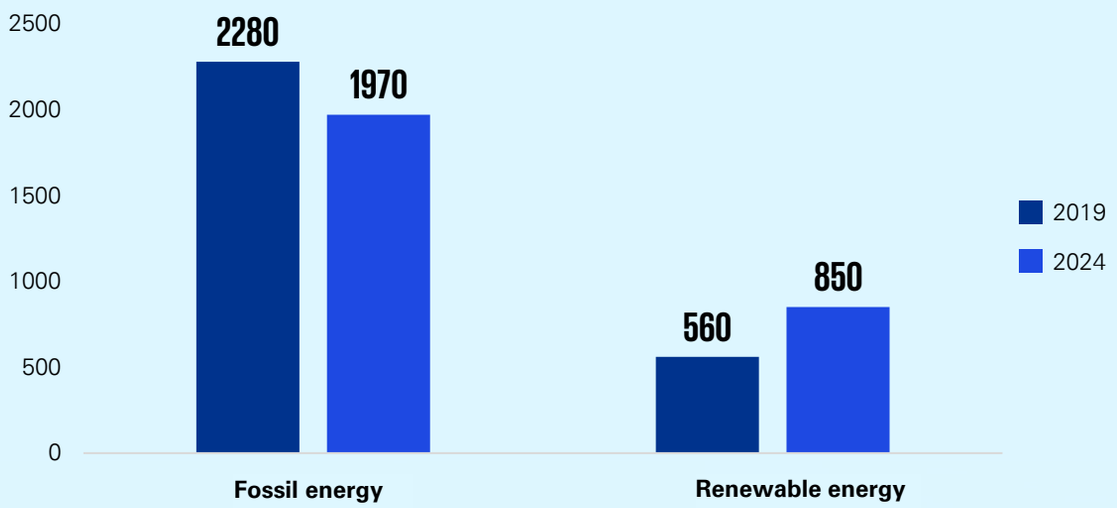
Data source: IEA, Bloomberg, KPMG analysis
Note: The data for 2030 is predictive.



2.2.3. The energy transition is inevitable, and investments in clean energy are growing rapidly.

Currently, while fossil energy investment in the United States still dominates, the growth rate is declining. According to the IEA's "World Energy Investment 2024" report, US fossil energy investment decreased from USD 228 billion in 2019 to USD 197 billion in 2024, a decline of 13.6%; during the same period, clean energy investment increased from USD 56 billion to USD 85 billion, representing growth of 51.8% (Figure 20).

Figure 20 | US fossil and clean energy investment in 2024, in USD 100 millions



Data source: IEA, KPMG analysis

Although the Trump administration strongly supports the development of traditional fossil fuels such as oil and natural gas, whether or not to increase the exploitation of oil and gas resources mainly depends on supply and demand in the oil market alongside corporate profitability, and is relatively less affected by policy. As oil production gradually increases and global oil demand growth remains weak, global oil inventories are expected to rise from the second half of 2025 to 2026, putting downward pressure on oil prices. The EIA predicts that the average price of Brent crude oil will be USD 74 per barrel in 2025 and will drop to USD 66 per barrel in 2026. Given the already weak oil prices, energy companies have no incentive to further depress them by significantly increasing oil and gas production through large-scale development. According to a survey of senior executives at major US oil producers conducted by the Dallas Federal Reserve Bank in January 2025, 50% of executives said their companies would cut capital expenditure this year, while 14% expected spending to remain unchanged compared to 2024. Additionally, states in the US have significant autonomy in developing clean energy and are not constrained by federal government policies. For example, California stated that the federal government could not stop California's clean energy plan, and California aims to achieve 100% clean energy by 2025[25].

[25] California officials said that Trump would not block California's clean energy plan, Securities Times, 6 February 2025

The transition to clean energy and to addressing climate change are the future trends in global energy development, with the market share of renewable energy generation gradually expanding. According to the latest report released by the EIA on February 11, 2025, renewable energy will account for 25% of US electricity generation for the first time in 2025, and will contribute 27% of electricity generation in 2026. The natural gas generation share will decline from 43% in 2024 to 39% (Table 10)[26].

Table 10 US electricity generation market share from 2024 to 2026

Type of power generation	2024	2025	2026
Natural gas	43%	41%	40%
Coal	16%	15%	15%
Renewable energy	23%	25%	27%
Nuclear energy	19%	19%	19%

Data source: EIA, KPMG analysis

2.3 Products "going abroad": Analysis of major new energy sectors

Chinese new energy enterprises mainly enter the US through trade, greenfield investment, and mergers and acquisitions. This section is primarily an analysis from a trade perspective of the export situation of Chinese new energy products, such as photovoltaic, energy storage, and wind energy, to the US.

2.3.1. Photovoltaics: Very few direct exports to the US, with indirect exports via Southeast Asia

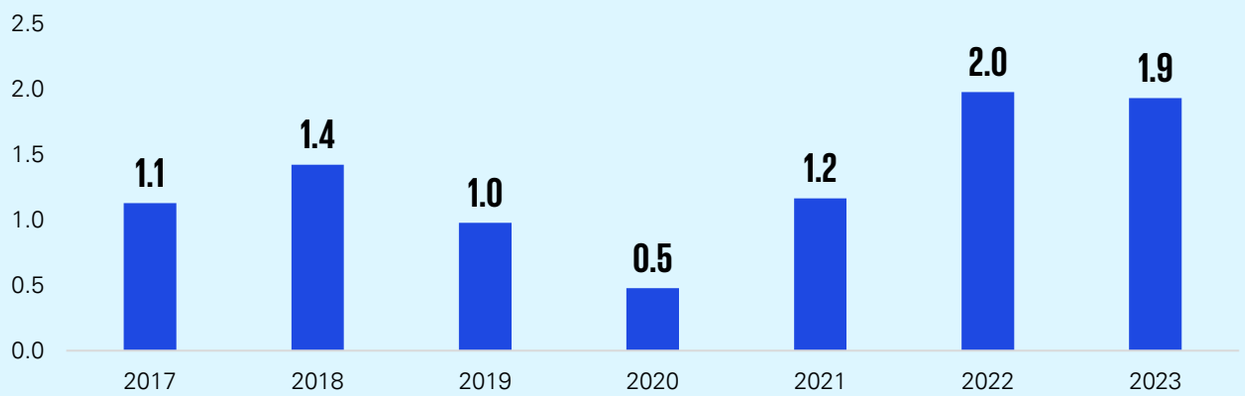
China has a complete photovoltaic industrial chain, with advantages in various links such as silicon wafers, solar cells, and modules. According to data from the China Photovoltaic Industry Association, in 2023, domestic production volumes in the four core links of polysilicon, silicon wafers, solar cells, and modules accounted for 91.6%, 98.1%, 91.9%, and 84.6% of total global production, respectively. Due to previous anti-dumping and countervailing duties and Section 201 tariffs imposed by the United States on our photovoltaic product exports, currently, there are fewer direct exports of photovoltaic products from China to the United States. Mainly, China invests in building factories in Southeast Asia and export to the United States from there.

[26] Short-Term Energy Outlook, US Energy Information Administration , 11 March 2025

Silicon wafers: China is exporting less to the US, while Japan and South Korea are the main sources of US imports.

In recent years, the value of silicon wafers exported by China to the United States has remained steady, except in 2020 when the exported amount to the US dropped to USD50 million due to the pandemic and other factors. In 2023, the value of silicon wafers exported by China to the United States was USD190 million, accounting for 12.6% of total US imports of silicon wafers (Figure 21).

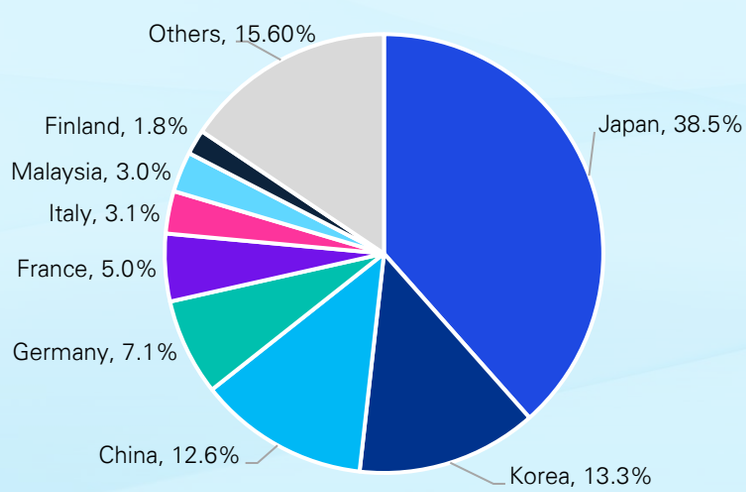
Figure 21 | Silicon wafers exported from China to the US, 2017-2023, in USD 100 millions



Data source: UN Comtrade Database, KPMG analysis

Japan and South Korea, leveraging their advantages in production technology and capacity, industrial chain synergy and supply chain stability, and stable bilateral political relations, have become the primary sources of silicon wafers for the United States. In 2023, the US imported USD1.54 billion worth of silicon wafers globally, with Japan and South Korea together accounting for 51.8% (Figure 22).

Figure 22 | Major sources of silicon wafer imports to the US in 2023

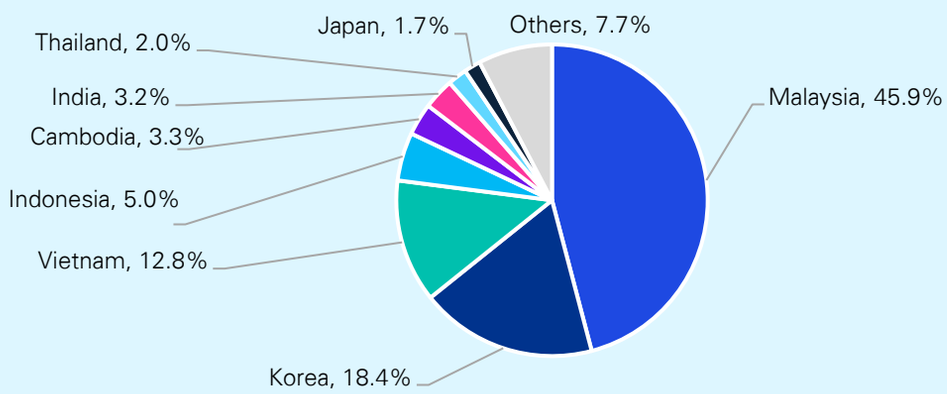


Data source: UN Comtrade Database, KPMG analysis

Battery cells and photovoltaic modules: China's direct exports to the US are negligible, but indirect exports to the US through Southeast Asia are significant.

Compared to other segments of the photovoltaic industrial chain, battery cell technology is more difficult and requires a larger investment. As a result, the creation of battery cell capacity in the United States has lagged behind, with supply mainly relying on imports. However, China's battery cell exports to the United States have been affected by multiple tariff increases since 2012, resulting in relatively small direct export amounts to the United States. In 2023, the value of China's battery cell exports to the United States was only USD499,000. Southeast Asian countries are the main sources of battery cell imports to the United States, with Malaysia accounting for half and being the largest sourcing country. Other Asian countries such as South Korea, Vietnam, Indonesia, and Cambodia are also important sources of battery cell imports for the United States, with respective shares of 18.4%, 12.8%, 5.0%, and 3.3% (Figure 23).

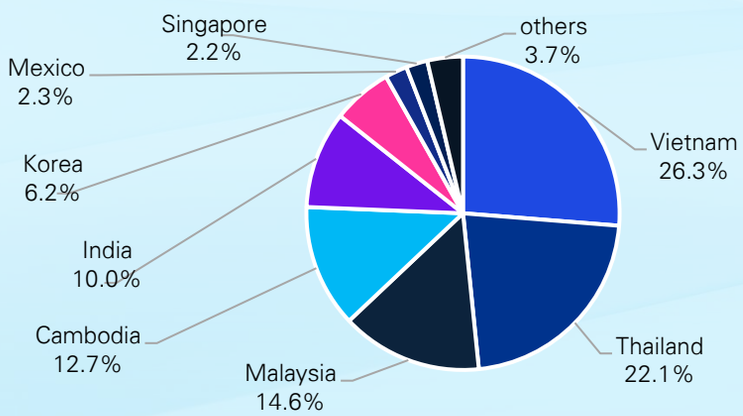
Figure 23 | Major sources of US battery cell imports in 2023



Data source: UN Comtrade Database, KPMG analysis

The product with the largest imports in the US photovoltaic industrial chain is photovoltaic modules. In 2023, the US imported USD 19.27 billion worth of photovoltaic modules from around the world. The four southeast Asian countries are the main sources of US photovoltaic module imports, accounting for a combined total of 75.6%. Affected by "anti-dumping and countervailing duties" and other trade barriers imposed by the US on Chinese photovoltaic modules, Chinese photovoltaic module exports to the US have declined from one-third of the total US photovoltaic module imports to almost completely exiting the US market. In 2023, China's export of photovoltaic modules to the US was only USD 11.91 million (Figure 24).

Figure 24 | Major import sources of US photovoltaic modules in 2023



Data source: UN Comtrade Database, KPMG analysis

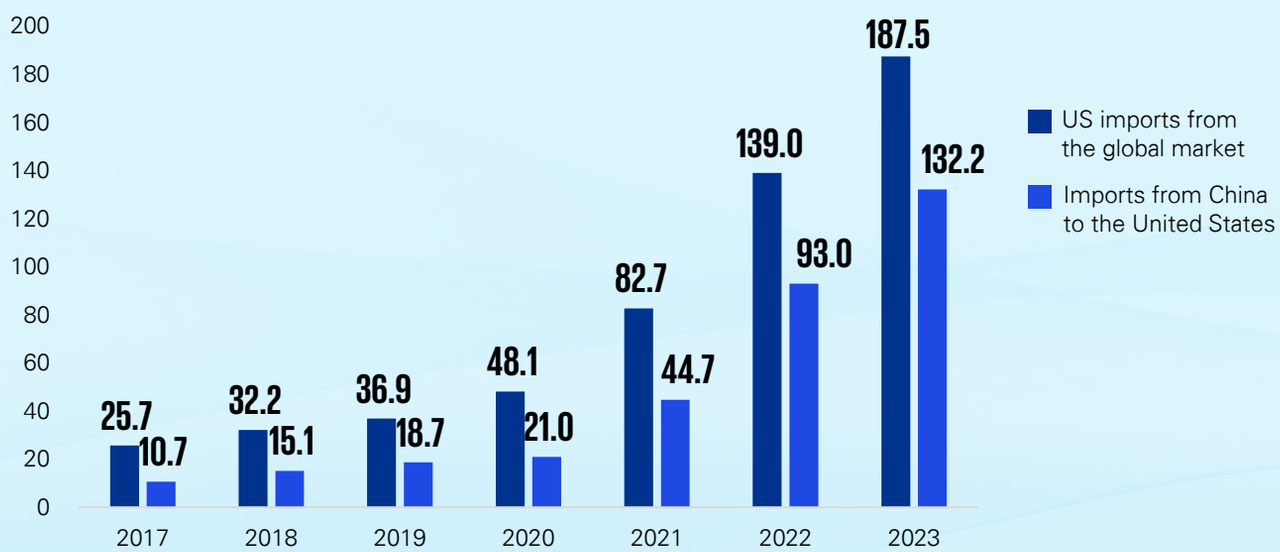
After the United States imposed tariffs on Chinese solar panels and related products, Southeast Asia, due to its geographical proximity to China, lower labour costs, and lower tariffs, attracted the attention of Chinese photovoltaic companies and has become an important region for the expansion of overseas production capacity in recent years. According to Sober PV Network statistics, by the first quarter of 2024, the capacity of silicon wafers, solar cells, and modules in Southeast Asia reached 34.2 GW, 69.6 GW, and 93.2 GW, respectively. Among these, the capacity of Chinese photovoltaic companies in Southeast Asia for silicon wafers, solar cells, and modules reached 27 GW, 45 GW, and 50 GW, accounting for 78.9%, 64.7%, and 53.6%, respectively[27]. Notably, in 2024, the US Department of Commerce initiated anti-dumping and countervailing duty investigations into crystalline photovoltaic cells (whether or not assembled into modules) from four countries in Southeast Asia, having a significant impact on photovoltaic capacity in Southeast Asia. According to a survey by Shanghai Metals Network, the operating rate of Chinese module manufacturing bases in Southeast Asia typically remains above 80%, but dropped to about 30% in June 2024 (when the tariff exemption for Southeast Asian countries expired)[28].

After the US imposed "anti-dumping and countervailing duties" on photovoltaic products from the four countries in Southeast Asia, their competitiveness in exporting photovoltaic products to the US was significantly weakened. At the same time, Indonesia, Laos, South Korea, and the Middle East, among other regions, are not subject to the US's "anti-dumping and countervailing duties." Therefore, when these countries and regions export photovoltaic products to the US, they can avoid the cost increases caused by high tariffs, and may enter the US market at a more attractive price level.

2.3.2. Energy storage: Batteries are highly dependent on China, with future exports facing challenges from uncertain tariff policies.

Seventy percent of lithium batteries imported into the US come from China; the US is China's largest export market for lithium batteries. In recent years, the value of lithium battery exports from China to the United States has continued to increase. In 2017, this value was USD 1.07 billion, accounting for 41.6% of the total US imports; in 2023, the value reached USD 13.22 billion, with its US import share rising to 70.5% (Figure 25).

Figure 25 | China's exports of lithium batteries to the US, 2017-2023, in USD 100 millions



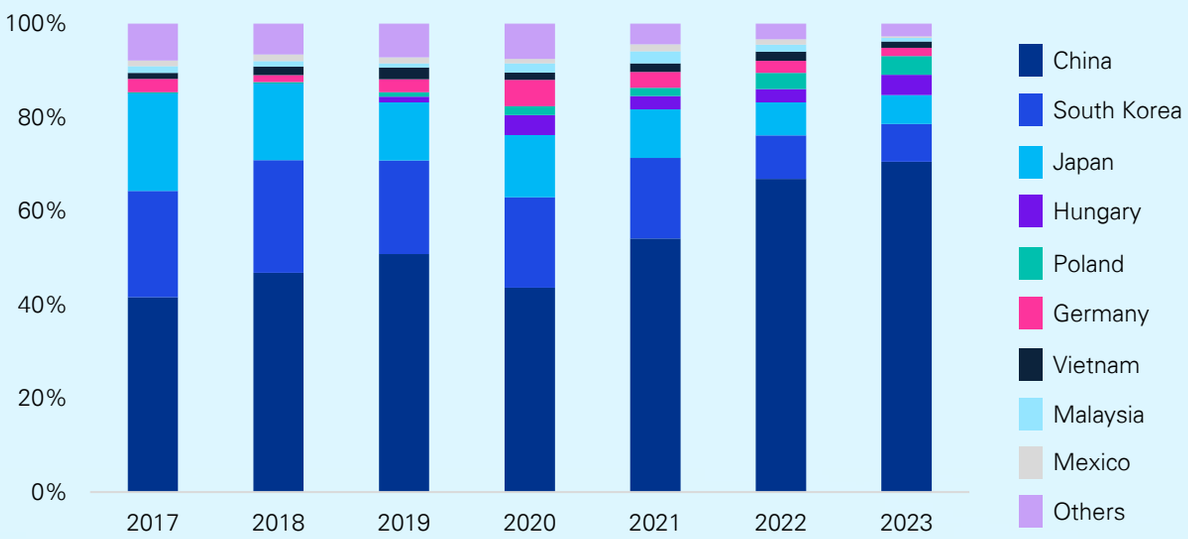
Data source: UN Comtrade Database, KPMG analysis

[27] Chinese photovoltaic companies have an overseas production capacity exceeding 55 GW and face intense competition, Solarbe Photovoltaic Network, 8 May 2024

[28] June production scheduling for components dropped by 11.9%, significant adjustments in Southeast Asia's operating rates, SMM, 11 June 2024

Except for China, other significant import sources of energy storage batteries for the United States are South Korea, Japan, Hungary, Poland, and Germany. Notably, in recent years, the import share of energy storage batteries from South Korea and Japan to the United States has been continuously declining. In 2017, the import shares from South Korea and Japan were 22.7% and 20.8%, respectively, while in 2023, they dropped to 8.1% and 6.1%, respectively. Additionally, thanks to Chinese lithium battery companies investing in and setting up factories in Hungary, Hungary has began to be an import source of lithium batteries for the United States in 2019, and, by 2023, it had risen to the fourth largest import source after China, South Korea, and Japan (Figure 26).

Figure 26 | Major sources of US lithium battery imports from 2017 to 2023



Data source: UN Comtrade Database, KPMG analysis

There are mainly two ways for China lithium battery exports to enter the United States: one is through the export of products such as completed vehicles and energy storage systems; the other is through signing procurement agreements with overseas electric vehicle and energy storage companies to directly export products. Specifically, CATL is the main supplier of lithium batteries in the United States, while EVE Energy, CALB, and HiTHIUM hold a certain market share through system integrators.

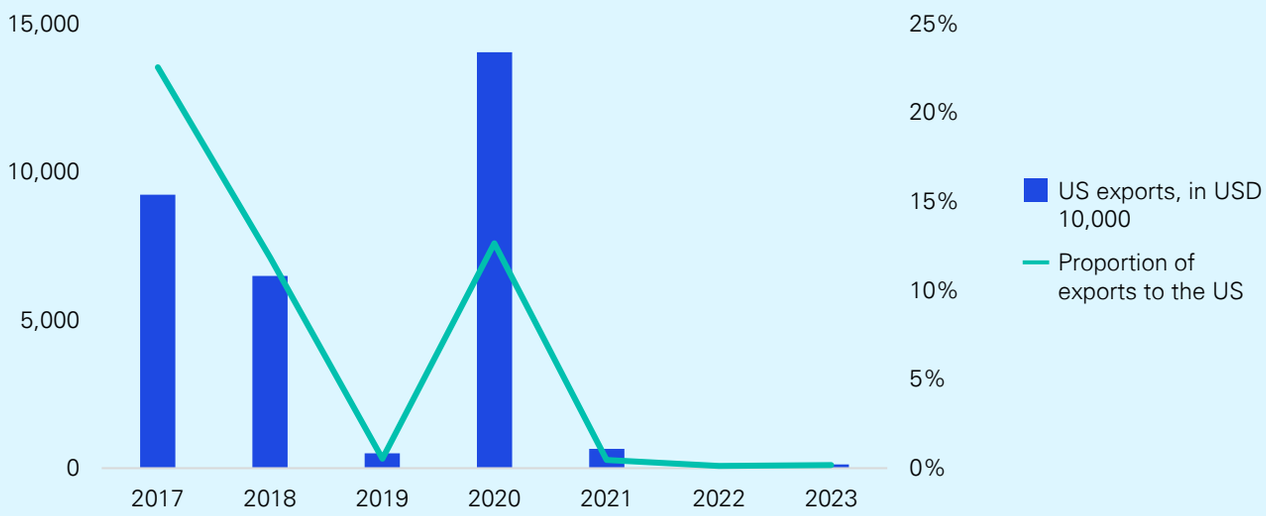
Imposing high tariffs on China will reduce China's exports of lithium batteries to the US. In May 2024, the US government imposed additional tariffs on imports from China of lithium batteries, electric vehicles, photovoltaic cell modules, natural graphite, steel, and aluminium materials, to be phased in over the period of 2024 to 2026. Among these, tariffs on electric vehicles in 2024 increased from 25% to 100%, while tariffs on lithium-ion batteries used in electric vehicles rose from 7.5% to 25%. For non-electric vehicle lithium-ion batteries, it will increase from 7.5% to 25% by 2026. Currently, energy storage batteries dominate the lithium batteries exported from China to the US, so the new tariff measures have not yet significantly impacted export volumes[29]. However, since the start of Trump's second term, cumulative tariffs on Chinese imports have reached 145%, combined with a base rate of 3.4% and previously imposed 25% "Section 301" tariffs, Chinese lithium batteries facing the US market now face total tariffs of up to 173.4%. The US is our largest export destination for lithium batteries, and the high tariffs will significantly increase the cost of exporting lithium batteries to the US, weakening their competitive advantage in the US market; it is expected that our share of the US lithium battery export market will be greatly affected.

[29] Under the tariff threat, China's lithium battery exports to the US reached a record high, The Paper, 23 January 2025

2.3.3. Wind energy: Fewer exports to the US, and enterprises are still facing difficulties in making breakthroughs under the new administration.

In 2023, China exported wind power units worth USD700 million, with major export destinations being South Africa, Australia, Chile, Egypt, Argentina, Japan, and Canada. The export value to the United States was only USD1.25 million, accounting for 0.2% of China's wind power unit exports (Figure 27).

Figure 27 | Chinese wind turbine exports to the US, 2017-2023, in USD 10,000



Data source: UN Comtrade Database, KPMG analysis

From the perspective of wind power installation capacity, in 2023, China's cumulative export capacity of wind turbines to the United States was 758.85 MW, with 0 new installation capacity in 2023 (Table 11)[30]. The most recent export of wind turbine units from Chinese wind power original equipment manufacturers to the United States was in 2020, and after Donald Trump was re-elected as President of the United States, it is expected that Chinese wind power companies will still find it difficult to make breakthroughs in exports to the United States. On his first day as president, Donald Trump signed an executive order temporarily suspending the sale of leases for offshore wind energy and halting the issuance of approvals, permits, and loans for onshore and offshore wind projects. He also required an assessment of the environmental impact of wind power projects on wildlife, the economic cost of intermittent power generation, and the impact of government subsidies on the wind energy industry[31].

[30] Wind Energy Statistics Briefing for China's Wind Power Installation Capacity in 2023, Chinese Renewable Energy Society, 19 April 2024
[31] Trump leads a global anti-wind energy wave: Wind energy should not be "politicized," Huaxia Energy Network, 24 January 2025

Table 11 Chinese wind turbine exports by country in 2023 (MW)

Continent	Main export countries	New export capacity (MW)	Accumulated export capacity (MW)
Asia	Vietnam	164.8	2,486.55
	Uzbekistan	915.8	1,027.05
	India	0	882.3
	Kazakhstan	168	791.76
	Summary	**2,125.1**	**7,260.71**
Americas	United States	0	758.85
	Chile	288	609.94
	Argentina	0	414.6
	Brazil	18	313.5
	Summary	**306**	**2,899.89**
Africa	South Africa	344	795
	Egypt	515.5	515.5
	summary	**937.5**	**1,766.5**
Oceania	Australia	198	1,755.48
Europe	Serbia	9.9	248.4
	Croatia	0	156
	Ukraine	0	144
	France	0	142.88
	Summary	**85**	**1,408.23**
Global	**Total**	**3,665.1**	**15,594.11**

Source: CWEA, KPMG analysis

Note: The current statistics on wind turbine exports mainly target domestic wind turbine manufacturers in China, and foreign-funded wind turbine manufacturers are not included. In these statistics, "wind power installation capacity" refers to "craned-in capacity," which means the installed capacity of wind turbines shipped by wind turbine manufacturing companies to wind farm sites, completed with all components hoisted by construction units, and after installation acceptance or static commissioning.

In recent years, the United States has imposed multiple obstacles on the import of new energy products from China, such as photovoltaic and lithium battery products, through tariffs and non-tariff trade barriers. The imposition of high tariffs on China during the second term for Trump, and levying globally "equivalent tariffs," further hinders both direct and indirect exports of Chinese new energy products to the United States. Meanwhile, the US government issued a memorandum on the "America First" investment policy, further strengthening the review mechanism for foreign direct investment, but also providing tax incentives and other incentives to foreign investors who meet certain criteria, encouraging enterprises to prioritise production and investment in the United States. Against this backdrop, the strategic significance of Chinese new energy companies investing and building factories in the United States is highlighted, but it is also necessary to guard against the risk of policy changes by the Trump administration.

2.4 Capacity "going abroad": Analysis of major new energy sectors

2.4.1 Greenfield investment: Photovoltaic and hydrogen energy companies are setting up factories in the US, accelerating deployment of capacity.

Solar energy companies are accelerating the establishment of factories in the United States to avoid trade barriers.

In 2022, the US government provided subsidies to photovoltaic companies through the Inflation Reduction Act (IRA). According to statistics, in response to risks from fluctuations in US trade policies, Chinese photovoltaic companies have successively put forward plans to build factories in the US on their own agendas since 2023 (Table 12). Some state legislatures with greater decarbonisation pressure, such as Texas, Ohio, and Arizona, have welcomed the localisation layout of Chinese enterprises. Domestic photovoltaic companies effectively avoid or mitigate the adverse effects of US trade constraints on Chinese and Southeast Asian photovoltaic enterprises by setting up factories in the US, while also accelerating their internationalisation process and enhancing their competitive advantages in the US.

Table 12 Chinese photovoltaic companies establishing factories in the United States, 2023-2024 (incomplete statistics)

Enterprise	Factory location	Date	Investment amount (USD)	Stage	Produc-tion capacity
TCL Zhonghuan partially owned subsidiary Maxeon	New Mexico	August 2023	1 billion	component + battery	3 GW
CSI Solar	Indiana	January 2023	839 million	battery	5 GW
	Texas	June 2023	250 million	component	5 GW
LONGi	Ohio	March 2023	600 million	component	5 GW
Trina Solar	Texas	September 2023	200 million	component	5 GW
Jinko Solar	Florida State	March 2023	8,137 million	component	About 1.4 GW
JA Solar	Arizona	January 2023	60 million	component	2 GW
Hounen	South Carolina	May 2023	3.3 million	battery	1 GW
HIUV New Materials	Ohio	November 2024	10 million	Encapsula-ting film	-

Source: public information, company announcements, KPMG analysis

Case Four

KPMG assisted a Chinese electric vehicle battery manufacturer in its US site selection.

A domestic battery production company plans to establish its first factory in the United States and has hired KPMG US to assist with finding a suitable location. The company shows a strong interest in the southeastern and midwestern regions of the United States and hopes to receive consulting assistance from KPMG in terms of regional analysis, site selection, and local incentive policies. The project will invest approximately USD 1 billion and create more than 1,000 jobs.

Based on the client's preference for regions, the KPMG US team evaluated over 50 locations in Indiana, Kentucky, Michigan, Ohio, and South Carolina according to the project requirements and other client needs, shortlisting options for the client and conducting detailed cost analyses for each location on the shortlist to assist the client with their final decision. The KPMG team also helped the client arrange multiple site visits (including executive site visits) and meetings with state and local officials responsible for economic development to negotiate incentives for establishing a factory locally. Additionally, in response to potential geopolitical issues that Chinese companies may encounter when investing in the US, the KPMG team provided advice on how the client could address these challenges.

Energy storage companies continue to make steady progress in expanding their markets in the United States

With the rapid expansion of the new energy industry globally, demand for energy storage batteries in the US market is increasing. Chinese energy storage companies are accelerating their strategic pace of capacity in the US. According to incomplete statistics, by the end of 2024, energy storage companies such as Gotion High-Tech, AESC, EVE Energy, and HiTHIUM had made deep industrial layouts in the US. More than 5 overseas factories have publicly disclosed to the media or announced planned construction (Table 13).

Table 13 Chinese energy storage companies building factories in the US (incomplete statistics)

Company	Factory location	Battery type	Production capacity
Gotion High-Tech	Illinois	Lithium-ion battery	40 GWh
	California	Portable energy storage, home energy storage	Undisclosed
AESC	South Carolina	Lithium-ion battery	30 GWh
	Kentucky	EV battery	30 GWh
EVE Energy	Mississippi	Lithium iron phosphate battery	21 GWh
HiTHIUM	Texas	Energy storage battery modules and system integration	10 GWh

Source: public information, company announcements, KPMG analysis

From the perspective of the "going abroad" path for domestic energy storage companies, building factories overseas is one of the important business models for Chinese new energy companies. However, companies can also choose technology licensing and patent licensing methods. For example, CATL cooperates with Ford Motor Company, with Ford investing USD 3.5 billion to build a new lithium iron phosphate battery factory in Michigan, US, while CATL provides paid technology licensing[32].

[32] Ningde Times has entered the US market, providing technology to build the first US-based LFP battery factory with Ford in February 2023, The Paper https://www.thepaper.cn/newsDetail_forward_21919815

Asset swaps could become a model for Chinese new energy enterprises venturing to the US.

Overseas acquisitions are one of the main routes for Chinese companies to go global. In recent years, the US government has strengthened its national security review system over foreign investments for mergers and acquisitions. Industry experts suggest that under the current administration, the focus of the Committee on Foreign Investment in the United States (CFIUS) may have a high degree of continuity compared to before. Based on currently available information, KPMG has observed that Chinese energy companies remain cautious about acquiring US renewable energy companies.

On November 6, 2024, Trina Solar, a domestic photovoltaic company in China, announced a sale of assets for the acquisition of shares. It plans to sell its 5GW module factory located in Wilmer, Texas, to FREYR, a US-based company. In addition to cash and other considerations, Trina Solar will also obtain partial equity in FREYR. Trina Solar pointed out that this transaction will promote the development of the Trina brand in the United States by retaining technology and brand output, combining the management team's channels and industry experience in US and Nordic capital markets, as well as external advisors' government relations. This is set to advance the implementation of the company's overall strategic layout, further optimise overseas asset allocation, and enhance the operational efficiency and profitability of its overseas business.

To sum up, Trina Solar has achieved localisation in production, operations, and sales by selling its factory and sharing part of the profits with FREYR, obtaining a long-term stable "pass" for the US market. After the asset swap, the originally Chinese-invested enterprise has become a localised one, minimising its policy and environmental risks in the local market. Looking ahead, going overseas through technology exports and holding a smaller share might be a more viable path.

Case Five

Toyota's experience in investing and setting up factories in the United States

Background on Toyota setting up a factory in the United States

Under the encouragement of government export policies, Toyota actively expanded into overseas markets from 1955, initially entering through its export business. However, its first attempt to enter the US market failed due to insufficient adaptability. Despite this setback, Toyota did not give up but continuously adjusted its market entry strategy and product adaptability. In the 1960s and 70s, Toyota's total exports rapidly increased, especially following the Corolla model being exported to the US in 1968. Toyota's sales in the US surged, making it the second-largest imported car brand in the US that year. However, with the emergence of pressures such as US-Japan trade frictions, a single export model could no longer meet Toyota's continuous development in the US market. The signing of the Plaza Accord and subsequent trade sanctions taken by the US forced Toyota to replace exports with overseas direct investment, initiating the process of investing and setting up factories in the US.

Three-step strategy: "Joint venture trial run — cultivating deep expertise as a sole operator — closed-loop supply chain"

The initial choice was to set up a joint venture factory and quickly begin local operations. Toyota's investment in the US was divided into two phases: joint venture plant construction and wholly-owned plant construction. In 1984, Toyota and General Motors established a joint venture factory, NUMMI, in North America. After taking on the experiences from NUMMI in labour relations, human resource development, facility introduction and operations, logistics systems, etc., in January, 1986, Toyota established Toyota Motor Manufacturing Kentucky (TMMK) and Toyota Motor Manufacturing Canada (TMMC) as wholly-owned companies. Initially, Toyota adopted a joint venture investment approach, quickly acquiring local market resources, policy support, and familiarity with the local business environment and regulations through cooperation with local American enterprises. This approach effectively reduced the risks from initially entering the US market, mitigating obstacles caused by cultural differences and unfamiliarity with the market, and gathered experience for subsequent independent plant construction.

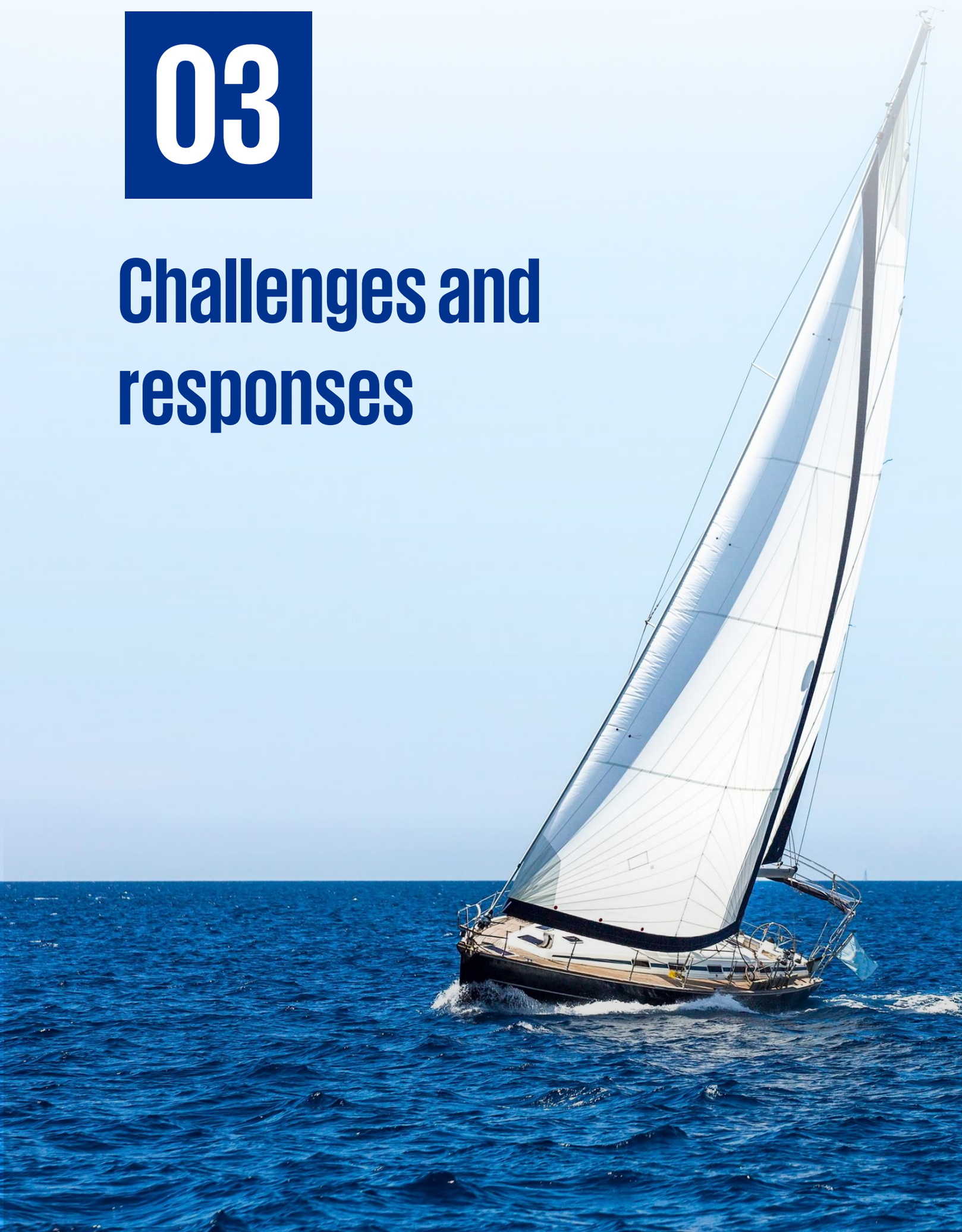
Consider multiple factors in selecting a factory location. When Toyota was selecting a site for its factory in the United States, it not only focused on locational advantages but also took into account factors such as parts procurement, labour costs, public safety, and incentives from state and provincial governments. Toyota chose to establish a wholly-owned factory in Kentucky because the state offered lower labour costs and up to USD 147 million in incentives.

Implementing a lean production model and improving the supply chain closed loop to support a high-quality "going abroad" strategy. Toyota, in the process of "going abroad," to ensure high-quality delivery and profitability, fully implements the Toyota Production System (TPS) in its overseas factories. The core concepts of TPS are "automation" (Visual Control), "just-in-time" (JIT), "teamwork," "standardisation," and "continuous improvement." In Toyota's US factories, JIT requires manufacturing the required products at the needed time and in the needed quantity to reduce inventory risks. However, due to a lack of understanding of the JIT model by local US parts suppliers, Toyota decided to guide Japanese parts suppliers into the North American market and locate them within a "two-hour drive radius." Domestic parts suppliers moving themselves to the export destination and form a closed supply chain loop not only helps Toyota reduce transportation costs and tariff risks but also achieves precise scheduling and quality assurance under its "JIT" philosophy, significantly improving production efficiency.

Source: collated public data, analysis by KPMG

03

Challenges and responses



3.1 Challenges in "going abroad" in mature markets such as Europe and America

Enterprises have extended "going abroad" from initial products to capacity and supply chains. Developed countries such as Europe and America, with their mature markets, larger profit margins, and more complete infrastructure, are highly attractive to Chinese new energy enterprises aiming to "go abroad." However, at the same time, Chinese enterprises need to be aware that they may face a series of challenges brought about by the long-term defensive measures taken by developed markets against China's new energy industry.

3.1.1 Challenge 1: European and American markets have set up "obstacles" for China's new energy industry through "trade barriers + localisation industrial policies"

In recent years, competition between China and developed countries in Europe and America has intensified, mainly characterised by industrial conflicts. This has led to European and American countries frequently using a combination of "trade restrictions + localisation industrial policies" to continuously strike against China, forming significant pressure on the "going abroad" efforts of China's new energy enterprises.

Escalation of trade restriction measures

Since April 2024, the EU has implemented the *Foreign Subsidies Regulation*, and subsequently launched anti-subsidy investigations into China's new energy companies such as photovoltaic and wind power enterprises. Following this, Shanghai Electric and LONGi were forced to withdraw from the bidding for a photovoltaic park project in Romania[34].

From the US perspective, during the Biden administration in 2024, a series of additional tariffs on Chinese exports known as the "new three categories" were implemented. Starting from August 1, 2024, tariffs on Chinese exports of battery components (non-lithium-ion batteries) were increased from 7.5% to 25%, tariffs on electric vehicles were raised from 25% to 100%, and tariffs on lithium-ion batteries for electric vehicles were increased from 7.5% to 25%. As of January 1, 2025, tariffs on semiconductors were increased from 25% to 50%. Starting from January 1, 2026, tariffs on non-electric vehicle lithium-ion batteries will be raised from 7.5% to 25%[35].

After the Trump administration came to power, it continued to engage in trade protectionism towards new energy and imposed a 25% tariff on all imported cars. It also levied "reciprocal tariffs" on countries around the world, with reciprocal tariffs on China as high as 125%. In addition to this, an extra 20% tariff was previously imposed under the pretext of combating fentanyl. As a result, total additional tariffs imposed by the US on China reached 145%.

The localisation policy of "reindustrialisation" promotes the return of manufacturing

In recent years, the COVID-19 pandemic exposed the vulnerability of global supply chains. At the same time, due to reflections on over-outsourcing and offshoring, as well as considerations to enhance supply chain security, address domestic employment issues, and other concerns, a wave of manufacturing reshoring has emerged in Europe and America. This includes measures such as tax incentives, subsidies, and restrictions on foreign products in laws like the US Inflation Reduction Act (IRA) and the European Net Zero Industry Act, all aimed at strengthening the competitiveness of local manufacturing industries. In addition to advanced manufacturing sectors like semiconductors, the new energy industry is also a key area supported by relevant policies. Recently announced US policies have highlighted that the core of the current administration's industrial policy for the next four years lies in maintaining the United States' leading position in cutting-edge technology fields, and restoring and maintaining its global competitiveness in basic and mid-range manufacturing industries. To achieve this goal, the US government will probably continue to adopt measures such as external containment and promoting foreign direct investment.

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[34] Expert Interpretation of the Negative Impacts of the EU's Foreign Subsidies Regulation, The Paper, 2 July 2024, https://m.thepaper.cn/newsDetail_forward_27933950

[35] Effective August 1! New US tariffs on Chinese electric vehicles take effect, Tencent News, 23 May 2024, https://news.qq.com/rain/a/20240523A07OVW00

3.1.2. Challenge 2: High and costly barriers to entry in developed markets

When enterprises internationalise and enter developed markets, it is beneficial in accumulating internationalisation experience and shaping the brand image of products, thereby improving global product sales. Moreover, developed countries generally possess broad markets and high profitability, which matches the profit-seeking nature of capital. However, markets in developed countries also have high entry barriers and high costs, etc., and enterprises "going abroad" will face a series of challenges.

Implicit market protection measures

In order to avoid the trade protection policies issued by European and American countries, Chinese enterprises may also encounter local hidden market protection means when carrying out production capacity layout in developed markets, causing the construction plans of Chinese new energy enterprises to lag behind or to be unable to land investment projects. For example, the Chinese battery manufacturer Gotion High-Tech announced its plan to build a factory in Michigan, a US subsidiary Gotion. Since then, the plan has been approved by the state government and the US Treasury. However, since 2023, Gotion's plan has encountered multiple "snipers." First, the residents of Greenchart, Michigan, the site of Gotion's new factory, dismissed five local officials because they had approved the factory building project. Then, the new mayor revoked a resolution adopted by the previous government the previous year to support the factory building plan, because the resolution failed to address residents' concerns about environmental issues and Gotion's ownership[36].

Powerful local competitors

Compared with the existing brands, enterprises in the newly entered developed country market have low brand awareness and a weak image. Therefore, they should highlight the obstacles of tight encirclement. Take energy storage products as an example. As early as 2015, Tesla had already begun to layout its energy storage industry. Recently, Tesla has continued to increase its layout in the energy storage field.

In 2015, it launched the home energy storage product Powerwall, and the commercial energy storage product Powerpack in the US market. Subsequently, in 2019, Tesla introduced the Megapack large-scale energy storage system for the utility-scale energy storage market. These three products are mainly targeted at the residential energy storage market and commercial and industrial energy storage markets. With the commencement of construction of Tesla's Shanghai energy storage megafactory in May 2024, Tesla's energy storage deployment reached 31.4 GWh in 2024, a 100% increase from the 15.7 GWh deployed throughout 2023[37]. In the future, Chinese energy storage companies will face direct international competition from strong local brands like Tesla in developed markets such as Europe and America, and even in their home markets they will have to contend with formidable competitors.

[36] Chinese company's factory construction plan in the US faces setbacks: approval officials are removed, new mayor halts it, Tencent News, 20 December 2023, https://news.qq.com/rain/a/20231220A02DSB00
[37] Tesla's energy storage "accelerates wildly"! In the fourth quarter, it set another record with deployments reaching 11 GWh, Battery News Network, 14 January 2025, https://news.bjx.com.cn/html/20250114/1422559.shtml

High market costs

Enterprises "going abroad," regardless of whether they choose the greenfield or M&A approach to investing in overseas markets, will inevitably face the calculation of market costs. Among them, the costs in developed markets such as Europe and America are even more exorbitant, making it one of the important factors that enterprises must consider in their "going abroad" decisions. In general, market costs mainly include pre-investment research and localisation, compliance and legal risks, logistics and supply chains, human resources, as well as additional communication costs due to cultural differences.

As an example of compliance and legal risks, in addition to stricter industry regulations, developed countries also have higher requirements for the warranty and certification of new energy products. For instance, the standard warranty period for energy storage systems is generally required to be between 15 to 20 years, while the domestic market typically only offers 3-5 years. Additionally, there are different certification systems for energy storage products in Europe and America. For example, North America mainly adopts the UL certification system, Europe uses the CE certification system, and Australia uses the CECC certification system. Energy storage companies wishing to enter these markets need to meet specific safety and performance standards, which will increase compliance costs.

3.1.3. Challenge 3: Overseas localisation operations for enterprises "going abroad"

Localising production capacity will bring challenges to those enterprises "going abroad" in terms of operational delivery capability, organisational structure and team management, as well as cost control.

Operational delivery capability

Enterprises "going abroad" to Europe and America usually face pain points in understanding customer needs, local deployment and security capabilities, and coordination mechanisms for production and sales.

Understanding customer needs: On the one hand, the different technical standards in various new energy industries and language communication barriers in developed markets lead to an insufficient understanding of customer needs. On the other hand, customers in developed markets usually have higher requirements for product design parameters and customisation levels, while most localised enterprises still rely on domestic core technologies and are unable to respond to agile customisation needs.

System stability and security assurance capabilities: In the age of information and digitalisation, local deployments by enterprises need to have strong data processing capabilities to ensure stable and reliable system operations. Additionally, European and American consumers have a strong awareness of personal data security protection, so ensuring cross-border data security management, effectively preventing cyber attacks and data leakage risks is also an unavoidable key issue for localised enterprises.

Co-production and sales synergy mechanism: In the initial stage of entering the overseas market, when capacity construction is still ramping up, the local enterprise's capacity planning may not meet market demand. Additionally, due to the lack of real-time data exchange between the production and sales ends, demand forecasting may be inaccurate and inventory turnover rates may be low.

Organisational structure and team management

Enterprises "going abroad" often face challenges in the initial stage of localisation in terms of organisational structure setup and team management. For organisational structure, some functions of localised enterprises may extend from domestic to overseas, leading to the application of domestic experience in serving foreign markets, which can result in delayed responses to customer needs. In terms of team management, on the one hand, cross-cultural integration may lead to management conflicts; on the other hand, there may be a lack of appropriate team KPI management and incentive mechanisms for the local market.

Cost control

Cost control is crucial for enterprises when "going abroad" to achieve profitability in the destination market. For example, cost control is important throughout the entire lifecycle of greenfield investments, including site selection and supply chain establishment. Taking factory site selection as an example, which is most sensitive to initial costs, multiple factors need to be considered, such as construction costs, operational costs of the factory, and transportation costs. Due to their lack of familiarity with local conditions, enterprises often face challenges in cost estimation and cost control.

3.2 How enterprises "going abroad" can respond

3.2.1. Reduce systemic risks resulting from sudden policy changes in the target country or region by diversifying production capacity across multiple regions.

Chinese New energy enterprises have launched their production capacity based on reasons such as reducing costs by utilising the host country's labour or resource advantages, avoiding unfavourable policies like quotas and tariffs in trade countries, or enhancing the security of their supply chains. Currently, the main model is still "China + 1," which means maintaining core capacity domestically while establishing a primary backup base in another country or region.

The selection of backup bases is mainly determined by the terminal consumer market. First, North America and Europe have relatively higher per capita GDP and stronger consumption power; second, South America and Southeast Asia have large populations. Therefore, the main hotspots for current investment are primarily concentrated in ASEAN, Mexico in North America, and parts of Eastern Europe. Among these, the layout in ASEAN mainly serves the Southeast Asian market and re-export trade to the US. Setting up factories in Mexico is primarily aimed at attracting American/Canadian customers, while establishing production capacity in countries like the Czech Republic and Hungary is intended to increase market share in Europe.

However, the regional concentration of large-scale "going abroad" production capacity is prone to systemic risks due to sudden policy changes in a single country. For example, the photovoltaic production capacity of Chinese companies in Southeast Asia has almost been suspended due to the initial double counter strike by the United States against photovoltaic products from four Southeast Asian countries in 2024. In the future, enterprises should consider expanding from a "China+1" model to a "+N" model, that is, from a single backup base to second or third backup bases. In terms of country and region selection, on one hand, they can prioritise policy window regions to enhance market response speeds, and on the other hand, they can also consider China's overseas economic and trade cooperation zones (such as RCEP and co-construction countries of the Belt and Road Initiative).

Case Six

KPMG assisted an Asian chemical company in developing a pan-European renewable energy procurement strategy.

An Asian chemical company has set decarbonisation targets at the group level, aiming to achieve 100% renewable energy for its power supply by 2030. Prior to this, the group's European subsidiaries had been independently procuring energy. Against the backdrop of rising energy prices and increased market volatility, the chemical company hopes to explore potential synergies through the centralised procurement of renewable energy. In the process of formulating a renewable energy portfolio, the company faces numerous market challenges, including

- The energy market faces EU level regulatory frameworks and country-specific regulations, requiring industry expertise and mature compliance processes.
- Market volatility makes price forecasting difficult and increases uncertainty.
- Current power purchase agreements are scarce, and large energy consumers have an advantage in the intense competition for resources.
- It is necessary to take action quickly to establish a sustainable portfolio of energy procurement in order to achieve the group's set decarbonisation goals.

After hiring the KPMG Germany team to assist the company in developing a pan-European renewable energy procurement strategy, the work was divided into three main phases: initial assessment, tendering and contract preparation, and implementation of procurement. Each phase concluded with a workshop.

- In the first phase, the KPMG team aligned the decarbonisation goals of each subsidiary uniformly and designed and completed a questionnaire focusing on the subsidiaries' existing energy procurement. Subsequently, the team conducted an initial assessment based on the survey results and several interviews with the subsidiaries. Based on data-driven detailed analysis, the KPMG team gained understanding of the current decarbonisation plans of each subsidiary and initially identified the potential for integrating their needs.
- The second phase included market analysis of power purchase agreement developers, initial screening and prioritisation of partners, preparation for the bidding process (including the tender evaluation framework), and a detailed implementation roadmap.
- The third phase focused on initiating the bidding process, evaluating different procurement quotes, contract negotiations, and monitoring the implementation of procurement after signing the contract.

With the assistance of KPMG's German professional team, the client gained a deep understanding of existing renewable power procurement options (virtual power purchase agreements, green certificates, etc.) and their strategic fit within the current procurement portfolio. After carefully considering the specific circumstances of each subsidiary and aligning with the group's overall goals, the client developed a future-oriented centralised renewable energy procurement strategy to be executed in a collaborative manner across subsidiaries to achieve the group's decarbonisation objectives.

3.2.2. Firmly establish a foothold through a "dual-driver" strategy driven by core technologies and brand building, and curb fierce price competition.

Enterprises "going abroad" with a focus on core technologies can significantly improve product performance and promote the optimisation of manufacturing processes, so as to provide cost-effective solutions for overseas markets and seize a competitive advantage. Taking the energy storage industry as an example, Chinese enterprises need to improve their energy density, cycle life, and other core technical indicators to break through barriers to access markets in Europe and the United States. Meanwhile, it is necessary to deepen the collaborative innovation of the industrial chain and build a moat through the ecological construction model of "technology + scenario + service."

Secondly, the enterprise should gradually establish its brand connotation through excellent quality, a strong innovation ability, and high reliability using systematic brand image building. In developed markets such as Europe and North America, enterprises should enhance their brand image and win the trust of consumers by strictly complying with local environmental protection, safety, quality, and other standards. On the basis of this technology-brand "dual-driver" model, new energy enterprises should not only learn from Tesla's global strategy of "product standardisation + localised operations," but also establish an agile response mechanism to global energy policy changes.

In addition, for China's new energy industry, it is also necessary to strengthen industry self-discipline through industry associations and other ways to curb the vicious competition of low prices in overseas markets. In 2023, Chinese photovoltaic manufacturing enterprises experienced a decrease in profits due to fierce price competition leading to an increase in industry volume. This competitive situation will spread overseas, with many enterprises falling into the dual dilemma of profit margins or market protection. In addition, the vicious price wars are also easily used by European and American governments as the basis for the implementation of "double anti-" policies, which ultimately lead to huge losses for the whole industry overseas.

3.2.3. Promote "go abroad" efforts through both horizontal and vertical development.

From the perspective of vertical integration in the industrial chain, enterprises "going abroad" can expand from manufacturing into services and consumption, achieving an end-to-end closed loop.

As far as the manufacturing end in the upstream part of the industrial chain is concerned, after leading enterprises set up factories in the local area, other supporting enterprises can follow - from exporting parts to overseas production, to achieve the "going abroad" production capacity. For example, lithium battery enterprises have been deployed in Europe, the Americas, Southeast Asia, and other places. At the same time, a large number of parts enterprises have also "gone overseas," forming a complete overseas industrial chain from battery cells to packs. The group "going abroad" on the service side is mainly reflected in large infrastructure projects such as new energy power stations. Large projects such as photovoltaic power stations and wind power stations often adopt a project contracting or BOT (build – operate - transfer) model. Large enterprises undertaking construction usually drive the survey, design, operation and maintenance and other service supporting enterprises to cooperate in "going abroad." On the consumer side, systematic integration can open up the overseas market space for small- and medium-sized supporting enterprises. For example, household photovoltaic, wind power, and other new energy products are suitable for the discrete use scenarios of enterprises, households and other end consumers, but they need to be matched with household storage, intelligent energy management systems, and other products in order to play a role.

From the perspective of horizontal development in the industrial chain, enterprises "going abroad" can strengthen strategic cooperation with related companies.

Cooperation with affiliated enterprises can be strengthened. For example, in the construction machinery industry, as a key industry for energy consumption and carbon emissions, international trade barriers will further improve with the continuous improvement of environmental protection laws and regulations worldwide. The transformation of new energy has become an inevitable trend, and domestic leading enterprises of construction machinery have also begun to lay out new energy fields. In September 2022, Guangxi Liugong and CATL signed a 10-year strategic cooperation agreement to jointly explore the electric construction machinery market.

On the other hand, it is necessary to strengthen strategic cooperation with professional services. New energy enterprises "going abroad" need professional services that cater to overseas markets, whether it be greenfield investments or mergers and acquisitions, which require services such as site selection and financing. In addition, after landing overseas, they also need accounting services, legal services, technical services, and other services that align with the policies and regulations of the host country, as well as supply chain management, human resources management, sales services, and after-sales support in foreign countries.

Case Seven

KPMG assisted Asian automakers in expanding their energy business into Europe and setting up strategic partnerships with energy companies.

With the development of electric vehicles, automotive, and energy industry value chains in Europe are increasingly converging. To ensure the success and sustainability of this green revolution, automobile manufacturers are paying increasing attention to electricity supplies. Against this backdrop, the European headquarters of an Asian automaker hopes to integrate into the European energy industry value chain and therefore seeks support from strategic consulting experts. Despite intense competition, the KPMG Germany team won the trust of the client by leveraging its deep industry knowledge, innovative and pragmatic proposals, stakeholder management capabilities, high-quality professional teams, and reasonable pricing. KPMG Germany's close cooperation with major European energy and automotive companies also provided strong support that ultimately won the project.

Over two years, this project was completed in three phases: preliminary research, detailed plan formulation, and implementation. The KPMG team helped the client find the best solutions to the following questions by studying attractive business models, market entry barriers, and regulatory frameworks for integrating into the energy industry value chain.

- What is the current and future EU landscape for transport and energy up to 2030?
- What are the current and long-term opportunities and potential risks for the client?
- Should the customer expand its mobile and energy charging add-on services in Europe?
- If so, what is the best strategy in the short term and beyond 2030? What levels of direct and indirect profits can be achieved?
- What is the unique value of the client within the European energy market?
- In terms of business capabilities, external partnerships, target customers/market, and target services, what criteria must the client meet to establish a foothold in the European market?

The KPMG Germany team demonstrated their deep understanding of the electric vehicle value chain in this project and proactively engaged with the client using its expertise and experience in energy business models, innovation, and market dynamics, ultimately achieving a satisfactory result for the client.

3.2.4. Establish a sound internal control system for post-investment operations.

Greenfield investment, as an important model for overseas investment by Chinese companies “going abroad,” largely depends on the post-investment operation phase management level. Establishing a sound post-investment operation internal control system is crucial for ensuring the smooth operation of investment projects and achieving expected returns. The construction of a risk control system for greenfield investment enterprises is based on five key principles of internal control development: importance, adaptability, checks and balances, cost-effectiveness, and comprehensiveness. The overall process is divided into four progressive implementation frameworks: " Current situation analysis ," "Identifying Risks," "Establishing Controls," and "Continuous Optimisation.”

"Current situation analysis" focuses on using both internal and external perspectives to review the current state of business operations, clarifying management drivers and the starting point for internal controls. The external dimension focuses on the institutional characteristics and market ecology of the host country's business environment; the internal dimension emphasises analysing the company's strategic positioning, operational structure features, and risk maps. By decoding business processes, it establishes the logical starting point for system construction, outputting a structured cognitive framework that ensures the internal control system is precisely aligned with the company's strategic vision and external constraints.

"Identifying Risks" supports strategic objectives and process control by playing a role in risk identification and assessment. By establishing a risk information database, creating risk assessment criteria, designing differentiated risk response strategies, formulating embedded control solutions for business processes, and optimising risk monitoring and early warning indicator systems, a five-in-one closed-loop risk management system is constructed.

"Establishing controls" is based on the COSO framework and industry benchmarks, establishing a hierarchical mechanism for strengthening controls. It focuses on key control points in various business processes, bring about a control matrix that is compliant, feasible, and rigorous. Especially in the context of overseas greenfield investment projects, it places greater emphasis on innovation in the control system under cross-border operating scenarios, achieving an organic integration of international standards and overseas practices.

"Continuous optimisation" requires enterprises to regularly assess their internal control systems based on factors such as the development of business and changes in risk preferences, combining strategic evolution, operational structure optimisation, and risk map iteration to achieve dynamic improvements and adjustments to the internal control system.

Case Eight

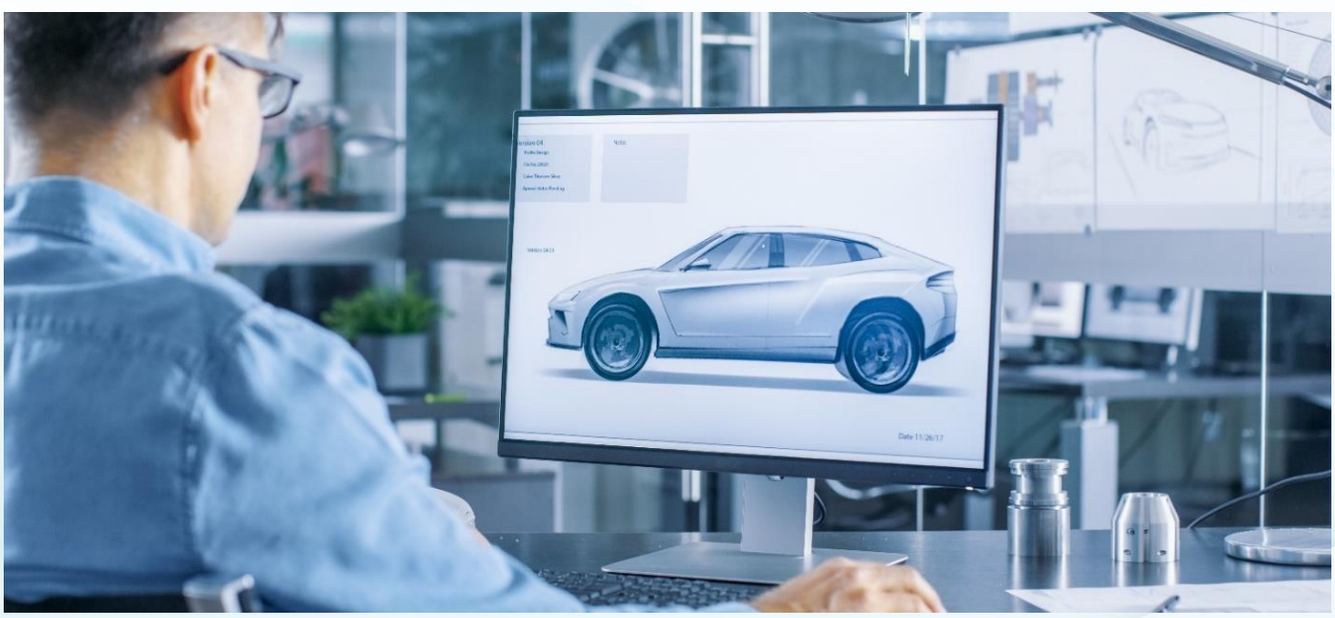
KPMG provided customised services across different stages for a domestic new energy vehicle group's investment and operations in France.

The continuous development of the global new energy automotive industry and the sustained growth in demand for electric vehicles in the European market provide a good opportunity for Chinese new energy vehicle brands. As the second largest automobile market on the European continent, France has a strong consumer demand for new energy vehicles. At the same time, the French government regards the new energy automotive industry as one of its strategic industries for promoting the green transformation and re-industrialisation, introducing multiple measures to promote the development of the new energy automotive industry and to encourage investment. These favourable factors have attracted many Chinese new energy vehicle companies to expand their markets into France.

A well-known domestic new energy vehicle group entered France many years ago and invested in building a factory locally. During the investment planning phase, the initiative and coordination of the KPMG China Business Department in France assisted the company in sorting out the conditions to meet the subsidy policy and in applying for it, successfully obtaining subsidies from the French government. After the company's investment was implemented, the audit partner responsible for KPMG's China business in France also led the local audit team to provide statutory audit services to them.

In recent years, with changes in the French market demand, the automaker has promptly adjusted its strategy to vigorously develop its electric passenger vehicle business in France. However, due to the business model becoming more complex and the business scale growing too rapidly, there were loopholes in the company's internal control processes. The KPMG audit team in France promptly identified this loophole and proposed audit adjustments, thereby ensuring that the company's financial statements for that year were prepared in accordance with French accounting standards in all material respects and fairly reflected its financial position and operating results. The KPMG team also assisted the automaker in promptly improving its internal control system, optimising internal control procedures, and laying a solid foundation for further business development.

The rapid development of the new energy vehicle market in France provides opportunities for Chinese new energy vehicle companies and enterprises along the upstream and downstream supply chain to enter the French market. However, at different stages of investment and operation, companies may encounter various issues and challenges. KPMG's China Business Department in France understands the local market conditions and is fully aware of the difficulties faced by Chinese companies. They collaborate with local tax, finance, and consulting professional service teams to provide customised solutions, ensuring the success and sustainable development of Chinese companies investing in France.



Conclusion

Jointly reshaping the global landscape for the new energy industry

Under the dual drivers of the global energy revolution and geopolitical changes, the globalisation of China's new energy enterprises has evolved from being a strategic choice to being an inevitable path for industrial development. The European market, with its firm carbon neutrality goals, grid upgrade needs, and premium pricing, remains the main arena for the global new energy transformation. Meanwhile, despite policy fluctuations, the US market still offers incremental opportunities for strategically resilient companies due to its massive energy transition demands. In the face of high trade barriers, tightening localisation policies, and increasing geopolitical risks, Chinese companies that are going abroad need to pursue strategies that feature "precise plans, dynamic compliance, and ecosystem development." As a global professional service provider, KPMG possesses a deep understanding of policy trends in Europe and America, and the firm leverages its local networks across the globe to turn policy opportunities into tangible business results and deliver value for enterprises.

"Those who harness the wind and the tide will chart new paths." We firmly believe that Chinese new energy enterprises will write a new chapter in the reshaping of the global energy landscape. In the years ahead, KPMG looks forward to working alongside new energy enterprises as they continue to "go global."

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About KPMG China

KPMG China has offices located in 31 cities with over 14,000 partners and staff, in Beijing, Changchun, Changsha, Chengdu, Chongqing, Dalian, Dongguan, Foshan, Fuzhou, Guangzhou, Haikou, Hangzhou, Hefei, Jinan, Nanjing, Nantong, Ningbo, Qingdao, Shanghai, Shenyang, Shenzhen, Suzhou, Taiyuan, Tianjin, Wuhan, Wuxi, Xiamen, Xi'an, Zhengzhou, Hong Kong SAR and Macau SAR. Working collaboratively across all these offices, KPMG China can deploy experienced professionals efficiently, wherever our clients are located.

KPMG firms operate in 142 countries and territories with more than 275,000 partners and employees working in member firms around the world. Each KPMG firm is a legally distinct and separate entity and describes itself as such. Each KPMG member firm is responsible for its own obligations and liabilities.

In 1992, KPMG became the first international accounting network to be granted a joint venture licence in the Chinese Mainland. KPMG was also the first among the Big Four in the Chinese Mainland to convert from a joint venture to a special general partnership, which it did on 1 August 2012. Additionally, the Hong Kong firm can trace its origins to 1945. Our early commitment to this market, together with an unwavering focus on quality, has been the foundation for accumulated industry experience, and is reflected in KPMG's appointment to provide multidisciplinary services (including audit, tax and advisory) to some of China's most prestigious companies.

About the KPMG China Research Centre

KPMG China Research Centre is dedicated to conducting in-depth research covering macroeconomics, industries, regional issues, and niche markets. The Centre pools together the research capabilities of China's network and benefits from KPMG's global resources to provide thorough analysis and insights in economic and business fields from an international perspective.

The Centre integrates theory with practice to ensure that research results have both theoretical depth and practical value. Relying on the "dual engines" of data mining and information tracking, the Centre steadily monitors the latest developments in specific industries, including macroeconomic trends, national policies and regulations, leading enterprises, and capital market dynamics. Through publicly-released reports and special research projects, the Centre provides clients with innovative and forward-looking solutions.

The Centre is committed to working with its ecosystem partners to promote growth. By continuously deepening cooperation with national, local, and corporate research institutions, the Centre is actively participating in the development of an innovative, professional and efficient research ecosystem, while providing comprehensive support for the sustainable development of partners.

About the KPMG Global China Business Development Centre

KPMG's Global China Practice, based in Beijing, plays a key role in both "bringing China to the world" and "bringing the world to China". The practice has dedicated teams in nearly 60 locations worldwide, including developed markets such as Europe, the USA, and Australia, as well as emerging markets like Southeast Asia, Latin America, the Middle East, and various countries along the "Belt and Road".

Our experts take pride in having participated in many of China's significant outbound mergers and acquisitions, as well as greenfield investments. Additionally, the Global China Practice enhances KPMG's ability to assist foreign companies by connecting them with local partners as they enter and establish themselves in China. Market participants are adapting to thrive in China's "new development paradigm". Foreign companies are actively engaging in China's ongoing economic transformation, achieving mutually beneficial outcomes. We support these companies in aligning their value propositions and business strategies to address new risks and seize emerging opportunities.

KPMG's Global China Practice works closely with both Chinese and foreign companies to help them navigate complex and dynamic business environments. The practice assists in forming important business partnerships and developing strategies for achieving long-term, sustainable positions in the market.

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