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China's New Energy Enterprises "Going Abroad" Series: Sailing to Southeast Asia

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Foreword

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As the promotion of sustainable development continues, global demand for new energy products, services and technologies has been surging. Overseas markets are becoming an important point of leverage for Chinese new energy enterprises seeking growth and expansion. In order to further take advantage of these trends, KPMG China is launching the *New Energy Enterprises "Going Abroad" Series*, making use of our professional market insights and in-depth data analysis to reveal the potential for the new energy sector and unveil attractive opportunities in overseas regions for enterprises.As the first instalment in the series, this report takes a closer look at the characteristics of the new energy market in Southeast Asia while providing forward-looking market insights and strategic suggestions, so as to help enterprises seize the growth opportunities present there and open up a new chapter of green energy cooperation.

01

Internal and external factors encouraging new energy enterprises to actively seek global opportunities

1.1 External environment: The global new energy market is seeing both high growth in demand and supply chain security challenges

Demand is surging in the global new energy market

As the world pursues sustainable development, demand for new energy products, services and technologies continues to rise. The U.S. Energy Information Administration (EIA) predicts wind and solar power will account for 72% of renewable energy power by 2050, nearly doubling from 2020. The inherent intermittency and instability of power generation from new energy sources such as wind and solar energy will accelerate the rapid development of the global energy storage market, with the installed capacity expected to increase by about 40% in 2024. [1]

Persistent international instability is driving enterprises to seek alternative production solutions within the global industrial chain

Given the ever-changing international environment and the increasing trade barriers due to deglobalisation, Chinese new energy enterprises are actively exploring overseas supply chains. Over the past two years, Europe and the United States have introduced a number of local restrictions on the lithium battery industrial chain, including the US Inflation Reduction Act (IRA) and the new EU Batteries Regulation. As a result, if Chinese enterprises do not build production capacities overseas but only export their products, they will be disqualified from related subsidies and markets.

[1] Global energy storage market: cost-effectiveness drives up the installed capacity of energy storage, Sina, 28 December 2023, https://finance.sina.cn/stock/ggyj/2023-12-28/detail-imzzpytv7608742.d.html

1.2 Internal environment: Amid intensifying competition, technological competitiveness and policy incentives are driving enterprises to "go global” at an increasing pace

New energy enterprises are seeking overseas business opportunities due to fierce domestic competition

In the new energy sector, technological advancement and efficiency improvements are making new photovoltaic and wind power projects less expensive. However, as subsidies for new energy power plant projects continue to shrink, and the new energy power market sees fiercer competition, the return on these projects is declining. In addition, due to overcapacity, new energy power plant equipment manufacturers and other new energy enterprises are turning to the global market for new sources of growth and profit.

The high-level opening-up policy supports new energy enterprises in "going global"

Following China’s official proposal of its "going global" strategy in 2000, the Chinese government has released a myriad of policies and measures to encourage enterprises to implement the strategy. Additionally, China’s pursuit of the "Belt and Road" initiative over the past decade has also broadened market opportunities while providing framework support for Chinese new energy enterprises. The support from the Chinese government not only lowers the threshold and risk of "going global" for new energy enterprises, but also promotes international technology exchange and cooperation.

China’s new energy industry is competitive in both technology and cost efficiency

After years of development, Chinese new energy enterprises now possess competitive technical strength in areas such as lithium batteries, photovoltaic power and wind power. At the same time, these enterprises have developed a deep understanding of downstream customers’ needs, to which they can better tailor their products. Taking the power battery industry as an example, Chinese enterprises are actively setting up strategic partnerships with foreign automotive manufacturers, exploiting their technical strengths to gain a share in overseas markets.

02

Why new energy enterprises are exploring the Southeast Asia market: key drivers and current trends [2]

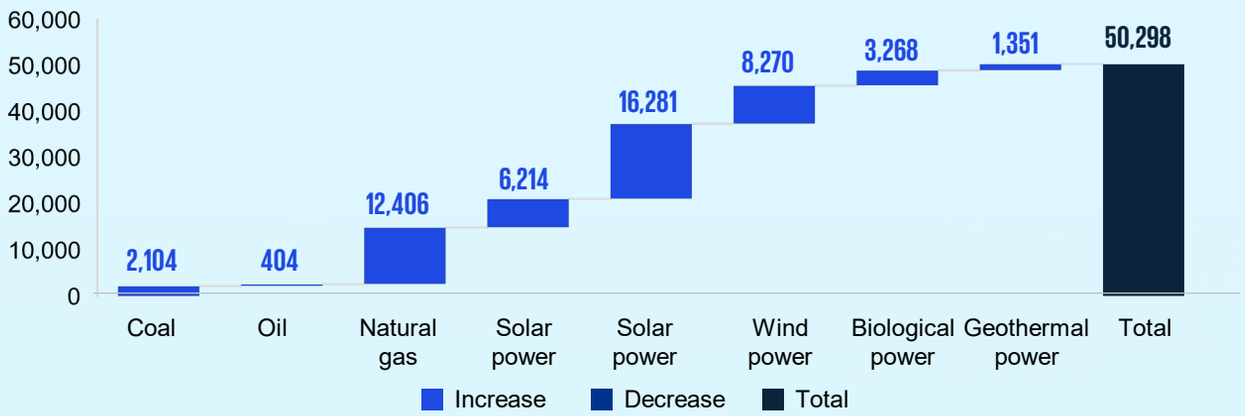
[2] In this report, Southeast Asian countries refers to eleven countries in Southeast Asia, and ASEAN countries refers to ten ASEAN countries excluding East Timor.

2.1 The Southeast Asia market has a strong appeal to Chinese new energy enterprises

2.1.1.Renewable energy development is becoming a necessity in ASEAN

It is estimated that the newly installed capacity of the Association of Southeast Asian Nations (ASEAN) will reach around 50,298MW between 2022-2025, nearly 50% of which will be newly installed solar and wind energy capacity. Respectively, these may reach 16,281MW and 8,270MW (see Figure 1). Looking ahead, in clean energy fields such as hydrogen and ammonia, ASEAN is also expected to play an important role in global hydrogen energy trading by virtue of its wind and solar resources and its pivotal geographical location in global shipping.

Figure 1 | ASEAN’s new installed capacity in 2022-2025 (unit : MW)

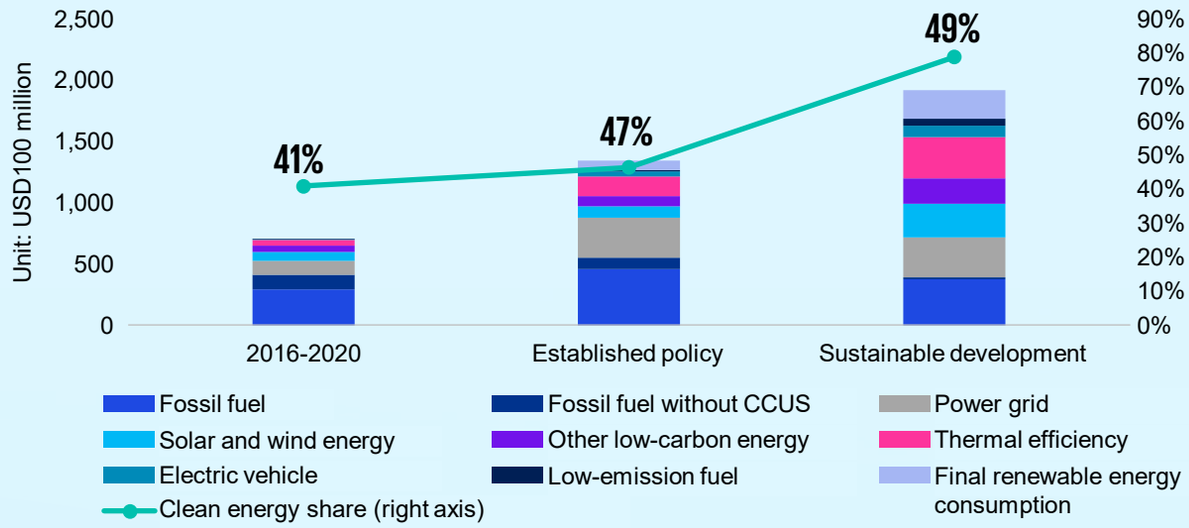


Source: ASEAN Centre for Energy; KPMG analysis

2.1.2. ASEAN countries are actively introducing plans and policies to support renewable energy development

All ASEAN countries have set their renewable energy development targets (the proportion of installed capacity or power generation) to above 30%, with the highest being about 70%. Brunei, Malaysia, and the Philippines are focusing on photovoltaic power generation, while Vietnam is promoting wind power. New energy construction in Southeast Asia will attract considerable investment from both home and abroad. According to the ASEAN Centre for Energy, the average annual energy investment in the region may exceed USD100 billion by 2030, with as much as 79% of investments being allocated to clean energy (see Figure 2).

Figure 2 | Forecast of average annual energy investments in Southeast Asia

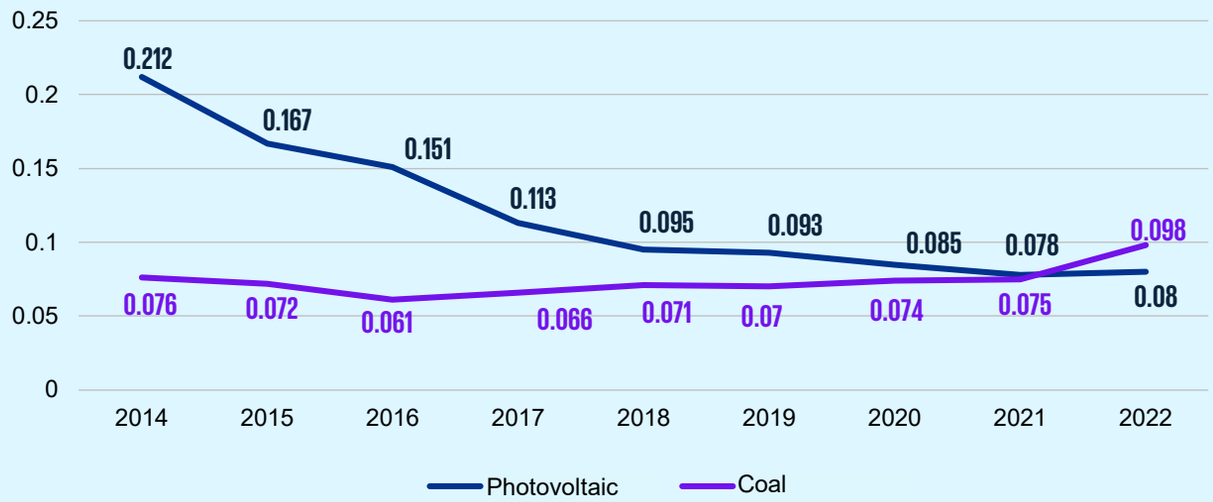


Source: IEA; KPMG analysis

2.1.3 Renewable energy has become the cheapest power source in most ASEAN countries

Around the world, the cost of renewable energy is constantly decreasing. In 2022, the levelised cost of electricity (LCOE) for photovoltaic power generation in Southeast Asia was USD0.08/kWh, while for coal power generation it was USD0.098/kWh (see Figure 3).

Figure 3 | Photovoltaic LCOE vs Coal LCOE in Southeast Asia in 2014-2022 (USD/kWh)

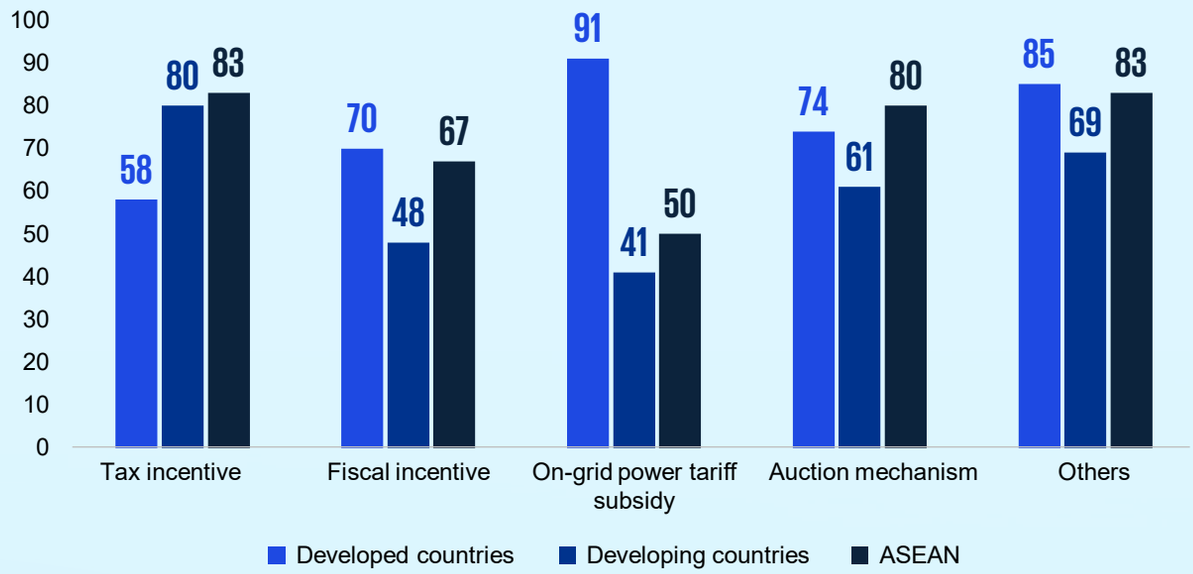


Source: BloombergNEF; KPMG analysis

2.1.4 A more favourable business environment is expected as some ASEAN countries continue to optimise their policy packages

In order to draw private investment, including foreign investment, into the field of new energy, some ASEAN countries have adopted more comprehensive policy measures than other developing countries. These include tax incentives, fiscal incentives, on-grid power tariff subsidies, and auction mechanisms, as well as income tax relief periods and land tenure policies for transnational investors. It is expected that ASEAN will become a hot spot for transnational investment (see Figure 4).

Figure 4 | Popularity of private investment promotion policies by policy type (percentage of countries adopting the policies)



Source: United Nations Conference on Trade and Development[3]; KPMG analysis

[3] The private investment promotion policies are based on the Climate Change Laws of the World database, and the other types of policy mainly include guarantee plans, business facilitation, etc.

2.1.5 Some ASEAN countries, including Vietnam and Indonesia, may be popular destinations for Chinese enterprises "going abroad"

At present, there are obvious differences in the composition of installed power generation capacity among ASEAN countries, as well as significant gaps in the proportion of renewable energy in overall power generation. For Cambodia, Myanmar, Laos and Vietnam, this share exceeds 35%, meeting the overall goal under the ASEAN Plan of Action for Energy Cooperation (APAEC) 2021-2025. However, Malaysia, the Philippines and Thailand are still a little below the target, while the share in Brunei, Singapore and Indonesia remains below 15% (see Table 1).

Table 1 Composition of installed power generation capacity of ASEAN countries in 2022

Country	Coal	Oil	Natural gas	Water power	Geothermal power	Solar power	Wind power	Biological power	Others	Total (MW)	Share (%)
Brunei	254	15	1,046	—	—	6	—	—	—	1,322	0.45%
Cambodia	1,025	643	—	1,332	—	437	—	29	—	3,465	51.87%
Indonesia	46,044	4,352	20,831	6,689	2,360	272	154	3,099	—	83,802	15.01%
Laos	1,878	—	—	9,040	—	56	—	43	—	11,017	82.95%
Malaysia	13,168	141	11,718	6,100	—	1,930	—	72	—	33,128	24.45%
Myanmar	138	181	3,529	3,262	—	181	—	—	—	7,291	47.23%
The Philippines	12,443	4,436	3,732	3,775	1,952	1,540	443	611	—	28,932	28.76%
Singapore	—	764	10,671	—	—	516	—	393	—	12,344	7.36%
Thailand	6,068	374	30,925	8,580	—	2,909	1,504	2,692	300	53,352	29.96%
Vietnam	25,312	166	7,152	22,492	—	16,364	3,987	193	—	75,665	56.88%
ASEAN	106,329	11,071	89,604	61,270	4,313	24,211	6,088	7,131	300	310,317	33.29%

Source: ASEAN Centre for Energy; KPMG analysis

2.2 Foreign trade: Export of photovoltaic, wind, hydrogen and ammonia power generation equipment to Southeast Asia is strong, but faces future uncertainty

2.2.1 Export of photovoltaic power generation equipment accounts for the largest share, but faces homogeneous competition and policy fluctuation challenges

Capitalising on a strong domestic R&D and supply chain system, Chinese photovoltaic enterprises are expanding their business presence in overseas markets, from Europe and the United States to ASEAN, the Middle East and other regions. Countries like Thailand, Vietnam, and Malaysia are showing great market potential. By 2023, China's photovoltaic module output had topped the world for 16 consecutive years, with the output of polysilicon, silicon wafers, and solar cells and components making up over 80% of the global total. For silicon wafers, China's exports to Southeast Asia increased at an average annual rate of 43.7% between 2019 and 2023. Thailand, Vietnam and Malaysia have been the top three importers in the region, and have also topped the global importer list for two consecutive years. For solar cells and components, China's exports to Southeast Asia grew at an annual rate of around 12.5% between 2019 and 2023 and reached RMB24.675 billion in 2023. Though the global share is relatively small, it has risen from 7.0% in 2021 to 8.1% in 2023. For inverters, China's exports to Southeast Asia have grown slowly, with an average annual rate of around 16.6% between 2019 and 2023, though the share of the country's total inverter exports has declined from 8.7% to 4.4%.

What should be noted is that China's overall photovoltaic product exports are increasing in quantity but declining in price. In its disclosure of the operating conditions of China's photovoltaic manufacturing industry in September to October 2023, the Ministry of Industry and Information Technology clearly pointed out that the risk of overcapacity for middle and low-end products requires close attention.[4] This means that in Southeast Asia, which is becoming an important market for China's photovoltaic products, enterprises with a strong competitiveness in technology and product differentiation are more likely to gain in market share.

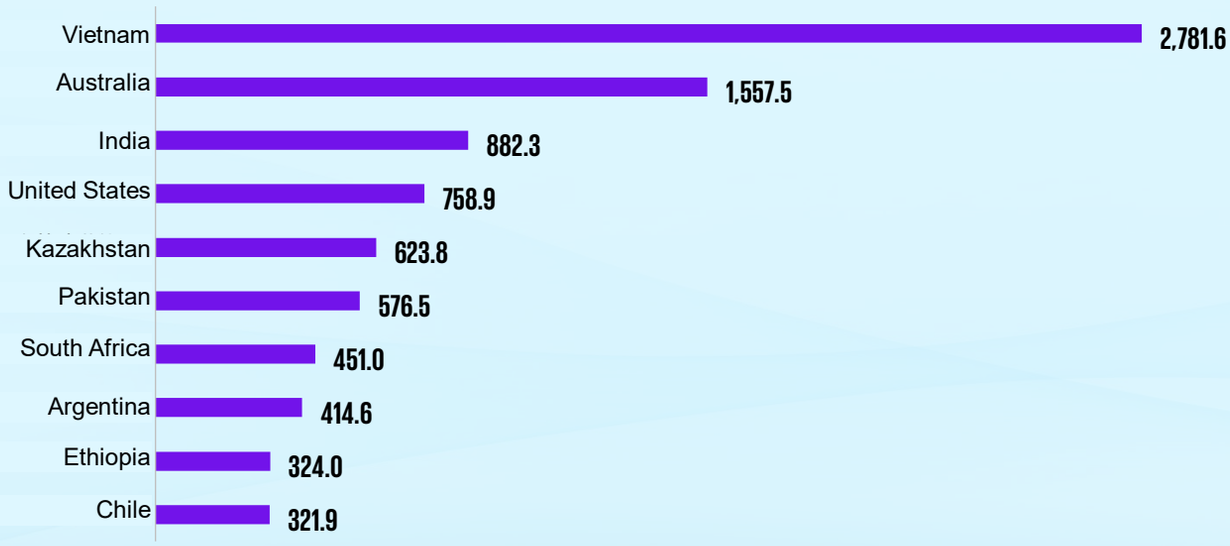
[4] Operating conditions of China's photovoltaic manufacturing industry in September to October 2023 (miit.gov.cn), Ministry of Industry and Information Technology, 12 December 2023, https://wap.miit.gov.cn/gxsj/tjfx/dzxx/art/2023/art_3525982a17314cc6a42a0dc3e0de1fa2.html

2.2.2 The export of wind power generation equipment (installed capacity) is developing rapidly, with offshore market demand expected to surge

According to statistics from the Chinese Wind Energy Association (CWEA), by the end of 2022, China had exported a total of 4,224 wind turbines with a capacity of 11,929MW to 49 countries on five continents, of which Vietnam was the top importer contributing about 23.3% of the total (see Figure 5). Over the past five years, except for 2021, China's export of wind turbines to Southeast Asia was relatively small, with more than 98% being delivered to Vietnam. Exports to Thailand, the Philippines, Malaysia and other countries in the region ranged from merely RMB100,000 up to RMB1 million.

Southeast Asia has a wealth of offshore wind energy resources yet to be exploited on a large scale. According to the ASEAN Offshore Wind Power Development Roadmap, jointly formulated and released by the China Renewable Energy Engineering Institute and the ASEAN Centre for Energy, ASEAN's offshore wind power installed capacity was 0.87GW by the end of 2022. Offshore wind power has a promising future as power consumption continues to rise in Southeast Asia, where a dense population with a huge power demand resides in coastal areas.

Figure 5 | Top 10 importers of Chinese wind turbines by capacity (unit: MW, as of the end of 2022)

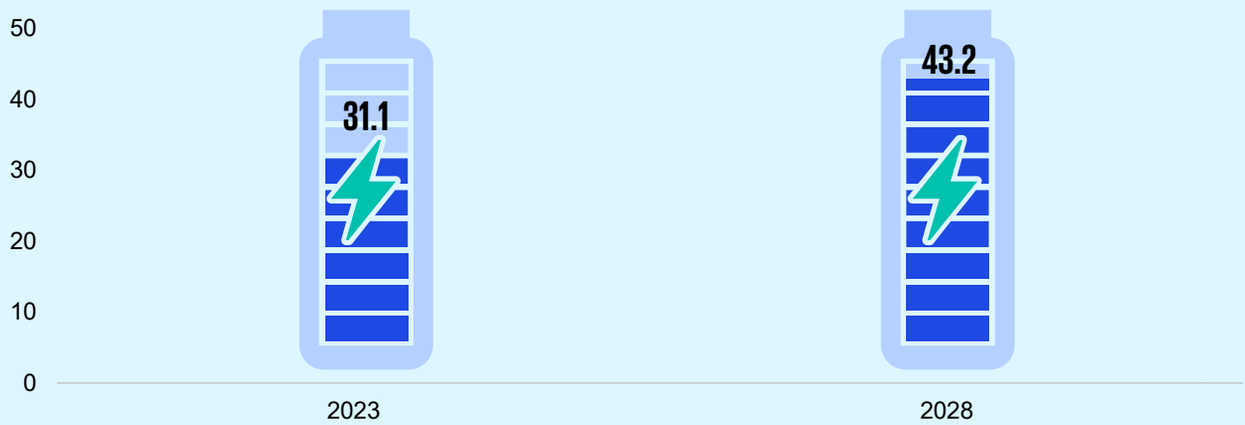


Source: CWEA; KPMG analysis

2.2.3 Export of energy storage equipment is still in its early stages

The energy storage market in Southeast Asia is still at an early stage of development. According to public data[5], only 2% of new energy storage projects that were put into operation in 2022 were located in Southeast Asia. The major energy storage markets in the region include Malaysia, Singapore, Vietnam, the Philippines, and Indonesia. According to Mordor Intelligence, the energy storage market in Southeast Asia is expected to grow from USD3.11 billion to USD4.32 billion between 2023 and 2028, with a five-year compound annual growth rate of 6.8% (see Figure 6).

Figure 6 | Estimation of ASEAN energy storage market size (unit: USD100 million)

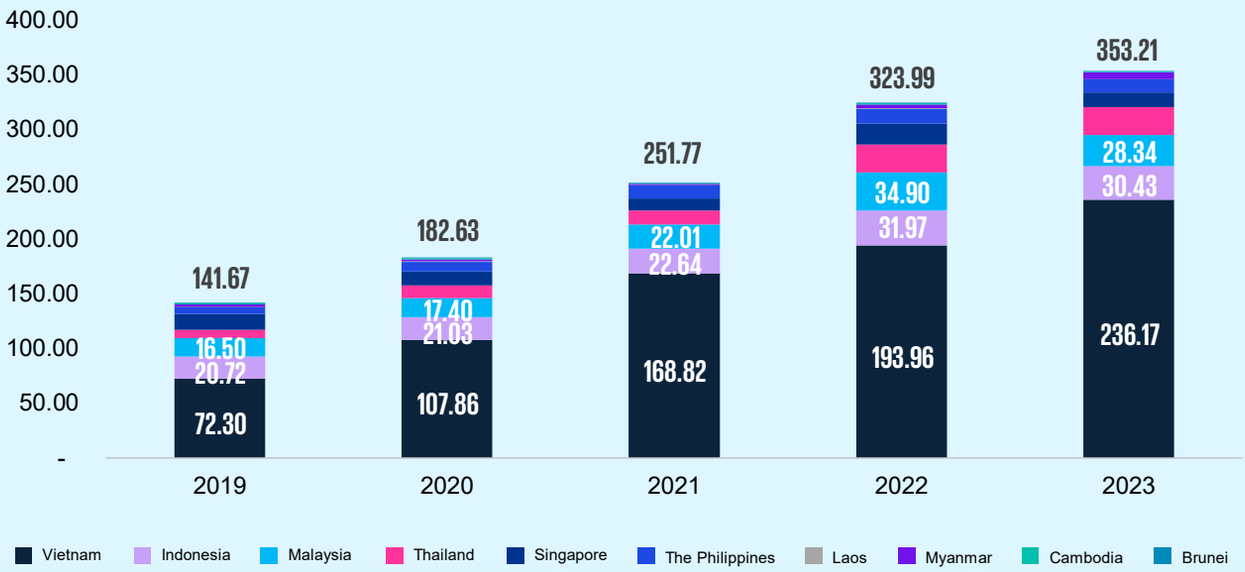


Source: Mordor Intelligence; KPMG analysis

5 In-depth analysis of household energy storage market demand, ESCN, 20 October 2023, https://www.escn.com.cn/20231020/69c31de744f24003bdbd3bba84551571/c.html

From 2019 to 2023, China's battery exports to Southeast Asia increased at an average annual growth rate of 25.7% to RMB35.321 billion. Vietnam was the top importer, making up more than 50% of the total. It was also the fifth largest importer of Chinese battery products in 2022 and 2023.

Figure 7 | China's battery exports to Southeast Asia in 2019-2023 (unit: RMB100 million)



2.2.4 Hydrogen and ammonia export opportunities are on the rise

Southeast Asia boasts rich and diverse local resources for hydrogen and ammonia energy development, which can be used to produce and export blue hydrogen and green hydrogen. According to the Hydrogen in ASEAN: Economic Prospects, Development, and Applications released by the ASEAN Centre for Energy, ASEAN member countries with fossil fuel resources and large-scale production infrastructure will begin to produce and export grey hydrogen and continue to expand their hydrogen energy infrastructure between 2020 and 2025. From 2026 to 2030, ASEAN member countries will leverage carbon capture, utilisation, and storage technologies to shift to blue hydrogen production and export based on their grey hydrogen production capacities and infrastructure.[6]

After 2030, when the LCOE of renewable energy has been significantly reduced and renewable energy power generation has reached a high proportion across ASEAN countries, electrolytic hydrogen production will be used to store intermittent renewable energy and provide auxiliary grid services, such as balancing loads and generating power at peak hours. By this time, green hydrogen is expected to have become the major form of hydrogen for energy.

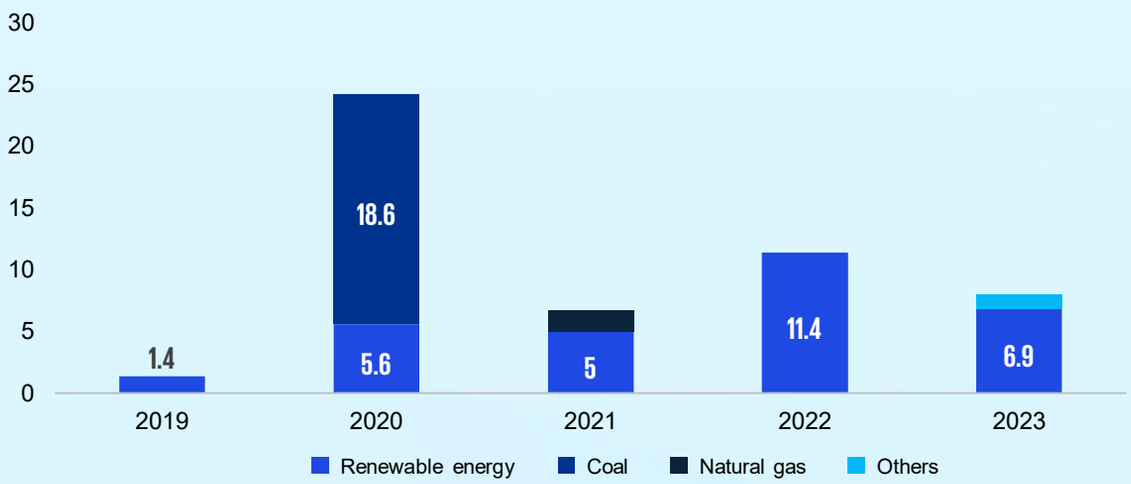
[6] Hydrogen in ASEAN: Economic Prospects, Development, and Applications, ASEAN Centre for Energy, September 2021

At present, the hydrogen and ammonia industries in Southeast Asia are still weak, and need to look outwards for hydrogen production equipment as well as production capacity. Some midstream and downstream hydrogen energy equipment enterprises in China have started exporting hydrogen energy related products to Southeast Asia. For example, Feichi Technology and CRRC Zhuzhou have provided hydrogen buses and trains and other products for Malaysia's hydrogen-powered transport demonstration project.[7]

2.3 Greenfield investment: Chinese enterprises are stepping up investments in Southeast Asia for global product distribution

ASEAN is one of the main destinations for China's overseas energy investments and received a total of USD5.17 billion energy-related greenfield investments between 2019 and 2023, including USD3.03 billion for renewable energy (see Figure 8).

Figure 8 | Energy-related greenfield investments by Chinese enterprises in Southeast Asia between 2019-2023 (unit: USD100 million)

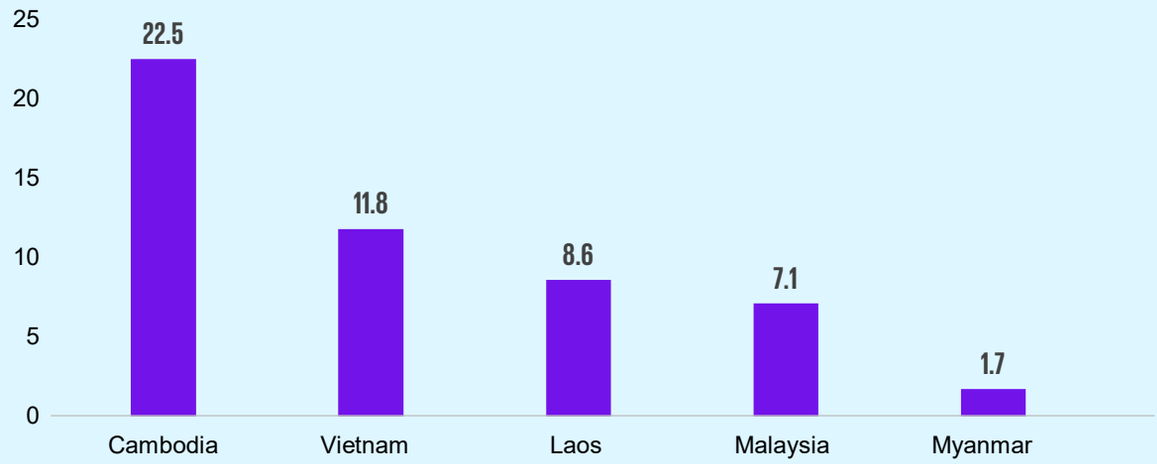


Source: The American Enterprise Institute; The Heritage Foundation; KPMG analysis

Country-wise, Cambodia, Vietnam and Laos rank as the top three in terms of the aggregate amount of greenfield investments from Chinese enterprises. In addition, according to estimates by the Global Development Policy Centre of Boston University, installed capacities of China-invested power stations in Vietnam, Indonesia, and Cambodia will reach 10.9GW, 17.7GW and 1.7GW, respectively, by 2033 (see Figure 9).

[7] Green development and hydrogen energy actions of the "Belt and Road" countries, OFweek, 20 October 2023, https://m.ofweek.com/hydrogen/2023-10/ART-180826-8420-30613919.html

Figure 9 | Total energy-related greenfield investments by Chinese enterprises in Southeast Asia countries between 2019-2023 (unit: USD100 million)



Source: The American Enterprise Institute; The Heritage Foundation; KPMG analysis

2.3.1. Photovoltaic enterprises are using Southeast Asia as a “springboard” to swiftly establish a global industrial chain

As a consequence of the two rounds of “anti-dumping and anti-subsidy” investigations by the United States against China, photovoltaic products directly exported to the United States from China are subject to anti-dumping and anti-subsidy tariffs as well as Section 201 and 301 tariffs. At the same time, in order to address stiff domestic power and oil prices, the U.S. government issued five determinations in early June 2022 under the Defence Production Act to permit up to 24 months of duty-free access to solar cells and modules from Cambodia, Malaysia, Thailand, and Vietnam, aiming to accelerate the development of clean energy technologies and power grid facilities within the country.[8] These have all pushed more and more Chinese photovoltaic enterprises to set up plants and production capacity in Southeast Asia and sell finished products to the United States from there, so as to use Southeast Asia as a "springboard" to reduce tariff costs (see Table 2).

[8] Biden declares an energy emergency in the United State and China accelerates the construction of its energy system, ifeng, 8 June 2022, https://finance.ifeng.com/c/8Gfih57VfGg

Table 2 **Production capacity establishment by Chinese photovoltaic enterprises in Southeast Asia in 2023 (partial statistics)**

Location	Enterprise	Date	Investment (USD)	Description
Vietnam	First Applied Material Co., Ltd.	2023-10-28	27,700,000	A project with an annual production capacity of 30 million sqm backsheet
	Crown Advanced Material Co., Ltd.	2023-8-1	20,000,000	Further invested in its subsidiary for producing solar cell encapsulation film
	Boway Group	2023-8-21	350,000,000	Built a solar equipment plant for producing photovoltaic cells and modules and advanced alloy strips
	JA Solar Technology Co., Ltd.	2023-8-31	2,715,000,000	Invested in a high efficiency battery project with an annual production capacity of 5GW
	Hongrida Technology Co., Ltd.	2023-9-12	34,000,000	Invested in a production base for photovoltaic modules, junction boxes and consumer electronics connectors
	Huitian New Materials Co., Ltd.	2023-8-15	70,900,000	Invested in a project with an annual production capacity of 26 million sqm backsheet
Indonesia	China Lesso Group Holdings Limited	2023-9-19	Not disclosed	Put into production its 1.2GW photovoltaic module production line
	Trina Solar Co., Ltd.	2023-10-17	Not disclosed	Built its first photovoltaic cell and module production base
	Flat Glass Group Co., Ltd.	2023-11-1	290,000,000	Invested in two projects with a daily melting capacity of 1,600 tonne photovoltaic module cover glass
Malaysia	LONGi Green Energy Technology Co., Ltd.	2023-10-17	2,800,000,000	Built 8.8GW of production capacity (phase I: 2.8GW; phase II: 6GW), and put phase I into production
	Jinjing (Group) Co., Ltd.	2023-5-18	Not disclosed	Started operations of its 600t/d thin-film photovoltaic module glass production line (phase II)
Thailand	First Applied Material Co., Ltd.	2023-10-28	159,000,000	Invested in a project with an annual production capacity of 720 million sqm of high-efficiency battery encapsulation film
Cambodia	SolarSpace Technology Co., Ltd.	2023-3-1	Not disclosed	Produced the first 1.2GW high-efficiency solar module

Source: bjx.com.cn; KPMG analysis

It is worth noting that the US duty-free exemptions on photovoltaic products from Cambodia, Malaysia, Thailand and Vietnam will end by June 2024 and the United States is taking measures to promote the return of the manufacturing industry to safeguard its local photovoltaic enterprises. This, to some extent, will attract Chinese enterprises to set up plants there.

2.3.2. Wind power enterprises are actively driving project implementation

While exploring the Southeast Asia market for "going abroad”, Chinese wind turbine manufacturers are not only exporting wind turbines, but are also joining their efforts with wind power project development enterprises to directly bid for wind power development projects in Southeast Asia, shifting their business model from “engineering, procurement, and construction” (EPC) to “build, operate and transfer” (BOT). According to partial statistics, Chinese wind power enterprises implemented 23 projects in Vietnam between 2020 and October 2023, setting up a total installed capacity of about 4.1GW. They also constructed a total installed capacity of about 2.4GW through projects in Laos and the Philippines, with the 1,000MW Sekong wind power project in Laos being the biggest.

2.3.3. Energy storage enterprises are building plants in Southeast Asia

The construction of energy storage projects is closely tied to power grid standards and power consumption habits, requiring significant customisation, particularly in overseas power distribution and storage markets, as well as in industrial and commercial energy storage. As a result, energy storage enterprises going global often need to set up local production facilities based on a deep understanding of the local power environment, available resources, industrial policies, and other factors. In recent years, an increasing number of Chinese enterprises have been establishing plants in Southeast Asia.

2.3.4. Hydrogen (ammonia) energy enterprises are carrying out diversified investment and cooperation in Southeast Asia

Over the past few years, Chinese hydrogen energy enterprises have proactively adopted strategies to diversify investment and cooperation in Southeast Asia, such as investing in construction projects and engaging in development projects, effectively driving green development in the region leveraging their technological advantages, industrial chain integration capabilities, and expertise in planning and construction. For example, GUOFUHEE, Evvo Labs and Xindongxin Corporate Management Company signed a strategic cooperation framework on hydrogen energy projects in Singapore. This agreement involves creating a joint venture to establish a foothold in Singapore's hydrogen energy market, and then to expand into projects in Malaysia, Vietnam, the Philippines, Indonesia and other regions.[9]

[9] GUOFUHEE signs a contract in Singapore to jointly drive development of the hydrogen energy market in Southeast Asia, h2.in-en.com, 7 August 2023, https://h2.in-en.com/html/h2-2427381.shtml

2.4 Overseas M&A: Limited engagement by Chinese new energy enterprises

In addition to making greenfield investments, Chinese new energy enterprises can also pursue the Southeast Asia market through mergers and acquisitions (M&A). According to partial statistics, Chinese photovoltaic and energy storage enterprises concluded only eight M&A deals in the Southeast Asia market between 2019 and 2023 (see Table 3), according to which Singapore and Indonesia were the most popular investment destinations.

Table 3 M&A by Chinese new energy enterprises in Southeast Asia in 2019-2023 (partial statistics)

Date	Acquirer	Target	Country of target	Amount (USD0'000)	Business line
2019-11-12	TCL Zhonghuan Renewable Energy Technology Co., Ltd.	Maxeon Solar Technologies Ltd. (28.85% stake)	Singapore	2,906.9	Manufacture and sales of solar panels
2023-07-13	CNGR Advanced Material Co., Ltd.	PT Nadesico Nickel Industry (67% stake)	Indonesia	1,983.1	Energy storage
2022-07-07	CNGR Advanced Material Co., Ltd.	Debonair Holdings Private Limited (100% stake)	Singapore	1,870.2	Energy storage
2021-04-14	TCL Zhonghuan Renewable Energy Technology Co., Ltd.	Maxeon Solar Technologies Ltd. (16.96% stake)	Singapore	1,137.3	Manufacture and sales of solar panels
2019-02-02	Sichuan Xidian Electric Power Design Co., Ltd.	Iraya Energy Corp (40% stake)	The Philippines	400.0	Hydropower generation
2022-12-14	Beijing Energy International Holding Co., Ltd.	Cuu An Wind Power Joint Stock Company (100% stake)	Vietnam	389.7	Wind power generation
2023-10-20	Wintime Energy Group Co., Ltd.	Vnergy Pte. Ltd. (70% stake)	Singapore	71.3	Energy storage
2019-05-09	GS-Solar Co., Ltd.	Panasonic Energy Malaysia Sdn. Bhd.; Panasonic Corporation (Photovoltaic research and development business) (90% stake)	Malaysia	Not disclosed	Photovoltaic R&D

Source: CV source; Mergermarket; Refinitiv; KPMG analysis

In conclusion, China's photovoltaic power, wind power and other new energy product exports to Southeast Asia have been increasing. In the future, as global demand for clean energy continues to rise and China's new energy industry continues to gain in competitiveness, it is expected that China will export a greater volume of new energy products to Southeast Asia, although it needs also to address the risks arising from trade policy uncertainty. Greenfield investments by Chinese enterprises in Southeast Asia not only help to establish close partnerships and complete industrial chains, but also enable them to avoid potential trade frictions and other trade protections. In the long run, greenfield investment may become the primary focus for Chinese new energy enterprises looking for expansion in Southeast Asia. M&A in the new energy field is sluggish, but still plays an important role in promoting market development and resource integration. When going global, Chinese new energy enterprises should employ various strategies to cater to the needs and dynamics of the Southeast Asian market.

03

Challenges facing new energy enterprises in the Southeast Asia market

3.1 Policy uncertainty during Southeast Asia countries’ energy transition will potentially undermine investors’ expectations

Although Southeast Asia countries are keen to shift to new energy, they currently rely heavily on fossil-fuel energy such as coal power, with many of their coal powerplants having been in operation for only a short time. Shifting to new energy will require safely decommissioning and reengineering these coal plants and managing the industries linked to them. For example, Vietnam aimed to issue its Eighth National Power Development Plan in 2021, but postponed it to May 2023 due to the rising cost of coal power and other factors. Highlighting the complexities and uncertainties in policy-making.

3.2 Trade policies are changing and market access is subject to barriers

On the one hand, there exists trade policy uncertainty, such as tariff policies. The two-year duty-free period in the United States for photovoltaic products from Southeast Asia is about to expire. Subsequent US trade policy concerning photovoltaic products from Southeast Asia still hangs in the balance. Meanwhile, as the local photovoltaic industrial chain in the United States matures and becomes more competitive, Chinese photovoltaic enterprises looking to carry out production in Southeast Asia and export from there to the United States still face trade policy uncertainty. On the other hand, these enterprises need to tackle market access barriers. New energy enterprises entering the Southeast Asia market need to obtain permits from local governments, such as investment permits, environmental permits, and power grid access permits. This process may depend on the complexity of local policies, regulations, approval formalities, attitudes towards foreign investors, and other factors, all of which can influence foreign investment decisions.

3.3 The new energy industry is subject to supply chain stability risks

Although China has a relatively mature new energy industrial chain, its new energy enterprises still face risks when expanding abroad. These include raw material price fluctuations, differences in technical standards, and supply chain disruptions. The new energy industry relies heavily on critical raw materials such as lithium and cobalt, and fluctuations in the prices of these raw materials have a direct impact on production costs. Supply chain interruptions are also a concern to the new energy industrial chain "going abroad". Emergencies like the COVID-19 pandemic may lead to the interruption of the global supply chain and hinder the manufacturing and delivery of new energy equipment.

3.4 Tech start-ups are struggling with financing difficulties

The risk assessment and credit rating system of financial institutions for tech start-ups have yet to reach a high level of sophistication, and, therefore, financial institutions are cautious about funding the latter. Meanwhile, most Southeast Asia countries lack a mature financial market, only making it even more difficult for tech start-ups to seek financing there.

04

Solutions for new energy enterprises

4.1 Becoming familiar with local policies and regulations and actively engaging in policy discussion and formulation

The policy risks confronting Chinese enterprises in Southeast Asia mainly stem from the political environment and policy instability. In order to address these risks, Chinese enterprises should pay close attention to the energy policy dynamics of their target countries, maintain close communication with local governments and industry associations, and establish and improve corresponding risk management systems.

4.2 Taking various measures to effectively reduce the impact of trade barriers

The new forms of trade protection can have large negative impacts, wide potential coverage, and limited measures for avoidance. Attention needs to be paid, and early warnings given, to avoid potential adverse effects by implementing market diversification strategies, improving the competitiveness of products and services, and comprehensively implementing localisation and forward-looking internationalisation strategies.

4.3 Improving supply chain resilience through supply chain diversification and localisation

New energy enterprises need to pursue supply chain diversification to reduce their dependence on a single supplier and localise supplies by leveraging the resource advantages of Southeast Asia. By establishing joint ventures, signing long-term supply agreements, and making strategic investments, they can ensure a stable supply of critical raw materials.

4.4 Broadening financing channels by diversifying sources of international capital

When facing financing challenges, new energy enterprises need to adopt diversified financing approaches, such as loans, debt financing, and equity financing, to ensure project funding and sustainable business development.

KPMG is committed to providing "lifecycle" services for overseas investment projects

	Major services	Job
Before investment	Developing an overseas investment strategy	Clarify the strategic objective of overseas investment, and preliminarily determine the target location and industry
	Analysing the investment environment	Study the political, economic, legal and tax systems, industry dynamics, labour market condition, major risks, and other factors of the target location
	Developing a market entry strategy	Determine the investment approach (M&A, equity participation, greenfield construction, joint venture, cooperation, etc.) and develop a market entry strategy and action plan
	Selecting a project	Collect project information, preliminarily determine and evaluate the projects aligned with the investment strategy, and select the project to be invested in
During investment	Carrying out preliminary communication	Conduct preliminary communication on the investment intention, and preliminarily determine whether the project is feasible
	Conducting due diligence	Carry out an all-round due diligence survey on the selected project
	Determining the price range	Perform a comprehensive financial calculation on the project, conduct sensitivity analysis on macro factors, policy changes, key financial indicators and other factors, and determine the price range for the transaction
	Developing a financing plan	Clarify the financing needs, expand financing channels, design a financing structure, and formulate a fund arrangement plan
	Designing a tax structure	Conduct preliminary communication on the investment intention, and preliminarily determine whether the project is feasible
	Creating a transaction execution strategy	Create a transaction execution strategy based on comprehensive consideration of the due diligence findings, valuation analysis results, financing need and other factors; clarify the exit mechanism
	Conducting business negotiations	Specify the key negotiation focuses, formulate a negotiation strategy and principles, and design transaction protection clauses; reach an agreement on project operation control authority, and clarify matters related to corporate governance
	Obtaining approvals from competent authorities	Perform domestic approval processes (with the National Development and Reform Commission, the Ministry of Commerce of the People’s Republic of China, the State Administration of Foreign Exchange, etc.), as well as overseas approval processes
	Signing and delivering	Determine the date of acquisition, formulate the strategic objective of integration, and design the integration roadmap; design the business and operation models and the organisational structure; identify key risks and formulate a risk prevention plan
After investment	Implementing integration after the transaction	Implement the integration plan and establish a communication mechanism; complete integration tasks within 100 days and establish a corporate governance and control system; carry out change management; perform assessment for purchase price allocation
	Establishing a risk management system	Formulate policies and processes for overseas risk management and establish an overseas risk monitoring system, including risk tracking of and internal audits for overseas investment projects
	Setting up an ESG management system and key indicators	Tailor ESG management objectives, strategies, management systems and key indicators according to industry characteristics and define the ESG management scope and approach to enhance core advantages
	Improve the overseas operation system	Design and optimise the management and control model and organisational structure of the parent company and overseas holding company, clarify the functions and authorisation system for business activities, and explore synergy between domestic and overseas businesses
	Pursuing digitalisation	Develop a strategic digital transformation roadmap, an overall digital architecture plan, an IT governance system plan, and a digitalisation plan, and implement digitalisation as planned
	Improving operating efficiency and carrying out tax and audit-related work	Formulate financial management objectives and work plans, establish and improve an overseas financial control system; pursue tax compliance, tax optimisation, tax dispute resolution, and transfer pricing; handle customs queries and compliance management; analyse standard differences and create standard transition plans; submit financial statements regularly; conduct special inspections or audits on overseas businesses; audit asset securitisation
	Performing human resources management	Manage human resources for overseas businesses, including adjusting the organisational structure, designing positions, assessing capabilities, appraising performance, conducting compensation and welfare-related tasks, file for individual income tax, and create tax saving plans
	Exiting	Formulate and implement a project exit strategy, which may include IPO, bulk sale, asset or equity transfer, and internal restructuring

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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 client is located.

KPMG firms operate in 143 countries and territories with more than 273,000 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 license 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, as of 1 August 2012. Additionally, the Hong Kong firm can trace its origins to 1945. This 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 for multidisciplinary services (including audit, tax and advisory) by some of China's most prestigious companies.

About KPMG's Global China Practice

Headquartered in Beijing, KPMG's Global China Practice (GCP) has set up professional teams in nearly 60 top investment regions around the world, including traditional investment destinations such as Europe, the United States and Australia, as well as emerging attractive investment locations in Southeast Asia, Latin America, the Middle East and other "Belt and Road" areas. We are committed to assisting Chinese enterprises in making investments abroad and foreign enterprises in investing and expanding business in China.

We have worked on many of China's landmark outbound investment transactions. We are also passionate about introducing potential Chinese business partners to foreign enterprises looking to explore the Chinese market. As China enters a new stage of development during the 14th Five-Year Plan period, foreign-funded enterprises in China should consider what contribution they can make to help the country achieve high-quality economic and social development while pursuing business success. We will help these enterprises align their business strategies to emerging opportunities and challenges.

Through the Global China Practice, KPMG stands shoulder to shoulder with Chinese and foreign companies alike as they seek to understand complex and dynamic business environments, shape crucial business partnerships, and build platforms to achieve long-term and sustainable market positions.

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