

Chinese Energy Investments in Southeast Asia

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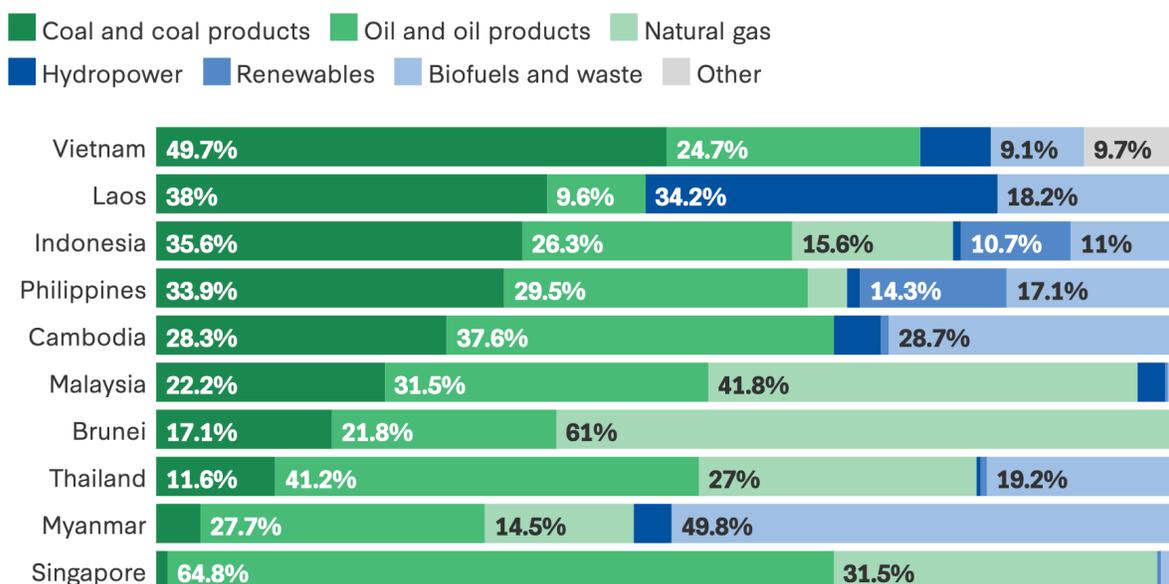
Introduction

Southeast Asian nations face a daunting challenge in trying to meet the energy needs of booming populations and rapid economic growth while keeping to ambitious carbon neutrality pledges made at the most recent UN climate summits. **Previous reports** from the CSIS Southeast Asia Program on national energy plans in the region found that many were likely unrealistic even with pledged support from the United States. As a result, major economies in Southeast Asia were expected to both increase dependency on coal usage and seek increased funding and technical assistance from Beijing, which would undermine both their own goals and those of Washington. With the Trump administration revoking Biden-era programs to support energy transitions in the region, including withdrawing from the Just Energy Transition Partnerships in both Indonesia and Vietnam, there is a widening funding gap that China is poised to fill.

To assess how China's investments have impacted Southeast Asia's electricity generation and downstream and midstream energy industries, as well as identify the opportunities and challenges this environment creates for Southeast Asia and the Trump administration's strategic agenda in the region, the Southeast Asia Program engaged in research and conversations with former U.S. government officials and relevant subject matter experts. These conversations informed the findings and recommendations in this report, but all opinions presented are solely those of the authors. This report encompasses all 11 member countries of the Association of Southeast Asian Nations (ASEAN), including the newly acceded Timor-Leste.

To better understand the broader context within which China has made investments in each country's energy landscape, data from the International Energy Agency is used where available to identify the energy mix of each ASEAN member.

Figure 1: Southeast Asian Total Energy Supply in 2023 by Percent



Source: International Energy Agency.

Brunei

Reflecting the country's fossil fuel-rich status, Brunei's **total energy supply** in 2023 consisted of 61 percent natural gas, 21.8 percent oil and oil products, 17.1 percent coal and coal products, and a scant 0.01 percent renewable energy. The sultanate has set forth plans to increase the share of renewable energy to **at least 30 percent** of total installed capacity mix by 2035, to be achieved largely through the development of solar power projects.

China is a major investor in Brunei's petrochemical industry, which is fueled by the sultanate's considerable offshore hydrocarbon reserves. Flagship projects include the Pulau Muara Besar refinery and petrochemical complex, with an **annual production capacity** of 175,000 barrels per day. The complex, which began operations in 2019, was developed as a **joint venture** between China's Zhejiang Hengyi Group and Damai Holdings, a subsidiary of the Brunei government. As part of the venture, the Brunei Shell Petroleum company **supplies Hengyi Industries with crude oil**, with Hengyi in turn supplying the Brunei Shell Marketing Company (BSM) with refined fuel products for distribution within the Brunei market. Refined products distributed through this arrangement include **gasoline, diesel, and jet fuel**, with the first delivery of goods to BSM taking place in May 2020. Phase two of the project, **announced in 2020 and inked in 2023**, will see the complex add additional capacity of 280,000 barrels of crude oil refinery a day, as well as new capacities in producing a broader range of refined petroleum products. Already, the project has had a considerable impact on the Bruneian economy. Phase one of the project **contributed an estimated 1 percent** to the country's GDP growth and created approximately 3,210 additional jobs, while phase two is expected to add **a further 2,000 jobs**. And in 2023, Hengyi Industries executives announced that the project now accounted for approximately **9.4 percent** of Brunei's total GDP and contributed approximately 55 percent of the country's total export volume in 2022.

China's investment in the Pulau Muara Besar complex extends beyond the plant itself. The China Harbour Engineering Company in 2015 was awarded the **\$204 million** Pulau Muara Besar Bridge, Road, and Utilities project, linking what would eventually become the refinery and petrochemical complex to mainland Brunei. Moreover, in 2024, Zhejiang Hengyi Group announced a **new initiative** with Brunei to install solar panels at the Pulau Muara Besar plant, with an eventual target capacity of 476 megawatt peak (MWp).

Cambodia

In 2023, Cambodia's **total energy supply** consisted of oil and oil products at 37.6 percent, biofuels and waste at 28.7 percent, coal and coal products at 28.3 percent, hydropower at 4.6 percent, and renewables at just 0.8 percent. While a modest part of its total energy supply, hydropower **provided** 34.5 percent of Cambodia's electricity. Cambodia has embraced hydropower dams to help **reduce** its high electricity costs. In 2023, electricity cost around \$0.25 per kWh in Cambodia compared to \$0.14 per kWh in neighboring Thailand and just \$0.07-\$0.08 per kWh in Vietnam. But with hydropower dams increasing **biodiversity risks**, Cambodia is slowly diversifying its electricity generation. The kingdom's coal usage is still rising and is expected to peak in 2030. In accordance with its **Cambodia Power Development Master Plan 2022-2040**, Cambodia is trying to diversify its electricity generation by 2040, aiming for 30 percent solar power, 28 percent hydropower, and 21 percent coal.

Chinese energy investments have played a **critical** role in Cambodia's energy transition due to the Belt and Road Initiative, particularly in Cambodia's coal, oil, solar, and hydropower sectors. Cambodia's **largest** power generation project, a 2×350 MW coal power plant in Sihanoukville, is a subsidiary of the Huadian Overseas Investment Company. The plant has both **provided** stable and reliable electricity to the national grid and offers opportunities to train locals in technical skills. Chinese firm Guanzun Energy Investment Co Ltd is planning to **invest** \$3.5 billion into constructing Cambodia's first oil refinery. The refinery will process 10 million tons of oil per year and is heavily advertised as a job creation engine. In terms of solar, the Shanxi Institute, a subsidiary of China Energy Engineering Corporation, **won** an engineering, procurement, and construction bid for a 250 MW solar power project worth \$233.1 million. The project, set to be completed in 2026, is intended to help Cambodia reach its goal of 1 GW of operating capacity by 2030. In July 2025, Chinese firm Dongbaishan Holding Group **agreed** to invest \$500 million in a large-scale solar energy facility in Kampong Speu province, but has not provided substantive details on the project.

Most significantly, Chinese investments in hydropower have played a critical role in Cambodia's energy security. Cambodia currently has at least six **active** hydropower dams funded by China. Cambodia's **largest** hydropower project is backed by the China Hwaneng Group. The project, the Lower Sesan 2 hydropower station, has a capacity of 400 MW and cost approximately \$781 million. In 2020, the station generated 1,698 GWh, almost 20 percent of Cambodia's total electricity. Chinese enterprises continue to invest in Cambodia's hydropower, with Sinomach **currently** building a cascade station of its Tatay Hydropower Station, dubbed the Upper Tatay Hydropower Station. This station has a designed capacity of 150 MW and is set to be completed in 2027. Combined with the original Tatay Station, the Upper Tatay Station will help with flood control.

In 2020, Cambodia **imported** small-scale liquefied natural gas (LNG) from China. Cambodian Natural Gas Co Ltd (CNGC) worked with Chinese company CNOOC Gas Power Group Co Ltd to **distribute** LNG within Cambodia's market. The first part of the plan focused on **distributing** LNG to hotels and restaurants in both Phnom Penh and Preah Sihanouk province, with broader goals to expand to 25 provincial cities. CNOOC also expressed interest in **investing** in CNGC's LNG import terminal project in 2021. The 15-year multiphase project aims to reduce Cambodia's dependence on hydropower and coal. Yet as of 2025, CNGC has not confirmed if CNOOC has invested in the project.

Laos

In 2023, Laos's **total energy supply** consisted of coal and coal products at 38 percent, hydropower at 34.2 percent, biofuels and waste at 18.2 percent, and oil and oil products at 9.6 percent. While heavily reliant on hydropower, Laos is trying to diversify sources to improve its energy security. In its Sustainable Development Goal 7 roadmap power plan submitted to the United Nations, Laos **emphasized** that being reliant on hydropower makes the country more vulnerable during the dry seasons. To help diversify its energy mix, Laos has steadily increased its reliance on coal.

In 2020, State-operated Électricité du Laos (EDL) and the China Southern Power Grid Company (CSG) **signed** a 25-year concession agreement. The agreement gave CSG permission to build and manage Laos's power grid through a new company, Électricité du Laos Transmission Company Ltd (EDLT). While EDLT was developed by both EDL and CSG, the latter has a 90 percent stake in the company. The deal went through because EDL is heavily in debt and lacks funds to maintain the grid. The government of Laos clarified that EDLT would only control the high-voltage power line network, or power that exceeds 230 kilovolts, while EDL retains control of powerlines under 230 kilovolts. EDLT, however, **controls** connections to power grids in neighboring countries.

Similar to Cambodia, China has increased its energy investments in Laos following the development of the Belt and Road Initiative. Chinese firms particularly have invested in Laos's hydropower, solar, and oil refinery sectors, **providing** up to \$3.2 billion to Laos's energy sector from March 2018 to March 2023. The Power Construction Corp. of China (PowerChina), for instance, **invested** \$2.8 billion in one of Laos's largest power generation facilities, the Nam Ou hydroelectric plant. The plant consists of seven dams and has been operating since 2021, with a generation capacity of 1.27 gigawatts. But in 2025, PowerChina **sued** EDL for \$555 million in unpaid fees, highlighting EDL's debt.

In 2023, Laos began **importing** gasoline from China, instead of purchasing from Thailand, to combat its ongoing economic crisis. Due to high inflation rates, the Lao government claimed to not have the sufficient foreign currency reserves to purchase gasoline from Thailand, which only accepts Thai baht or U.S. dollars. Meanwhile, China accepts Lao kip or Chinese yuan, and allows the Lao government to take out **high interest loans** to pay for gasoline imports. Laos's fuel imports from China began following the signing of a memorandum of understanding (MOU) between the Vientiane Petroleum State Enterprise, SINOPEC Hong Kong, and SINOLAO. The agreement allows Laos to import fuel from China for both wholesale and retail distribution. Further details on the imports, including scale, remain undisclosed.

In 2024, Laos **signed** a solar power agreement with state-owned China General Nuclear. The first phase of the agreement will build a 1000 MW solar plant in Oudomxay province, while the second phase will

build a 580 MW solar and wind plant in Luang Namtha province as well as another 420 MW solar plant in Oudomxay. The projects aim to improve electricity connectivity between northern Laos and China.

Lao Petroleum & Chemical Co. Ltd, a joint venture between Laos and China, **launched** the first phase of a 3-million-tons-per-year oil refinery project in 2020, which was supposed to begin **experimental fuel production** in late 2021. But to date, the Laos government has not given approval for the refinery to begin operations, despite **facing** nationwide diesel shortages. Once the project is approved, it could take another 10 years to complete.

In 2025, China Western Power Industrial **signed** an undisclosed renewable energy deal with Laos's Xekong Thermal Power Plant for \$1.45 billion. The deal, while lacking details, intends to build a 1,800 MW clean energy power project in Southern Laos.

Indonesia

As of 2023, Indonesia's **total energy supply** consisted of coal and coal products at 35.6 percent, oil and oil products at 26.3 percent, biofuels and waste at 15.6 percent, biofuels at 11 percent, renewables at 10.7 percent, and hydropower at 0.8 percent. While the country set ambitious energy transition goals in the context of its Just Energy Transition Plan (JET-P), the Rencana Umum Perencanaan Tenaga Listrik (RUPTL) plan launched in May 2025 **scaled back these targets**. For instance, the RUPTL targets 10.6 GW in power generation from solar and wind by 2030, falling short of the 24.3 GW target outlined in the JET-P Comprehensive Investment and Policy Plan. Moreover, the RUPTL instead calls for an increase in power generation from coal and gas between 2024 and 2034, with an additional 16.6 GW of new fossil fuel power over the next decade.

Across both Indonesia's energy transition efforts and its broader aims in extractive industries and mining, China remains a critically important partner. According to the American Enterprise Institute's China Global Investment Tracker, China invested at least **\$10.82 billion** in Indonesia's energy sector between 2005 and 2024, with a focus on oil and gas, mining, and green technologies, including solar power and electric vehicle batteries. Chinese state-owned enterprises have an extensive record of collaboration with their Indonesian counterparts, with recent years seeing joint agreements between **Sinopec and Pertamina**, the **China Energy Engineering Group and PLN**, and the **State Grid Corporation of China and PLN**, among others. China has also participated in pipeline projects across Indonesia: China Petroleum Pipeline Engineering Co., Ltd. (CPP) collaborated with Pertamina to **develop a 52-inch offshore crude oil pipeline**, a 320,000-ton single-point mooring system, a 52-inch onshore pipeline, and two large storage tanks in Balikpapan—with the offshore pipeline **being described by CPP** as the world's largest-diameter crude oil subsea pipeline.

China's efforts, however, have not been without controversy. Chinese-funded energy and mining projects face routine criticism for lax environmental and safety safeguards, with reports of some communities located nearby coal-fired power plants experiencing unusually high levels of **respiratory illness**. Notable incidents also include a **December 2023 explosion** at a Chinese-funded nickel plant that killed at least 13 workers. To be sure, Chinese-funded energy or mining projects **are not alone** in facing safety challenges or disasters in recent years. But they have become a **political lightning rod**, even while the Indonesian government **continues to court** Chinese financing.

Moreover, broader regional economic headwinds have at times impacted China's ability to invest in Indonesia's downstream and midstream energy industries. A consortium of Chinese petrochemical companies, including Tongkun Group and Xinfengming Group, announced in 2023 plans for an **\$8.6 billion petrochemical complex** as part of the Kalimantan Industrial Park Indonesia project, with an expected production capacity of 14.32 million metric tons of petrochemical products a year. By the next year, the investment was **scaled down to \$5.9 billion** and projected production capacity slashed to 10 million metric tons of petrochemical products a year, with the consortium attributing the decision to changes in the internal and external market environment. The development of the complex was further plagued by **allegations of illegal land seizure** and environmental damage in relation to the broader KIPI initiative—but by August 2025, Indonesian officials and the funding consortium **signed an MOU** affirming the project's investment commitments, with the complex estimated to eventually contribute up to \$9 billion annually to Indonesia's GDP.

Malaysia

As of 2023, **Malaysia's energy mix** consisted of natural gas at 41.8 percent, oil and oil products at 31.5 percent, coal and related products at 22.2 percent, hydropower at 2.6 percent, biofuels at 1.6 percent, and renewables at 0.3 percent. The country's **2023 National Energy Transition Roadmap** established a 2050 target of increasing natural gas usage to 56 percent of total energy supply and boosting renewables (including renewables for hydrogen) to 22 percent, while reducing oil and coal usage to 21 percent and 1 percent, respectively.

China plays a significant role in Malaysia's energy industry, with major investments in both power generation and energy-intensive industrial hubs. The latter includes the flagship Malaysia-China Kuantan Industrial Park (MCKIP), which was established in 2013 with a central focus on the steel and nonferrous metals industry, clean technology and renewable energy, and the petrochemical industry. The **MCKIP's development plans** tout further incoming investments focused on refining petrochemical products; the park additionally sits adjacent to the **Gebeng Integrated Petrochemical Complex**, itself a site for Chinese investment with China's Yihong New Energy Group announcing a \$700 million integrated oil refinery and petrochemical complex through its **Petroluxe Refinery** subsidiary in 2024.

Beyond China's role as an investor in the MCKIP and related projects, Chinese firms such as the China General Nuclear Power Corp (CGN) and PowerChina have supported Malaysia's energy transition by exporting advanced technology and financing renewable and gas projects. CGN, through its 2.24 GW gas-fired Edra Melaka Power Plant and other investments, now ranks as Malaysia's second-largest **independent power producer** with the firm's cumulative power supply to Malaysia exceeding 200 billion kWh as of 2025. Meanwhile, state-owned PowerChina has participated in range of cooperative agreements and investment projects spanning **gas power plants, hydropower, green hydrogen,** and **hotel and highway construction**. Malaysia also plays a critical role as a fuel supplier for China: In 2021, Petronas signed a 10-year agreement with CNOOC to **supply 2.2 million metric tons of LNG** per year. And with Malaysia's government under Prime Minister Anwar Ibrahim squarely focused on strengthening economic ties with Beijing, China will likely continue to play a critical role as an investor and partner. For instance, Chinese President Xi Jinping's April 2025 visit to Kuala Lumpur saw the two countries sign **more than 30 cooperative agreements**, including on green technology.

Myanmar

In 2023, Myanmar's **total energy supply** consisted of biofuels and waste at 49.8 percent, oil and oil products at 27.7 percent, natural gas at 14.5 percent, coal and coal products at 4.3 percent, hydropower at 3.6 percent, and renewables at less than 0.1 percent.

Chinese investments play a core role in Myanmar's energy security. In 2020, Chinese state-owned Hong Kong-listed VPower Group and China National Technical Import and Export Corporation **vowed** to invest in three power plant projects across Myanmar, with a total capacity of 900 MW and estimated value of \$800 million. The Chinese companies, however, **suspended** the projects following the Myanmar military coup in 2021. Some of the projects, totaling a capacity of 750MW, were **stopped** later that year due to the military junta being unable to finance the operation.

China's energy investments in Myanmar also strategically benefit China. The China-Myanmar oil and gas pipelines have been **online** since 2013, spanning 793 kilometers from Myanmar's Kyaukpyu city to China's Yunnan region. Constructed by China National Petroleum Corporation (CNPC), China's largest energy company, the pipelines cost an estimated \$2 billion. The pipelines continue to operate well below their maximum annual capacity of 12 billion cubic meters of natural gas and 22 million tons of oil.

Myanmar has only continued to **face** electricity shortages since the coup. In January 2025, the junta claimed that electricity generation had decreased by 1,009 MW, with electricity supply down to around 50 percent of its total production capacity. The electricity crisis continues to worsen, with junta leader Min Aung Hlaing **blaming** the outages on the suspension of the China-invested Myitsone dam. State Power Investment Corporation and Yunnan International Power Investment Co. Ltd had initially invested \$7.2 billion into the dam, which was set to have a 6,000 MW capacity. Yet the project was shelved in 2011 by then-President Thein Sein due to public concerns over the dam's environmental ramifications.

The junta is still seeking Chinese investments to improve Myanmar's energy security. In 2021, the Myanmar Investment Commission (MIC) **approved** a \$2.5 billion LNG power project. However, no further details on the project have been provided, and it remains unclear if the project has made any progress. In February 2025, the junta **announced** that China would help fund four solar projects, with a total capacity of 190 MW and worth approximately \$140.5 million. No further details have been provided on the projects. And in May 2025, the MIC **approved** an additional \$35 million worth of foreign investments in the industry sector, including projects pertaining to solar and electricity production. While no additional details were provided, the MIC confirmed that China is currently one of the top three investors in Myanmar, alongside Singapore and Thailand.

The Philippines

In 2023, the Philippines' **energy mix consisted** of coal and related products at 33.9 percent, oil and oil products at 29.5 percent, biofuels and waste at 17.1 percent, renewables at 14.3 percent, natural gas at 3.8 percent, and hydropower at 1.3 percent. The Philippines' **energy transition plan for 2023-2050** calls for an expansion of the use of renewable energy up to 50 percent by 2040—as part of this shift, the Philippines in 2022 **loosened foreign ownership restrictions** in the renewable energy sector, with foreign investors now allowed to own 100 percent of individual renewable energy projects.

While fuel refining and other downstream industries remain dominated by domestic and Western firms, Chinese companies have emerged as nascent players in the Philippines' green energy transition. In 2023, nine Chinese energy companies, including CGN, pledged to invest \$14 billion in **renewable energy projects** in the Philippines. The announcement, however, was met with mixed reactions from the Philippine public—with some analysts expressing skepticism given Beijing's history of pledging and then **failing to follow through** on investment commitments made to the Philippines during the broadly pro-China Rodrigo Duterte administration. Meanwhile, amid the Philippines' push to **increase LNG imports** to counterbalance a decline in domestic supply from the Malampaya gas field, electricity supplier First Gen Corp. in 2024 **awarded a contract** to CNOOC to facilitate the import of 130,000 cubic meters of LNG.

Meanwhile, China has played an active—but politically sensitive—role in building out critical energy infrastructure. In 2007, China's State Grid Corporation (SGC) **acquired** a 40 percent stake in the National Grid Corporation of the Philippines (NGCP), the firm responsible for operating and maintaining the country's power grid. With the intervening years since the purchase seeing increased tensions between China and the Philippines due to disputes in the South China Sea, SGC's ownership share and potential control over the power grid has raised alarm across the Philippine government. An internal report prepared for Philippine lawmakers in 2019 suggested that **China could shut off the Philippine power grid** in a time of conflict. Public debate regarding China's ownership role in the Philippine power grid **resurfaced earlier this year** and the Ferdinand "Bongbong" Marcos Jr. administration responded by directing the Maharlika state investment fund to **purchase a 20 percent stake of NGCP**, buying these shares from the 60 percent stake held by Synergy Grid & Development Philippines. Maharlika executives **further signaled interest** in purchasing additional shares from SGC's 40 percent ownership share. The Philippine government additionally announced **enhanced security protocols** at power grid sites, and recommended periodic cybersecurity assessments and other precautionary measures to "ensure that [the] power grids are safe from foreign manipulation."

Singapore

As of 2023, Singapore's **total energy supply** consisted of oil and related products at 64.8 percent, natural gas at 31.5 percent, biofuels and waste at 2.2 percent, coal and coal products at 1.1 percent, and renewables at 0.4 percent. Singapore's **Green Plan 2030**, launched in 2021, sets forth a broad range of targets, including increases in public transportation usage, a buildout of additional green spaces in the city-state, and the development of additional solar power capabilities to approximately 3 percent of energy demand by 2030 while still **depending on LNG** as a primary energy source.

China plays a key role in Singapore's fuel refining industry. PetroChina's Singapore Petroleum Company (SPC) owns a 50 percent stake in the Singapore Refining Company (SRC), whose facilities on Jurong Island account for a **crude processing capacity** of around 290,000 barrels per day. That is smaller in scale than other refineries in the country but still significant in its own right. Chevron, the holder of the remaining 50 percent stake in SRC, in 2025 **solicited bids for the sale of its shares**. Although PetroChina and SPC have the right of first refusal for Chevron's stake, **other potential buyers** including Vitol and Glencore have reportedly submitted bids, with the estimated value of the entire refinery totaling \$1 billion. Moreover, China is also a major supplier of refined petroleum products to Singapore—in 2021, Singapore **accounted for around half of Chinese gasoline exports**, with much of these

products blended and reexported to neighboring Indonesia and Malaysia. And **CNPC**, in addition to holding its stake in the SRC through its PetroChina subsidiary, also maintains shares in the Universal Terminal on Jurong Island—the largest independent commercial oil storage terminal in the region—and owns the third-largest network of service stations in Singapore.

Chinese firms have also invested in renewable energy technologies in Singapore. TCL Zhonghuan in 2024 announced that it sought to **acquire majority ownership of Maxeon**, a Singapore-based solar panel firm. Meanwhile, CRE International, a subsidiary of the China National Nuclear Corporation (CNNC), in 2025 **announced a cooperation framework agreement** with Singapore-based Equator Renewables Asia to generate and export renewable energy from the Riau Islands in Indonesia to Singapore.

Beyond these investments, China continues to play a key role in power generation in Singapore. China's Huaneng Power International **acquired ownership** of the Tuas Power Ltd power generation company in 2008 from Singaporean state-owned investment firm Temasek Holdings. The Tuas power station, located in western Singapore, contributes an estimated **20 percent** of the country's total power supply.

Thailand

In 2023, Thailand's **total energy supply** consisted of oil and oil products at 41.2 percent, natural gas at 27 percent, biofuels and waste at 19.2 percent, coal and coal products at 11.6 percent, and renewables and hydropower at a combined 1 percent. Thailand's hydropower usage has largely **decreased** due to the severe drought season from 2023 to 2024, which negatively impacted both Laos and Vietnam. As a result, the country has increased dependency on oil and natural gas.

Thailand's fuel refining and distribution sector is **dominated** by state-owned PTT Public Company Limited and Bangchak corporation, as well as by U.S. companies like Chevron and ExxonMobil. But Chinese investors are still attempting to tap into Thailand's oil refinery sector. In 2023, CNPC's **first** refined oil project in Thailand became operational, with an annual oil transmission capacity of 6 million metric tons. The project is intended to **improve** delivery efficiency of refined oil products in Thailand.

Currently, China is a significant investor in Thailand's solar and wind sectors, supplying photovoltaic modules and wind turbines. China and Thailand have notably agreed to **increase** cooperation on solar technology and cost reductions following the U.S. **tariffs** on Southeast Asian solar imports. The United States' **investigation** of Chinese solar companies in Southeast Asia has been ongoing since 2021, with one U.S. solar panel manufacturer claiming that Chinese solar factories in Southeast Asia, four of which are based in Thailand, were avoiding U.S. anti-dumping and countervailing duties. While there are no further details on China and Thailand's increased cooperation, Thailand **revealed** that a government delegation met with six leading Chinese solar companies in June 2025.

Additionally, Thailand **imports** a significant amount of its electricity from neighboring countries, projected to account for 15.7 percent of electricity consumption in 2025. For example, Thailand **imported** \$2.12 billion in electricity from Laos in 2024. Because Laos's electricity is dominated by China, Thailand is indirectly getting a high volume of its electricity from Chinese investments.

Timor-Leste

The International Energy Agency does not report data on the breakdown of Timor-Leste's energy supply but the country has **historically** relied on fossil fuels for power generation, most notably oil and related products. Timor-Leste's **Strategic Development Plan 2011-2030** set out an ambitious goal of both increasing reliable electricity access throughout the entire country while also meeting at least 50 percent of energy needs through renewable energy sources by 2020. These target dates were later revised, with the country now aiming for an energy mix of over 50 percent renewable energy **by 2030**.

The United States, Australia, and other Western players dominate Timor-Leste's oil and gas industry. But China has been a key partner in Timor-Leste's electrification goals. In 2009, CNNC through its subsidiary China Nuclear Industry 22nd Construction Co. won a contract to build, operate, and maintain Timor-Leste's **national electricity grid**. The project, which consists of 1 national dispatch center, 9 substations, 1,407 transmission towers, 603 kilometers of high-voltage transmission lines, and 120 kilometers of medium-voltage distribution lines, represents the **largest power infrastructure initiative** in Timor-Leste to date, and has transmitted approximately 5.82 billion kWh of electricity as of 2025. China has also played a role in **supplying fuel** to Timor-Leste, with CNPC in 2021 signing an agreement to supply diesel fuel for the Betano power station in southern Timor-Leste. And in March 2025, China National Nuclear Power, another subsidiary of CNNC, expressed interest in **submitting a bid** to develop a high-profile solar power project, consisting of a 72-85 MW solar power plant and a 36-43 MW battery energy project in the city of Manatuto. The project was **eventually awarded** to Japan's Itochu Corporation and Électricité de France in October 2025, with construction expected to begin by next year.

Vietnam

In 2023, Vietnam's **total energy supply** consisted of coal and coal products at 49.7 percent, oil and oil products at 24.7 percent, biofuels and waste at 9.1 percent, and hydropower at 6.8 percent. Vietnam's coal usage continues to increase, with peak usage **expected** by 2035. Hydropower usage has also decreased due to the **persisting** El Niño drought season from 2023 to 2024. Vietnam made up for the drought-induced gaps through increased coal, oil, and natural gas usage. Vietnam is still trying to rapidly increase its renewable energy usage, with the revised Power Development Plan 8 (PDP8) **expecting** renewables to account for 28 to 36 percent of Vietnam's installed capacity by 2030.

To accommodate its rapidly growing economy, Vietnam plans to strategically **combine** domestic energy production expansion with increased electricity imports from China and Laos. Under PDP8, Vietnam intends to import 3,700 MW from China by 2030, a 3,000 MW increase from its previous plan. Vietnam is also negotiating with Chinese power suppliers to **increase** annual electricity purchases to 19 billion kWh from 2027-2028 via a 500 kV transmission line.

Vietnam's oil refinery sector is primarily **state-dominated**, with investments from Kuwait and Japan. The country currently has two oil refineries with a total capacity of almost 350 thousand barrels per day. Both refineries are managed by state-owned PetroVietnam, with the Nghi Son Refinery & Petrochemical LLC's management also shared with Kuwaiti and Japanese firms. Yet Chinese energy investments in Vietnam are still significant, primarily by state-owned Huadian Corporation (CHD).

As of 2025, CHD has **invested** around \$2.8 billion in power plant projects, with a total installed capacity of 1.5 GW. The power projects include the Duyen Hai Thermal Power Plant in Tra Vinh province and four wind power projects in Dak Lak province. And in a meeting with Prime Minister Pham Minh Chinh in May 2025, CHD **stated** its intent to expand its presence in Vietnam's renewable energy landscape. CHD's **sectors** of interest include biomass power, wind power, pumped-storage hydropower, and grid upgrading. The firm also **intends** to cooperate with local Vietnamese research institutes and universities to promote both technology transfer and human resources training.

Other Chinese firms are also interested in investing in Vietnam's energy sector. During the Vietnam-China-ASEAN International Energy Forum 2025, Guangxi Modern Logistics Group **presented** ideas to improve wind power in Vietnam. Wasion Holdings also presented its new grid monitoring technology to improve Vietnam's energy efficiency. In May 2025, Vietnam's Power Generation Corporation 2 **signed** an MOU with China's Lancang-Mekong International Company Limited to develop pumped storage hydropower projects in Vietnam.

Recommendations

China represents both a significant and a wide-ranging investment partner in Southeast Asia's energy sector. Although the scale, scope, and depth of its engagement differs by country, China's role as an investment partner has become increasingly important as Southeast Asian countries pursue ambitious energy transitions while safeguarding energy security. At the same time, the United States' position as a traditional partner of choice in energy cooperation means that the Trump administration still has an opportunity to reengage with its Southeast Asian counterparts and provide alternatives to Chinese investments. Based on this research, the United States and counterpart governments in Southeast Asia should pursue the following recommendations.

1. **To realize its ambition of being the world's leading energy exporter, the United States should seek more LNG partnerships in Southeast Asia.** Southeast Asian countries are committed to making the transition toward net zero. But most intend to use LNG as a transition fuel while building out capacity in renewable energy. This presents the United States with an opportunity. Chinese finance and technology plays an increasingly important role in the green transition, but supporting the transition from older coal and natural gas sources to LNG will keep the United States in the game while aligning with the Trump administration's priorities.
2. **The U.S. government should regularly map midstream and downstream energy vulnerabilities of key Southeast Asian partners.** Most Chinese investments in critical energy infrastructure in Southeast Asia should be of little concern to the United States. But in some cases, such as China's ownership stake in the Philippines' NGCP, they present potential vulnerabilities, either for peacetime coercion or sabotage during a potential crisis. The same would be true if China were to play an outsized role in the fuel refining and distribution networks of key allies and partners, which could limit U.S. and allied mobility in a crisis.
3. **Southeast Asian nations should explore avenues for coordination on foreign-invested energy projects.** The interconnected nature of the regional power grid, particularly in the context of mainland Southeast Asia, means that it is important that ASEAN member states align internally on critical issues before engaging with external investors. Enhancing coordination on this front would help maximize grid efficiencies while allowing ASEAN members to collectively

anticipate and mitigate any negative social, environmental, and transnational externalities that may arise out of energy megaprojects.

4. **Southeast Asian nations should diversify funding to maximize energy security.** In a shifting geopolitical landscape, international funding priorities continue to fluctuate. To best navigate this, Southeast Asian nations should diversify foreign funding in critical infrastructure, including energy generation, transmission, and distribution. This will help limit strategic vulnerabilities and avoid potentially dangerous overreliance on a single funder. Southeast Asian nations should continue to engage with a broader array of partners, including Australia, Canada, Japan, and South Korea, all of which already have strong energy ties with the region. ASEAN member states should also double down on partnerships with multilateral organizations, such as the Asian Development Bank, World Bank, and United Nations Development Program, even while these organizations face their own funding challenges ahead. ■

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Throughout this project, CSIS scholars received input from a wide range of U.S. and Southeast Asian experts and policymakers. Our program thanks them for their counsel. The authors would also like to thank CSIS Southeast Asia Program interns Julia Rocio Gatdula and Kate Yeo for their research support.

This report is made possible with support from Chevron.

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