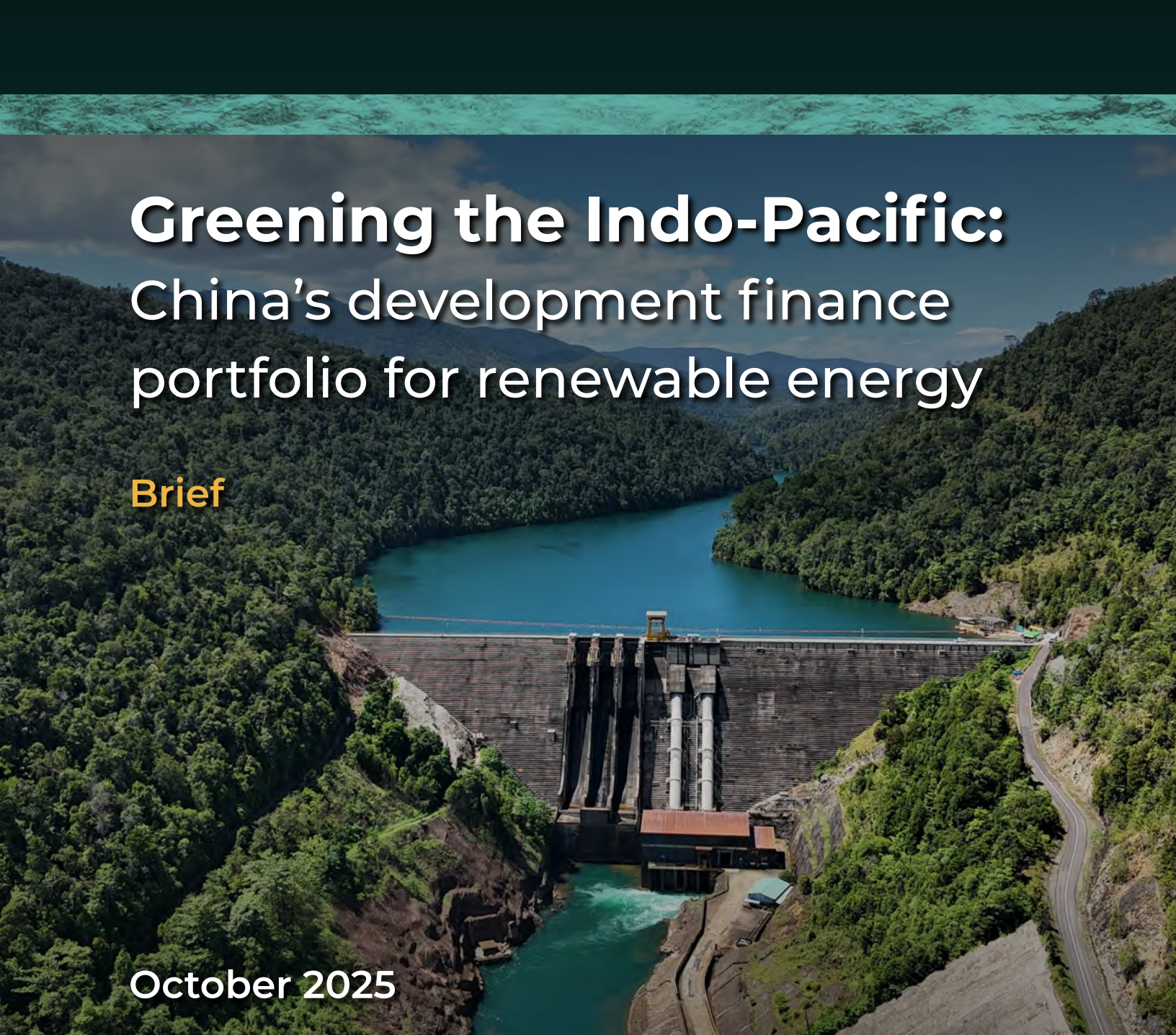




Greening the Indo-Pacific: China's development finance portfolio for renewable energy

Brief

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AIDDATA

A Research Lab at William & Mary

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Executive summary

[AidData's Global Chinese Development Finance Dataset, Version 3.0](#) offers unique insights into China's state-directed financing. Across almost all low- and middle-income countries, the energy sector is one of China's most consistently-funded sectors. How Beijing engages in this sector has reverberating implications for the world's mitigation of climate-induced challenges—especially in the Indo-Pacific region, one of the most populous in the world. This brief provides an overview of key trends in the region and important take-aways to inform an understanding of China's global strategy.

- We identify 453 projects funded by 394 loans (\$106.4 billion) and 51 grants (\$0.2 billion) from China in the energy sectors across 24 low- and middle-income countries in the Indo-Pacific from 2000 to 2022. In total, 42 Chinese official funding agencies committed over \$106.6 billion during this period.
- Pakistan, Vietnam, and Indonesia are the top recipients of Chinese loan and grant commitments for energy financing (across renewable, non-renewable and transmission projects), with more than 60% of the entire portfolio or \$64.5 billion dedicated to these three countries from 2000 to 2022.
- \$24.4 billion of \$107 billion in the energy sector was directed to renewable energy activities, while coal (\$57.6 billion), hydro (\$21.4 billion) and nuclear (\$10.2 billion) are the most-financed energy sources.
- Following China's commitment to "no new coal" in 2021, no new coal projects have been identified in 2022 in low- and middle-income countries in the Indo-Pacific.
- Two case studies highlight China's distinct approach to energy financing in the Indo-Pacific. This brief provides a deeper dive into Indonesia, whose nickel production is explored in AidData's [Power Playbook](#) report, offering insights into the connection between energy financing and minerals extraction. A second analysis focuses on Bangladesh, a case study in AidData's [Belt and Road Reboot](#) report and one of the largest recipients of coal-financed projects that has only seen one Chinese-financed renewable energy project to date.

Overview: Chinese energy finance to the Indo-Pacific

Over the last two decades, China has emerged as one of the largest bilateral financiers of energy projects to low- and middle-income countries (LMICs) worldwide, as well as in its direct neighbourhood: the Indo-Pacific region. While Chinese development financing for renewable energy has become increasingly visible in rhetoric and commitments, Beijing's past financing has historically focused on non-renewables.

Key statistics: China's development finance for energy in the Indo-Pacific, 2000-2022

0.4 percent

of development finance across all LMICs dedicated to renewable energy

24 countries

in the Indo-Pacific received Chinese financing for energy projects

\$107B

in energy financing, from China to the Indo-Pacific

\$24.2B

in renewable energy financing to the Indo-Pacific

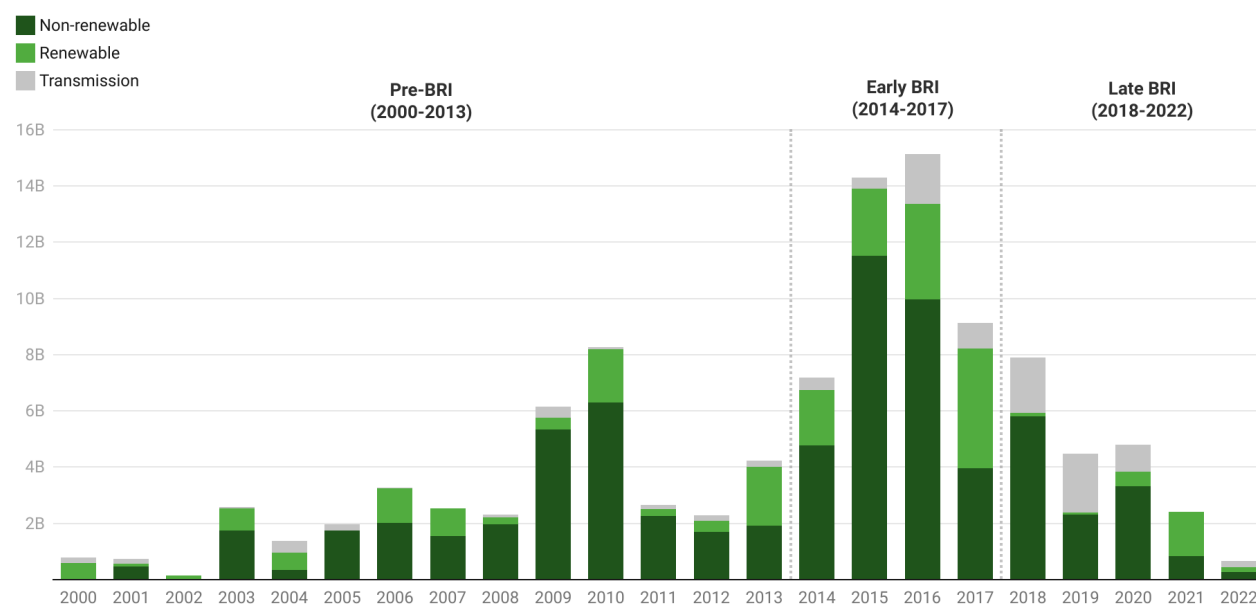
453

energy projects in the Indo-Pacific financed by China through 394 loans and 51 grants

2000 to 2022: Annual trends in energy financing in the Indo-Pacific

China's loan- and grant-financed energy commitments rapidly increased during the early stages of the BRI, peaking at almost \$15 billion in 2016. Since then, energy financing has decreased, reaching a low in 2022. Renewable energy financing also peaked in the early BRI period and declined in the late BRI period, despite China's increasing rhetorical emphasis on climate change. However, in 2021 and 2022, renewable energy again became a larger proportion of China's energy financing portfolio—inviting cautious optimism.

Figure 1: China's grants and loans to the energy sector in the Indo-Pacific by type, 2000-2022



Section 1: Green energy, green Indo-Pacific?

The importance of renewable energy

Renewable energy is critical for fueling the clean energy transition and averting climate crisis. Increasingly, energy sources such as solar, wind, and hydro are gaining traction to make this transition feasible. Yet, between 2000 and 2022, China only committed 0.4% of its overall development finance to renewable energy projects in Indo-Pacific countries.

China has invested billions of dollars in the energy sector through its development finance portfolio over the past two decades—stepping up as a development partner when other countries were less enthusiastic to do so. Especially in its direct neighbourhood of the Indo-Pacific, China has directed significant financial commitments to countries in the region for energy projects, as well as other “hardware” sectors such as transportation or industry, mining, and construction. Through its financial commitments, where has China concentrated its efforts in the energy sector in the Indo-Pacific—and how has this changed over time?

China’s commitment to renewable energy financing

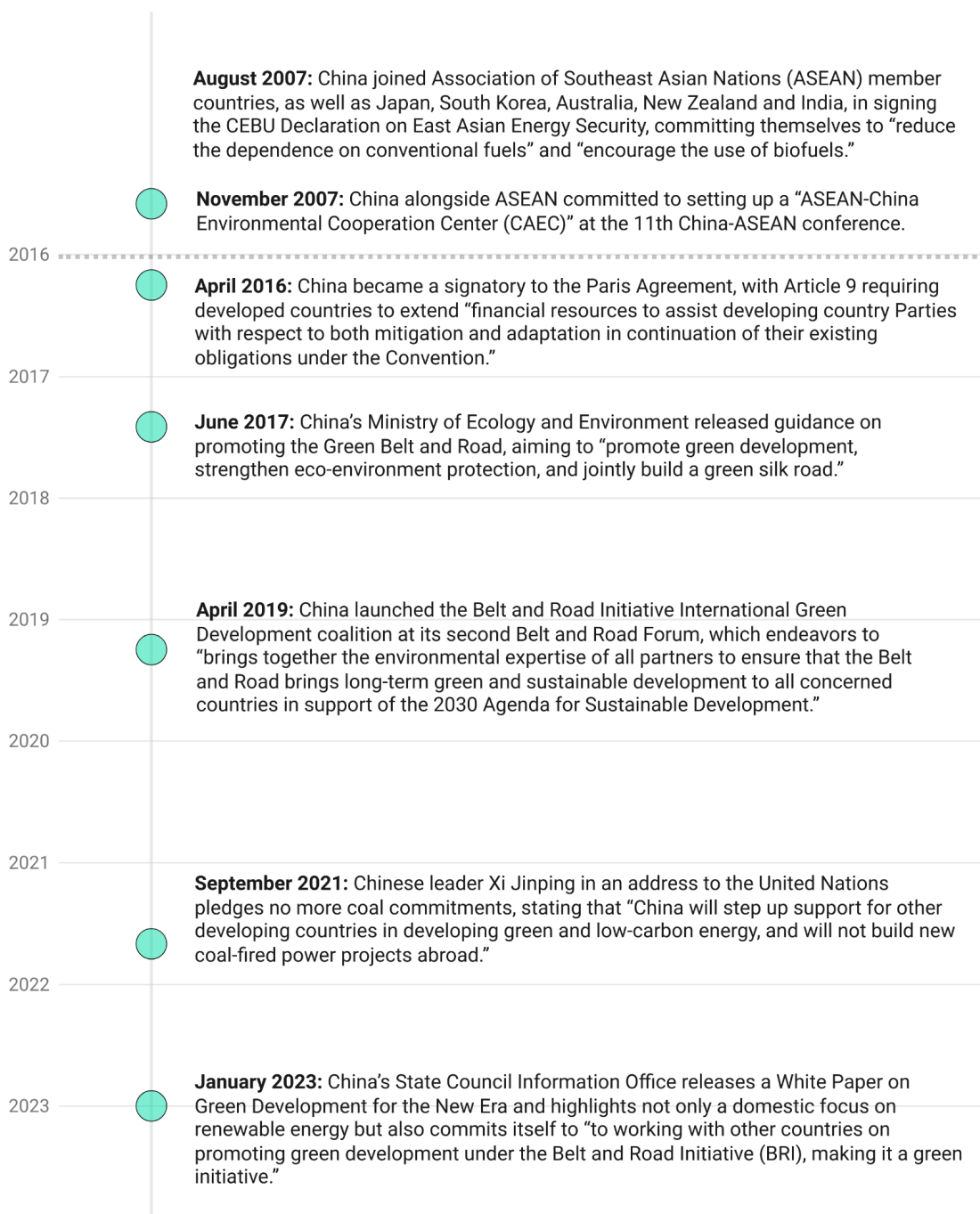
Under the auspices of the Belt and Road Initiative (BRI), Beijing has provided an extraordinary amount of aid and credit for renewable energy projects overseas. Since 2000, China has made multiple pledges and commitments domestically, bilaterally, and multilaterally to decrease emissions, exert financing to clean and renewable energy, and support Indo-Pacific countries (see timeline below). As more attention has been dedicated toward the renewable energy transition in recent years, so has Beijing’s initiatives and participation in green fora increased. Beijing’s most direct commitment to green energy finance only occurred recently, when Chinese President Xi Jinping declared in 2021 that Beijing would no longer support new coal-fired power plants overseas.

Introducing AidData’s *Greening the Indo-Pacific* brief:

Building upon [AidData’s Global Chinese Development Finance Dataset, Version 3.0](#), this brief tracks commitments from Chinese government agencies and state-owned entities for energy generation and transmission projects in the Indo-Pacific region, totalling 453 projects worth almost \$107 billion between 2000 and 2022. AidData uses the International Renewable Energy Agency’s [definition](#) of renewable energy sources, which includes hydro, wind, solar, geothermal, biomass, and marine energy. This analysis outlines key trends in renewable and non-renewable energy in the Indo-Pacific. Our data shows that Chinese creditors historically have overwhelmingly favored non-renewable energy projects in the region—although Beijing has started to shift its rhetoric on greening the BRI and has provided funding for a small share of renewable energy projects.

Timeline: China's key energy activities globally and in the Indo-Pacific

From 2007 to 2023, Chinese leaders made both rhetorical commitments and financial contributions to the energy sector at the global level and in the Indo-Pacific that have affected its portfolio—most notably, its 2021 commitment to no longer finance coal-fired power plants.



Section 2: China's commitments to renewable energy in the Indo-Pacific

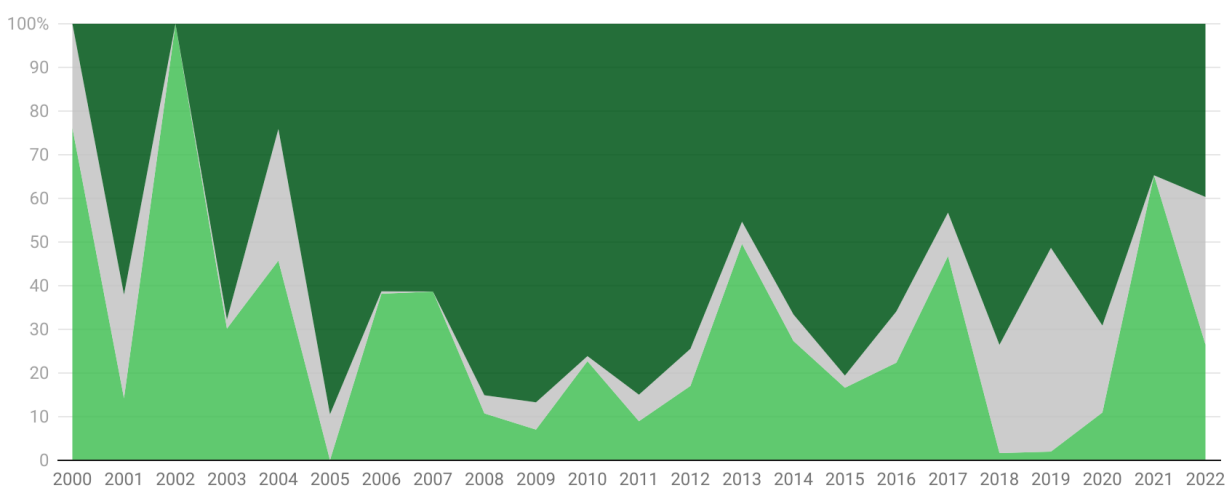
Key trends in the Indo-Pacific

Overall, China committed \$397.7 billion in development finance to 24 recipient countries in the Indo-Pacific region from 2000 to 2022. Of this total, \$24.2 billion or 6% was allocated to renewable energy projects. While the share of renewable energy financing as part of China's total commitments to the Indo-Pacific has fluctuated over the past 23 years, it has consistently remained the top-financed sector (see Figure 2). Specifically, in the pre-BRI period (2000-2013), China allocated \$7.7 billion or 6.6% of all financing in the Indo-Pacific to renewable energy projects. Financing slightly increased during the early BRI period (2013-2017), but then dropped sharply to just 1.8% during the late BRI period (2018-2022). Although China has increasingly focused on renewable energy through the BRI and beyond in recent years, the share of development finance supporting this green energy transition in the Indo-Pacific has so far remained under 20%. The proportion of funding directed to renewable energy projects dropped sharply from 17% in the early 2000s to just 0.6% in 2022. From 2000 to 2022, China's commitment to renewable energy projects in the Indo-Pacific region has seen a significant decline as a share of its total financial commitments. This trend reflects a broader shift in China's financing priorities in the region, particularly during the BRI period, and suggests that the green energy transition has not yet been made a priority within China's development finance strategy in the region.

Figure 2. Share by type of China's loans and grants for energy in the Indo-Pacific, 2000-2022

By financial amount (%), 2000-2022.

■ Non-renewable ■ Renewable ■ Transmission



China's financing of renewable and non-renewable energy in the Indo-Pacific

Instead of providing significant financing for the green energy transition through developing new renewable power plants, China's financing has historically focused on providing energy security and integration—ensuring recipient countries have access to generating electricity and energy in the first place. With almost \$107 billion in energy financing, the majority of China's development finance to the Indo-Pacific is directed toward non-renewable energy projects and energy transmission projects. Almost \$70.1 billion was allocated to non-renewable energy between 2000 and 2022, compared to \$24.2 billion for renewable energy. Transmission projects across 24 Indo-Pacific countries received total commitments worth almost \$11 billion during the same time period.

The Karachi Nuclear Power Plant project, a non-renewable energy project in Pakistan, received the highest financial commitment. The Export-Import Bank of China committed almost \$4 billion to support the second and third phases of the project in 2015 and provided the second-largest commitment—a \$2.5 billion supplier's credit—to the same project the same year.

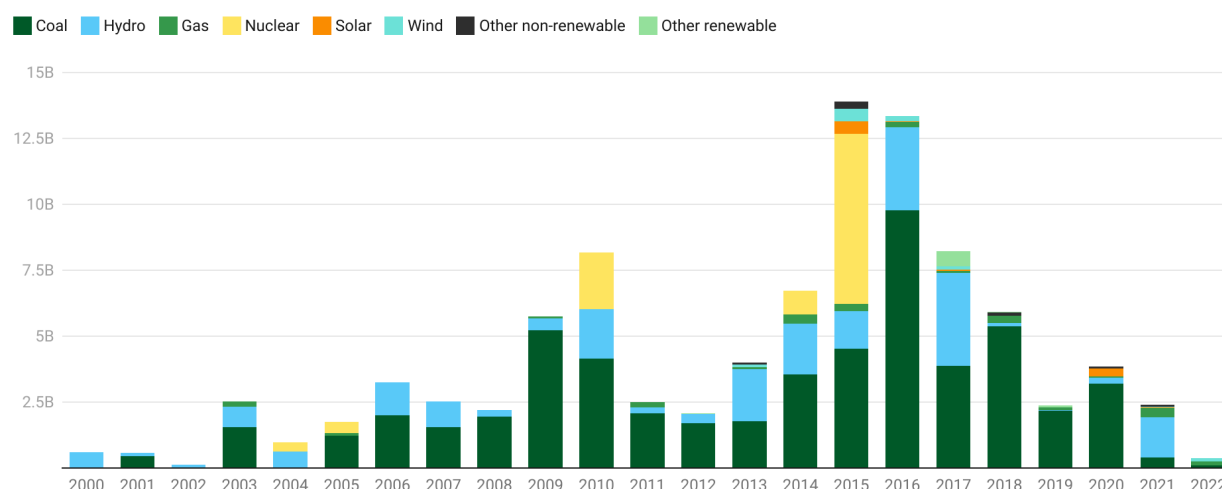
What energy type is most-financed in the Indo-Pacific?

Figure 3. China's loans and grants for energy financing in the Indo-Pacific, 2000-2022

Energy Source Type	Total Commitment (US\$ Billion)
Coal	\$56.7
Hydro	\$21.4
Nuclear	\$10.2
Gas	\$2.6
Wind	\$1.1

Coal-fired power plants emerge as the primary focus of China's energy financing in the Indo-Pacific region. Coal received \$56.7 billion in grant- and loan-financed commitments from China across 24 Indo-Pacific countries, accounting for over 60% of the total funding (see Figure 3 above). Hydropower follows as the second-largest source, with \$21.4 billion in commitments, while transmission, nuclear, and gas projects represent smaller but still notable shares. Coal financing peaked around 2016 and 2018, before declining in recent years—in line with China's no new coal commitment in 2021 (see Figure 4 below). Though consistently funded, hydropower has received lower levels of investment that peaked in 2016 and 2017. Beijing's financing for renewable sources, such as solar and wind, has remained limited.

Figure 4. China's loans and grants for energy in the Indo-Pacific by energy source, 2000-2022



Other renewable: includes biomass, waste, and geothermal. Other non-renewable includes oil and diesel.

Which countries receive Chinese financing for energy in the Indo-Pacific?

China's energy finance commitments in the Indo-Pacific are highly concentrated in a few key countries: Pakistan, Vietnam, Indonesia, Laos and Bangladesh. However, many of its international cooperation initiatives in the Indo-Pacific have specifically focused on the Association of Southeast Asian Nations (ASEAN), highlighting that bilateral cooperation takes the lead in China's energy financing in the Indo-Pacific.

As shown in the table below, Pakistan, Vietnam, and Indonesia received the largest shares of financing, benefiting from significant investments in both power generation and transmission, as measured by both financial commitments and the number of projects. Pakistan was the largest beneficiary of China's energy financing, receiving a total of \$25.7 billion in loan- and grant-financed commitments between 2000 and 2022 for the greatest number of committed projects (67 records).

In total, over 60% (\$64.5 billion) of China's energy financing in the Indo-Pacific has been directed toward these top three recipients. Laos (\$12.2 billion) and Bangladesh (\$11.2 billion) also received notable financing from China, supporting their efforts to expand electricity access and improve energy security. This bilateral focus by Beijing reflects both economic priorities and strategic considerations, focused on fostering stronger partnerships in the region.

Figure 5. Top recipients of China's energy finance in the Indo-Pacific, 2000-2022

Recipient	Loan and Grant-Financed Commitments between 2000 and 2022	Total Activities between 2000 and 2022
Pakistan 🇵🇰	25.7B	68
Vietnam 🇻🇳	20.1B	67
Indonesia 🇮🇩	18.7B	59
Laos 🇱🇦	12.2B	55
Bangladesh 🇬🇧	11.2B	36

Are China's financing terms for renewable energy more attractive?

China's financing for renewable energy in the Indo-Pacific region offers less favorable lending terms than other energy sectors, such as power generation and transmission. This concessionality gap suggests that China may not be providing a sufficiently strong incentive for participation in green projects.

While China has committed substantial development finance to the region, the vast majority of this funding—\$106.4 billion out of \$106.6 billion, or 99.8%—came as loans, rather than grants. This preference for debt-based financing warrants a closer look at the terms of these loans, particularly in comparison to China's broader development finance practices.

Transmission projects in the Indo-Pacific by far have the most favorable terms, with a grant element of 41.8%.¹ Non-renewable energy projects in the region enjoyed an average grant element of 34.7%, compared to renewable projects with a grant element of 32.5%. Overall, China's energy loans to the Indo-Pacific from 2000 to 2022 had an average grant element of 35%—more favorable than the average global energy loan grant element of just under 32%.

Despite China's significant role as a financier of energy infrastructure in the region, renewable energy projects generally receive less favorable loan terms than fossil fuel-based projects. This suggests that China does not yet prioritize green energy financing over traditional energy sources, offering fewer incentives for recipient countries to shift toward or adopt renewable energy projects. This pattern of more generous financing for grid infrastructure highlights China's broader goals of regional connectivity, integration, and access to energy generation, as outlined in the Chinese government's action plan for the BRI in 2015.²

¹ Our cash flow grant element follows the OECD methodology of calculation and captures the gift value of a loan. The higher the value, the more concessional and favorable the lending terms are. To calculate the grant element of a loan, which is a measure that varies from 0 percent to 100 percent, AidData calculates the discounted cost (or "net present value").

² To learn more about China's broader energy financing goals, see China's State Council (2015): http://english.scio.gov.cn/beltandroad/2015-03/28/content_76329478.htm.

Case study: Chinese energy financing to Indonesia

A deeper dive into Chinese official finance for energy generation in Indonesia provides a necessary overview of a sector under scrutiny. The relationship reflects efforts to partner with state-owned enterprises (SOEs) and in-country companies to build up renewable energy.

Key statistics: China's development finance to Indonesia for energy, 2003-2022

\$18.7B

in loans and grants from China to Indonesia in the energy sector

59

energy projects financed by China in Indonesia

51.7%

of all energy financing was committed after the BRI's launch in 2013

\$1.6B

in Chinese development financing for renewable energy in Indonesia

8.7%

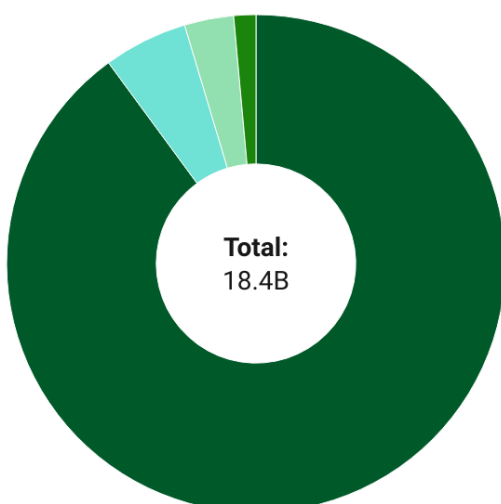
of China's energy finance in Indonesia supported renewable projects

China's energy commitments to Indonesia during the BRI

Period	Commitments to renewables	Average per year commitment to renewables	Commitments to non-renewables	Average per year commitment non-renewables
Pre BRI (2000-2013)	\$871M	\$62.2M	\$7.8B	\$561M
Early BRI (2014-2017)	\$714M	\$178M	\$6.8B	\$1.7B
Late BRI (2018-2022)	\$46.8M	\$9.4M	\$2.1B	\$416M

Breakdown of energy financing to Indonesia by type and borrower, 2003-2022

■ Coal (16.5B)
 ■ Hydro (1B)
 ■ Geothermal (586.1M)
 ■ Gas (262.5M)



PT Perusahaan Listrik Negara (Persero) (PLN)

5.8B

PT Sumber Segara Primadaya (S2P)

3B

Shenhua Guohua Power Jawa Bali

1.5B

PT Huadian Bukit Asam Power (HBAP)

1.3B

Government of Indonesia

1.3B

Key trends: Indonesia is the third-largest recipient of China's energy finance in the Indo-Pacific, with renewable energy commitments becoming increasingly important due to the country's large nickel industry. In total, between 2003 and 2022, Chinese official finance extended \$18.7 billion in loans for energy sector projects.³ Overall, the energy sector reflects an inconsistent trend to renewable energy commitments, with a slight uptick in recent years.

Commitments: For energy projects in the Indo-Pacific, Chinese financiers committed on average \$623. million per year in the pre-BRI period, \$1.9 billion per year in early BRI, and \$425 million per year in the late BRI period. Across all three periods, non-renewable energy remained the driver of China's commitments. The focus on green energy is of particular interest today, as Indonesia's nickel sector provided [27% of the world's refined nickel output in 2023](#), helping to propel clean and electric energy uptake worldwide. This extraction and processing in Indonesia demands energy.

Energy type: Out of \$18.7 billion in energy projects committed by China to Indonesia, 88.2% (or \$16.5 billion) supported coal projects. Hydropower projects were the largest renewable energy source financed by Chinese creditors, receiving \$1 billion in commitments between 2003 and 2022. The top five recipients of China's energy lending comprise over 70% of total lending to Indonesia, with all five of these recipients having some level of Indonesian state ownership—loans to these borrowers often support coal projects.

Most of China's energy financing in Indonesia goes to state-owned borrowers

The top two recipients of energy financing over the period were both Indonesian state-owned enterprises (SOEs): S2P and Perusahaan Listrik Negara (PLN). PLN is Indonesia's state-owned electrical energy enterprise. It received a total of \$6.1 billion across 22 commitments. PLN provides power services to [98% of Indonesian households](#), as well as powering Indonesia's infamous nickel industry. Since [regulations passed in 2009 requiring Indonesian nickel to be processed in-country](#), this power is central to the clean energy transition down the line. For example, PLN provides power to nickel smelters in an [industrial site on the island of Sulawesi](#), and despite the coal project finance to PLN, the primary contributor of electricity to the Sulawesi Park is a 515 MW hydroelectric plant.

Both the third and fourth largest recipients of financing were joint ventures between Chinese and Indonesian SOEs. Shenhua Guohua Power Jawa Bali, responsible for the 2100 MW Java-7 Coal-Fired Power Plant Construction Project, and PT Huadian Bukit Asam Power (HBAP), responsible for the 1240 MW Bangko Tengah (SS-8) Mine Mouth Power Plant Construction Project (a coal-fired power plant which supports a coal mine in Sumatra and connects to PLN substations in the area) are joint ventures with some level of Chinese government ownership. The fifth largest recipient of funds was the government of Indonesia, who over six commitments received \$1.3 billion to support both coal and hydropower projects.

Shift to renewable energy: While Beijing promised to cease coal investments abroad, Indonesia has not yet halted its pursuit of new coal power plants. However, in 2022, China Construction Bank and Bank of China made commitments to PLN earmarked for solar, wind, and other renewable energy projects, highlighting the promise of new renewable energy projects in Indonesia.

³ The total amount by energy source type is shown as \$18.4B, but overall total financing to Indonesia is \$18.7B. This is due to the exclusion or inclusion of specific projects that are identified by the OECD's industry, mining, construction sector, but support energy projects in practice.

Case study: Chinese energy financing to Bangladesh

A deep dive into China's energy financing portfolio in Bangladesh shows how Beijing has heavily supported non-renewable energy projects but has modified which non-renewables it finances as its portfolio has matured.

Key statistics: China's development finance to Bangladesh for energy, 2000-2022

\$11.2B

in loans and grants from China to Bangladesh in the energy sector

36

energy projects financed by China in Bangladesh

91.2%

of all energy financing was committed after the BRI's launch, from 2014-2022

\$99M

in Chinese development financing for renewable energy in Indonesia

0.9%

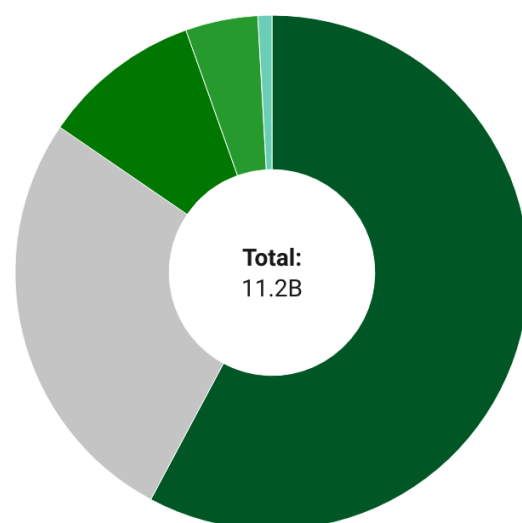
of China's energy finance in Bangladesh supported renewable energy projects

China's energy commitments to Bangladesh during the BRI

Period	Commitments to renewables	Average per year commitment to renewables	Commitments to non-renewables	Average per year commitment non-renewables
Pre BRI (2000-2013)	\$0M	\$0M	\$604M	\$43.1M
Early BRI (2014-2017)	\$16.1M	\$4M	\$1.2B	\$307.5M
Late BRI (2018-2022)	\$82.5M	\$16.5M	\$6.3B	\$1.3B

Breakdown of energy financing to Bangladesh by type and borrower, 2000-2022

■ Coal (6.5B)
 ■ Transmission (3B)
 ■ Gas (1.1B)
 ■ Diesel and oil (511.7M)
 ■ Solar and wind (98.6M)



Bangladesh-China Power Company (Pvt.) Ltd. (BCPCL)

2.2B

RPCL-NORINCO Intl. Power Ltd. (RNPL)

1.9B

SS Power I Limited

1.3B

Bangladesh Power Development Board (BPDB)

875.8M

Government of Bangladesh

461.6M

Key trends: The BRI supercharged China's energy financing to Bangladesh, with non-renewables and coal in particular receiving hefty commitments from Chinese lenders. By contrast, renewable financing has been negligible, if not non-existent. However, as it has grown more climate conscious, China's energy finance to Bangladesh has shifted away from coal to other, less emission-intensive non-renewables, and, to a lesser extent, renewables.

Commitments: \$8.2 billion of Chinese energy finance to Bangladesh supported generation assets, while \$3 billion went to transmission activities (see chart above). 91.2% of financing came from 2014 and onwards. \$8.1 billion went to non-renewables; only \$99 million went renewables, or 0.9% of all energy financing. Hefty commitments for non-renewables dwarfed renewables—the average annual commitment to fossil fuels during the late BRI period was over 76 times larger.

Non-renewable and renewable energy financing in Bangladesh

Non-renewable financing: Coal represents 57.8% (or \$6.5 billion) of China's total energy financing in Bangladesh. The largest projects were two 1.3 GW coal projects—Payra and Patuakhali—which together received over \$4 billion from Chinese state-owned banks. The developers of both coal projects were 50:50 joint ventures of Bangladeshi and Chinese state-owned firms. Payra began commercial operations in December 2020, while Patuakhali was completed in June 2025.

Shift to renewables: Nearly all of China's renewable energy financing supported the 66 MW Cox's Bazar Wind Farm, financed by a 2022 \$82.5 million China Eximbank loan to a special purpose vehicle subsidiary of Chinese state-owned State Power Investment Corporation. Built by Chinese contractors, it began operations in April 2024. It claimed to reduce coal consumption by 44,600 tons and CO2 emissions by 109,200 tons while powering ~100,000 households.

Shift away from coal: The Bangladeshi government played an eager and active role in soliciting Chinese support for coal-fired power plants, and China was willing to meet the demand for new generation in the 2010s, as the BRI supercharged energy finance. However, by the 2020s, China's preferences began to shift, as it moved to align its climate rhetoric with actual financial commitments in Bangladesh. [In February 2021](#), the Chinese Embassy denied a Bangladeshi government request for loans for coal projects, declaring that China would no longer back new coal projects in Bangladesh. As coal declined, gas and diesel received more support from Beijing, with \$250.8 million provided from 2021-2022. [Gas emits less carbon than coal](#); its increase suggests a move for more climate conscious financing. In 2022, China financed its first major Bangladeshi renewable project, Cox's Bazar Wind, a positive sign for renewables.

The case of Bangladesh shows the significant but changing role of non-renewables in China's portfolio. After years of massive support of coal projects, meeting heavy demand from the Bangladeshi government and despite its increasing public statements on climate change, China made a conscious decision to transition away from supporting the most emission-heavy energy types, a decision finally putting teeth to its statements on climate change. But coal's loss does not always translate into renewables' absolute gain, as gas and diesel finance has taken more prominence in Bangladesh. However, renewables finance has grown and could take a greater slice of the pie if Bangladesh's government, which has a [4.1 GW 2030 target](#) for renewables, provides opportunities for China to finance and construct such projects.

Section 3: Conclusion

Takeaways for China's renewable financing in the Indo-Pacific

Historic trends: From 2000 to 2021, China largely provided *non-renewable* energy financing to the Indo-Pacific, especially for coal-fired power plants. Despite China's strategic initiatives for green energy over the last two decades, these commitments are only slowly being realized into strategic investments post-pandemic—evident through similar levels of concessionality in renewable and non-renewable energy lending.

Shifts in financing: However, preliminary data for 2021 and 2022 highlight signs for cautious optimism: after steady declines in renewable energy financing in the Indo-Pacific from 2018 to 2020, the share of new financing going to renewables increased, to 65.3% in 2021 and 26.5% in 2022. Following China's commitment in 2021 to “no new coal,” no new coal activities have been identified in the Indo-Pacific.

Turning rhetoric into action: If Beijing wants to continue to make good of its strategic vision for a greener BRI, it can start by dedicating more loans and grants specifically toward renewables—such as solar, wind, and hydro. This could be especially useful, as China already leads in producing clean energy technology domestically, such as photovoltaics and wind turbines. Additionally, Beijing can provide concessional loans that Indo-Pacific countries can take advantage of if they want to move toward renewable energy, but are hindered by cost. Since Beijing has already begun to integrate new financing models—such as working through joint ventures and special purpose vehicles—to retain market share in its projects while leveling up renewable financing, it may continue to revise and adapt its renewable financing approach. At the same time, this gap also offers opportunities for other nations, such as the United States or European Union countries, to step in to finance the renewable energy transition in the Indo-Pacific.

Methodology note

This analysis relies upon grant and loan commitments in constant 2022 U.S. dollars from 2000 to 2022. Biomass, geothermal, hydro, solar, wind, and waste were considered as types of renewable energy. Coal, diesel, gas, oil, and nuclear were considered as types of non-renewable energy. For energy generation projects involving multiple energy sources, this study allocates funding equally among the respective energy types. The 24 low- and middle-income countries analyzed are Papua New Guinea, Bangladesh, Kiribati, Indonesia, Thailand, Malaysia, Myanmar, Cambodia, the Democratic People's Republic of Korea, Philippines, Sri Lanka, Micronesia, Maldives, Tonga, Nepal, Fiji, India, Timor-Leste, Vanuatu, Pakistan, Laos, Vietnam, Mongolia, and Samoa. While this list is not exhaustive of all countries in the Indo-Pacific, other low- and middle-income countries had no valid records for energy generation and transmission between 2000 and 2022.

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