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‘Small’ Belt, ‘Beautiful’ Road

CHINA’S CAUTIOUS RETURN TO GLOBAL ENERGY FINANCE

BY JIAQI LU, DIEGO MORRO, SHENGHENG LI, THANG HA

EXECUTIVE SUMMARY

A new update to the China’s Global Energy Finance (CGEF) Database, managed by the Boston University Global Development Policy Center, estimates that from 2000-2023, China’s two development finance institutions (DFIs)—the China Development Bank (CDB) and the Export-Import Bank of China (CHEXIM)—provided 367 loans, totaling $209 billion to 118 public borrowers in 68 countries around the world.

The CGEF Database is an interactive data project exhibiting public financing for global energy projects by CDB and CHEXIM to public entities, public majority-owned or private entities with a sovereign guarantee on a loan.

For the year 2023, the CGEF Database recorded three new energy-related loan commitments from CHEXIM, totaling $502 million, to three African government borrowers – Madagascar, Burkina Faso and Uganda – marking a cautious comeback after a one-year hiatus. Yet, the amount committed in 2023 is only 6 percent of the average annual lending total amount ($9 billion) for 2000-2022.

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Main findings:

- From 2000-2023, CDB and CHEXIM provided 367 loans, totaling $209 billion to 118 public borrowers in 68 countries.
- During this time, oil and gas hold the largest share of energy finance (50 percent) followed by hydropower (18 percent) and coal (10 percent). Renewable sources of energy like wind and solar and other renewables account for just 1 percent.
- Asian countries received the highest amounts of China's overseas energy finance at 31 percent ($65 billion), whereas Africa, Latin America and the Caribbean and Europe received 26 percent ($55 billion), 24 percent ($51 billion) and 18 percent ($38 billion), respectively.
- The top five recipients of Chinese energy loans are Russia ($35 billion, 17 percent), Brazil ($28 billion, 13 percent), Angola ($24 billion, 12 percent), Venezuela ($14 billion, 7 percent) and Pakistan ($10 billion, 5 percent). These five countries borrowed more than half of all lending from 2000-2023.
- In 2023, CHEXIM financed three new renewable energy projects for a combined total of $502 million in three African countries – Madagascar, Burkina Faso and Uganda. All three projects involved non-fossil fuel energy, including two hydropower-related projects (one power plant and one transmission project) and a solar power plant.
- China's lending in 2023 shows a shift towards smaller-scale projects, a departure from the large-scale projects that characterized the early BRI years (2013-2018). The average loan amount in 2023 was $167 million, which is significantly below the $574 million average loan amount for all energy loans committed from 2000-2022.
- Following recent commitments to support renewable energy and sustainable development made at the Ninth Forum on China-Africa Cooperation (FOCAC), Chinese overseas energy finance is set to rebound in the coming years, with a decidedly green slant.

As China plays a more active role in international climate governance, a green horizon for Chinese overseas energy finance is within reach. For three consecutive years, China has not financed new overseas fossil fuel projects. In the next three years, China's commitments to Africa alone will result in increased levels of green energy finance. However, whether Chinese DFIs might still support large-scale oil and gas projects, such as the East Africa Crude Oil Pipeline, remains uncertain.

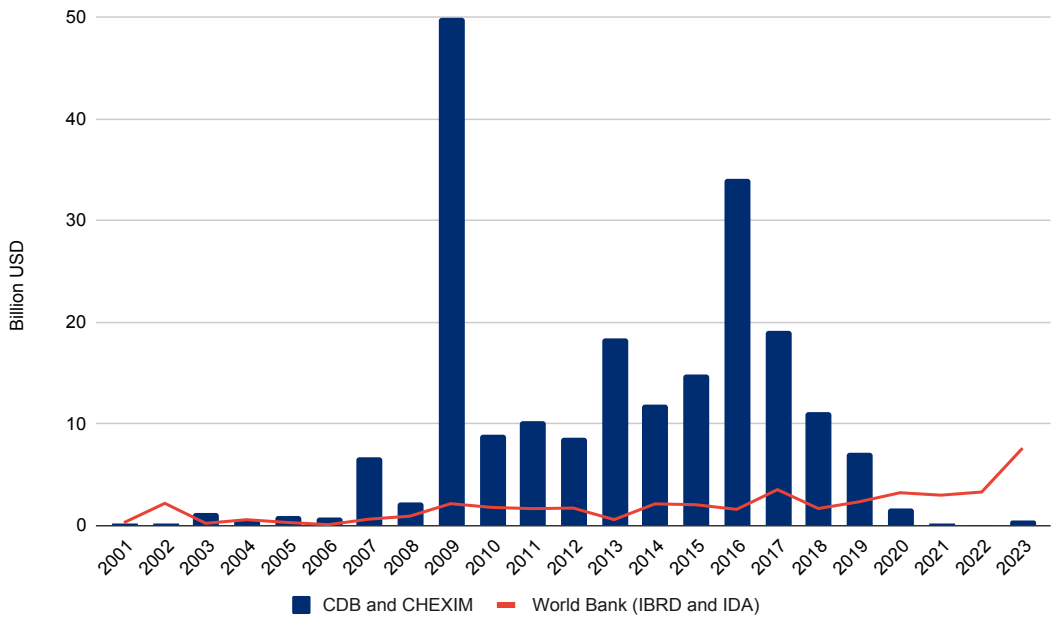
The next phase of China's overseas energy finance will likely reveal the true extent of its commitment to renewable energy and sustainable development. While China's move away from coal (and potentially, all fossil fuels) demonstrates a remarkable change, the scope and scale of its future investments will ultimately determine its contribution to the global energy transition.

CHINA'S GLOBAL ENERGY FINANCE DATABASE UPDATE

The China's Global Energy Finance (CGEF) Database, managed by the Boston University Global Development Policy Center, is an interactive data project exhibiting public financing for global energy projects by China's two development finance institutions (DFIs)—the China Development Bank (CDB) and the Export-Import Bank of China (CHEXIM). The commitments tracked are international sovereign loans, which means the recipient is a public entity, public majority owned or a private entity with a sovereign guarantee on a loan.

From 2000-2023, CDB and CHEXIM committed 367 energy loans to 118 public borrowers in 68 countries, totaling $209 billion. Comparatively, the World Bank committed $43 billion to energy projects in the same period (World Bank Group), as shown in Figure 1. Higher levels of Chinese financing exemplify how energy is central to China's overseas lending portfolio and how important China is to global energy finance and achieving climate-related objectives.

Figure 1: China and World Bank Energy Lending, 2000-2023



Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024 and Projects, The World Bank Group.

Chinese DFI loan commitments have experienced a sharp decline in recent years. The revised CGEF data shows how financing dropped dramatically after the onset of the COVID-19 pandemic in 2020, with zero new loan commitments in 2022. In 2023, loan amounts increased for the first time since 2016, but funding remains below 2020 levels and far short of the peak Belt and Road Initiative (BRI) years.

The decline in lending is not unique to energy, as China's overall overseas development finance has significantly scaled back in recent years (Engel et al. 2024). In contrast, World Bank energy lending, while nearly five times smaller than China's during the same period, remained relatively stable during the pandemic and after. Notably, in 2023, World Bank energy lending more than doubled from the previous year for a total of $8 billion, over 15 times higher than that from China.

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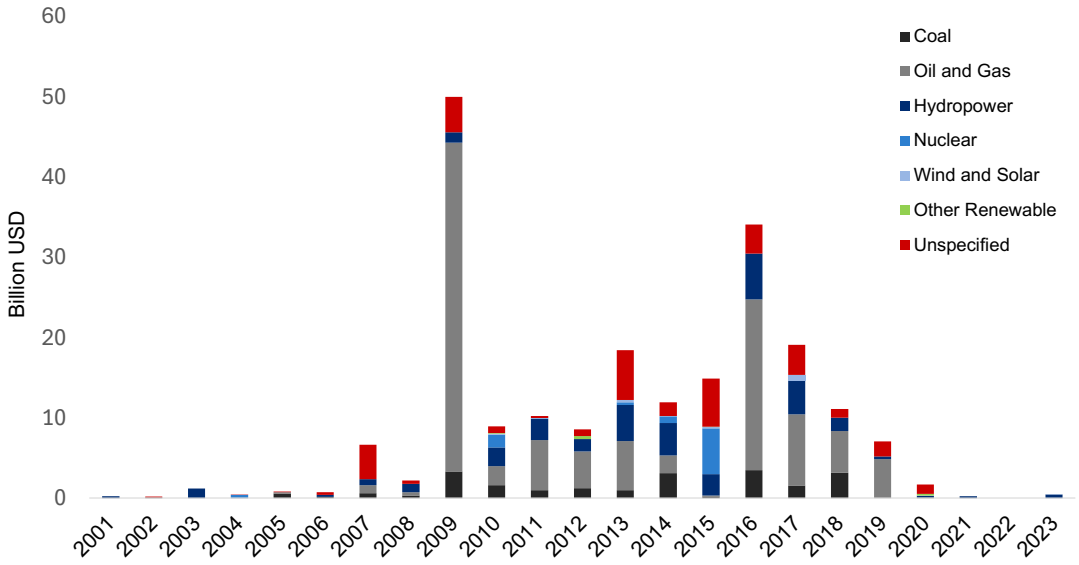
The composition of China's energy financing has also evolved over time, as shown in Figure 2. Half of all Chinese overseas energy lending has supported oil and gas related projects. Hydropower is the second biggest component of the energy portfolio, representing 17 percent, followed by coal at 10 percent. Nuclear energy stands at 4 percent, whereas renewable energy including wind and solar and other renewables (geothermal and biomass) represent only 1 percent of the total amount funded by Chinese DFIs from 2000-2023.

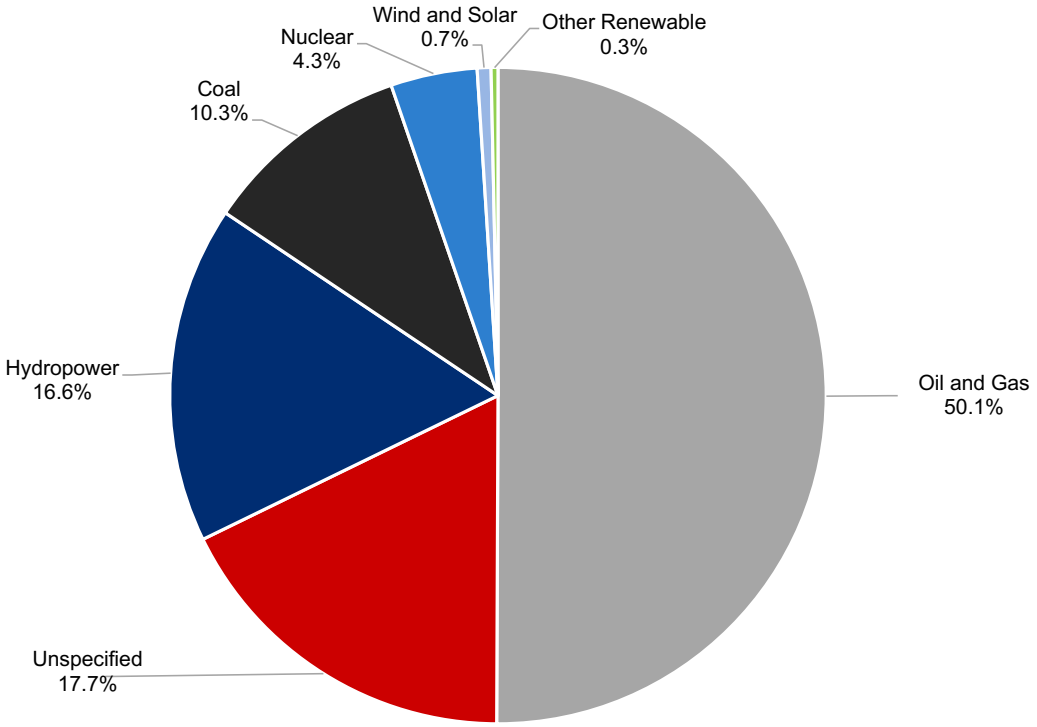
Figure 2: Chinese Lending by Energy Source, 2000-2023



Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

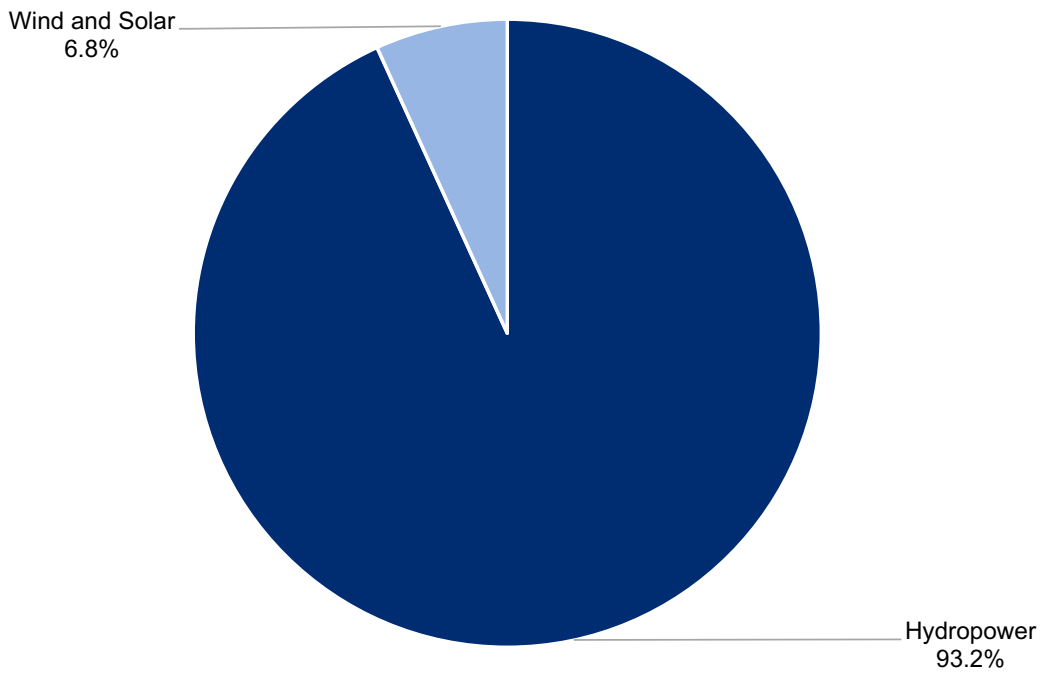
The carbon intensive loan profile has begun to change in recent years. Figures 3 and 4 show the stark contrast of energy source financing from 2000-2020 and the post-pandemic years, 2021-2023. The traditional energy sectors of coal, oil and gas dominated funding from 2000-2020. In 2021, Chinese leader Xi Jinping announced that China would no longer provide funding for new coal projects overseas and instead would seek to ramp up support for green and renewable energy in developing countries (Volcovici, Brunnstrom, and Nichols 2021). As a result, CHEXIM and CDB lending to sovereign governments has shifted exclusively to hydropower and renewable energy. However, lending amounts are significantly smaller, with only four projects committed since 2021, and no loan commitments in 2022.

Figure 3: Chinese Lending by Energy Source, 2000-2020



Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

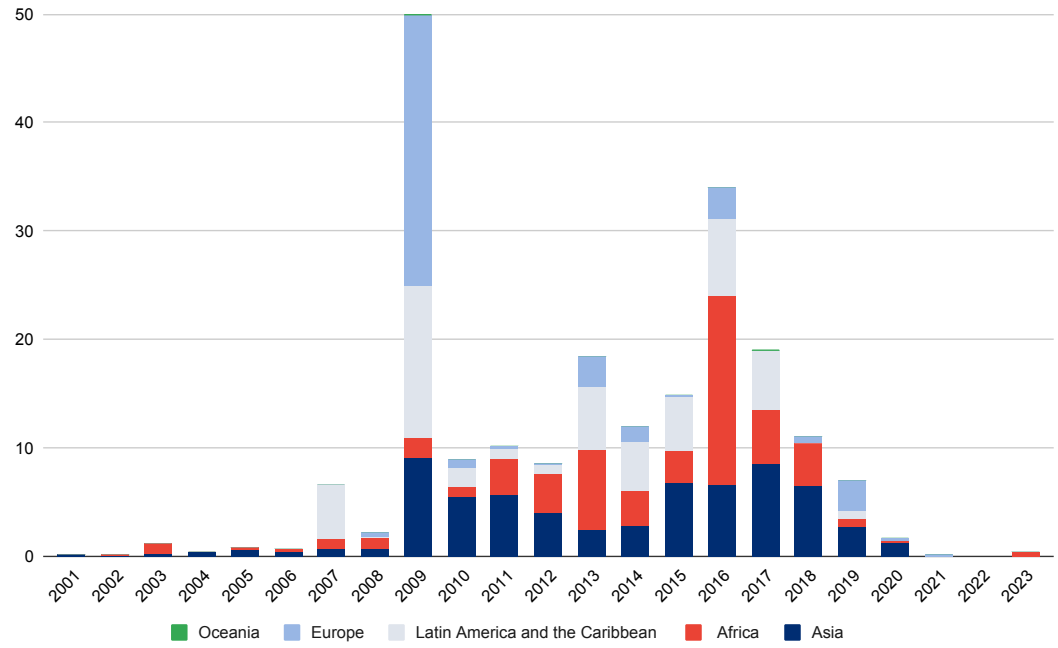
Figure 4: Chinese Lending by Energy Source, Post-Pandemic (2021-2023)



Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

Geographically, at $65 billion (31 percent of the total value), Asia is the largest recipient of Chinese overseas energy loans, with gas and liquified natural gas (LNG), coal, and oil the major sources of energy funded by China in the region. Africa, Latin America and the Caribbean and Europe respectively received $55 billion (26 percent), $51 billion (24 percent) and $38 billion (18 percent), with almost all funding concentrated in oil and gas.

Figure 5: Chinese Lending by Region, 2000-2023



Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

At the country level, the top five recipients of Chinese energy loans are Russia ($35 billion, 17 percent), Brazil ($28 billion, 13 percent), Angola ($24 billion, 12 percent), Venezuela ($14 billion, 7 percent) and Pakistan ($10 billion, 5 percent). These top five countries borrowed more than half of all energy lending provided by China's two DFIs between 2000-2023.

GLOBAL ENERGY SECTOR DEVELOPMENT FINANCE IN 2023

After no new loan commitments were made in 2022, Chinese energy lending has returned with caution. While many major economies experienced strong post-pandemic recovery, China's economy continues to struggle. Therefore, Chinese financial institutions are maintaining risk-averse lending practices and prioritizing domestic growth (Kratz, Minge, and D'Alelio 2020), with limited funding overseas (Huang and Evans-Pritchard 2024).

Table 1 shows the three loans that were committed in 2023 to Madagascar, Uganda and Burkina Faso valued at $502 million. All three projects involved non-fossil fuel energy, including two hydropower-related projects (one power plant and one transmission project) and a solar power plant. These three projects are all financed by CHEXIM.

Table 1: 2023 New Chinese Loan Commitments for Energy

Project Name	Amount (USD M)	Recipient	Lender	Source	Activity
Ranomafana Hydropower Plant, Ikopa River (64MW)	240	Madagascar	CHEXIM	Hydro	Power Generation
Electrification of Industrial Parks Phase III (118.5km), Jinja	211.9	Uganda	CHEXIM	Hydro	Transmission and Distribution
Donsin Solar Power Plant (25MW)	50.1	Burkina Faso	CHEXIM	Solar	Power Generation

Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

China's lending in 2023 shows a shift towards smaller-scale projects, a departure from the large-scale projects that characterized the early BRI years (2013-2018). For example, the average loan amount in 2023 was only $167 million, which is significantly below the $574 million average loan amount for all energy loans committed from 2000-2022. In other words, loans made in 2023 are only 29 percent of the yearly average committed from 2000-2022.

KEY DRIVERS OF CHINA'S OVERSEAS ENERGY FINANCE

South-South Cooperation

The main trigger for the post-pandemic rebound in Chinese lending activity is the recapitalization of Chinese DFIs to achieve BRI objectives. In October 2023, Chinese leader Xi Jinping announced that CHEXIM and CDB would each establish a 350 billion RMB ($48.75 billion) financing window for BRI projects (Chinese Ministry of Foreign Affairs 2023). These funds are earmarked for BRI projects that aim to enhance connectivity and promote sustainability and infrastructure development. Of the 2023 loan recipients, all three are African BRI members.

Africa faces a power crisis and is the only region with declining electrification rates (Adjei 2024). The 2023 projects are all green development initiatives and aim to address energy shortages. This renewed lending, focused on green energy, aligns with China's broader goals of promoting sustainable development and South-South cooperation across the BRI (Lu 2024).

For both China and recipient countries, funding smaller projects serves as a risk mitigation strategy (Engel et al. 2024). In the case of BRI, large fossil fuel projects, especially coal, launched during the early years have increased pressure on sovereign borrowers' balance sheets, amplified by the economic downturn amid the pandemic. Smaller projects are a way to ensure repayment and promote debt sustainability. Similarly, lending at affordable rates, particularly in a high interest rate environment, is also conducive to reducing risk. Two of the three loans committed in 2023 are offered at concessional rates, thereby helping alleviate future debt servicing burdens. For the Chinese government, shifting its lending profile away from fossil fuels not only helps mitigate financial and political risks, but also improves its international reputation in global climate governance (Nedopil 2023).

Case Study: Donsin Solar Power Plant (25MW) Project

The Donsin Solar Power Plant project, located in the commune of Loumbila, Burkina Faso, is a renewable energy initiative funded through a concessional loan agreement with CHEXIM. According to the Council of Ministers of Burkina Faso, this 355.09 million RMB ($50.1 million) loan was signed on September 29, 2023, and was provided to the government of Burkina Faso. At the time of writing, the project is progressing toward implementation and has a construction period of 15 months.

This preferential loan agreement provided the financial foundation for constructing a 25MW solar power plant with energy storage, including 5MW of solar panel and 20MWh of storage, located at Donsin Airport in Oubritenga Province. On April 16, 2024, the Transitional Legislative Assembly ratified the loan associated with this project. This swift government approval underscored the project's importance to Burkina Faso's energy strategy, which aims to increase national electricity production and enhance energy reliability by integrating renewable sources into the grid.

Once completed, the solar power plant is expected to secure Donsin airport in terms of energy supply and increase national production by 45 gigawatt-hours per year, representing a 6 percent increase in current production. It will also enable the connection of more than 50,000 new households and the training of over 50 executives in the energy sector.

International Climate Governance

The increase in support for renewable energy is partially driven by China's growing role in global climate governance. In 2020, China pledged to achieve carbon neutrality by 2060 (Liu and Yao, 2021). Yet, the government received significant criticism from the international community for China's continued support to new fossil fuel projects abroad. In 2021, Xi pledged to suspend

building new coal plants abroad and instead seek to ramp up support for renewable energy in developing countries. China's National Development and Reform Commission (NDRC) released policy guidelines in March 2022 elaborating on this proposal (National Development and Reform Commission 2022). The rules indicated that China would not finance new coal power projects abroad, proceed "cautiously" with existing coal plants and encourage Chinese renewable energy companies to "go global." Since the 2021 announcement, Chinese DFIs have not provided any new loans for overseas coal or other fossil fuel projects.

As for proceeding cautiously with existing coal plants, commentators discussed that the rules would enable projects whereby construction had not commenced to be 'shelved' or repurposed to leverage renewable energy (Centre for Research on Energy and Clean Air 2022). However, there were no public or publicly guaranteed Chinese DFI-backed coal-fired power plants that had yet to start construction by the time of the announcement. As a result, converting to renewable energy to reduce future emissions was not possible. However, additional research is warranted to study the behavior of Chinese commercial lenders and other private actors in adhering to these guidelines.

The recent rebound in lending is consistent with China's strategy in pursuing a more active role in international climate governance by engaging in bilateral and multilateral mitigation efforts and providing climate finance for Global South countries (Liu et al. 2024).

The emphasis on clean energy is also aligned with China's novel "small is beautiful" approach, which focuses on supporting small-scale initiatives with positive environmental and social impacts for recipient countries (Ray 2023). However, recent Chinese loans for clean energy projects are significantly smaller compared to those for fossil fuels. Between 2000-2020, the average loan for coal projects was $431 million per project. In contrast, the average loan for clean energy over the past three years has been $184 million per project. This decline raises concerns about the scale of China's commitment to clean energy finance.

Case Study: 64 MW Ranomafana Hydropower Plant Project in Madagascar

On April 6, 2023, Madagascar and China inked a framework agreement on a $240 million preferential loan to finance the expansion of the Ranomafana hydropower plant. The agreement, signed between Madagascar's Minister of Foreign Affairs, Yvette Sylla, and the Chargé d'Affaires at the Chinese Embassy in Antananarivo, Zhang Wei, marked the largest financial cooperation project between the two nations since the establishment of diplomatic relations in 1972 (Chinese Embassy in Madagascar 2023).

The loan, provided by CHEXIM, will fund the installation of an additional 64 MW of generating capacity at the Ranomafana plant, situated on the Ikopa River, approximately 115 kilometers northwest of the capital city of Antananarivo. PowerChina's subsidiary, Sinohydro Corporation, was awarded a $270 million Engineering, Procurement and Construction (EPC) contract to execute the expansion. The project is reportedly experiencing delays and remains under construction (Power Technology 2024).

Once completed, the Ranomafana Hydropower Project will supply low-carbon electricity to regions including Analamanga, Bongolava and Itasy. The project dovetails with Madagascar's broader development agenda by strengthening the country's energy security, reducing dependence on fossil fuels and curbing carbon emissions (Sey 2023). With an anticipated annual output of 311 million kWh, the expanded capacity will help alleviate power shortages, stabilize the national grid and spur economic development across the region.

CONCLUSION: A STRONGER GREEN REBOUND ON THE HORIZON?

Two years after ending international coal financing, China has gone further by halting all fossil fuel financing. However, with economic challenges at home putting serious pressure on government funding, it is uncertain whether China will continue to provide substantial international development finance of any sort. Therefore, for international climate observers, two questions loom large: Will China's overseas energy finance remain cautiously low, and will the country take the next step by cease financing for all fossil fuels, and not just coal-fired power plants?

While the long-term picture remains unclear, at least in the short term, a stronger rebound in green energy investment should be expected. At the recent Ninth Forum on China-Africa Cooperation (FOCAC), China committed $50 billion for the region from 2024-2027, including $30 billion in credit lines (Wu 2024). While specific allocation details were not provided, this funding is aimed at supporting 30 clean energy projects across the continent, underscoring China's strong commitment to green development.

Moreover, China has pledged to establish a China-Africa nuclear energy forum, which will promote multilateral collaboration in nuclear energy development throughout Africa. This partnership could follow a model similar to the US-China Clean Energy Research Center (Lewis 2023), where China's DFIs could support African countries in building their own research and development (R&D) and installation capabilities. Such an initiative could unlock Africa's potential for clean technology innovation and deployment, fostering local expertise and driving sustainable energy development across the region.

Beyond Africa, China may also be poised to return to BRI countries with greener initiatives. Last year, China announced the Green Investment and Finance Partnership (GIFP) at the third Belt and Road Forum in Beijing, pledging to expand investments in BRI countries through more sustainable and environmentally friendly projects. If the GIFP is fully implemented, China's DFIs could play a pivotal role in bridging the clean energy gap in the Global South, promoting an inclusive energy transition (Gallagher 2023).

In addition to international demand, China's domestic economy and new developments in the clean energy industry also call for a more diverse global strategy. Chinese DFIs have the potential to channel China's "clean energy tsunami" (Sandlund and White 2024) towards the Global South, addressing the urgent need for sustainable energy solutions in developing regions. Initiatives like the "Africa Solar Belt" highlight these efforts, directly providing Chinese-made solar panels as material aid to underserved populations without reliable electricity in Africa (Song and Ireri 2024).

As China solidifies its position as a leader in international climate governance, a green horizon for Chinese overseas energy finance is within reach. For three consecutive years, China has not financed new overseas fossil fuel projects, signaling a strong commitment to green energy. In the next three years, China's commitment to Africa alone is set to lift its green energy finance. While China's move away from coal (and potentially, all fossil fuels) demonstrates a remarkable change, the scope and scale of its future investments will ultimately determine its contribution to the global energy transition.

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APPENDIX

The 2024 update to the CGEF Database cross-checked records of past projects with other available databases published by the Boston University Global Development Policy Center and those of peer institutions, including the most recent update of the Boston University Global Development Policy Center's Chinese Loans to Africa Database, the Boston University Global Development Policy Center's China's Overseas Development Finance Database and AidData's Global Chinese Development Finance Dataset. Project related attribute data is also checked with S&P Platts data.

All CGEF Database entries have sources compiled according to the GDP Center's double verification methodology, with source documents archived internally and available upon request. The CGEF Database only includes loans to overseas borrowers with public ownership or those publicly guaranteed. Entries beyond the scope of the CGEF Database, including loans that have not been disbursed and canceled, projects that Chinese DFIs have withdrawn from, projects without host country public sector borrowers, loans financed by any syndicate involving non-Chinese lenders, have been removed; and new entries have been added, along with revisions to existing entries as new sources became available.

The list of BRI countries was also updated according to the list of countries that have signed cooperation documents with China as of 2023. These updates will also be reflected in the upcoming versions of other databases managed and maintained by the Boston University Global Development Policy Center. Tables A1-A3 summarize the updates that have been made.

Table A1: New Loans Added to the Database, 2024 Update

Total Value of 77 Loans Added: +$29.38 billion

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
AFR.026	Regional	OMVS: Koukoutamba Hydroelectric Project (294MW); 600km Koukoutamba-Conarky & Koukoutamba-Manantali Transmission Lines (225kV)	CHEXIM	2013	458.39
AO.145	Angola	Menongue Medium and High Voltage Power Grid Construction and Expansion Project	CHEXIM	2013	50
BA.002	Bosnia and Herzegovina	Dabar Hydropower Plant (159MW)	CHEXIM	2021	234.56
BD.007.03	Bangladesh	Oil Tankers and Three Bulk Carriers Purchase (3 Units Each)	CHEXIM	2016	180.72
BD.008.03	Bangladesh	Dhaka Power Distribution Company (DPDC) Power System Networks, Modernization (Concessional Loan)	CHEXIM	2019	380.61
BD.014	Bangladesh	Patuakhali Coal-Fired Thermal Power Plant (2 x 660MW)	CHEXIM	2018	602.5
BD.018	Bangladesh	Power Grid Network Strengthening Project (PGCB) (Concessional Loan)	CHEXIM	2020	279.71
BF.008	Burkina Faso	Donsin Solar Power Plant (25MW)	CHEXIM	2023	50.13
BY.007.01	Belarus	Railway Electrification, Zhlobin-Osipovichi (107km)	CHEXIM	2012	63.97
BY.007.02	Belarus	Railway Electrification, Zhlobin - Kalinkovichi (101km)	CHEXIM	2012	65.7
BY.007.06	Belarus	Railway Electrification Zhlobin-Kalinkovichi Section	CHEXIM	2019	73.82

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
BY.010.01	Belarus	Electrification of Molodechno-Gudogay-State Border Line Railway (84km)	CHEXIM	2015	76.4
BY.010.02	Belarus	Minsk-Severnaya Substation, Renovation	CHEXIM	2015	48.34
BY.015	Belarus	Railway Electrification, Gomel Zhlobin section	CHEXIM	2013	80.73
CD.011	Congo, Democratic Republic of the	Busanga Hydropower Project (240MW)	CHEXIM	2015	509.43
CU.003	Cuba	La Herradura Wind Farm Project (Phases I and II)	CDB	2017	159.7
EC.017	Ecuador	Paute-Sopladora Hydropower Plant (321MW)	CHEXIM	2011	554.25
EC.018	Ecuador	Minas-San Francisco hydroelectric dam (270 MW) (independent component)	CHEXIM	2013	312.5
ET.074	Ethiopia	Addis Ababa Gerbi Dam Reservoir, Transmission Line (8.2km) and Treatment Plants	CHEXIM	2016	139.11
ET.090	Ethiopia	Bahir Dar-Debre Markos-Addis Ababa Power Transmission Project (400kV), Lot 3A	CHEXIM	2008	34.99
ET.096	Ethiopia	Bahir Dar-Debre Markos-Addis Ababa Power Transmission Project (400kV), Lot 2	CHEXIM	2008	36.92
ET.097	Ethiopia	Bahir Dar-Debre Markos-Addis Ababa Power Transmission Project (400kV), Lot 3B	CHEXIM	2008	54.87
ET.098	Ethiopia	Bahir Dar-Debre Markos-Addis Ababa Power Transmission Project (400kV), Lot 1	CHEXIM	2008	64.72
ET.101	Ethiopia	Finchaa-Amerti-Neshes (FAN) Hydropower Project (97MW, Loan 2)	CHEXIM	2007	55.82
GA.045	Gabon	Grand Poubara Hydropower Plant (160MW) (Concessional Loan)	CHEXIM	2008	70
GQ.004.12	Equatorial Guinea	Djibloho Power Transmission and Transformation Project (1460km Transmission Lines and 32 Substations)	CHEXIM	2009	549.95
GQ.010	Equatorial Guinea	Malabo Gas Power Plant (42MW), Expansion	CHEXIM	2009	117.95
IQ.001	Iraq	Al-Rumaila Combined Cycle Gas Power Plant (730MW)	CHEXIM	2018	872.13
IR.003.02	Iran, Islamic Republic	Abadan Combined Cycle Power Plant	CHEXIM	2017	613
IR.003.03	Iran, Islamic Republic	Abadan Refinery Upgrade, Phase 1	CHEXIM	2016	1024.1
IR.007	Iran, Islamic Republic	Abadan Refinery Upgrade, Phase 2	CHEXIM	2018	1797.58
IR.011	Iran, Islamic Republic	Zanjan 1 Gas-fired Combined Cycle Power Plant (448MW)	CHEXIM	2018	326
IR.012	Iran, Islamic Republic	Lamard Combined Cycle Power Plant (913MW)	CHEXIM	2018	501.15

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
KE.086	Kenya	Nairobi Underground Electric Power Distribution Network (Kileleshwa,Westlands, Parklands)	CHEXIM	2017	101.33
KE.087	Kenya	Nairobi Underground Electric Power Distribution Network (Kilimani, Hurlingham, Ngong Road)	CHEXIM	2017	177.51
KH.003.08	Cambodia	Stung Atay Pursat Dam, Phase 1 (120MW)	CHEXIM	2010	63.13
KH.006.05	Cambodia	Transmission Line and Substation, Phnom Penh - Bavet (115kV)	CHEXIM	2013	76.68
KH.010.03	Cambodia	Stung Atay Pursat Dam, Phase 2 (120 MW)	CHEXIM	2017	45.71
KH.018	Cambodia	Backbone & Sub-Region Transmission Line Project (500kV)	CHEXIM	2020	111.99
KZ.005	Kazakhstan	KazMunayGas Atyrau Refinery Aromatic Hydrocarbons Complex (On-lending)	CHEXIM	2009	884
KZ.036	Kazakhstan	Atyrau Petrochemical Complex Construction	CDB	2016	2000
LA.013.02	Lao People's Democratic Republic	Transmission Line and Substations, Thavieng-Thabok (230kV)	CHEXIM	2015	96
LA.014.04	Lao People's Democratic Republic	Electricity Transmission Line, Vientiane (115/22kV)	CHEXIM	2016	76
LA.021	Lao People's Democratic Republic	Nam Khan 2 Hydropower Plant (130MW)	CHEXIM	2010	292.6
LA.024	Lao People's Democratic Republic	Sigma Hydropower Station-Sekong 2 Substation Transmission and Transformation Project	CHEXIM	2016	269.45
LA.028	Lao People's Democratic Republic	Nabong-Nam Ngum 1-Hin Heup Power Transmission Line (230kV)	CHEXIM	2018	162.35
LK.007.04	Sri Lanka	Equipment Purchase, Lighting Sri Lanka, Uva Province	CHEXIM	2011	24.9
MG.008	Madagascar	Ranomafana Hydropower Plant, Ikopa River (64MW)	CHEXIM	2023	240
MM.004.01	Myanmar	Offshore and Onshore Natural Gas Development and Pipeline Project (EUR)	CDB	2010	603.67
MM.006	Myanmar	Baluchaung 3 Hydropower Plant (52MW)	CHEXIM	2011	48.31
MM.008.02	Myanmar	Transmission Lines, Upper Yeywa-Shwesaryan and Shwesaryan Substation Extension (230kV)	CHEXIM	2013	102
MM.021	Myanmar	Upper Keng Tawng Hydropower Plant (51MW)	CHEXIM	2008	29.97
MM.024	Myanmar	Thaukyegat II Hydropower Plant (120MW)	CHEXIM	2010	69.3
MN.012	Mongolia	Choibalsan Thermal Power Plant (86MW)	CDB	2020	60.87
MY.003	Malaysia	Trans-Sabah Gas Pipeline	CHEXIM	2017	1904.88
MY.004	Malaysia	Tanjung Kidurong Gas-fired Power Plant (1159MW)	CDB	2019	100
PK.003.03	Pakistan	Chashma Power Station, Units 3 and 4 (680MW) (Concessional Loan)	CHEXIM	2010	105.32
PK.003.04	Pakistan	Chashma Power Station, Units 3 and 4 (680MW) (Additional USD finance)	CHEXIM	2010	474

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
PK.005	Pakistan	Neelum-Jhelum Hydropower Plant (968MW) (Loan 1)	CHEXIM	2012	448
PK.009.03	Pakistan	Karachi Coastal Nuclear Plant (KANUPP) (2290MW) (2014 Preferential Export Buyer's Credit)	CHEXIM	2014	382.85
PK.009.04	Pakistan	Karachi Coastal Nuclear Plant (KANUPP) (2290MW) (Concessional Loan)	CHEXIM	2014	431.11
PK.033	Pakistan	Coal Mine to Support Thar Block 2 Power Plant	CDB	2015	200
PK.045.01	Pakistan	Karachi Coastal Nuclear Plant (KANUPP) (2290MW) (Buyer's Credit)	CHEXIM	2015	2050
PK.045.02	Pakistan	Karachi Coastal Nuclear Plant (KANUPP) (2290MW) (2015 Preferential Export Buyer's Credit)	CHEXIM	2015	3618.15
RU.027	Russian Federation	Purchase of Icebreaking LNG Tankers (15 Units)	CDB	2018	604.23
SD.077	Sudan	Merowe Hydropower Project Transmission Lines and Substations	CHEXIM	2003	381
TG.030	Togo	Lome and Inland Cities Network Reinforcement and Expansion	CHEXIM	2013	33.87
TJ.008.01	Tajikistan	Dushanbe 2 Coal Plant (400MW) (USD loan)	CHEXIM	2014	178.97
TJ.008.02	Tajikistan	Dushanbe 2 Coal Plant (400MW) (RMB loan)	CHEXIM	2014	151.46
TJ.011	Tajikistan	Unified Power System in Northern Tajikistan Project	CHEXIM	2011	26.46
UG.045	Uganda	Electrification of Industrial Parks Phase III (118.5km) Jinja Industrial Park, Njeru, Masese, Kasese Industrial Park, Ishaka Industrial Park	CHEXIM	2023	211.85
UZ.003	Uzbekistan	Gas Network Modernization Project	CHEXIM	2010	73.6
UZ.027.02	Uzbekistan	Nizhne-Bozsuyskiye, Shakhrikhan and Tashkent HPP cascades (116MW)	CHEXIM	2018	62.96
UZ.028	Uzbekistan	Gas to Oil Processing Plant	CDB	2019	1200
UZ.043	Uzbekistan	Loan to Uzbekneftegaz	CDB	2017	45
VN.003.03	Vietnam	Vinh Tan 2 Coal Plant (1244MW) (Export Buyer's Credit)	CHEXIM	2010	695
VN.011.01	Vietnam	Vinh Ha Hydropower Plant (21MW)	CHEXIM	2013	30

Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

Table A2: Loans Removed from the Database, 2024 Update

Total value of 41 loans removed: -$37.53 billion

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
BD.005	Bangladesh	Shahjibazar Power Plant (330MW)	CHEXIM	2014	239
CM.083	Cameroon	Djoum Solar Plant (0.5 MW)	CHEXIM	2015	90.1
DO.001	Dominican Republic	Electrical Distribution System, Upgrade	CHEXIM	2019	600
EC.001.02	Ecuador	Paute-Sopladora Hydropower Plant (321MW)	CHEXIM	2011	571
EC.002.02	Ecuador	Oil Development	CDB	2010	200
EC.003.04	Ecuador	Oil Development	CDB	2011	600
EC.008.01	Ecuador	Energy Saving Programs	CHEXIM	2015	250
EG.056	Egypt	Transmission Line (500kV) (1210km) (CDB Loan)	CDB	2017	231
ET.070	Ethiopia	Woldiya II, Combolcha III Power Supply Stations (400kV)	CHEXIM	2017	89.8
ID.003.01	Indonesia	Rembang Coal Plant (632MW)	CDB	2008	131
ID.003.02	Indonesia	Indramayu Coal Plant (990MW)	CDB	2008	84.6
ID.007	Indonesia	Tanjung Kasam Coal Plant (130MW)	CHEXIM	2008	180
ID.019	Indonesia	PLTU Jawa 7 Coal Plant (2100MW)	CDB	2016	1800
ID.020	Indonesia	Cilacap Sumber Coal Plant (600MW)	CDB	2016	98
ID.024	Indonesia	Sumsel 5 Coal Plant (300 MW)	CHEXIM	2012	318
ID.025	Indonesia	Bangko Tengah (Sumsel 8) Coal Plant (1200 MW)	CHEXIM	2015	1260
KZ.003.01	Kazakhstan	Turkmenistan-China Gas Pipeline Lines A,B (Kazakhstan portion)	CDB	2008	7500
KZ.003.02	Kazakhstan	Turkmenistan-China Gas Pipeline Line C (Kazakhstan portion)	CDB	2012	4700
KZ.010	Kazakhstan	Beineu-Bozoi-Shymkent Gas Pipeline	CDB	2011	1800
KZ.017	Kazakhstan	Beineu-Bozoi-Shymkent Gas Pipeline (Additional Finance)	CDB	2015	350
LA.003	Lao People's Democratic Republic	Xeset 2 Hydropower Plant (76 MW)	CHEXIM	2004	108.4
LA.007	Lao People's Democratic Republic	Nam Ou 2-5-6 Hydropower Plants (540MW)	CDB	2012	660
LA.008	Lao People's Democratic Republic	Nam Khan 2 Hydropower Plant (130 MW)	CHEXIM	2009	308
LA.010	Lao People's Democratic Republic	Nam Phay Hydropower Plant (86MW)	CHEXIM	2013	367.29

BU ID	Country	Project Name	Lender	Year	Amount (USD M)
LA.012.02	Lao People's Democratic Republic	Nam Ngum 3 Hydropower Plant (540 MW)	CHEXIM	2014	1290
MM.013	Myanmar	Offshore Natural Gas Development and Pipeline Projects	CDB	2009	599
PK.004	Pakistan	Guddu Gas Plant (511MW)	CHEXIM	2011	464
PK.009.01	Pakistan	Karachi Coastal Nuclear Plant (2290MW)	CHEXIM	2014	6500
PK.011.02	Pakistan	Port Qasim Datang 1 (700MW)	CDB	2016	750
PK.012	Pakistan	Thar Block 2 Engro Coal Plant (660MW)	CDB	2016	207
PK.025	Pakistan	Suki Kinari Hydropower Plant (884 MW)	CHEXIM	2017	708.1
SD.002	Sudan	El-Jaili (Garri/Qarre) Gas Power Station Phase I 212MW	CHEXIM	2001	128
TD.002	Chad	N'Djarmaya Oil Refinery	CHEXIM	2011	330
TJ.004	Tajikistan	Sughd Substation (500/220kV)	CHEXIM	2011	26.5
TJ.008	Tajikistan	Dushanbe 2 Coal Plant (400MW)	CHEXIM	2014	332
UA.003	Ukraine	Gas to Coal Projects	CDB	2012	300
UZ.013	Uzbekistan	Ustyurt Natural Gas and Petrochemicals Complex, Surgil Gas Field	CDB	2013	227
UZ.014	Uzbekistan	Gas Network Modernization Project	CHEXIM	2013	73.6
VN.007.01	Vietnam	Duyen Hai Coal Plant (2490MW)	CHEXIM	2011	1028.99
VN.009	Vietnam	Thai Binh 2 Coal Plant (1200MW)	CDB	2013	27.89
VN.015	Vietnam	Vinh Tan 3 Coal Plant (1980MW)	CDB	2016	2000

Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

Table A3: Year, Loan Value and Lender Updates in the Database, 2024 Update

14 loans with an updated loan commitment year, 9 loans with an update in lender and 77 loans with a different amount (excluding those with changes of $100,000 and under) leading to a cumulative difference of: $7.66 billion with respect to the previous database update.

BU ID	Action	New Value
AG.001	Updated loan amount	From $47M to $43.7M
AO.009.09	Updated loan amount	From $21.13M to $27.32M
AO.009.09	Updated year of loan commitment	From 2011 to 2009
AO.009.10	Updated loan amount	From $3.61M to $3.72M
AO.009.10	Updated year of loan commitment	From 2011 to 2010
AO.009.71	Updated loan amount	From $112M to $80.75M
AO.061	Updated loan amount	From $4099.5M to $3852M
AO.080	Updated lender	From CHEXIM to CDB
AO.089.45	Updated loan amount	From $452M to $531.8M
AO.089.49	Updated lender	From CHEXIM to CDB
AR.003	Updated loan amount	From $2500M to $2498.61M
BD.007.01	Updated loan amount	From $552.1M to $467.84M
BD.007.01	Updated year of loan commitment	From 2016 to 2017
BD.008.01	Updated loan amount	From $550M to $84.27M
BD.008.02	Updated year of loan commitment	From 2017 to 2019
BD.010	Updated loan amount	From $970M to $686.57M
BO.010	Updated loan amount	From $60M to $59.73M
BR.001	Updated loan amount	From $7000M to $10000M
BY.001	Updated loan amount	From $362M to $382.35M
BY.008.02	Updated loan amount	From $323M to $323.82M
BY.008.02	Updated lender	From CHEXIM to CDB
CD.012	Updated loan amount	From $367M to $360M
CG.009.04	Updated loan amount	From $110M to $96.36M
CG.009.04	Updated year of loan commitment	From 2012 to 2013
CG.009.11	Updated loan amount	From $36.39M to $32.62M
CG.009.11	Updated year of loan commitment	From 2012 to 2013
CM.010	Updated loan amount	From $49.78M to $44.47M
EC.003.05	Updated loan amount	From $312.48M to $506M
EC.007	Updated loan amount	From $509M to $509.23M
EG.023	Updated loan amount	From $459M to $690M
EG.023	Updated lender	From CHEXIM to CDB, CHEXIM
ER.008	Updated loan amount	From $100M to $98M
ET.004	Updated loan amount	From $116M to $64.82M
GA.004	Updated loan amount	From $336.32M to $300M

BU ID	Action	New Value
GN.006	Updated year of loan commitment	From 2011 to 2013
GQ.027.02	Updated lender	From CHEXIM to CDB
GQ.027.03	Updated lender	From CHEXIM to CDB
GQ.029	Updated loan amount	From $149M to $201.25M
ID.001	Updated loan amount	From $330M to $330.8M
ID.004	Updated loan amount	From $625M to $625.26M
ID.005.04	Updated loan amount	From $293M to $293.23M
ID.009.01	Updated loan amount	From $133M to $132.2M
KE.007	Updated loan amount	From $98.97M to $87.51M
KE.011	Updated loan amount	From $382.5M to $367.7M
KE.020	Updated loan amount	From $20.2M to $19.43M
KE.021	Updated loan amount	From $93.27M to $89.62M
KE.038	Updated loan amount	From $5.12M to $4.92M
KE.040	Updated loan amount	From $136M to $139.21M
KE.083	Updated loan amount	From $97.97M to $83.29M
KE.095	Updated loan amount	From $127.65M to $118.49M
KG.004.02	Updated loan amount	From $390M to $389.8M
KH.004.03	Updated loan amount	From $50M to $50.88M
KH.006.02	Updated loan amount	From $76M to $18.81M
KH.007.03	Updated loan amount	From $95M to $94.86M
KH.008	Updated loan amount	From $159M to $159.16M
KH.010.01	Updated loan amount	From $123M to $116.62M
KH.010.02	Updated loan amount	From $180M to $176.49M
KH.010.02	Updated year of loan commitment	From 2015 to 2017
KH.012	Updated loan amount	From $80M to $78.15M
KZ.001	Updated loan amount	From $1138M to $1130.41M
KZ.001	Updated year of loan commitment	From 2008 to 2012
LA.003.02	Updated loan amount	From $206M to $199M
LA.012.01	Updated loan amount	From $51M to $45.66M
LA.017.02	Updated loan amount	From $217.26M to $217M
LA.017.03	Updated loan amount	From $89.77M to $90M
LA.018	Updated year of loan commitment	From 2018 to 2014
LK.005.01	Updated loan amount	From $32M to $30.72M
LK.020.01	Updated loan amount	From $1000M to $700M
MM.001	Updated loan amount	From $258M to $257.78M
MN.003	Updated loan amount	From $76M to $75.29M
MN.009	Updated loan amount	From $51.8M to $49.21M
MR.013	Updated loan amount	From $138.8M to $138.3M

BU ID	Action	New Value
PK.003.01	Updated loan amount	From $1570M to $1000M
PK.010	Updated loan amount	From $1024M to $576M
RS.004	Updated loan amount	From $608M to $608.26M
RS.008	Updated loan amount	From $214.09M to $187.14M
RU.012	Updated lender	From CDB to CHEXIM
RU.018	Updated loan amount	From $11795.58M to $3000M
RU.020	Updated loan amount	From $2772.25M to $2808.99M
SD.004	Updated year of loan commitment	From 2003 to 2002
SD.028	Updated lender	From CHEXIM to CDB
SD.063	Updated loan amount	From $175M to $165M
SD.097.09	Updated loan amount	From $274M to $232.9M
SN.011	Updated loan amount	From $141.73M to $138.3M
SY.001	Updated loan amount	From $36.6M to $51.24M
TJ.001	Updated year of loan commitment	From 2008 to 2007
TJ.010	Updated loan amount	From $79M to $80.81M
TM.001	Updated loan amount	From $3000M to $4000M
TM.004	Updated year of loan commitment	From 2013 to 2011
UZ.010.01	Updated loan amount	From $37.1M to $33M
UZ.023	Updated loan amount	From $105.5M to $89.8M
VE.009	Updated loan amount	From $4015M to $4000M
VN.002.05	Updated loan amount	From $355M to $355.3M
VN.002.05	Updated year of loan commitment	From 2007 to 2010
VN.003.01	Updated loan amount	From $84M to $88.63M
VN.003.02	Updated loan amount	From $995M to $300M
VN.006	Updated loan amount	From $36M to $35.75M
VN.008	Updated loan amount	From $1001M to $1000.9M
VN.008	Updated lender	From CHEXIM to CDB
VN.012	Updated loan amount	From $468M to $467M

Source: China's Global Energy Finance Database, Boston University Global Development Policy Center, 2024.

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