

GLOBAL ECONOMIC GOVERNANCE INITIATIVE

\$1 B
NORTH AMERICA

\$42.8 B
LATIN AMERICA

\$50 B
EUROPE/CENTRAL ASIA

\$23.4 B
AFRICA

\$48.2 B
ASIA

Total Global
\$165.4 B

Slowing Down, Powering Up: 2017 Chinese Energy Development Finance

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Chinese policy banks provided \$25.6 billion in financing to foreign governments in the energy sector in 2017, increasing the total amount of energy finance by China's policy banks since 2000 to roughly \$225.8 billion. China's development bank financing in energy thus decreased by 45 percent from the 2016 figure of \$47.3 billion; however the total number of loans and countries increased from 2016 to 2017. In 2017 the majority of financing was in power generation, with significant increases in hydroelectric power plants. The region of the world that received the largest amount of energy finance was Africa, at 26.7 percent of the total. Those nations currently designated to be part of China's Belt Road Initiative received 55.9 percent of total energy finance from China's two global policy banks.

The China Global Energy Database at Boston University's Global Development Policy Center (GDP Center) tracks the international financing to foreign governments by China's two policy banks, the China Development Bank (CDB) and China Export-Import Bank (CHEXIM). These banks do not regularly and systematically publish their annual global disbursements in a disaggregated form. Therefore, a number of researchers have attempted to build estimates of Chinese overseas development finance 'from the ground up.' The GDP Center has collaboratively adopted the data collection methodology deployed by colleagues at the China-Africa Initiative at the Paul Nitze School for Advanced International Studies at John Hopkins University (SAIS-CARI). This policy brief accompanies this year's release of the China Global Energy Database to exhibit the main trends and to discuss revisions from our estimates of China's development finance in the energy sector published in 2016.

Table 1: Overview of 2017 Loans in Context

	2017	2016	2013 to 2016 (ave)
Loan Amount (USM)	25,603	47,353	28,762
Number of Loans	21	18	20
Number of Recipients	17	15	10

Table 1 exhibits the aggregated 2017 figures alongside our revised 2016 estimates and the average from 2013 to 2016. Among these loans, \$14.68 billion of loans came from CDB, \$10.9 billion of financing came from CHEXIM, and one project –the \$1.7 billion Karot Run-of-the-River Hydroelectric Project in Pakistan, whose estimated cost is 1.7 billion USD – was co-financed by CDB, CHEXIM and several other Chinese financiers.

Table 2: Sectoral Distribution of Chinese Development Finance in Energy

Sector	2017		2016		2013 to 2016 (ave)	
	Loan Amount	% Total	Loan Amount	% Total	Loan Amount	% Total
Efficiency	-	0%	-	0%	63	0%
Extraction	7,400	28%	21,900	46%	10,055	35%
Gas	1,200	4%	-	0%	-	0%
Oil	6,200	23%	21,900	46%	10,055	35%
Multipurpose	694	3%	16,100	34%	4,525	16%
Coal	-	0%	-	0%	500	2%
Gas/LNG	-	0%	12,000	25%	3,000	10%
Oil	694	3%	4,100	9%	1,025	4%
Power Gen	14,598	58%	4,954	10%	12,014	42%
Coal	3,450	15%	3,286	7%	3,486	12%
Hydro	9,227	34%	1,438	3%	5,241	18%
Nuclear	-	0%	-	0%	2,425	8%
Oil	1,590	8%	-	0%	-	0%
Solar	332	1%	-	0%	407	1%
Thermal	-	0%	230	0%	58	0%
Wind	-	0%	-	0%	398	1%
Transmission	2,911	12%	4,399	9%	2,105	7%
Unspecified Electricity	1,841	7%	857	2%	353	1%
Gas	1,070	4%	3,042	6%	1,437	5%
Hydro	-	1%	500	1%	188	1%
Oil	-	0%	-	0%	127	0
Total	25,603.27	100%	47,353	100%	28,762	100%

The declines in Chinese development finance in the energy sector are concentrated in significant reductions in extractive activities and in energy transmission and distribution systems—as shown in Table 2. What is somewhat masked in the data for 2017 is that there has been an increase in the dollar amount of loans in the power sector which almost tripled relative to 2016 and is also higher than the average from 2013 to 2016. The majority of the total, and the increase, is in hydroelectric power plants, with 7 new dams receiving financial support from the two Chinese policy banks. The dollar amount of coal financing increased, though the number of coal projects decreased in 2017, as only 3 new coal power plants were reported (as opposed to 4 in 2016 and an average of 5 per year from 2000 to 2016).

We only have information with respect to the amount of energy capacity for 87 percent of the 144 power plants in our entire database—totaling to roughly 76,000 MW for all Chinese overseas power plants. For 2017, we were only able to confirm energy capacity for 8 of the 12 power generation projects financed by the CDB and CHEXIM in that year. Those eight projects combine to 6,004 MW, up from 4,380 MW in 2016.

Table 3: Geographical Distribution of Chinese Development Finance in Energy

Region	2017		2013 to 2016 (ave)	
	Loan Amount (USM)	Percent Total	Loan Amount (USM)	Percent Total
Africa	6,834	26.7%	5,228	18.2%
Europe/Central Asia	2,719	10.6%	5,607	19.5%
LAC	5,697	22.2%	9,892	34.4%
Middle East	3,090	12.1%	-	0.0%
South Asia	5,844	22.8%	5,746	20.0%
SEA	1,420	5.5%	2,287	8.0%
Total	25,603	100%	28,762	100%
BRI Countries	14,313	55.9%	13,366	46.5%

Note: Mambilla Dam (2017) has been proposed many times; we decided to include it in 2017 because reports specifically confirms that contracts and approvals have been reached

Chinese development finance in the energy sector continues to be a global phenomenon. Africa became the largest recipient of Chinese energy loans in 2017 (at \$6.8 billion), with power generation and transmission being the major types of Chinese energy investment in that region. South Asia and Latin America and the Caribbean each received just over 22 percent in energy financing. In this year’s database, we have created a new field for analysis, those 68 countries currently designated as countries comprising China’s ambitious ‘Belt Road Initiative’ that seeks to further integrate ancient land and maritime trading routes through massive investments in infrastructure and commitments to regional cooperation. Through this regional lens, 55.9 percent of all Chinese energy loans went to BRI countries.

Significant improvements in the 2017 Dataset

In addition to tracking new loans from the CDB and CHEXIM each year, our team spends considerable effort revising and improving the data for past years. Sometimes previous loans are cancelled altogether, other times loans recorded in one year do not end up commencing until another year, and in other cases we learn of new loans that we may have missed in previous incarnations of the database.

Our team’s methodology is spelled out in Gallagher et al (2015) and is modeled after the SAIS-CARI methodology (2017). The GEGI team at the GDP Center will be releasing our own version of a stand-alone manual and methodology in 2018. While we encourage you to consult those documents for more detail, we adopt two guiding principles to gather our data:

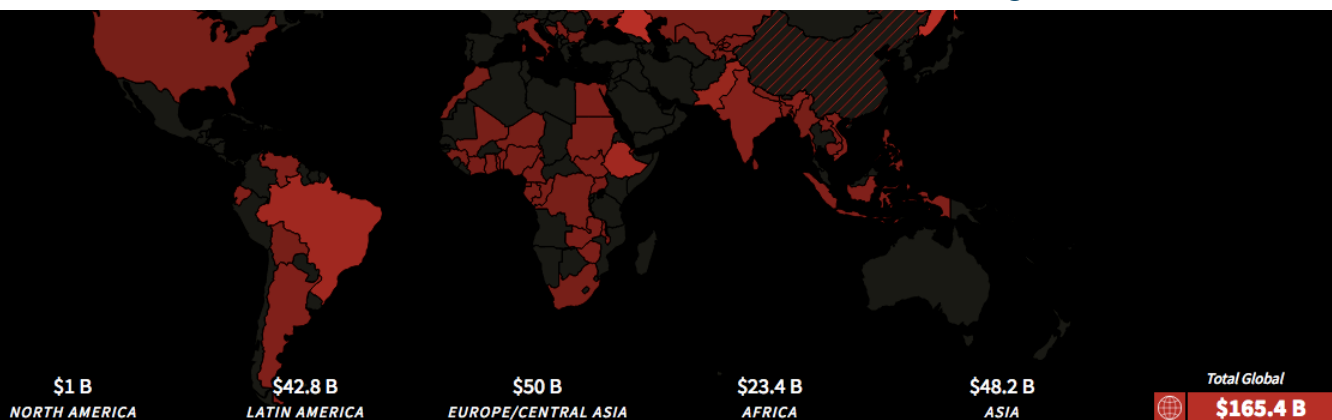
- **Verification:** We learn of loans from finance ministry and central bank reports in host countries, global news reports, announcements from the Chinese banks themselves, and beyond. That said, we will not publish an entry into our database unless we can confirm the loan in both Chinese and the host country or from international sources. And, to be clear, we do not include financing from China’s ‘commercial banks’ as development finance unless the CDB or CHEXIM is a party to the project. Moreover, a significant portion of projects are verified via direct consultation with the development banks themselves.
- **Project Implementation:** Whereas other databases record MOUs and other proposed projects, the GDP Center’s database only includes verified projects that have commenced and are underway. Projects have to be officially contracted, excluding MoU and cooperation proposals from the database.

While the GDP Center strives to be quick to release timely estimates of these capital flows, like other institutions we strive for the utmost precision over the medium term. In that spirit, we have deleted or added a number of projects relative to past estimates. For instance, in the 2017 edition of the database we have made revisions such as:

- Deleting the proposed CHEXIM clean coal investment in Texas, U.S.A. After consultations with key actors with respect to our general principles outlined above we conclude that this project is not longer a ‘live’ energy project.
- Deleting the An Khanh power station in Vietnam (2007), which proved not to engage China’s policy banks but rather solely from the Bank of China and a Vietnamese commercial bank.
- Deleting a 2009 power plant in India, the JSW Barmer (Jalipa Kapurdi) power station: Chinese banks and dual-language sources do not confirm their involvement in the project.
- Eliminating a fuel transmission project in Ethiopia and Djibouti from 2015 because the project was cancelled after being engaged in the project implementation stage.
- Deleting the Hamarawein Port Power Station in Egypt of 2016. This project was proposed in 2016, and construction was expected to start in 2017. CDB, CHEXIM and the Industrial and Commercial Bank of China (ICBC) are reported to finance the proposal made by Shanghai Electric Group. However, the project has been delayed in 2017, and the Egyptian Ministry of Electricity is still evaluating the offer from Chinese, Japanese and American companies. The project is therefore removed for the time being.

In addition to the deletion of projects that do not seem to be coming to fruition in the short term, the GDP Center added upwards of twenty projects during the 2000 to 2014 after the re-release of a parallel data collection effort by [AidData](#) at the College of William and Mary in the United States. While the AidData is too large to fully cross-check, our team worked to triangulate the financing designated by AidData in the energy sector—filtering the data through the two principles discussed above.

The AidData database (retrieved 11/7/2017) lists 361 entries in the energy sector from 2000 to 2014. However, the majority of those deals are recorded by AidData as financing from China’s commercial banks and governmental institutions other than policy banks, and are thus not included in our database as such financing is hard to characterize as development finance. For 196 of those projects recorded by AidData where the China Development Bank and/or the Export-Import Bank of China were a party. Our database included the majority of the loans in the AidData database that were in the energy sector from CDB or CHEXIM, yet with our methodology 122 of those deals in the AidData database could not



The Global Economic Governance Initiative (GEGI) is a research initiative at Boston University's Global Development Policy Center. The GDP Center is a University wide center in partnership with the Frederick S. Pardee School for Global Studies. The Center's mission is to advance policy-oriented research for financial stability, human wellbeing, and environmental sustainability.

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be confirmed. We did identify 24 loans that we had not included in previous renditions of our database and have included those in the 2017 version..

After a close analysis of the AidData methodology and that deployed by CARI and the GDP Center, we identify some significant differences in data collection that result in the AidData estimates for China's global energy finance to be quite larger than ours:

- 1. Search methodology:** AidData deploys a TUFF methodology, which can be summarized in three steps: First is a standardized machine selection of news from the Factiva media database, manual validation, followed data quality insurance procedures. This method offers a wide coverage of data thanks to the massive media collection and has been used in numerous studies.
- 2. "Unspecified" loans.** 138 of AidData's energy finance are listed as 'unspecified' with respect to their financier of origin. After screening through our method, we could not find sufficient evidence for the majority of these records to be classified as development finance—but rather financing from commercial banks and/or government agencies. Thus leading to a significant overestimation bias on the part of AidData given that the vast majority of their tracked loans originate from commercial banks.
- 3. Loans vs. Lines of Credit.** There are some cases where AidData will identify a line of credit in one year versus a loan in a second year—counting both as autonomous capital flows. Such an approach obviously conflates the total amount of financing and can lead to double counting.

The GDP Center is constantly working to improve our data collection and identification and would love to hear from other analysts if they learn of other loans we have not included or learn that some that we have in the database are no longer active and can be deleted.

SOURCES

AidData (2017), China's Global Development Footprint, College of William and Mary, <http://china.aiddata.org/>.

Brautigam, Deborah and Hwang, Jyhjong Wang (2017), "China-Africa Loan Database Research Guidebook, SAIS-CARI Research Initiative, Paul Nitze School of Advanced International Studies, <http://www.sais-cari.org/data-chinese-loans-and-aid-to-africa/>