Global Energy Monitor

OPACITY AND ACCOUNTABILITY

The Hidden Financial Pipelines Supporting New Coal

OCTOBER 2022

Executive Summary

The continued expansion of global coal infrastructure and new coal projects is one of the biggest threats facing humanity. One-third of the world's carbon emissions come from burning coal, making it the **world's single largest contributor** to climate change. Coal also contributes to toxic air and water pollution, which kills millions of people each year. The latest **IPCC report** unequivocally stated that no new coal facilities can be added to the existing global fleet to avoid the worst impacts of climate change. Additionally, the International Energy Agency's **Net Zero by 2050** report advised that unabated coal use for electricity must end in advanced economies by 2030 and globally by 2040.

While significant progress has been made to phase out the global coal fleet, there is much work to be done to ensure the world gets on track to accelerate the transition away from coal to renewable energy, and achieve a Paris-aligned pathway.

Ending coal funding is the key to stopping new coal, because without funding, the coal industry will cease to operate. With coal remaining a major part of the world's electricity grid, it is critical to uncover how funding flows to coal infrastructure and identify solutions to curb coal's growth.

ABOUT THE REPORT

Opacity and Accountability: The Hidden Financial Pipelines Supporting New Coal – a new report from Global Energy Monitor – reveals how coal power persists through continued funding from the world's financial institutions – including those that have publicly committed to and enacted coal restriction policies.

Key data points include:

1. **The new coal project pipeline is shrinking.** In 2015, when the world's governments negotiated the Paris Agreement, there was a total of 1,553 GW of coal power capacity in the global pipeline. Since then, the pre-construction pipeline has collapsed to just 280 GW, with just 176 GW under construction as of January 2022.

2. **General corporate funding is the largest source of financing for new coal projects.** Corporate funding far outweighs designated project funding as the largest source of finance for new coal infrastructure. And while many of the largest financial institutions have made net-zero commitments or pledges to move away from financing coal, their coal exclusion policies still allow corporate financing and investment in companies involved in new coal development.

3. **Stronger policies can and will effectively stop the flow of new coal.** The path towards a coal-free future means financial institutions – many of which already have coal exclusion policies in place – must strengthen their policies and eliminate loopholes to end new coal financing.

Financial institutions have the capacity, the power, and the incentive to put the world on course to meet our global climate goals by ending the flow of capital that has sustained the era of coal long past its expiration date. For the financial institutions that want to be a part of the solution, this report provides the tools and insights to support the bold, forward-thinking climate leadership needed to usher in the new era of clean, renewable energy worldwide.

INTRODUCTION

Challenge Meets Opportunity

The operation and continued expansion of the global fleet of coal-fired power plants represents one of the biggest threats facing humanity. Combustion of coal is the world's leading emitter of climate change-accelerating CO_2, and **recent research** indicates that coal mining releases more methane, a highly potent greenhouse gas, than either oil or gas.

According to the International Energy Agency **Net Zero by 2050** report, unabated coal use for electricity must end in advanced economies by 2030 and globally by 2040, and there is no room whatsoever for adding further facilities to the existing fleet.

Yet even as the door swings shut for one era of electricity, it is rapidly opening for another: a new, clean energy future made possible by the **integrated deployment** of increasingly competitive battery storage, photovoltaic (PV) solar, wind power, and load shaping technology. As of May 2022, 652 GW of utility-scale solar power and 882 GW of utility-scale wind power are under construction, in pre-construction development, or announced phases, according to a **country-by-country survey** by Global Energy Monitor. If financed and fully implemented, this pipeline of new renewables will more than double the existing 485 GW of utility-scale solar and 743 GW of utility-scale wind power that are currently in operation, according to Bloomberg New Energy Finance.

The surge in renewables is no accident: it is driven by the fact that the levelized costs of utility-scale solar and wind are now **below those of coal power**. In some cases, coal plants **are being shuttered** less than a decade after being built because of their inability to compete with wind power.

WHAT DOES THE TRANSITION FROM COAL TO CLEAN POWER MEAN FOR GLOBAL ENERGY FINANCE?

The answer is that to accomplish a rapid phase-out of coal, avoiding both stranded assets and the worst effects of climate change, an essential first step is to stop providing funds for new coal assets and shift funding toward renewables and storage investments.

Every dollar spent on building a new coal plant displaces a dollar spent building renewables, storage, and power grid upgrades. This phenomenon is known as "lock-in," due to the four-decade lifespan of a coal plant and the inability of coal plants to provide the flexible dispatch needed to mesh with intermittent renewables. Today's emerging power systems use a different combination of technologies: wind and solar for generation, battery and other storage to accommodate intermittency, and load shaping, demand management, and other techniques for balancing the grid. All these pieces of the energy transition represent finance opportunities. Yet rather than seize these opportunities, some companies are still undertaking new coal projects, and the financial community continues to provide the funds that fuel the expansion of coal.

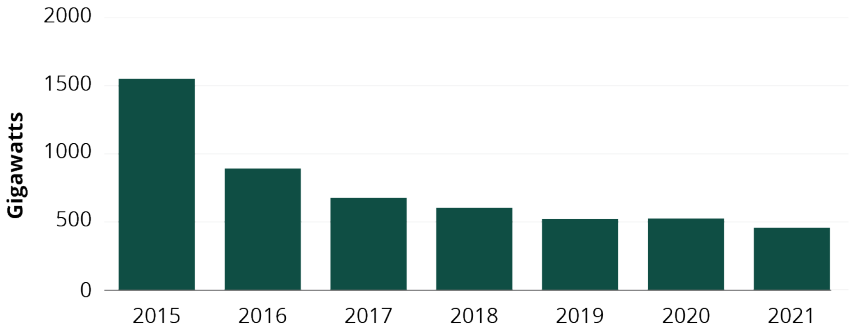
Ending new coal financing demands an understanding of the current state-of-play in order to accurately assess how, and from where, new coal funding is happening. This report aims to provide an assessment of current coal financing, identifying the origins of capital investment and outlining actions and policy reforms that can rapidly slow and stop the financing of new coal projects.

INTRODUCTION

The Good News, and the Remaining Challenge

Despite the challenge that lies ahead, we've already proven we can make significant progress in shutting down the global coal fleet. In 2015, when the world's governments negotiated the Paris Agreement, there was a total of **1,553 gigawatts (GW)** of coal power capacity in the global pipeline. Since 2015, as shown in Figure 1, the pipeline for further additions of capacity has declined to 280 GW in pre- construction and 176 GW in construction (**Global Coal Plant Tracker**, January 2022). This includes 606 coal plant units in pre-construction at 296 locations and 344 units in construction at 189 locations. For mines, the current global pipeline includes 569 million tonnes per annum (mtpa) of capacity in construction, and 1.4 billion mtpa of capacity in pre-construction, based on mines of 1 mtpa or larger, according to the Global Coal Mine Tracker (January 2022).

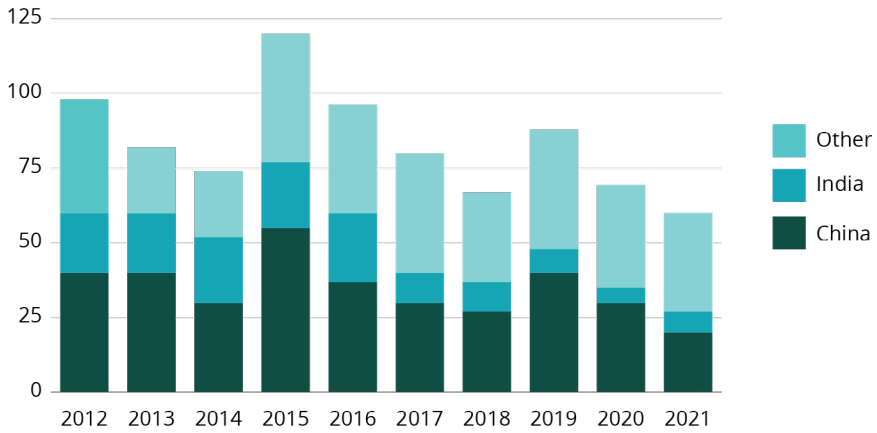
FIGURE 1 | **DECLINE OF COAL-FIRED POWER PLANTS IN CONSTRUCTION AND PRE-CONSTRUCTION, 2015-2021**



Source: Global Coal Plant Tracker, 2022

To finish the job and achieve the IEA's target of an OECD phase-out by 2030 and a complete global phase-out by 2040, the construction of new coal plants, mines, and terminals must end. Financial institutions have an opportunity to step up and terminate funding for new coal projects, which still amount to more than $60 billion each year, as shown in Figure 2.

FIGURE 2 | **ESTIMATED GLOBAL CAPITAL EXPENDITURES FOR NEW COAL PLANTS, MINES, AND TERMINALS, 2017-2021 (US$ BILLION)**



Source: GEM Global Coal Plant Tracker, Global Coal Mine Tracker, Global Coal Terminals Tracker, GEM analysis

Investing in the future means removing insurance, investment, and banking services from dirty, 19th- and 20th-century fuels and funneling that money toward clean, renewable energy. For financial institutions worldwide looking to be part of the climate solution, there is a massive opportunity – and an urgent need – to end support for all coal developers while simultaneously redirecting funds to support a rapid solar and wind buildout.

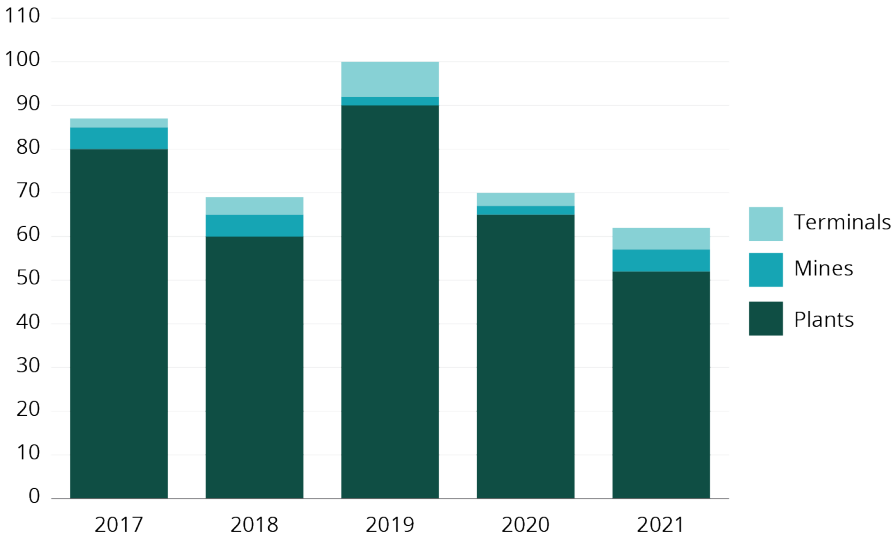
COAL PLANTS

While it is not possible to directly ascertain the amount of money that is flowing into coal project construction, the total can be estimated through analysis of the following three datasets:

- Levels of coal plant completion over the past decade;
- Volume of coal capacity currently in the development pipeline; and
- IEA country-specific per-MW figures for coal plant construction costs.

Based on such an estimation method, approximately US$844 billion was spent on coal plant construction in the decade 2012–2021, including US$357 billion in China, US$147 billion in India, and US$340 billion elsewhere. As shown in Figure 3, annual expenditures on coal plant construction have declined by 46% since 2012, led by a 64% decline in India, a 41% decline in China, and a 30% decline elsewhere. Nevertheless, the pipes are far from closed: approximately US$54 billion in financing flowed to construction of coal plants in 2021, as expansion of the coal fleet continued, albeit at a slowing rate. Of that US$54 billion, US$20 billion was in China, US$7 billion was in India, and US$26 billion was elsewhere.

FIGURE 3 | **ESTIMATED CAPITAL EXPENDITURES FOR NEW COAL INFRASTRUCTURE, 2012-2021 (US $BILLION)**

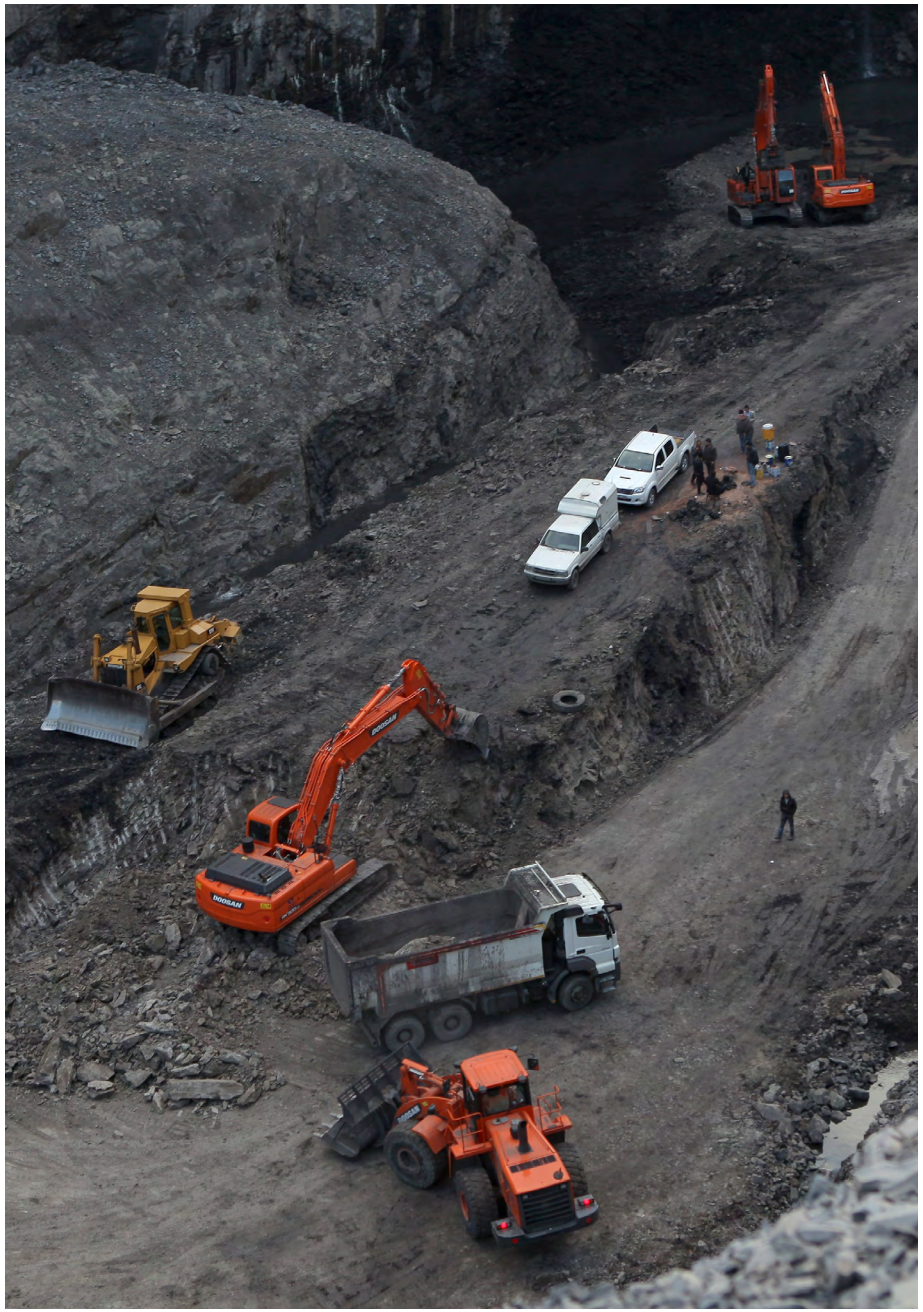


*Source: GEM **Global Coal Plant Tracker**, IEA **"Projected Costs of Generating Electricity 2020,"** GEM analysis*

COAL MINES AND TRANSPORTATION

Capital expenditures for coal mines and coal transportation infrastructure are far less than those used for coal plant expansion; capex for coal plant expansion is roughly five times greater than capex for coal mines and transportation.

Both coal mines and coal transportation infrastructure continue to expand, with 32 mines larger than 1 million tonnes/year opening in 2021, the most since 2016 (GEM **Global Coal Mine Tracker**). Annual financing of new coal mines is estimated to be US$5 billion, and annual financing of new coal terminals is estimated to be about US$4 billion (GEM **Global Coal Mine Tracker**, GEM **Global Coal Terminals Tracker**).



FOLLOW THE MONEY

How Financial Support Reaches Coal Projects

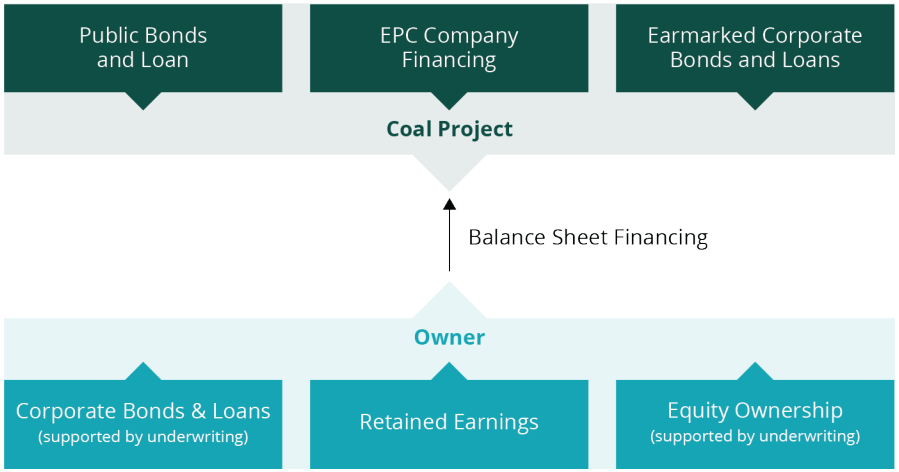
Behind the expansion of the global fleet of coal plants, and the mines and transportation infrastructure that support the plants, is **a constellation of financial providers, often working in combination.**

A particularly crucial role is played by insurers. Without their initial commitment of support, no bank will provide financing. Government finance also plays an important part, particularly in catalyzing private financing by lowering the degree of risk. Public institutional enablers of coal include export credit agencies, sovereign wealth funds, pension funds, multilateral development banks, and state-owned banks. Private finance providers include commercial banks, bondholders, equity investors, private equity companies, and EPC (engineering, procurement, construction) companies.

As shown in Figure 4, support for coal arrives through a variety of financial pipes, and for the era of coal to come to an end, all these pipes must be closed. Overall, funding sources fall into two general categories:

- **Designated project funding:** This type of funding is raised in connection with a specific coal plant, mine, or infrastructure project. Sources may include project bonds and loans, export credit agency support, governmental loans, and EPC (engineering, procurement, and construction) company financing.
- **General corporate financing:** This type of funding comes from general corporate monies. These corporate monies in turn may derive from the company's own retained earnings, or by external fundraising through equity issues, corporate loans, revolving lines of credit, or general bonds. As noted in Figure 4, underwriting provided by banks is a major aspect of capital expenditure, since it enables corporate owners of coal projects to secure loans and bonds.

FIGURE 4 | **HOW FINANCIAL SUPPORT REACHES COAL PROJECTS**



IDENTIFYING THE SOURCE OF FINANCING

Of the roughly US$844 billion in financial support for coal plants over the past decade, researchers have identified about US$174 billion in designated project support. As shown in Table 1, the largest source of this support has been privately-owned commercial institutions, followed by government policy institutions, government banks, and power authorities.

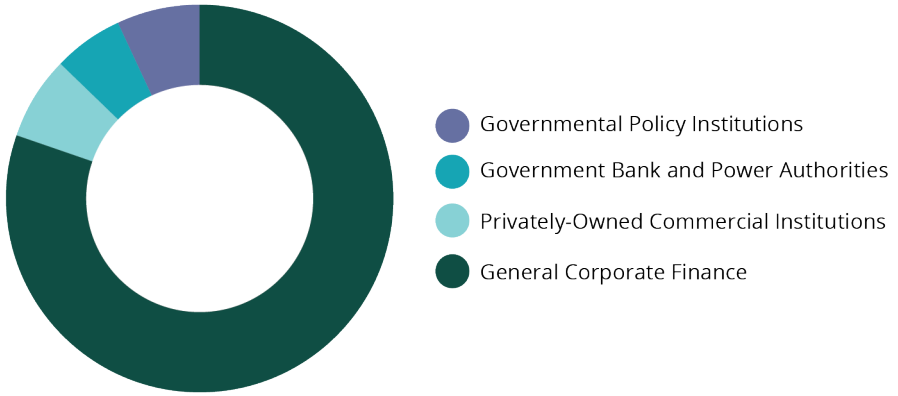
While far from inconsiderable, the relative size of designated support is only a fifth of all financial support, as shown in Figure 5.

TABLE 1 | **SOURCES OF DESIGNATED COAL PLANT FINANCING, 2012–2021 (US$ BILLION)**

Governmental policy institutions, such as multilateral development agencies and export credit agencies	**62**
Government banks and power authorities	**50**
Privately-owned commercial institutions	**62**
Total	**174**

Source: GEM Global Coal Project Finance Tracker, GEM Global Coal Plant Tracker, GEM analysis

FIGURE 5 | **DESIGNATED COAL PLANT FUNDING COMPARED TO GENERAL CORPORATE FINANCE, 2012–2021**

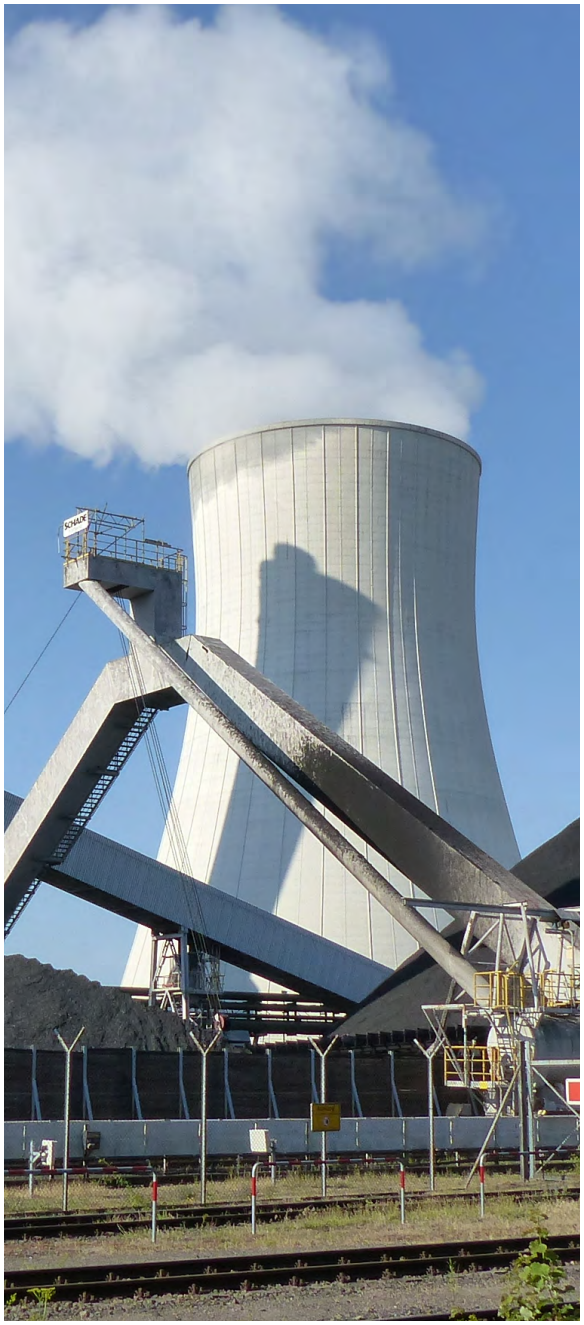


Source: GEM Global Coal Project Finance Tracker, GEM Global Coal Plant Tracker, GEM analysis

PROJECT FINANCE HAS VIRTUALLY ENDED

The year 2021 marked a milestone toward ending new coal, as the three governments that had been financing coal plants outside their own countries – Japan, South Korea, and China – all pledged to end public support for new coal plants, followed by a commitment from all G20 countries ahead of the 2021 climate talks. As shown in Table 1, government institutions were the source of about two-thirds of designated coal plant financing from 2012 to 2021. Due to the new policies, virtually no project lending by government institutions closed in 2021. In addition, 2021 saw private project financing drop from $3.8 billion in 2020 to only $625 million in 2021, due to the steadily tightening restrictions on project finance that have been adopted by many major banks. As detailed by the Reclaim Finance **Coal Policy Tool**, 65 institutions now have strong restrictions (8 or higher on a 10-point scale) against project-specific lending to new coal plants . Among the banks with lending restrictions rated 8-10 for new coal projects are such major lenders as Bank of America, Barclays, BNP Paribas, Citi, Credit Suisse, Credít Agricole, DBS, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase, Morgan Stanley, Standard Chartered, Sumitomo Mitsui Trust Bank, and UBS.

Reports from South Korea and Vietnam suggest a tightened environment for project-specific loans and bonds, posing difficulties for construction of new coal plants. In June 2021, Vietnam's Ministry of Industry and Trade stated that the 1200 MW **Quảng Trạch-2 Power Center** would probably be delayed until after 2030 due to difficulties in mobilizing capital. An October 2021 report by the civil society group GreenID lists Quảng Trạch-2 as one of 18 coal-fired power stations in Vietnam that was struggling to secure financing. In South Korea, the half-built 2100 MW **Samcheok power station** was reported to be having difficulties selling its project bonds, due to heightened awareness of the possibility that net-zero commitments would lead the plant to be underutilized and prematurely retired. In other countries, financing seems to have simply "gone dark." For example, the 1070 MW **Taketoyo power station** reported that it had received US$2.32 billion in loans from "undisclosed entities."



GENERAL CORPORATE FUNDING: EXPOSING THE INVISIBLE COAL FINANCE PIPELINE

Figure 5 demonstrates a critical fact of coal financing over the past decade: **General corporate funding far outweighs designated project funding.**

The preponderance of general corporate funding explains a paradox that continues to hamper progress in the effort to turn off the financial pipelines for coal. Despite the many policies financial institutions have adopted to restrict their investments in coal, most of these policies do not effectively address the continued flow of general corporate funding to companies that are building coal projects. As of mid-2022, according to the Global Coal Plant Tracker, 576 coal-fired generating units (298 GW) remain in pre-construction development, and 365 units (178 GW) remain in active construction, a slight increase from the 176 GW in construction at the beginning of 2022. Of the pre-construction pipeline, 34% (by capacity) is outside China; of plants that remain in active construction, 47% (by capacity) is outside China.

Part of why restrictions on coal investments have failed to stop the flow of finance to the sector is that roughly 62% of loans and underwriting in support of new coal project developers comes from Chinese institutions – which have not adopted restriction policies.

However, the ongoing flow of money into new coal projects cannot be explained solely by the lack of policies by Chinese institutions. Finance continues to flow to coal from non-Chinese institutions, including some members of climate leadership groups under the Glasgow Financial Alliance for Net Zero (GFANZ), such as the Net-Zero Banking Alliance (NZBA). The effect of this disconnect can be seen in Table 2, which lists lending and underwriting by the top 50 financial institutions to developers of new coal projects. Among these institutions, 15 are members of the NZBA, including Mizuho Financial Group, Mitsubishi UFJ Finance Group, SMBC Group, Citigroup, Bank of America, and JPMorgan Chase. Overall, from 2019 to 2021, a total of US$202 billion in loans and underwriting was provided to developers of new coal projects by 46 members of the Net-Zero Banking Alliance (over a third of the 117 members of the NZBA), amounting to 60% of lending and underwriting by non-Chinese institutions.

Appendix A provides a list of projects in construction by recipients of project and corporate finance. This includes 183 coal plant units representing 108,946 Megawatts (MW) of capacity and 41 coal mines representing 159 million tonnes per annum (MTPA) of capacity. The total of 108,946 MW for which external financial sources are known (in the case of designated project financing) or can be inferred (in the case of general corporate financing) represents 62% of the 176,438 MW in construction at the beginning of 2022. As described in the Methodology section below, this represents a low estimate of the total share of capacity supported by external sources of financing. At the same time, due to the open-ended nature of most corporate financing as well as the opacity of financial disclosures, it is for the most part impossible to draw a direct line of accountability from coal project to external financial institution (see “The Dilemma of Financial Opacity” below).

Appendix C provides a list of coal plants in development in January 2022 by recipients of loans and underwriting provided by members of the Net-Zero Banking Alliance from 2019 through 2021. This includes 128 coal plant units representing 76,610 MW of capacity in pre-construction and 114 coal plant units representing 66,575 MW of capacity in construction. Again, it bears emphasis that a direct line of accountability from coal project to external financial institution cannot be drawn, due to the open-ended character of most corporate financing as well as the opacity of financial disclosures.

In most cases, financial flows to builders of coal projects cannot be explicitly identified with a particular coal plant project. For example, as of January 2022, as shown in Appendix C, 112 coal-fired power units were under construction by companies that received loans or underwriting support by Mizuho Financial from 2019 through 2021. During the same period, only six coal-fired power units under construction received project loans from Mizuho; an additional 13 units received project loans from 2015 through 2018. Most new coal projects are therefore financed through corporate loans and investment banking, i.e., the issuance of bonds or new company shares that are sold to investors. A typical example is the 1,100 MW Datteln 4 coal power station in Germany, which is owned by Uniper, a subsidiary of the Finnish company Fortum. Datteln 4 went online in 2020 and cost over US$1.6 billion – money which Uniper raised solely through corporate loans and bonds.

THE DILEMMA OF FINANCIAL OPACITY

In time of war, the vital work of defusing unexploded bombs and land mines is performed by specialists known as "sappers." The job calls for patience, nerves, and a bit of luck. If coal projects are planetary time bombs, and if these hazards to future generations are successfully defused, history may record that the most effective sappers were the handful of civil society groups who in recent years have been carefully reading the fine print of the "coal exclusion" policies being issued by financial institutions.

One of these groups, Reclaim Finance, has developed a Coal Policy Tool (CPT) that evaluates the scope and quality of each financial institution's coal policy. To date, 300 financial institutions have announced such policies for coal (Reclaim Finance **Coal Policy Tool**). The large number of such announcements demonstrates the amount of pressure felt by financial institutions to act on coal. Unfortunately, the vast majority of these policies are too weak to effectively phase out coal financing and investment. According to CPT, as of September 2022 only 26 of the 300 financial institution coal policies can be considered to be robust. Most of the adopted policies, for example, fail to prevent investments in coal developers, i.e., companies that are still developing new coal power plants, coal mines, or coal transportation infrastructure.

A case in point is Citi, the third largest provider of loans and underwriting to developers of new coal projects, as shown in Table 2, $15,767,000,000 between 2019 and 2021. At first glance, the policy appears robust. Citi's policy excludes all new or expanded coal mines and plants. It also excludes loans and underwriting to coal plant developers. But careful reading of the fine print shows that the exclusion of loans and underwriting to coal plant developers applies only to new clients. Since it does not apply to existing clients, Citi's policy does not apply robustly to the area of coal financing that accounts for 80% of new capital expenditures: corporate loans and underwriting.

Establishing accountability for financing to coal plants that may derive from general corporate monies is not possible, given current standards of disclosure. For example, as shown in Appendix A, at least 42 banks provided loans between 2019 and 2021 to PT PLN (Persero), Indonesia's state-owned power utility, which was developing **4,235 MW** of new coal-fired capacity as of mid-2022. Given the scarcity of publicly available information on bank underwriting and lending, banks have "plausible deniability" that the specific finance they provided to PT PLN in fact was used to build a new coal plant, as opposed to serving some other general corporate purpose.

Unless rigorously addressed, the dilemma resulting from inadequate disclosure, multiplied across the landscape of the global power sector, threatens to paralyze further progress on reining in the global coal plant pipeline.

TABLE 2 | **LOANS AND UNDERWRITING TO DEVELOPERS OF NEW COAL PROJECTS BY TOP 50 PROVIDERS OF LOANS AND UNDERWRITING, 2019–2021 (US$ MILLION)**

Bank	Bank Country	Loans	Underwriting	Total	Net-Zero Bank Alliance Member?
CITIC	China	244	39,654	39,898	
Industrial and Commercial Bank of China	China	3,102	32,280	35,381	
Bank of China	China	7,552	26,420	33,972	
Mizuho Financial	Japan	19,653	12,605	32,258	Yes
China Merchants Bank	China	93	31,901	31,994	
Shanghai Pudong Development Bank	China	28	31,303	31,331	
China Everbright Group	China	81	30,971	31,052	
Ping An Insurance Group	China	80	30,791	30,871	
Industrial Bank Company	China	92	28,845	28,937	
Mitsubishi UFJ Financial	Japan	15,335	10,508	25,843	Yes
China Construction Bank	China	1,035	22,949	23,984	
Agricultural Bank of China	China	381	23,112	23,493	
CSC Financial	China		21,828	21,828	
SMBC Group	Japan	13,205	8,539	21,744	Yes
Bank of Shanghai	China		19,331	19,331	
Bank of Ningbo	China		17,173	17,173	
Bank of Communications	China	480	16,234	16,714	
Citigroup	United States	7,245	8,523	15,767	Yes
Guotai Junan Securities	China		14,645	14,645	
Haitong Securities	China		13,404	13,404	
Bank of America	United States	1,413	9,112	10,525	Yes
China Minsheng Banking	China	481	9,997	10,478	
China International Capital Corporation	China		9,287	9,287	
Postal Savings Bank of China	China	166	9,066	9,232	
JPMorgan Chase	United States	1,580	7,518	9,098	Yes
Hua Xia Bank	China		8,997	8,997	
ICICI Bank	India		8,806	8,806	
Huatai United Securities	China		7,972	7,972	
HSBC	United Kingdom	1,396	6,542	7,937	Yes
Standard Chartered	United Kingdom	1,146	6,108	7,254	Yes
Bank of Beijing	China		6,935	6,935	

TABLE 2 | **LOANS AND UNDERWRITING TO DEVELOPERS OF NEW COAL PROJECTS BY TOP 50 PROVIDERS OF LOANS AND UNDERWRITING, 2019–2021 (US$ MILLION)**

Bank	Bank Country	Loans	Underwriting	Total	Net-Zero Bank Alliance Member?
State Bank of India	India	4,506	2,176	6,682	
China Zheshang Bank	China	88	6,575	6,663	
Sumitomo Mitsui Trust	Japan	6,621		6,621	Yes
Daiwa Securities	Japan		6,248	6,248	
BNP Paribas	France	2,295	3,319	5,614	Yes
Nomura	Japan	66	5,357	5,422	Yes
DBS	Singapore	2,110	3,049	5,160	Yes
Barclays	United Kingdom	699	4,420	5,119	Yes
Axis Bank	India	15	4,980	4,995	
Trust Group	India		4,454	4,454	
Guosen Securities	China		4,328	4,328	
Huatai Securities	China		4,290	4,290	
HDFC Bank	India	349	3,890	4,239	
China Cinda	China	28	4,157	4,185	
A.K. Group	India		4,032	4,032	
KB Financial Group	South Korea	314	3,676	3,990	Yes
Norinchukin Bank	Japan	3,988		3,988	
Orient Securities	China		3,922	3,922	
Deutsche Bank	Germany	1,220	2,665	3,885	Yes

Source: Urgewald and Profundo

A similar picture emerges for bonds and equities. As shown in Table 3, the lead company, BlackRock, invested or managed US$34.2 billion in bonds and equities of companies developing new coal power, mining and transportation projects. Blackrock is a member of the Net-Zero Asset Managers Initiative, as are Vanguard, JPMorgan Chase, Nomura, and Sumitomo Mitsui Trust. Overall, members of the Net-Zero Asset Managers Initiative owned or managed US$96 billion in assets in coal developers, according to November 2021 filings. Appendix B provides an analysis of bond-holding and shareholding in companies developing coal plants, mines, and transportation infrastructure, based on November 2021 filings, using a threshold of $1 billion dollars or more in total assets managed or owned. A summary of bond-holding and shareholding in members of coal plant developers by members of the Net-Zero Asset Owners Alliance and Net-Zero Asset Managers Initiative is provided in Appendix D, based on a threshold of $1 billion dollars or more in total assets managed or owned. The coal developers in BlackRock's portfolio are planning to build over 93 GW of new coal-fired capacity, an amount as big as the operating coal plant fleets of Japan and Germany combined.

TABLE 3 | **BOND-HOLDING AND SHAREHOLDING IN DEVELOPERS OF NEW COAL PROJECTS BY TOP 40 OWNERS AND MANAGERS, NOVEMBER 2021 MOST RECENT FILING (US$ MILLION)**

Bank	Investor Country	Bond-holding	Shareholding	Total	Net-Zero Asset Managers Initiative Member?
BlackRock	United States	2,707	31,531	34,237	Yes
Capital Group	United States	953	23,991	24,943	
Vanguard	United States	734	22,554	23,288	Yes
Government Pension Investment Fund (GPIF)	Japan	2,385	17,760	20,145	
Life Insurance Corporation of India	India	74	14,303	14,378	
Caixa de Previdência dos Funcionários do Banco do Brasil	Brazil		12,028	12,028	
National Pension Service	South Korea	7,576	3,254	10,829	
JPMorgan Chase	United States	703	7,355	8,057	Yes
Nomura	Japan	81	7,601	7,682	Yes
Sumitomo Mitsui Trust	Japan	11	7,521	7,532	Yes
Bradesco	Brazil	0	7,064	7,064	
Fidelity Investments	United States	624	5,458	6,082	Yes
Aditya Birla Group	India	1,990	3,958	5,948	
State Street	United States	97	5,780	5,877	Yes
HDFC Bank	India	2,561	3,312	5,872	
Nippon Life Insurance	Japan	906	4,949	5,855	Yes
ICICI Bank	India	1,360	3,871	5,232	
Berkshire Hathaway	United States	15	5,172	5,187	
Mitsubishi UFJ Financial	Japan	5	4,972	4,978	Yes
Qatar Investment Authority	Qatar		4,947	4,947	

TABLE 3 | **BOND-HOLDING AND SHAREHOLDING IN DEVELOPERS OF NEW COAL PROJECTS BY TOP 40 OWNERS AND MANAGERS, NOVEMBER 2021 MOST RECENT FILING (US$ MILLION)**

Bank	Investor Country	Bond-holding	Shareholding	Total	Net-Zero Asset Managers Initiative Member?
KDB Financial Group	South Korea		4,643	4,643	
Dimensional Fund Advisors	United States	81	4,386	4,467	
State Bank of India	India	1,150	3,217	4,367	
Government Pension Fund Global	Norway	184	3,941	4,125	
Mizuho Financial	Japan	26	3,999	4,025	Yes
Franklin Resources	United States	762	3,074	3,835	
Geode Capital Holdings	United States	0	3,487	3,487	
Daiwa Securities	Japan	12	3,388	3,400	
State Farm	United States		3,318	3,318	
Meiji Yasuda Life Insurance	Japan	3	3,305	3,308	Yes
Pension Fund Association for Local Government Officials	Japan	47	2,866	2,913	
Groupe BPCE	France	682	2,185	2,867	
Japan Mutual Aid Association of Public School Teachers	Japan	151	2,632	2,782	
Invesco	United States	420	2,319	2,739	Yes
Allianz	Germany	1,988	738	2,725	Yes
UBS	Switzerland	738	1,756	2,493	Yes
TIAA	United States	888	1,532	2,420	
Flourishing Trade And Investment	India		2,361	2,361	
Public Investment Corporation	South Africa		2,336	2,336	
Power Finance Corporation	India		2,212	2,212	

Source: Urgewald and Profundo

As shown in Table 4, many of the top recipients of finance by the banks in the Net-Zero Banking Alliance are coal developers in Japan, China, India, South Korea, and Indonesia. Table 5 takes a detailed look at Citigroup, the largest US lender to coal developers. As shown in the table, as of January 2022, recipients of Citigroup loans and underwriting during 2019–2021 were building 51 coal-fired generating units with 26,779 MW of capacity in China, Greece, India, Indonesia, Japan, and Vietnam.

TABLE 4 | **DESTINATION OF FINANCING (HEADQUARTERS OF RECIPIENT) FOR LOANS AND UNDERWRITING BY TOP 12 COAL LENDERS/UNDERWRITERS IN THE NET-ZERO BANKING ALLIANCE, 2019-2021 (US$ MILLION)**

	Japan	China	India	Switzerland	South Korea	Indonesia	Other
Mizuho Financial	25,988	933	641	795	113	432	3,357
Mitsubishi UFJ Financial	18,727	77	2,435	1,055	0	773	2,777
SMBC Group	3,042	0	0	0	0	0	2,777
Citigroup	6,659	373	625	1,105	1,335	1,527	4,144
Bank of America	0	0	0	0	0	0	4,144
JPMorgan Chase	1,612	972	533	1,145	831	56	3,949
HSBC	87	649	856	656	2,081	1,366	2,243
Standard Chartered	87	376	2,503	788	524	767	2,208
Sumitomo Mitsui Trust	5,945	0	56	255	0	0	365
Barclays	0	184	3,382	822	0	0	731
BNP Paribas	172	45	96	567	1,725	581	2,427
Nomura	5,234	0	0	0	69	54	66
Total	**67,552**	**3,610**	**11,127**	**7,187**	**6,678**	**5,555**	**22,932**

Source: Urgewald and Profundo, GEM analysis

TABLE 5 | **COAL PLANTS IN CONSTRUCTION IN JANUARY 2022 BY COMPANIES THAT RECEIVED LOANS OR UNDERWRITING FROM CITIGROUP IN 2019-2021**

Unit	Parent	Country	MW
Adani Godda power station Unit 1	Adani Group	India	800
Adani Godda power station Unit 2	Adani Group	India	800
Asam-Asam B power station Unit 1	PT PLN Persero	Indonesia	100
Asam-Asam B power station Unit 2	PT PLN Persero	Indonesia	100
Bangko Tengah (SS-8) Unit 1	China Huadian (55%), PT Bukit Asam (45%)	Indonesia	600
Bangko Tengah (SS-8) Unit 2	China Huadian (55%), PT Bukit Asam (45%)	Indonesia	600
Banten Lontar power station Unit 4	PT PLN Persero	Indonesia	315
Banten Suralaya power station Unit 10	PT PLN Persero (51%), PT Barito Pacific (34%)	Indonesia	1,000
Banten Suralaya power station Unit 9	PT PLN Persero (51%), PT Barito Pacific (34%)	Indonesia	1,000
Barru-2 power station Unit 1	PT PLN Persero	Indonesia	100
Central Java Power Project Unit 1	Adaro, ITOCHU, J-POWER	Indonesia	950
Central Java Power Project Unit 2	Adaro, ITOCHU, J-POWER	Indonesia	950
Cirebon Unit 2	Marubeni (35%), Indika Group (25%), Samtan (20%)	Indonesia	924
Dongjiakou CHP power station Unit 1	China Huaneng	China	350
Dongjiakou CHP power station Unit 2	China Huaneng	China	350
Huadian Pingjiang 1	China Huadian	China	1,000
Huadian Pingjiang 2	China Huadian	China	1,000
Huadian Shantou Fengsheng power station Unit 1	China Huadian (51%), Shantou Power Investment Corporation (49%)	China	660
Huadian Shantou Fengsheng power station Unit 2	China Huadian (51%), Shantou Power Investment Corporation (49%)	China	660
Huadian Tianjin Nangang Cogen power station unit 3	China Huadian	China	350
Huadian Turpan Cogen power station Unit 2	China Huadian	China	350
Huaneng Dalian-2 power station unit 3	China Huaneng	China	350
Huaneng Dalian-2 power station unit 4	China Huaneng	China	350
Huaneng Gulei power station unit 3	China Huaneng	China	50
Huaneng Gulei power station unit 4	China Huaneng	China	50
Huaneng Ruijin power station Unit 4	China Huaneng	China	1,000
Huaneng Yakeshi Huiliuhe power station Unit 5	China Huaneng	China	350
Huaneng Yakeshi Huiliuhe power station Unit 6	China Huaneng	China	50
Huaneng Zhengning 3	China Huaneng	China	1,000
Huaneng Zhengning 4	China Huaneng	China	1,000
Jimsar Wucaiwan Beisan power station unit 2	China Huaneng, National Energy Investment Group	China	660

TABLE 5 | **COAL PLANTS IN CONSTRUCTION IN JANUARY 2022 BY COMPANIES THAT RECEIVED LOANS OR UNDERWRITING FROM CITIGROUP IN 2019-2021**

Unit	Parent	Country	MW
Lombok FTP2 Unit 1	PT PLN Persero	Indonesia	50
Lombok FTP2 Unit 2	PT PLN Persero	Indonesia	50
Misumi power station Unit 2	Chugoku Electric Power	Japan	1,000
Nghi Son-2 Unit 1	Marubeni, KEPCO	Vietnam	660
Nghi Son-2 Unit 2	Marubeni, KEPCO	Vietnam	660
Palu power station Unit 5	PT PLN Persero	Indonesia	50
Palu power station Unit 6	PT PLN Persero	Indonesia	50
Ptolemaïda power station Unit 5	Public Power Corp.	Greece	660
Samcheok power station Unit 1	Nonghyup Bank (54.53%), POSCO (34%)	South Korea	1,050
Samcheok power station Unit 2	Nonghyup Bank (54.53%), POSCO (34%)	South Korea	1,050
SDIC Qinzhou-III power station Unit 1	SDIC (61%), Guangxi Investment Group (39%)	China	660
Shidongkou-1 power station Unit 1 & 2 replacement	China Huaneng, Shenergy Group	China	650
Shidongkou-1 power station Unit 3 & 4 replacement	China Huaneng, Shenergy Group	China	650
Sihanoukville CIIDG power station 2 Unit 2	Cambodia International Investment Development Group, China Huadian	Cambodia	350
Sulut-1 power station Unit 1	PT PLN Persero	Indonesia	50
Sulut-1 power station Unit 2	PT PLN Persero	Indonesia	50
Tanjung Jati B power station Unit 5	Sumitomo	Indonesia	1,000
Tanjung Jati B power station Unit 6	Sumitomo	Indonesia	1,000
Timor-1 power station Unit 1	PT PLN Persero	Indonesia	50
Timor-1 power station Unit 2	PT PLN Persero	Indonesia	50
Tokuyama East power station Unit 3	Marubeni, Tokyo Century Corporation, Tokuyama	Japan	300
Van Phong-1 Unit 1	Hanoi Industrial Construction and Investment, Sumitomo Corporation	Vietnam	660
Van Phong-1 Unit 2	Hanoi Industrial Construction and Investment, Sumitomo Corporation	Vietnam	660

Source: Urgewald and Profundo, GEM Global Coal Plant Tracker

THE ROLE OF INSURANCE

Insurance is a critical pillar of support for coal. Without insurance, no new coal power projects could be built, and few existing plants could keep operating. Since 2017, at least 39 major insurance companies have adopted coal exit policies. Many of them rule out support for new coal mine or power projects, while 14 policies also include a coal phase-out commitment.

Most of the 25 members of the Net-Zero Insurance Alliance are no longer offering coverage for new coal projects or were never involved in this market in the first place. Two NZIA insurers are, however, among the most active coal insurance holdouts: Beazley, a specialty insurer on the Lloyd's market, offered 1.7% of the capacity for the three new KEPCO projects, and the Lloyd's market as a whole (also a member of NZIA) contributed 16% of the capacity for the three projects. NZIA members Hannover Re, QBE and SCOR have ceased insuring new coal projects, but are underwriting the operation of KEPCO's Cebu power plant, even though the utility has no plans to phase out Cebu or any other coal projects in line with a credible 1.5°C pathway. Allianz, a member of the Net-Zero Insurance Alliance, held US$2.7 billion in bonds and equities in companies developing coal projects, according to November 2021 filings. These include coal mining company Vale and major builders of coal plants, including Adani Group, Eskom, PT PLN (Persero), and Marubeni.

SHRINKING THE PIPELINE

Recommendations to Stop the Flow of New Coal Financing

The good news is, thanks to government action, citizen advocacy, and market realities, the pipeline of new coal plants has already shrunk enormously.

The success to date is the result of government regulation, global climate change movements, and declining renewable energy costs.

So far, 44 governments have committed to end the construction of coal plants. A further 33 countries have canceled their project pipelines since 2015 and are well-positioned to make formal "no new coal" pledges, alongside seven more with no plans to replace their coal fleets (**Carbon Brief, Global Coal Plant Tracker**). All members of the G7 (Canada, France, Germany, Italy, Japan, the UK, and the US) committed in May 2021 to stop overseas public lending for coal, and in September 2021 Xi Jinping announced that China would no longer build coal-fired power plants abroad.

Now, private finance is the new policy frontier. The financial sector can meaningfully contribute to this progress by taking two powerful steps. First, stop the growth of the global coal fleet by enacting more effective policies to end investments in new coal. Second, take action to phase out the global coal fleet altogether.

STEP 1: **ENDING HOLLOW COAL POLICIES FOR NEW COAL**

To date, 300 financial institutions have announced restriction policies for coal, according to the **Coal Policy Tool**. The large number of such announcements reflects the pressure financial institutions are under to act on coal, but most of these policies do not yet effectively phase out coal financing and investment.

ACCORDING TO THE COAL POLICY TOOL, AS OF SEPTEMBER 2022, ONLY 26 OF THE 300 FINANCIAL INSTITUTION COAL POLICIES ARE ROBUST ENOUGH TO PREVENT SIGNIFICANT COAL INVESTMENT.

Most of the adopted policies fail to prevent investments in companies that are still developing new coal power plants, coal mines, or coal transportation infrastructure.

Despite significant policy gains, much more work remains to be done to ensure these policies function in practice to eliminate all new coal funding. To effectively end the building of new coal projects, policies must apply not only to designated coal project financing, but also to the companies that continue to provide such finance.

Hollow policies	Effective policies
No lending, bond purchases, underwriting of new bonds/ shares, insurance coverage, or other support for new coal projects	No lending, bond purchases, underwriting of new bonds/shares, insurance coverage, or other support for new coal projects and companies that are planning, building, or extending the life of coal projects

A typical example is Citigroup. As described above, Citigroup's restrictions only apply across the board to earmarked coal projects. Restrictions against lending to project developers apply only to new clients.

Another bank, Crédit Agricole, demonstrates what a more effective coal exclusion policy looks like. On the surface, Crédit Agricole's policy looks like Citigroup's: both banks exclude financing for coal mines and coal plants. The crucial difference is that, in addition to excluding financial support to specific coal projects, Crédit Agricole also excludes support to companies who are developing new coal projects. By doing so, Crédit Agricole recognizes the reality that most coal projects are financed not directly by means of outside support, but rather from general corporate funds. Therefore, the only way to effectively apply pressure from outside is to restrict funding to the company itself.

Financial institutions have made strides to implement their existing "no new coal" policies. Accounting for the gaps in these policies, and refining them accordingly, will enhance their effectiveness and help accelerate the clean energy transition around the world.

STEP 2: **DISMANTLING THE GLOBAL COAL FLEET**

While ending the development of new coal plants is an essential first step toward solving the climate crisis, the need to make rapid progress was made clear by UN Secretary-General António Guterres. In response to the IPCC's 1.5° Report, Secretary-General Guterres issued a call in Geneva on February 28, 2022, for governments and major corporations to rise to the challenge of climate leadership. "The facts are undeniable," said Guterres. "This abdication of leadership is criminal. The world's biggest polluters are guilty of arson of our only home."

"All G20 governments have agreed to stop funding coal abroad," noted Guterres. "They must now urgently do the same at home and dismantle their coal fleets. Those in the private sector still financing coal must be held to account. Oil and gas giants – and their underwriters – are also on notice. You cannot claim to be green while your plans and projects undermine the 2050 net-zero target and ignore the major emissions cuts that must occur this decade." (emphasis added)

The Secretary-General concluded,

"EVERY FRACTION OF A DEGREE MATTERS. EVERY VOICE CAN MAKE A DIFFERENCE. AND EVERY SECOND COUNTS."

Without funding, the coal industry could not continue to operate. Yet, as shown in this report, funding continues to flow to coal developers, despite financial institutions' attempts to implement coal restriction policies. The conclusion is clear: hollow exclusion policies are not effectively restricting finance to coal projects.

While change at the necessary scale and speed is difficult, recent events have shown what's possible. On March 10, 2022, two weeks after Russia invaded Ukraine, two iconic Wall Street institutions, Goldman Sachs and JPMorgan Chase, reported that they were withdrawing from Russia. JPMorgan's announcement stated that the company was "unwinding Russian business" and would not pursue new ventures there.

The rapid change in bank policies in response to Russia's invasion of Ukraine revealed a fundamental truth: banks and other large institutions are far from passive entities. When necessary, they are capable of acting forcefully, decisively, and quickly.

EXAMPLES OF BEST PRACTICES ON COAL POLICY

As measured by the Coal Policy Tool, 30 financial institutions currently have robust coal policies. By examining the fine print of these policies, it is possible to gain a measure of best practices for coal policy. The following are examples:

ENDING DIRECT SUPPORT TO NEW COAL PLANTS, MINES, AND TRANSPORT

- 24 companies on the Coal Policy Tool scorecard have gained a rating of 9 or 10, including 16 that categorically exclude any type of financial support for new coal mines, coal plants, and coal infrastructure.

ENDING SUPPORT FOR COMPANIES DEVELOPING NEW COAL PLANTS, MINES AND TRANSPORT

- 20 companies have gained a rating of 9 or 10 on the Reclaim Finance score chart. One company, AXA, is considered to define best practices by excluding nearly all financial support to coal project developers or companies buying coal assets without a commitment to close them, and in addition excludes financial support to companies selling equipment for new coal projects.

REQUIRING COMPANIES THAT HAVE COAL ASSETS TO HAVE A COAL PHASE-OUT IN PLACE THAT IS ALIGNED WITH THE PARIS CLIMATE ACCORDS

- Of the companies on the Coal Policy Tool scorecard, 31 have gained a rating of 9 or 10, including 22 whose policies are considered “best practices.” For example, AXIS Capital, an insurer based in Bermuda, requires companies receiving financial support to have committed to a coal phase-out by 2030 in EU/OECD countries and by 2040 worldwide. The goal in 2030/2040 is 0% exposure for AXIS to all coal companies. BNP Paribas requires any company receiving financial support to have a phase-out plan for coal mining and power by 2030 for the EU/OECD and by 2040 elsewhere.

SETTING THRESHOLDS FOR APPLYING RESTRICTIONS

- In order to ensure that companies with small levels of coal company ownership exposure are not unduly burdened by exclusion policies, the Coal Policy Tool defines both relative and absolute thresholds of coal ownership. 54 companies on the Coal Policy Tool scorecard have achieved a rating of 9 or 10 for their relative thresholds and 16 have received a rating of 9 or 10 for their absolute thresholds, with 12 companies achieving a score of 10 in both categories. An example of a high-ranking policy that sets thresholds comes from Credit Mutuel, whose policy excludes: 1) companies that receive above 20% of their revenue from coal power; 2) power companies owning more than 5 GW of coal power capacity, and; 3) mining companies producing more than 10 megatonnes of thermal coal.

CASE STUDY

How Crédit Agricole Became a Coal Policy Leader

With revenues of over €36 billion, assets over US$2.7 trillion, and 142,000 employees, France's Crédit Agricole Group is the third largest bank in Europe and tenth largest in the world.

Sometimes referred to as La banque verte, or "the green bank," because of its historical roots in France's farming sector, Crédit Agricole is recognized today as "green" in a new way: for its leadership in developing environmental policies in the banking sector.

In 2003, Crédit Agricole became the first French bank to sign the Equator Principles, a voluntary, unilateral commitment to perform a detailed analysis of environmental and social aspects of each new project financing. Today, Crédit Agricole has some of most restrictive policies of any bank with respect to coal lending, but the development of those policies did not happen overnight.

The bank's first coal policy exclusions came in December 2012, when Crédit Agricole introduced specific criteria to withdraw support for less efficient coal power plants, and in April 2013 when the bank withdrew support for mountaintop removal projects. In May 2015, Crédit Agricole expanded its exclusion to all coal mining projects and announced its first exclusions at the corporate level, which would end financing to companies receiving more than 50% of their revenues from coal extraction. In November 2015, the French bank removed financing to all new coal plants in high-income countries. In November 2016, Crédit Agricole expanded its exclusion to all coal power projects and adopted its first exclusion threshold at the corporate level on coal power, using a 50% revenue threshold but allowing some exceptions. In June 2019, the bank lowered its exclusion thresholds and went further, becoming the first major bank in the world to exclude most coal developers and to request an exit plan from the sector from its coal clients.

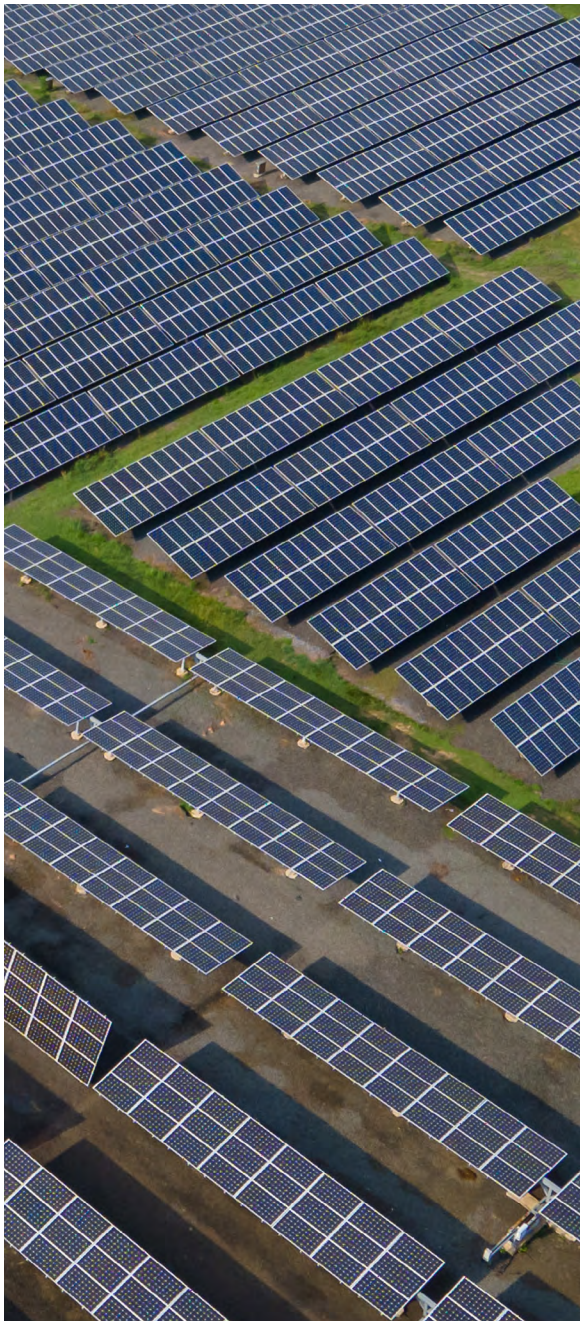
The bank announced:

"THE GROUP ALSO UNDERTAKES TO STOP WORKING WITH CORPORATIONS CURRENTLY DEVELOPING OR PLANNING TO DEVELOP NEW THERMAL COAL CAPACITIES ALONG THE ENTIRE VALUE CHANGE (MINING, PRODUCTION, UTILITIES, AND TRANSPORT INFRASTRUCTURES."

(JUNE 13, 2019, TRANSLATED FROM FRENCH)

While Crédit Agricole's coal policy is considered by Reclaim Finance to be "one of the most progressive ones globally," the road to coal policy leadership has not been without its obstacles. In 2021, an analysis by Reclaim Finance found that the bank still supported a several coal project developers, in apparent violation of its own exclusion criteria. This led Crédit Agricole to start a new review of its policy to ensure greater alignment with its overall exit pledge.

As it exited coal financing, Crédit Agricole has simultaneously begun aggressively financing renewables, starting with wind farms in 1997 and solar farms in 2008. By 2018, renewable energy represented over 64% of the bank's loans for electricity generation. As of 2022, the bank has financed a total of 435 wind farms generating more than 24,000 MW and 1,006 solar farms with almost 9,000 MW of installed capacity.



Conclusion

As the United Nations Secretary-General has made clear, the time for half-measures and hollow policies is over.

To avoid the worst impacts of climate change, it is imperative that we heed the warnings of the IPCC and the IEA to phase out coal power in the OECD by 2030 and in the rest of the world by 2040. Achieving this goal means stopping all finance to coal developers and supporting the creation of new systems built on clean power technologies. This is necessary given the urgency of the climate crisis, which no longer allows for delay. As the cost of renewables rapidly drops, phasing out coal investments is a prudent business practice that will help investors avoid the dangers of stranded fossil assets.

Financial institutions have the power and the ability to end the flows of capital that have sustained the era of coal. Major institutions are already leading the way by adopting stringent coal restriction policies that are in alignment with best practices set forth by civil society organizations.

For the financial institutions that wish to display bold, necessary climate leadership, it is time to adopt such practices. Together, financial institutions can enact meaningful progress to end the era of coal and welcome the new era of clean, sustainable energy.

SIDEBAR

LOOKING BEYOND ENDING NEW COAL: WHAT DOES A ROBUST COAL POLICY LOOK LIKE?

Financial institutions must end their support for all companies that do not have robust coal phase-out plans. The civil society organizations Reclaim Finance and Urgewald have developed the following criteria for company phase-out plans.

1. All coal expansion plans must be cancelled.
2. 80% of the global coal fleet and all thermal coal facilities in the OECD, Eastern Europe, and former Soviet Union must be closed by 2030, and globally by 2040.
3. Phase-out plans must include facility-by-facility closure dates.
4. Coal facilities must be closed and not sold to new owners.
5. Coal plants must be closed and not converted to fossil gas, biomass, or fossil-based hydrogen.
6. Claims of future retrofitting with carbon capture and storage must not be used to delay coal plant closures
7. Plant closures must be accompanied with just transition plans, and all worker and environmental obligations funded and implemented.
8. Companies must pledge not to challenge the phase out of coal facilities through investor-state dispute settlement mechanisms
9. Companies must stop all lobbying activities against government action on climate.
10. A science-based target or net-zero commitment is not an acceptable substitute for a credible coal phase-out plan.

METHODOLOGY NOTES

This report is based on the following data sources:

- Global Energy Monitor, "Global Coal Plant Tracker," January 2022
- Global Energy Monitor, "Global Coal Mine Tracker," January 2022
- Global Energy Monitor, "Global Coal Terminals Tracker," January 2022
- Global Energy Monitor, "Global Coal Project Finance Tracker," January 2022
- Urgewald, "Global Coal Exit List 2021"
- Urgewald and Profundo, "Detailed Analysis: Bond- and Shareholding in Coal Developers Per Financial Institution (2021 November Most Recent Filing Date, US$ mln)"
- Urgewald and Profundo, "Detailed Analysis: Loans & Underwriting to Coal Developers Per Financial Institution (2019-2021, US$ mln)
- International Energy Agency, "Projected Costs of Generating Electricity 2020."

DEFINITIONS

"New Coal" refers to (1) Coal-fired power plant units (including grid-connected cogenerators and units at industrial locations) in construction or pre-construction development as of the January 2022 release of the GEM Global Coal Plant Tracker; (2) Coal mines and coal mine expansions (including lignite) in construction or pre-construction development as of the January 2022 release of the GEM Global Coal Mine Tracker; (3) Coal terminals in construction or pre-construction development as of the January 2022 release of the GEM Global Coal Terminals Tracker.

"Coal Developer" refers to companies with a 25% or greater ownership share in a coal plant, mine, or terminal in construction or in pre-construction development.

COAL PROJECTS: YEAR-BY-YEAR COST ESTIMATES

Data on the global coal plant, mine, and terminals fleets was derived from three GEM trackers: Global Coal Plant Tracker (methodology **here**), Global Coal Mine Tracker (methodology **here**), and Global Coal Terminals Tracker. These data sets are based on research documented at the project level on GEM.wiki. Estimates for annual financial support for coal projects were derived by combining data from each GEM tracker with regionally-specific overnight capital cost estimates from International Energy Agency, "Projected Costs of Generating Electricity 2020."

DESIGNATED COAL PLANT FUNDING

Estimates for designated coal plant funding were based on GEM's "Global Coal Project Finance Tracker" (methodology **here**). This data set is based on a combination of diverse public sources and IJGlobal's infrastructure finance database.

CORPORATE FUNDING

Corporate loans, credit, and underwriting facilities were researched using financial databases from Bloomberg, Refinitive, and IJGlobal. Investments in bonds and shares were researched using Refinitiv, Thomson EMAXX, and Bloomberg. The research covered all 935 companies and their subsidiaries from Urgewald's Global Coal Exit List 2020 (methodology **here**).

GREEN FINANCE EXCLUSION

Where a bond had a "green bond flag" in the financial databases based on the ISIN and no other use of proceeds, it was labeled as "Pure" green bond/loan in the dataset. For bonds and loans without ISINs, a deal was labeled as "Pure" if the only use of proceeds was "Green bond/loan" or "Sustainability Bond/Loan." Where the use of proceeds included terms such as "green bond" or "green loan", or similar terminology, in addition to other use of proceeds such as "refinancing," "general corporate purposes," "working capital," etc., these were labeled as "Mixed' in the dataset. Both "Pure" and "Mixed" green financing were excluded from the analysis.

BILATERAL AND SYNDICATED LOANS

Financial databases often record loans and issuance underwriting when these are provided by a syndicate of financial institutions. These financial databases do not report bilateral loans, where a company borrows money from only one bank, rather than from a group of lenders. A significant portion of commercial banks' lending, namely all bilateral loans to companies featured on the GCEL, is therefore not captured by our data. Shares of syndicated loans were recorded where these details were included in the financial database, or in company or media publications. If unavailable, shares were calculated based on an institution's reported fees as a proportion of the total fees received by all financial institutions. Where deal fee data was missing or incomplete, the research used the bookratio, defined as the number of participants minus the number of bookrunners, divided by the number of bookrunners. For loans, the commitment to assigned bookrunner groups is shown in Table M1.

TABLE M1

Bookratio	Loans
>1/3	**75%**
>2/3	**60%**
>1.5	**40$**
>3.0	**<40%**

ADDITIONAL DATA SOURCES

In addition to financial databases, data was collected from the following pension funds, due to the relative size of the funds and the availability of data:

- California State Teachers' Retirement System (CalSTRS)
- California State Teachers' Retirement System (CalSTRS)
- New York State Common Retirement Fund
- Pensioenfonds Zorg en Welzijn (PFZW)
- Pensioenfonds Vervoer
- Pensioenfonds Horeca & Catering
- Pensioenfonds Metaal en Techniek (PMT)
- Pensioenfonds van de Metalelektro (PME)
- BPL Pensioen
- Pensioenfonds Detailhandel
- Algemeen Burgerlijk Pensioenfonds (ABP)
- Bedrijfstakpensioenfonds voor de Bouwnijverheid (BpfBOUW) • California Public Employees' Retirement System (CalPERS)
- Government Pension Investment Fund (GPIF)
- Government Pension Fund Global
- National Pension Service
- Första AP-Fonden (AP-1)
- Andra AP-Fonden (AP-2)
- Tredje AP-fonden (AP-3)
- Fjärde AP-fonden (AP-4)
- Sjunde AP-fonden (AP-7)
- Arbejdsmarkedets Tillægspension (ATP)
- PFA Pension
- PenSam

APPENDICES

Appendices may be downloaded at https://globalenergymonitor.org/news-reports/reports-briefings/

Appendix A. Loans and Underwriting, 2019-2021, for Companies Building Coal Plants and Mines in Construction in January 2022. Sources: Urgewald and Profundo (Lenders and Underwriters), GEM Global Coal Project Finance Tracker (Project Lenders), GEM Global Coal Plant Tracker, GEM Global Coal Mine Tracker.

Appendix B. Bond-Holding and Shareholding in Companies Developing Coal Plants, Mines, and Transportation Infrastructure, based on November 2021 Filings. Threshold: $1 billion or more in total assets managed or owned. (US$Million) Source: Urgewald and Profundo.

Appendix C. Coal Plants in Development in January 2022 by Recipients of Loans and Underwriting Provided by Members of the Net-Zero Banking Alliance, 2019-2021. Sources: Urgewald and Profundo (finance data), GEM Global Coal Plant Tracker (coal plants).

Appendix D. Bond-Holding and Shareholding by Members of the Net-Zero Asset Owners Alliance and Net-Zero Asset Managers Initiative. Threshold: $1 billion or more in total assets managed or owned. (US$Million) Source: Urgewald and Profundo.

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Global Coal Mine Tracker. **"Newly Opened Coal Mines."** January 2022

Kaarina Kolle (lead author). **Fools Gold: The financial institutions risking our renewable energy future with coal.** Europe Beyond Coal. July 2020

Patrick McCully and Sonja Meister. **How to Exit Coal: 10 Criteria for Evaluating Corporate Coal Phase-out Plans.** Reclaim Finance and Urgewald. November 2021

Bronwen Tucker and Kate DeAngelis. **Past Last Call: G20 Public Financing Institutions are Still Bankrolling Fossil Fuels.** Oil Change International and Friends of the Earth United States. October 2021

Who Is Still Financing the Global Coal Industry? Urgewald press release. February 15, 2022

TOOLS

GLOBAL ENERGY MONITOR (GEM)

- **Global Coal Plant Tracker** (January 2022)
- **Global Coal Mine Tracker** (January 2022)
- **Global Coal Terminals Tracker** (January 2022)
- **Global Coal Project Finance Tracker** (January 2022)

OIL CHANGE INTERNATIONAL

- **Shift the Subsidies database**

RECLAIM FINANCE

- **Coal Policy Tool** (April 2022)

URGEWALD

- **Global Coal Exit List** (2021)

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