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# **CARBON TRAP:**

## **HOW INTERNATIONAL COAL FINANCE UNDERMINES THE PARIS AGREEMENT**

#### **Acknowledgments**

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The Natural Resources Defense Council is an international nonprofit environmental organization with more than 2.4 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world’s natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Montana, and Beijing. Visit us at [nrdc.org](http://nrdc.org).

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Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition toward clean energy. Oil Change International, 714 G Street S.E., Washington, D.C. 20003, [www.priceofoil.org](http://www.priceofoil.org).

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# Executive Summary

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As the threat of climate change looms, the world must transition to cleaner energy and avoid burning most fossil fuels. Coal is of particular concern, accounting for two-fifths of global carbon emissions from fossil fuel use—more than any other individual source. Still, governments continue to invest in projects that further the world's dependence on coal.

Governments have a limited pool of public funds that they can use to make investments in other countries, often in an effort to bring sorely needed energy resources to places without reliable energy access. While expanding energy access is a worthy endeavor, these investments often take the form of coal-fired power plants, coal mining, and other coal-related projects, such as the building of railways and ports designed primarily to transport coal. These dirty investments are damaging the air, water, public health, and environment of developing nations under the guise of bringing energy. The costs and life spans of coal projects can stretch for decades, trapping developing nations in a system of incredibly carbon-intensive energy use.

It is time to turn this tide toward sustainable, profitable clean energy projects. At the Paris Climate Conference, held in December 2015, 195 nations agreed to cut their dependence on fossil fuels in a concerted effort to limit global temperature rise. The Paris Agreement also called for the shift of trillions of dollars in investment toward low-emission, climate-resilient development. The world must use its relatively small pool of public finance funds prudently to catalyze that shift.

The governments of the G20 nations account for the vast majority of international coal finance, much of which flows from export credit agencies (ECAs). Businesses in the financing country—rather than in the recipient countries, where the coal projects are built—are the main beneficiaries of these investments. The emerging economies, on the other hand, are left to grapple with the financial, public health, and environmental impacts. Unfortunately, the finance institutions provide very little public disclosure of the coal projects they finance. This report and accompanying database provide a window into the projects being financed.

Our analysis shows:

**1. Between 2007 and 2015, G20 nations financed \$76 billion worth of international coal projects. China, Japan, Germany, and South Korea accounted for four-fifths of this financing.**

- China financed \$25 billion
- Japan financed \$21 billion
- Germany financed \$9 billion
- South Korea financed \$7 billion

**2. G20 nations are considering financing new coal projects worth more than \$24 billion.**

- Japan plans to finance \$10 billion
- China plans to finance \$8 billion
- South Korea plans to finance \$2 billion

**3. The top three recipient countries for G20 coal project financing are Indonesia (\$11 billion), Vietnam (\$10 billion), and South Africa (\$7 billion).** Indonesia and South Africa are G20 members.

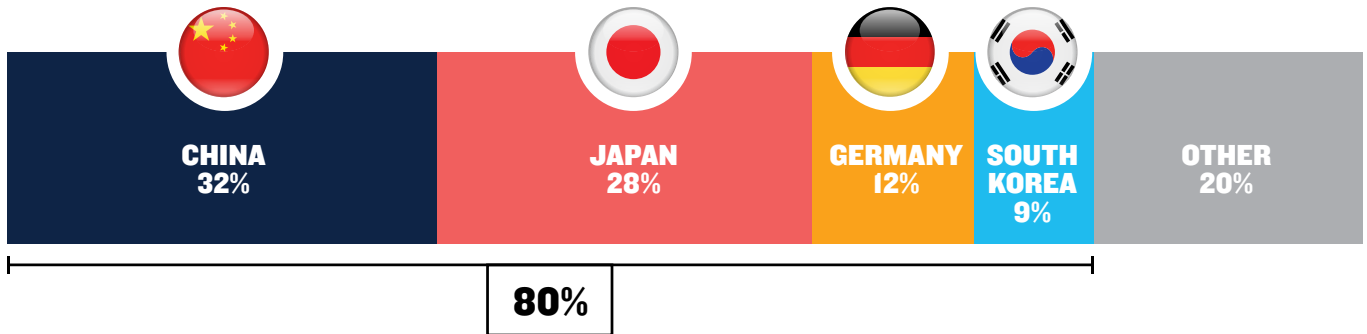
**4. Low-income countries received less than 2 percent of G20 international coal financing.** Instead, most of the money went to middle- and high-income countries, contrary to frequent claims that public finance for coal is intended to help the poorest countries expand access to energy.

Several multilateral banks and the export credit agencies for countries in the Organisation for Economic Co-operation and Development (OECD) have pledged to restrict coal financing. China's Green Credit Guidelines ask banks to consider climate risks in their investments abroad. Even so, new publicly funded coal projects loom on the horizon. Prioritizing coal producers' access to low-interest financing and loan guarantees—without accounting for the costs of the many externalities such as environmental degradation, pollution, and health impacts—unfairly favors coal over clean energy alternatives. Newly built coal infrastructure that will be around for decades is a carbon trap—locking countries into many years of harmful greenhouse gas emissions. Coal investment impedes the transition to a low-carbon economy. Given the grave climate and health impacts linked to coal use, it is time to end public financing for coal projects. To address climate change and improve transparency, we offer the following recommendations:

- G20 nations that are members of the OECD should **expand restrictions on coal finance** so they apply not only to coal plants but to all coal activities, such as exploration and mining.
- National policymakers should **develop clear guidelines for limiting coal finance**—in line with their national circumstances, with clear criteria for ensuring that future energy financing is consistent with the Paris Agreement, and with appropriate accounting for the cost of externalities.
- Governments and multilateral organizations should **disclose coal financing from all public institutions**, such as export credit agencies, development banks, majority state-owned banks, and others.

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## SHARE OF INTERNATIONAL COAL FINANCE BY G20 COUNTRY 2007-2015

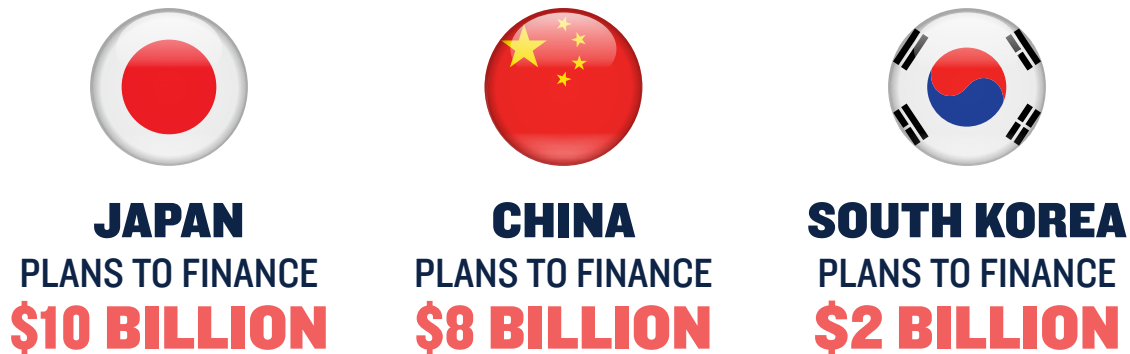


These 4 countries accounted for 80 percent of international coal finance by G20 countries between 2007 and 2015.

This report reviews international coal financing from 2007 through September 2016 in the G20 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, and the United States. While the European Union is also part of the G20, this analysis includes only those European Union member states that are also individual members of the G20. We chose the G20 because of its diverse global membership and role in setting global norms. It should be noted that the G20 nations are financiers of coal projects in some cases and recipients in others.

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## COUNTRIES IN THE G20 WITH THE MOST FINANCING PLANNED FOR FUTURE INTERNATIONAL COAL PROJECTS



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# Introduction

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## ENERGY ACCESS IN A CARBON-CONSTRAINED WORLD

Around the world, hundreds of millions of people still have limited energy access. A central challenge for the decades ahead is how to meet that very real need without reliance on carbon-intensive fossil fuels.

In December 2015, more than 190 nations met in Paris for the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC). The conference produced the Paris Agreement, with countries committing to doing their part to limit the average global temperature increase to well below 2 degrees Celsius, and making best efforts to limit it to 1.5 degrees.<sup>1</sup> One of the agreement's three stated objectives is "[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."<sup>2</sup> The Paris Agreement entered into force on November 4, 2016, and the global mandate to reduce emissions has never been clearer.

Energy production must be shifted to a low greenhouse gas emissions pathway, but energy finance has traditionally flowed to pollution-heavy energy sources, including coal. Today, more and more experts recognize that continued government financing for international coal projects flies in the face of climate-resilient development and stated international goals. Newly built coal infrastructure that will be around for decades is a carbon trap—locking countries into many years of harmful greenhouse gas emissions.

The latest report from the Intergovernmental Panel on Climate Change (IPCC) clearly states that human activities, especially the burning of fossil fuels, have increased the concentrations of greenhouse gases in the atmosphere, leading in turn to a rise in global temperatures.<sup>3</sup> Compared with oil and gas, coal has the highest carbon content per unit of energy.<sup>4</sup> Coal accounts for two-fifths of all global energy-related carbon emissions—more than any other individual source.<sup>5</sup> Researchers have calculated that for just a 50 percent chance of avoiding a 2 degree Celsius temperature rise, at least 80 percent of global coal reserves need to remain unused.<sup>6</sup> For a better chance of avoiding a rise of 2 degrees—or 1.5 degrees, the Paris Agreement's more aspirational goal—the proportion of coal that must remain unburned is even higher.<sup>7</sup> If we want to limit future temperature increases, it is critical that governments limit future coal projects. We must escape the carbon trap and pursue a clean energy pathway.

Nations around the world, especially members of the G7 and G20, have made repeated commitments to both fight climate change and end fossil fuel subsidies. However, government financing of international coal projects continues—despite the Paris Agreement—with hundreds of billions of dollars in government support flowing into coal projects. Now, when the global community must marshal its resources to fight climate change, governments are using scarce public money to aggravate the problem. Government financing for coal—largely in the form of export support, but also as development aid and general finance—is facilitating the expansion of coal use and exacerbating climate change. The same government resources spent on coal would be better spent supporting the renewable energy market, which has grown rapidly over the past decade, from \$88 billion in 2005 to \$330 billion in 2015.<sup>8</sup>

## THE CASE AGAINST COAL: HEALTH AND ENVIRONMENT

Coal produces 60 percent of global combustion-related sulfur dioxide emissions.<sup>9</sup> Sulfur dioxide can worsen heart disease and respiratory problems. Particulate matter from coal plants has similar impacts, increasing the risk of heart attack and stroke and leading to bronchitis, reduced lung function, and premature death. Coal combustion also produces nitrogen oxides, mercury, and combustion waste ash and sludge, which include toxins such as arsenic and heavy metals. Nitrogen oxides produce smog, which causes lung damage and aggravates asthma. Mercury can cause neurological problems, especially for children. Coal combustion waste products can contaminate water supplies and endanger marine life. They also poison the fish we eat, reducing their populations and threatening the livelihoods of fishermen.<sup>10</sup> A recent report from the International Energy Agency linked coal and oil combustion to 3 million premature deaths a year.

In 2015, the World Wildlife Fund (WWF) and Oil Change International published an assessment of the environmental costs of 20 coal power plants supported by export credit agencies.<sup>11</sup> Using a methodology developed by the International Monetary Fund (IMF), the analysis assessed the local air pollution and global climate change impacts and estimated the 2015 economic costs of the emissions to be as much as \$32.1 billion. The health and climate costs far outweigh the value of the financing. The annual costs of local air pollution were estimated to range from \$3.6 billion to \$20.2 billion. Over the 50-year potential life span of a coal plant, \$1 in export credit investment could produce more than \$100 in local air pollution costs alone.

## UNDERSTANDING COAL FINANCE

Without international financing by investors and banks, coal projects would not exist, because new coal developments require huge amounts of capital. For example, building a 600-megawatt coal-fired power plant might cost anywhere from \$500 million to \$1.3 billion.<sup>12</sup> In the database accompanying this report, we calculated the amount of public financing for each plant, coal mine, coal-related transmission and distribution project, and railway or port designed primarily to facilitate the transport of coal. Since countries often provide very limited public disclosure of the coal projects they finance, the figures presented in this report are likely to underestimate the totals.

Given coal's climate, health, and environmental impacts, such projects should not be financed at all—let alone with billions in public funds. Investing in and subsidizing coal projects in a carbon-constrained world is a losing proposition for the planet, especially for the recipient countries.

Countries must consider the full costs of coal before making an investment. Coal investments can turn out to be “stranded assets”—meaning that they cost more to build than they generate in revenue—when investors factor in coal's externalities such as environmental damage and health impacts. The International Energy Agency's World Energy Investment Outlook estimates that, after a full accounting of external costs, coal power plants worth \$120 billion could be stranded.<sup>13</sup>

Commercial banks may have provided \$130 billion for coal mining and power plants in 2014, but these private financial institutions are already starting to reject coal plants from their financial portfolios. In 2015, the commercial bank Natixis entirely banned coal mining and coal utilities from their lending portfolio, citing the “multiple risks associated with the coal industry, these being not just environmental, but economic and regulatory as well.”<sup>14</sup> Many other commercial banks, including Bank of America, BNP Paribas, Citigroup, Crédit Agricole, ING, Morgan Stanley, Wells Fargo, and Société Générale, have banned or restricted coal mining and coal power plants in their lending portfolios.<sup>15</sup> Many of the world's largest institutional investors, such as Allianz, Axa, and KLP, have divested from coal mining and coal-fired power plants, and so has Norway's \$900 billion sovereign wealth fund.<sup>16</sup>

This report reviews international coal financing from 2007 through September 2016 in the G20 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, and the United States. While the European Union is also part of the G20, this analysis includes only those European Union member states that are also individual members of the G20. The G20 was chosen because of its diverse global

membership and role in setting global norms. It should be noted that the G20 nations are financiers of coal projects in some cases and recipients in others.

G20 nations should be leading the shift away from coal investments rather than falling behind the private sector, which has already started to make that shift. Financing coal projects abroad also contrasts with domestic policies. For instance, the U.K. government is considering phasing out coal-fired power plants by 2023.<sup>17</sup>

## COAL PROJECTS: CONTROVERSIAL AND DESTRUCTIVE

In addition to significant environmental and health impacts, many of the coal projects documented here are controversial due to their social impacts. These plants have generated tension in Indonesia, Bangladesh, and the Philippines, all major recipients of G20 public finance for coal projects. Coal plant construction has come with involuntary relocations, intimidation, and attacks on local residents and anti-coal activists. In July 2016, Gloria Capitan, who led a campaign against coal projects in the Philippines, was murdered by two unidentified gunmen. Some 33 environmental activists in the country were killed in 2015.<sup>18</sup>

Pollution from Indonesia's Cirebon Power Plant has destroyed local fish and shrimp populations, which provided a livelihood for local fishermen. Coal companies intimidated villagers into selling their land at low prices, and local officials were bribed to use land acquisition laws to remove villagers who refused to sell. Near the Tanjung Jati B plant in Indonesia, respiratory illnesses have increased, acid rain has damaged farmland, and local fishermen cannot earn a living because the plant pollutes their fishing waters and coal barges disrupt their work.<sup>19</sup>

Multibillion-dollar projects often involve the government at several levels and include complex bidding and procurement procedures, opening the door to corruption and abuse of funds. For example, Marubeni, a Japanese company involved in several coal plants abroad, was fined for bribing high-ranking government officials in Indonesia.<sup>20</sup>

Other well-founded concerns include the costs and delays associated with coal megaprojects. The Medupi plant in South Africa, commissioned in 2007, was supposed to be completed in four years but has been under development for seven. It is likely to take at least ten years to complete. The cost estimate has risen from \$5 billion to nearly \$12 billion.<sup>21</sup>

Many coal plants have provoked large protests, including the \$4 billion Batang Power Plant in Indonesia, which has received significant financing from the Japanese government. Batang (also known as the Central Java Power

Project, and slated to come online by 2019) is sited within a marine conservation area and will jeopardize local fish populations.<sup>22</sup> Construction will destroy hundreds of hectares of farmland and will require demolishing at least five villages with about 10,000 residents who will need to relocate.<sup>23</sup> In 2013, about 7,000 residents protested the plant along with numerous environmental and human rights groups.<sup>24</sup> Many farmers who refused to sell their land within the proposed project area have faced intimidation and threats, including soldiers limiting their movements and their access to irrigation.<sup>25</sup> Controversy continues to build as Indonesia follows the Batang project with another destructive proposal, the expansion of the Tanjung Jati B power plant.

## CATEGORIZING COAL INVESTMENTS

Coal projects are financed through various international public finance mechanisms, including direct project finance and loan guarantees, policy and institutional reform packages, technical assistance, and advisory services. This financing can come from multilateral development banks, (MDBs), export credit agencies (ECAs), bilateral aid organizations, and international operations of national development banks and state-owned banks. For this report, the authors compiled a database of information on coal power plants, coal mining, transmission and distribution projects linked to coal power, and other coal-related activities.<sup>26</sup>

### TYPES OF INTERNATIONAL PUBLIC COAL FINANCING

- **Direct project finance:** loans, grants, and equity financing.
- **Guarantees for projects:** insurance to cover the overall risk of an investment at a lower cost and longer tenor (typically 12 to 20 years) than commercial insurance.
- **Policy lending and technical assistance:** This allows multilateral development banks and development agencies to influence policies, regulations, and institutions to alter costs, benefits, and development preferences to favor the coal sector.
- **Loans to financial intermediaries:** An international institution provides loans or equity financing to an entity such as a local bank, private equity fund, or special government-managed fund (e.g., an infrastructure development fund). The financial intermediary then passes on the original institution's funds.

Our report does not include the majority of financing from financial intermediaries, as such financing is intentionally difficult to track. An October 2016 report by IDI indicates that billions in coal financing has been funneled through this route. The money channeled by multilateral banks to intermediaries often funds coal projects in direct violation of the banks' environmental and social investment standards.<sup>27</sup>

See the Appendix for additional information.

### TYPES OF COAL PROJECTS REVIEWED

- **COAL POWER PLANTS:** new coal power plants and the expansion of existing plants, as well as coal power generation associated with industrial processes.
- **COAL POWER PLANT EMISSIONS CONTROLS:** alterations to existing plants to limit emissions.
- **COAL MINING:** new and existing coal mining projects, including equipment and transport, as well as coal imports and liquefied natural gas production from coal seams.
- **TRANSMISSION AND DISTRIBUTION:** electricity projects that are directly linked to coal power generation.
- **OTHER/UNSPECIFIED PROJECTS:** includes coal export terminals and development policy loans linked to coal. Our report does not include the majority of financing from financial intermediaries, as such financing is intentionally difficult to track. An October 2016 report by IDI indicates that billions in coal financing has been funneled through this route. The money channeled by multilateral banks to intermediaries often funds coal projects in direct violation of the banks' environmental and social investment standards.<sup>27</sup>

See the Appendix for additional information.



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## Results

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It remains difficult to track financing for coal plants abroad as some governments and multilateral organizations provide limited or no information about their investments. The following international coal finance figures should be considered conservative estimates. These numbers do not reflect coal's significant environmental, health, and social costs. Figures for past finance are based on projects that have reached financial close between the project sponsors and the lenders. Totals for pending projects are based on announcements from the financial institutions or news sources.

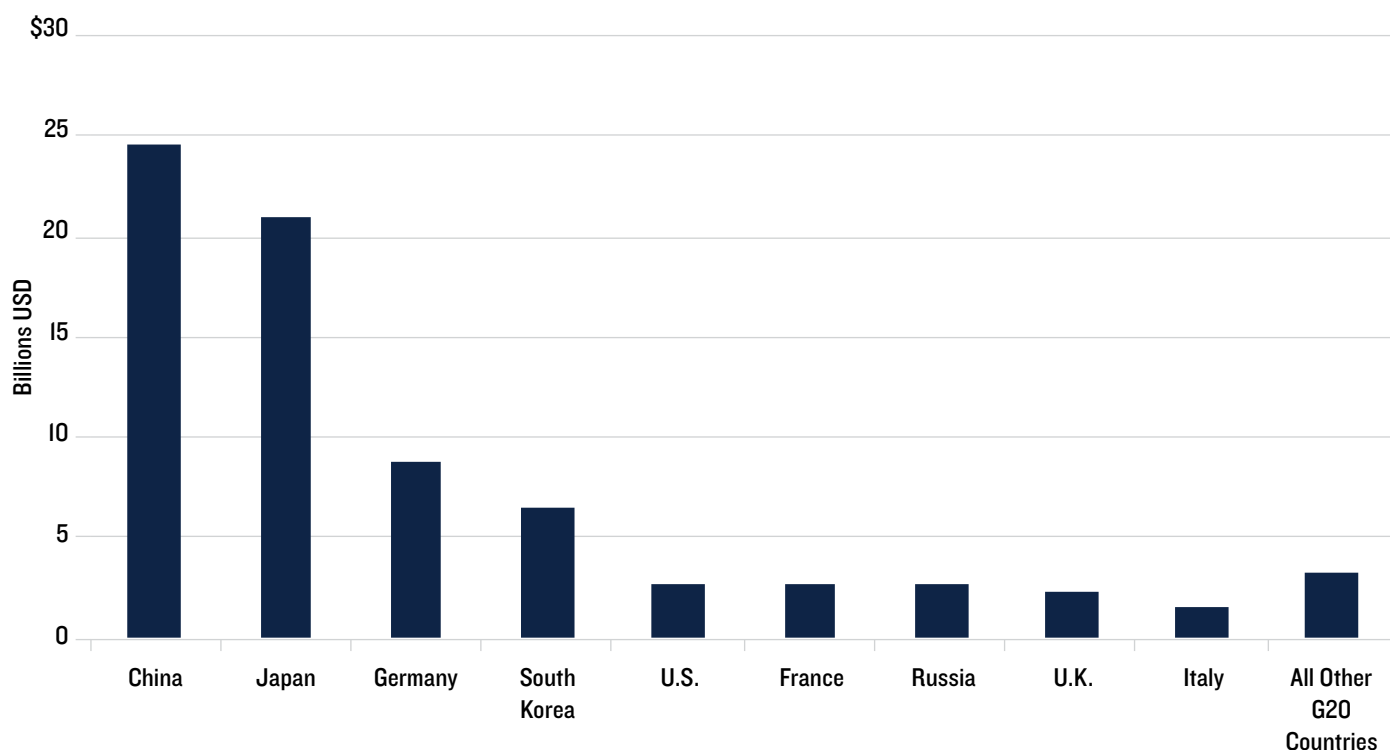
### TOTAL INTERNATIONAL COAL FINANCE BY G20 COUNTRIES

From 2007 to 2015, G20 nations provided \$76 billion in coal finance. Of the G20 countries, China, Japan, Germany, and South Korea have financed the most coal projects abroad and are committed to financing new ones. Between 2007 and 2015, China financed \$25 billion, Japan \$21 billion, Germany almost \$9 billion, and South Korea almost \$7 billion. These four countries accounted for more than four-fifths of all G20 coal financing. Figure 1 shows total financing by country from 2007 through 2015. Figure 2 shows yearly financing for the same period.

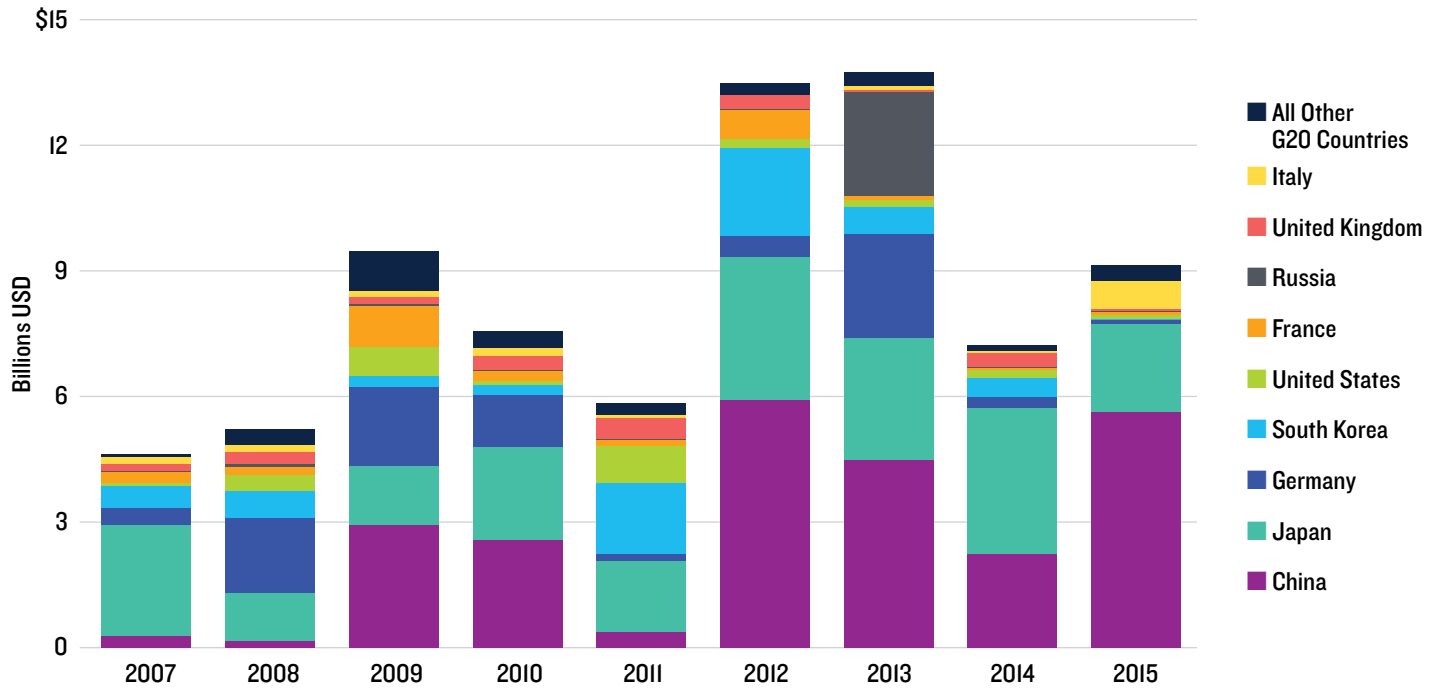
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**FIGURE 1: CUMULATIVE COAL FINANCING BY COUNTRY, 2007–2015**

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**FIGURE 2: TOTAL COAL FINANCE BY COUNTRY, 2007-2015**

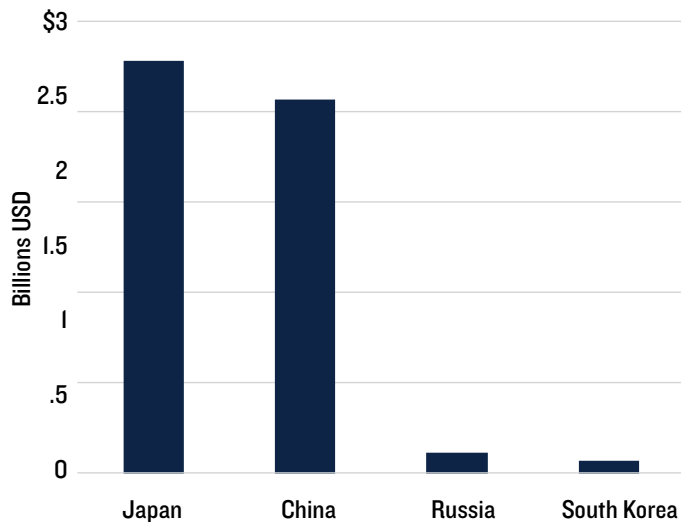


**RECENT AND PENDING COAL PROJECTS**

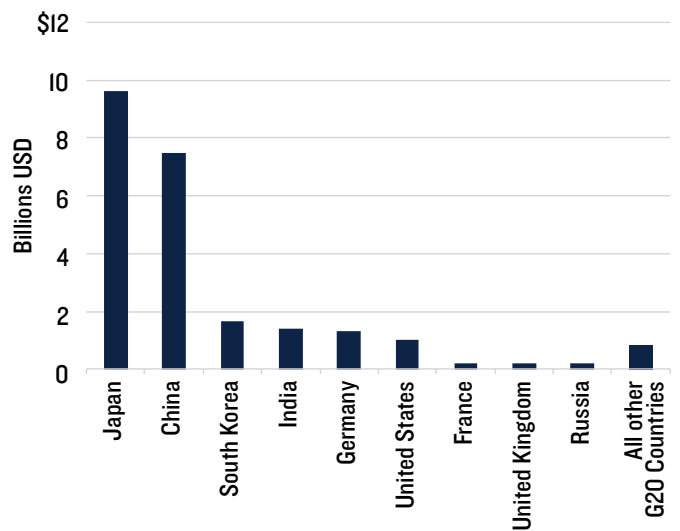
Unfortunately, financial institutions in several countries are actively supporting coal projects, even as many institutions across the G20 institute severe restrictions on coal financing and have pledged to reduce global emissions. From January to September 2016, \$5 billion in coal finance has been documented, and future coal-fired power plant and coal mining projects worth \$24 billion are under

consideration. China is weighing the funding of \$8 billion in international coal projects, and Japan is considering nearly \$10 billion. These pending coal projects are not in line with the Paris Agreement. These countries may be working to reduce emissions within their own borders, but their investments are saddling recipient countries with increased emissions. While our analysis currently shows few projects with documented financing in 2016, this is likely due to the limited availability of data at this point in the year.

**FIGURE 3: COAL FINANCE FROM JANUARY TO SEPTEMBER 2016**



**FIGURE 4: COAL FINANCE UNDER CONSIDERATION**

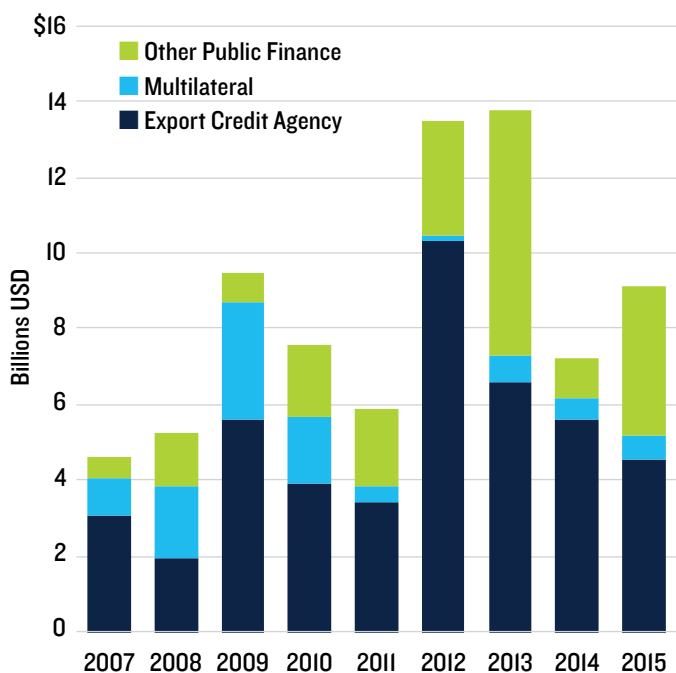


## COAL FINANCING BY INSTITUTION AND SECTOR

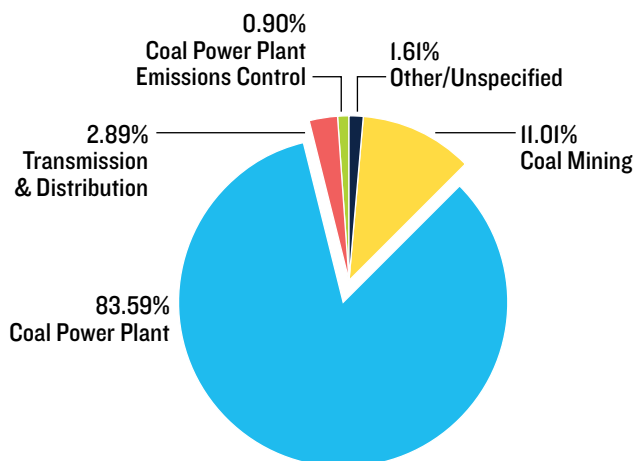
Export Credit Agencies have become more and more involved in coal financing, as multilateral development institutions such as the World Bank have slowed (but not halted) some types of financing for coal projects abroad (see Figure 5).

The majority of public finance supports coal-fired power plants, with a portion going to mining and other activities (see Figure 6).

**FIGURE 5: COAL FINANCE, 2007-2015**



**FIGURE 6: TOTAL SPENDING BY SECTOR, 2007-2015**

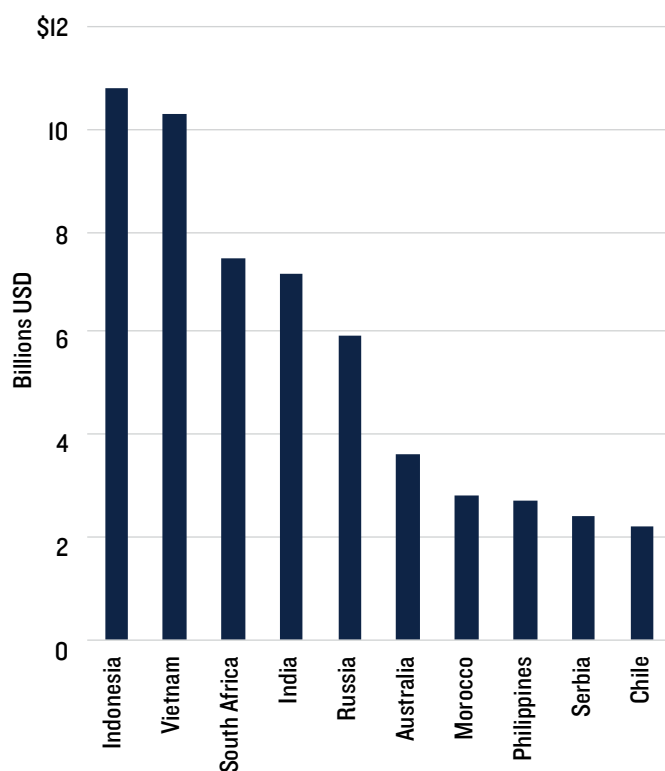


## RECIPIENT COUNTRIES FOR COAL FINANCE FROM 2007 TO 2015

Most public financing for coal has been concentrated in Asia. The top three recipient countries of G20 financing from 2007 through 2015 were Indonesia with \$11 billion, Vietnam with \$10 billion, and South Africa with \$7 billion. China provided more than \$7 billion for coal projects in Indonesia and \$3 billion for projects in Vietnam. Japan provided about \$3 billion each to Indonesia, Vietnam and Australia. Germany financed \$2 billion worth of coal projects in South Africa.

The recipient countries are rarely the low-income nations where greater energy supply is most needed. Our analysis showed that G20 finance to low-income countries from all multilateral organizations was less than 0.06 percent of total G20 coal finance provided from 2007 to 2015.<sup>28</sup> The only coal project financed bilaterally in a low-income country was a plant in Zimbabwe financed by China at \$1.2 billion—representing 1.6 percent of total finance during this period from G20 countries.

**FIGURE 7: TOP RECIPIENT COUNTRIES OF FUNDING FOR COAL PROJECTS, 2007-2015**



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## *Understanding Motivations*

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The increased share of public coal financing from export credit agencies exposes the main intent for these coal projects: to profit companies based in the financing country. While a local company in the recipient country takes on the loan for a project, and while local governments often take on a large share of the project risk, companies in the ECA's home country profit from the contracts for construction, equipment, or other activities.

This is the most obvious motivation for the Japanese government, which has enthusiastically promoted its coal power generation equipment across Asia. Many Japanese-supported coal projects include engineering, procurement, and construction contracts that profit Japanese companies, such as Marubeni, Toshiba, Sumitomo, and IHI.<sup>29</sup> Keidanren (the Japanese Business Federation), which represents these companies' interests, has a "Strategic Promotion" policy paper that lists target countries for promoting coal use in Asia.<sup>30</sup> Keidanren's member companies have a strong interest in increasing coal-fired power generation throughout Asia.

Unsurprisingly, the Coal Division of the Japanese Ministry of Economy, Trade, and Industry has a position strikingly similar to Keidanren's. Japan, ignoring the significant environmental, health, and social impacts of coal, claims its high-efficiency technology will contribute to the sustainable growth of the host country while protecting the environment. Civil society groups in Japan and around the world reject this argument.<sup>31</sup> Japan counts its coal finance as climate finance, claiming that its plants are more efficient than the coal plants that would have been built otherwise—failing to acknowledge the benefits of switching to more renewable energy sources.<sup>32</sup> Expert analysis shows that even relatively efficient coal-fired power plants are incompatible with globally adopted climate goals.<sup>33</sup> Japan's stance sets it apart from other developed countries, many of which have severely limited coal finance.

Japan has taken the most aggressive position on promoting coal abroad, but other nations have similar profit-oriented motivations for financing coal. China promotes coal finance abroad because Chinese companies win an increasing share of the construction and equipment contracts. Also, given the overcapacity of coal power within China, overseas projects provide international business opportunities for coal-plant equipment manufacturers and state-

owned enterprises doing engineering, procurement, and construction overseas.<sup>34</sup> China's State Council encouraged these international projects in a May 2015 statement, though its support was not limited to coal but extended to solar and wind power as well.<sup>35</sup>

Furthering national strategic and economic interests abroad is among the responsibilities of any government, but financing coal should no longer be a viable option. These investments could be redirected to cleaner energy alternatives to meet the same energy demands. G20 nations should not finance coal at the expense of communities in other countries, especially considering their own commitments under the Paris Agreement and the grave climate implications.

### **FINANCING EMISSIONS ABROAD: IMPLICATIONS FOR CLIMATE CHANGE**

At a time when the world is trying to reduce emissions, G20 governments have been financing coal plants in developing countries that will make it harder for the world to fulfill the commitments put forth in the Paris Agreement.

Vietnam, for example, committed to reducing its greenhouse gas emissions by 8 percent by 2030 compared with the business-as-usual scenario, or up to 25 percent with international support. Vietnam is far less likely to achieve that goal if it proceeds to build coal-fired power plants. New plants that foreign governments are considering financing would add 13 million metric tons of carbon dioxide emissions each year—that's more than a 7 percent increase over Vietnam's total emissions in 2014 of 190 MMtCO<sub>2</sub>.<sup>36</sup> Based on our analysis, plants already approved with international public financing will produce nearly 13 percent of Vietnam's annual carbon emissions—relative to the 2014 level—as they become operational.

Likewise, Indonesia's commitment as part of the Paris Agreement is to reduce emissions by 29 to 41 percent of business-as-usual levels by 2030, but internationally financed coal plants that have already been approved will produce emissions totaling more than 3 percent of the annual amount. Further, Indonesia is planning to add more plants that will increase emissions an additional 2 percent beyond current levels.<sup>37</sup>

### EXISTING RESTRICTIONS ON COAL FINANCE

Recognizing the contradiction between climate commitments and subsidized coal use and extraction, several governments and financial institutions have sought to limit coal financing. In 2013, several multilateral development banks and national governments began adopting restrictions on international public financing of coal, mainly due to concerns about the climate impacts. The list includes the World Bank Group, the European Bank for Reconstruction and Development, the European Investment Bank, and the Nordic Investment Bank, as well as the governments of France, the United Kingdom, and the United States. After 2013, these countries saw a decline in public coal financing, proving the commitments somewhat effective.

In November 2015, the parties to the OECD Arrangement on Officially Supported Export Credits—including Australia, Canada, the European Union, Japan, Korea, New Zealand, Norway, Switzerland, and the United States—agreed to new rules for financing coal-fired power plants. This includes restrictions on official Arrangement export credits for the least efficient coal-fired power plants without operational carbon capture and storage. The new rules will eliminate export credits for large (greater than 500MW) “subcritical” coal-fired power plants while allowing support for smaller subcritical plants (under 300MW) and medium supercritical plants (300 to 500MW) in the poorest developing countries.<sup>38</sup> The Agreement still allows export credits for all sizes of “ultra-supercritical” plants. Coal financing will still be allowed for small and medium supercritical plants in countries with limited electrification. The new rules will take effect January 1, 2017, and the agreement will undergo a mandatory review process starting in 2019 to align it with the latest climate science and technological developments.<sup>39</sup>

The Paris Agreement and the OECD Arrangement on Officially Supported Export Credits should spark a decline in global coal financing, provided that countries honor their commitments. However, the OECD agreement allows for the construction of smaller plants as long as they use ultra-supercritical coal technologies. Japan and other nations with this technology plan to exploit this loophole. Also, the OECD policies apply only to eligible export credits from OECD countries, and only to certain sizes and classes of coal power plants—not coal mining or coal-related infrastructure.

Despite domestic and international pressure, Japan is enthusiastically financing coal projects. In fact, even after the OECD deal was struck, Japan changed the risk rules for the Japan Bank for International Cooperation to allow

higher-risk investments, particularly in power plants and related infrastructure. This raises concerns that Japan plans to expand its coal finance rather than rein it in under the OECD agreement.<sup>40</sup> The country is currently in talks to finance billions in new international coal projects, primarily in Indonesia and Vietnam.<sup>41</sup> Germany is considering projects in several countries, including South Africa, Kazakhstan, and Russia.

On top of those loopholes for the export credit agencies of OECD members, there are many other ways countries can finance coal. For example, such financing can be promoted as aid for developing nations through a combination of export credit agencies, international development institutions, and wholly or partially state-owned banks working overseas. Multilateral institutions, such as the Asian Development Bank, African Development Bank, and Inter-American Development Bank, have continued their support for coal projects with very limited restrictions. The World Bank, meanwhile, has found ways to go around its own coal restrictions to finance power plants.<sup>42</sup> (See Appendix for more on loopholes.<sup>43</sup>)

China’s Banking Regulatory Commission has established its own Green Credit Guidelines for investments, including investments abroad. These guidelines are still being implemented, and their improvement and the development of full criteria and standards for lending can create more meaningful restrictions on coal finance. China has emphasized its commitment to limiting high-carbon projects in a 2015 joint statement with the United States: “The United States and China reached an important new understanding on the need to control financing for high-carbon projects internationally. Today, China—one of the largest providers of public financing for infrastructure worldwide—agreed to work toward strictly controlling public investment flowing into projects with high pollution and carbon emissions both domestically and internationally.”<sup>44</sup>

In light of China’s massive progress and potential in renewable energy deployment, China can use this opportunity to shift more investments toward clean energy sources such as renewables rather than fossil fuels abroad. Since 2013, China has set caps on and reduced its own domestic coal consumption, demonstrating policymakers’ awareness of the severe impacts of coal combustion. The question is whether China will continue to finance coal plants abroad—despite the long-term social and environmental impacts of coal—or put limits on its coal financing abroad while expanding its support for developing renewable energy sources internationally. Since coal investments are increasingly seen as stranded assets,

continued coal finance also puts China at risk of financial exposure, as the costs associated with coal power will be higher than the returns in the long run and assets may be rendered unusable before the end of their lifetime.<sup>45</sup>

## IMPLEMENTING THE PARIS AGREEMENT ON CLIMATE CHANGE

There is a glaring contradiction between countries' climate commitments under the Paris Agreement and their continued support for fossil fuels. Building more coal plants moves countries away from the commitments of their national determined contributions (NDCs), in which they

pledge to cut their carbon emissions. Many of these pledges include renewable energy targets in some form.<sup>46</sup> For instance, all 53 African countries that submitted climate commitments included renewable energy targets.<sup>47</sup>

Putting an end to international coal finance would help all countries reduce their emissions and shift to sustainable energy production. Countries such as Japan, China, Germany, South Korea, and others in the G20 should not be allowed to shift their greenhouse gas emissions to other nations to profit their domestic companies. This type of financing is the exact opposite of what countries agreed to provide under the Paris Agreement: climate finance to developing nations.

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## *Next Steps*

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Given everything we know about the social, public health, and environmental impacts of fossil fuel combustion, it is time to shift international public financing away from fossil fuels, especially coal, and move to sustainable, low-carbon options like solar and wind power.

## STRENGTHEN RESTRICTIONS ON COAL FINANCE

OECD governments need to strengthen the OECD Arrangement and immediately end all international public financing for coal power plants—except for the very rare circumstances in which no other option is available to provide immediate energy access in low-income communities. Countries outside the OECD Arrangement should develop more concrete guidelines for investments from export credit agencies and development institutions, with far less emphasis on new coal plants and more on renewable energy.

China can strengthen implementation of its Green Credit Guidelines, which call for banks and enterprises to align with international norms and good practices for overseas projects and to control the environmental and social risks of investments, including hazards from climate change.<sup>48</sup> In practice, this should mean restricting funding for coal mining and power projects, which has become the norm for international financial institutions. There should be clear, detailed policies to implement the China Banking Regulatory Commission's guidelines for coal mining and coal power projects, which should restrict these investments in favor of low-carbon projects.

China has shown itself to be a strong international leader on climate change—by helping the global community reach the Paris Agreement, installing the most wind and solar capacity in the world, and committing \$3.1 billion to the

South-South Climate Cooperation Fund. By limiting coal financing, China can lead developing nations on a wave of cost-effective renewable energy generation in developing nations, with prices often cheaper than fossil fuel energy. This will help to lead the push for renewables to gradually replace coal generation abroad and allow developing countries to provide clean, nonpolluting energy to their citizens.

Governments, starting with the G20, must widen the scope of restrictions for international public financing. Governments must go beyond restrictions only on coal power plants to cover other activities such as coal exploration, mining, and transport.

## FINANCE BETTER ENERGY OPTIONS

Energy supply and security can be achieved with non-fossil sources. Developing nations in need of energy and power should not be given a false narrative that there is a choice only between an unreliable energy supply and coal-fired power plants.

Favorable international public finance makes coal the most accessible power source for many developing nations. However, coal is favored not because it is the best energy option for the recipient country, but because companies in the financing countries profit from the transactions, for instance by selling the equipment used in the coal plant.

For the past decade, ECAs and others have favored coal over clean energy projects despite overwhelming evidence of coal's negative social and environmental impacts and the benefits of clean energy. Rather than financing coal, governments should finance renewable energy projects where the market is growing, leaving coal in the dust. Remarkably, the majority of global power generation

capacity installed in 2015 came from renewables.<sup>49</sup> Annual global investment in new renewable energy capacity in 2015 totaled \$266 billion—more than double the estimated \$130 billion invested in coal and gas-fired power plants.<sup>50</sup> From 2004 to 2015, about \$2.7 trillion in public and private investment went to clean energy.<sup>51</sup>

The electricity market is increasingly supplied by renewable energy, with wind and solar costs falling rapidly. In Australia, wind power can now be supplied more cheaply than coal or natural gas.<sup>52</sup> In Dubai, a new solar plant will produce electricity for 2.99 cents per kilowatt-hour, less than the price of coal.<sup>53</sup> In India, new coal is projected to be more costly than new solar power sources.<sup>54</sup> In South Africa, the price of electricity from new wind projects is half the price of electricity from new coal plants.<sup>55</sup> It is time for ECAs and other government institutions to recognize and embrace the changing energy landscape.

In reality, public institutions that finance renewable resources instead of coal will find that they represent the best economic and environmental opportunity. We need smart policies and rules to hold institutions accountable to climate and environmental principles when deciding on what to finance. For instance, the United States' Overseas Private Investment Corporation (OPIC) has significantly increased its financing for renewable energy abroad, from about \$100 million under the Bush administration in 2008 to more than \$1 billion per year from 2011 to 2015 under the Obama administration.<sup>56</sup> Thanks to strong government policies, OPIC and the Export-Import Bank of the United States are restricting coal investments.<sup>57</sup> Instead, OPIC is supporting a significant portion of renewable energy

projects in developing nations.<sup>58</sup> Many of the recipient countries for coal finance, including Vietnam and India, have used billions in investments to build strong clean energy sectors.<sup>59</sup> Given the overwhelming evidence of the dangers of coal, we should shift more investment to renewable resources, rather than having international ECAs promoting their domestic interests at the expense of the local communities that will be impacted by the coal projects.<sup>60</sup>

## IMPROVE TRANSPARENCY

Governments need to disclose detailed data on public coal financing, covering all relevant transactions by export credit agencies and information from wholly or partially state-owned banks by year, country, and project. This should include all project-level details necessary to paint a clear picture of the climate and environmental impacts.

Much of the public finance for coal moves through largely unknown and opaque institutions. In general, export credit agencies are so secretive that even their official coordinating bodies, such as the OECD Export Credit Group, do not have access to adequate data. Governments of the world are hiding their ongoing support for fossil fuels and for coal in particular. The stronger restrictions against coal financing by some countries and institutions may be an indication that countries are moving away from coal investments; however, it is too early and the data are too opaque to be sure. Since the funds are public, the entire process should be transparent, especially given the grave threat of coal and its potential to accelerate climate change.

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## *Recommendations*

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Public financing has played a significant role in supporting international coal projects over the past decades, in spite of repeated commitments to limit the expansion of fossil fuel use, as well as annual commitments at G20 meetings and other forums to end fossil fuel subsidies. Coal infrastructure that will be around for decades is a carbon trap, locking countries into many years of harmful greenhouse gas emissions. Below, we offer three concrete recommendations that can help eliminate such projects in the future:

- G20 nations that are members of the OECD should **expand restrictions on coal finance** so they apply not only to coal plants but to all coal activities, such as exploration and mining.

- National policymakers should **develop clear guidelines for limiting coal finance**—in line with their national circumstances, with clear criteria for ensuring that future energy financing is consistent with the Paris Agreement, and with appropriate accounting for the cost of externalities.
- Governments and multilateral organizations should **disclose coal financing from all public institutions**, such as export credit agencies, development banks, majority state-owned banks, and others.

Given the severe climate impacts of fossil fuels, public support for all carbon-intensive fossil fuel energy sources should be quickly phased out—beginning with international public coal finance.

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# Appendix

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## DATA COLLECTION

The database compiled for this report is public and can be found on the NRDC website. NRDC, Oil Change International, and the WWF compiled an earlier database updated by NRDC for this report. The database includes export credit agency and other bilateral public finance data from institutional websites, news articles, the IJGlobal Project Finance & Infrastructure Journal, and OECD documents. We received assistance and feedback from a number of organizations, including Urgewald for German institutions and the Japan Center for Sustainable Environment and Society (JACSES) for Japanese institutions. Multilateral development bank (MDB) data were collected from Oil Change International's Shift the Subsidies database. Pre-2015 data came from NRDC, Oil Change International, and WWF's 2015 report, "Under the Rug: How Governments and International Institutions Are Hiding Billions in Support to the Coal Industry."<sup>61</sup> More detailed information on methodology can be found in Annex I of that report. We contacted many of the financial institutions that had new project data for the first half of 2016. This allowed institutions to clarify and comment on the data prior to publication of this report. The database contains a summary of the institutional responses we received.

## INSTITUTIONS COVERED

- Major MDBs and multilateral finance institutions (MFIs): These institutions provide assistance to recipient countries and the private sector. All MDBs are backed by large sums of public money from member governments, allowing them to finance projects undertaken by recipient governments and the private sector at lower interest rates and on better terms (e.g., longer tenors) than commercial lenders. The database includes information on coal financing from: World Bank Group (which consists of the International Bank for Reconstruction and Development, the International Development Agency, the International Finance Corporation, and the Multilateral Investment Guarantee Agency), the African Development Bank, the Asian Development Bank, the Inter-American Development Bank, the European Bank for Reconstruction and Development, and the European Investment Bank.
- Export credit agencies (ECAs) in G7 countries: ECAs provide government-backed loans, credits, and guarantees for the international operations of corporations from the home country. ECAs provide public financial backing for risky projects, including coal projects, that might otherwise never be realized. Most industrialized nations and emerging economies have at least one ECA, which is usually an official or quasi-official branch of government. The database includes information on coal financing from the following ECAs: Export Development Canada (EDC), France's Compagnie Française d'Assurance pour le Commerce Extérieur (COFACE), Euler Hermes (Germany), Italy's Servizi Assicurativi del Commercio Estero (SACE), Japan Bank for International Cooperation (JBIC), Nippon Export and Investment Insurance (NEXI-Japan), UK Export Finance (UKEF), and Export-Import Bank of the United States (Ex-Im US).
- Development agencies and development banks: In addition to ECAs, many countries have bilateral finance institutions that may provide financing for coal, including development finance and aid agencies, international arms of national development banks, or trade promotion agencies. These include the Japanese International Cooperation Agency (JICA) and German Kreditanstalt für Wiederaufbau (KfW). Many institutions provide a mix of services. ECAs may provide bilateral development finance in addition to export credits. For example, JBIC provides bilateral aid in addition to financing overseas investments by Japanese companies. KfW supports domestic projects, bilateral aid, and export finance. There are also bilateral aid agencies such as JICA that may provide loans, grants, policy lending, and technical assistance. Generally these institutions finance international coal projects, but they sometimes also support domestic coal projects. These projects were also included in the database when information was available.



## TYPES OF INTERNATIONAL PUBLIC FINANCIAL SUPPORT FOR COAL

International support for coal takes many forms, including:

- **Direct project finance.** MDBs and bilateral institutions may provide direct financing for coal projects through loans, grants, and equity financing. Direct financing can support coal projects, including exploration, mining, production, rail lines, ports, power generation, power transmission and distribution systems, coal-bed methane capture, and rehabilitation and upgrading of coal power units.
- **Guarantees for projects.** Guarantees are important catalysts for obtaining project finance. MDBs, ECAs, and other public financial institutions provide insurance covering the overall risk of an investment at a lower cost and longer tenor (typically 12 to 20 years) than commercial insurance. Public guarantees help to extend the tenors on project loans, which can be a key limitation for large-scale coal projects. Guarantees from public institutions may cover the risks of currency transfer restrictions, expropriation, war and civil disturbance, and breach of contract. In addition, MDBs may support the creation and financing of national government institutions that provide government guarantees covering delays or failure to secure licenses, changes in regulations or laws, or payment obligations for state-owned enterprises. These government guarantees transfer private investment risks to the public.
- **Policy lending and technical assistance.** Through policy lending and technical assistance, MDBs and development agencies influence policies, regulations, and institutions that alter the costs, benefits, and development preferences in favor of the coal sector. For instance, in 2014, the World Bank provided financing to Pakistan for power sector reform in general, including investments in coal plants.
- **Financial intermediaries.** International institutions are increasingly using financial intermediaries to make investments, including in coal. In this arrangement, the institution provides loans or equity financing to an entity such as a local bank, a private equity fund, or a special government-managed fund (e.g., an infrastructure development fund). The financial intermediary then passes on the original institution's funds to various investments, including coal projects.

## LOOPHOLES FOR SUPPORTING COAL

Even with pledges not to finance coal plants except in “rare circumstances,” there are a number of ways in which institutions may continue to finance coal:

- **Lax interpretation of “rare circumstances” for coal plants and support for coal mining or infrastructure not covered by the pledge;**
- **Indirect support through financial intermediaries, equity funds, etc., as many of these funds include significant amounts of coal finance but do not disclose specific projects. An October 2016 report showed billions being funneled from the World Bank IFC to financial intermediaries that then approved and financed coal projects;<sup>62</sup>**
- **Policy, program, and infrastructure loans in countries with significant plans for coal expansion. For example, energy policy lending may be part of a country's general policy loan. Unlike with direct project investments, there is often no publicly available information on these individual subproject investments, making it difficult to track what ultimately happens to institutional financing through financial intermediaries. The extent to which coal is assisted through these activities is thus unknown. For instance, criteria of the Export Import Bank of the United States would not allow financing for the Batang coal power plant in Indonesia directly, but the World Bank—for which the United States provides a significant share of funding—is financing the Indonesia Infrastructure Finance project. In practice, this financing would include support for the Batang coal-fired power plant.<sup>63</sup>**

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