CLEARPATH

Energy Financing Power: America vs. China

A Case Study in Brazil

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Executive Summary

The United States faces a growing strategic challenge: China has emerged as the world's dominant energy financier, outpacing the U.S. nearly ten-to-one in global markets and establishing itself as a primary partner in key nations like Brazil. This first-of-a-kind analysis of U.S. and Chinese energy finance shows that, since 2015, China has outpaced the U.S. by more than 100 times in public energy finance in Brazil, $60 billion to $472 million.

Global investments follow a similar pattern, with China outstripping the U.S. $446 billion to $45 billion.[1] As a primary strategic competitor, China's financial initiatives lead to geopolitical gain and undermine U.S. interests. This is particularly true in critical countries like Brazil, the Western Hemisphere's second-largest economy, where China has rapidly deepened its presence in Brazil's energy sector.

This massive investment gap undermines U.S. interests and threatens U.S. geopolitical strength because:

1. China has established itself as a dominant source of energy finance in South America and owns at least 12% of Brazil's power system;
2. China is in a better position to shape energy standards, dominate supply chains, and lock in long-term political and commercial influence in strategic regions; and
3. Term sheets from official Chinese banks include clauses that indicate predatory lending practices that could isolate Brazil from other strategic financial partnerships.

China's growing influence not only directly challenges U.S. strategic interests in a vital South American nation but also cedes immense economic opportunity for U.S. businesses in the continent's largest market. Brazil is an important partner for the U.S. in the Western Hemisphere, and its rapidly growing domestic energy market is an export target for innovative American technology.

The authors of this report chose Brazil for this case study because it is the largest developing economy in the Western Hemisphere and a key energy partner for both the U.S. and China. Unfortunately, it is an example of a larger issue as the U.S. seeks to compete with China. This report outlines a clear roadmap of actions that can be taken to improve the situation.

Policy recommendations that expand global markets for U.S. businesses and strategically compete with China:

1. **Enhance the scale and strategic focus of the U.S. International Development Finance Corporation (DFC):**
   - Establish a revolving fund for equity investments to enable the DFC to pursue long-term investments that strengthen national security and support American supply chains.
   - Allow the DFC more project-level flexibility to partner with a greater range of countries that align with national priorities.

2. **Strengthen the Export-Import Bank of the United States' (EXIM) financing toolkit to reshore American manufacturing and supply chains:**
   - Raise the default rate cap to allow EXIM to pursue larger, American-made energy infrastructure projects, including advanced nuclear.
   - Establish National Interests Accounts to focus EXIM's investments on national strategic objectives.

3. **Promote strategic interagency coordination through an Energy Security Compacts (ESCs) framework that:**
    - Creates long-term agreements with clear, measurable outcomes targeting energy security and infrastructure,
    - Promotes coordination across federal authorities and multiplies capabilities at EXIM, DFC, the U.S. Trade and Development Agency (USTDA), the Millenium Challenge Corporation (MCC), and the Department of Energy (DOE), among others, and
    - Develops bilateral partnerships that focus on joint security priorities and center on American foreign policy goals.

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Glossary

Chinese Entities

CDB

China Development Bank: Established in 1994, the CDB is a state-funded and state-owned development finance institution. As an independent legal entity directly overseen by the State Council, it is dedicated to supporting China's economic development in key industries and under-developed sectors.

CHEXIM

Export-Import Bank of China: Policy bank that supports China's foreign trade, investment, and international economic cooperation for infrastructure projects. It offers concessional loans and preferential buyer's credit, as well as non-concessional loans

CNOOC

China National Offshore Oil Corporation: China's largest producer of offshore crude oil and natural gas and one of the world's largest independent oil and gas exploration and production companies. CNOOC mainly engages in exploration, development, production, and sale of crude oil and natural gas.

CNPC

China National Petroleum Corporation: CNPC is China's largest oil and gas producer and supplier, one of the world's major oilfield service providers and a global contractor in engineering construction, with businesses covering oil, gas & new energies, refining, chemicals, marketing & new materials, support & services, as well as capital & finance, etc.

State Grid

The State Grid Corporation of China, commonly known as State Grid, is a Chinese state-owned electric utility corporation, responsible for the majority of the country's electricity grid operations and serving 1.1 billion people.

U.S. Entities

DOE

The Department of Energy manages the United States' nuclear infrastructure and administers the country's energy policy. The Department of Energy also funds scientific research in the field.

DFC

The U.S. International Development Finance Corporation is America's development bank. DFC partners with the private sector to finance solutions to the most critical challenges facing the developing world.

EXIM

The Export-Import Bank of the United States assists American businesses in exporting their goods by providing financial assistance in the form of loans, loan guarantees and insurance. The focus of the Export-Import Bank is on assisting small businesses.

State Department

The Department of State advises the President and leads the nation in foreign policy issues. State negotiates treaties and agreements with foreign entities and represents the United States at the United Nations.

USTDA

The United States Trade and Development Agency links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions.

Key Terms

Concessionality

A measure of the softness of a credit reflecting the benefit to the borrower compared to a loan at market rate.

Development finance

Investment in private sector businesses, banks and projects in less economically developed countries to bring about positive economic, social and environmental change. Development finance generally requires repayment.

Foreign assistance/aid

Foreign aid is money, technical expertise, equipment, and supplies that the United States provides to countries in support of common interests of the U.S. and a country and its citizens. This aid does not require repayment.

FDI

Foreign Direct Investment is a type of cross-border investment that occurs when a resident of one country obtains a lasting interest in and degree of influence over the management of a business in another country. This report only discusses FDI from state-owned sources.

FPSO

Floating Production, Storage and Offloading unit: A Floating Production Storage and Offloading (FPSO) installation is a floating facility, usually based on a converted oil tanker hull. It is equipped with hydrocarbon processing equipment for separation and treatment of crude oil, water and gases, arriving on board from sub-sea oil wells via flexible pipelines.

HVDC

A High-Voltage Direct Current electric power transmission system uses direct current for electric power transmission, in contrast with the more common alternating current transmission systems.

RTMs

Reverse Trade Missions bring foreign project sponsors to the United States to observe the innovative design, manufacture and operation of American products and services to support their infrastructure development goals.

VLOC

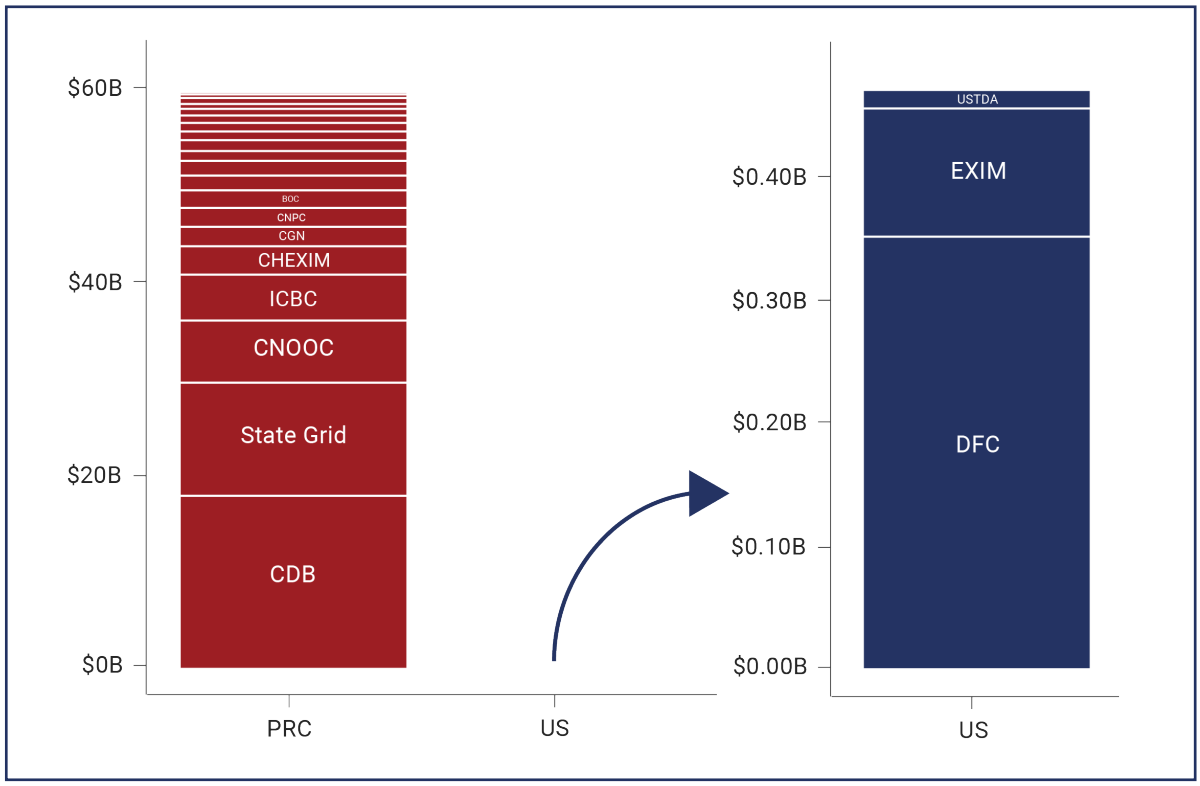
Very Large Ore Carrier: A type of bulk carrier designed to transport iron ore. VLOCs are among the largest bulk carriers in the world, with a capacity of up to 400,000 deadweight tons (DWT). They are specifically designed to transport heavy cargoes, such as iron ore, from the mining ports to the steel mills.

Introduction

On the morning of July 17th, 2022, the floating oil and gas platform FPSO *Almirante Barrasso* set sail from the Dalian shipyard in China's Liaoning province.[2] After months at sea, it moored above the Buzios oilfield off the coast of Brazil. Petrobras, Brazil's national oil utility, and two Chinese oil majors, China National Offshore Oil Corporation (CNOOC) and China National Petroleum Corporation (CNPC), partnered under a joint venture to develop the Buzios.[3] The China Development Bank (CDB) also provided $1.5 billion in project finance to Petrobras for the *Almirante Barrasso*, the sixth of a planned eleven Floating Production, Storage and Offloading units (FPSOs) to operate in the Buzios.

Chinese investment in Brazil extends far beyond the Buzios. Since 2015, the policy banks and state-owned corporations of the People's Republic of China (PRC) have invested $60 billion in Brazil's energy sector across equity and debt transactions. By comparison, U.S. federal activity in Brazil's energy industry has totaled $472 million since 2015 across equity, debt, and foreign assistance (see Figure 1).

Figure 1. Chinese and U.S. state-owned energy finance in Brazil, since 2015.



Source: ClearPath, AidData, AEI, DFC Annual Reports, data.gov, IATI.

Many worthwhile individual projects are hamstrung by weak strategic direction and ambition from the U.S. government. Valuable past projects include the U.S. Export-Import Banks' (EXIM) export guarantee of American-made natural gas pipelines, the U.S. Development Finance Corporation's (DFC) equity investment in the nickel miner TechMet, and the U.S. Trade and Development Agency's (USTDA) technical assistance for grid modernization and hydropower.

To strengthen American national security, expand markets for American innovation, and secure American energy dominance, policymakers should enhance the scale and coordination of U.S. international financing agencies. This report uses a first-of-a-kind harmonized dataset of U.S. energy finance to describe activity in the past decade and develop policy recommendations. We define "U.S. energy finance" as any financial transaction, including equity, debt, or foreign assistance, originating from or backed by the U.S. government for the purpose of managing or expanding the energy system. We exclude private (i.e. non-governmental) finance from U.S. or PRC entities, and we do not discuss the U.S.-Brazil trade relationship or Section 301 litigation.

The body of the report is organized as follows. First, it discusses American energy activity in Brazil across five government agencies. Second, it analyzes PRC state-owned energy finance in Brazil across official debt and state-owned foreign direct investment (FDI). Third, it discusses strategic recommendations for U.S. policymakers. All dollar amounts are in real USD (2023) and summary statistics show totals for the period 2015 to 2024, unless otherwise specified.[4]

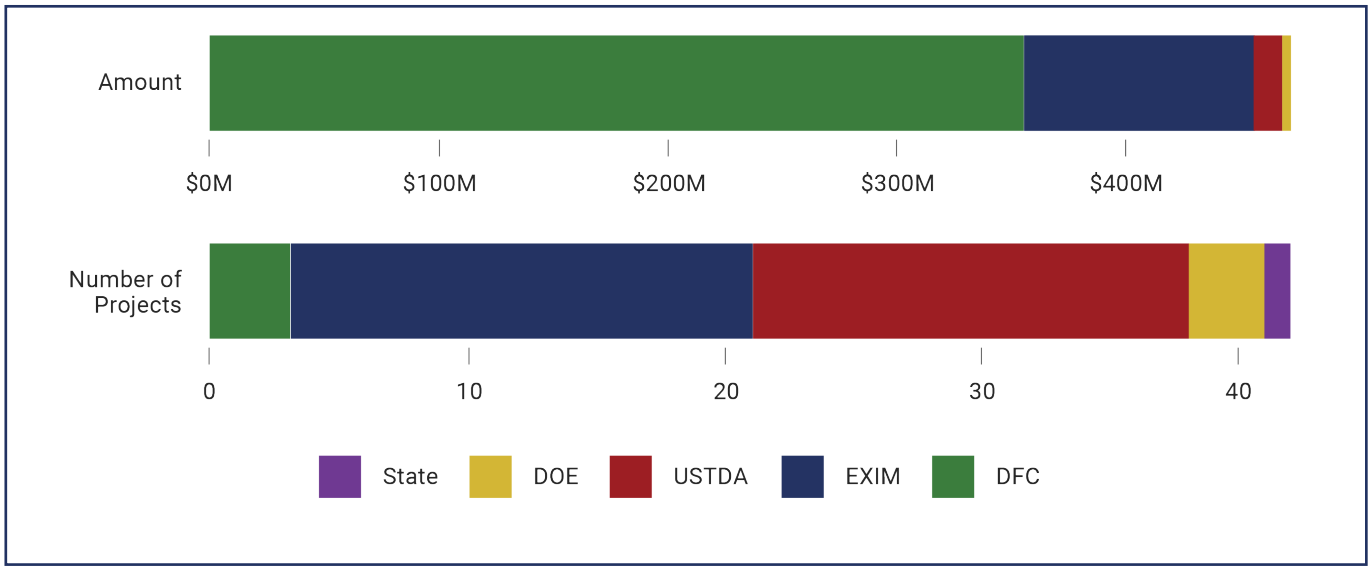
American Energy Activity in Brazil

The U.S. government has capabilities across nine agencies to strengthen policy and diplomatic relationships with strategic partners, and to support the American energy industry as it exports abroad. This report only discusses the agencies that have been active in Brazil's energy sector since 2015, which include EXIM, DFC, USTDA, the State Department (State), and the Department of Energy (DOE). EXIM and DFC are financing agencies – they operate like banks and have historically generated a profit with their transactions. USTDA, State, and DOE are aid agencies that offer concessional funding for humanitarian, diplomatic, and other purposes. The American foreign finance model is unique in its focus on product quality and environmental and labor standards. It leverages a crowd-in effect to de-risk projects, thereby attracting significantly larger volumes of additional private investment in targeted economic development zones. USTDA, for example, catalyzes $231 in private American exports for every agency dollar.[5] Innovative American businesses can take advantage of the crowd-in to provide follow-on financing and sell their products in new markets. This agile, market-oriented approach multiplies impact, leveraging the U.S. comparative advantage in its strong private sector. Greater collaboration among existing U.S. agencies and greater ambition to collaborate with American businesses on large-scale energy projects will advance American energy dominance and counter China's growing global influence.

Diversifying from an over-reliance on financing from China is crucial for Brazil's economic and national resilience. While China has become Brazil's top trading partner, its investments often pose strategic risks, including potential for control over critical infrastructure and supply chains. By developing a strong partnership with the U.S., Brazil can mitigate these risks. An improved and strategic U.S. financial model focused on coordination amongst agencies offers a powerful alternative for Brazil, aligning American strategic interests with Brazil's national development goals. This approach provides a transparent alternative to Chinese financing that strengthens Brazil's energy security by helping it diversify partners, access world-leading American technology, and maintain strategic control over its energy infrastructure.

In Brazil, five U.S. agencies have initiated 42 projects totaling $472 million, shown in Figure 2.[6] The majority of U.S. funding is captured by one project from 2021 to modernize public lighting and grid management in the city of Rio de Janeiro, guaranteed by DFC and funded by WorldBusiness Capital and Cooperativa de Ahorro y Credito Pacifico, a leading Latin American financial cooperative.[7] The balance of their projects brings DFC's total financing in Brazil to $353 million. EXIM's $102 million in spending is distributed across 28 deals in coking coal mining, natural gas pipelines, and nuclear engineering. USTDA, though small in dollar amount, has funded the most activities of any agency in Brazil, and DOE has a limited presence as a regulatory advisor.

Figure 2. U.S. activities in Brazil since 2015.

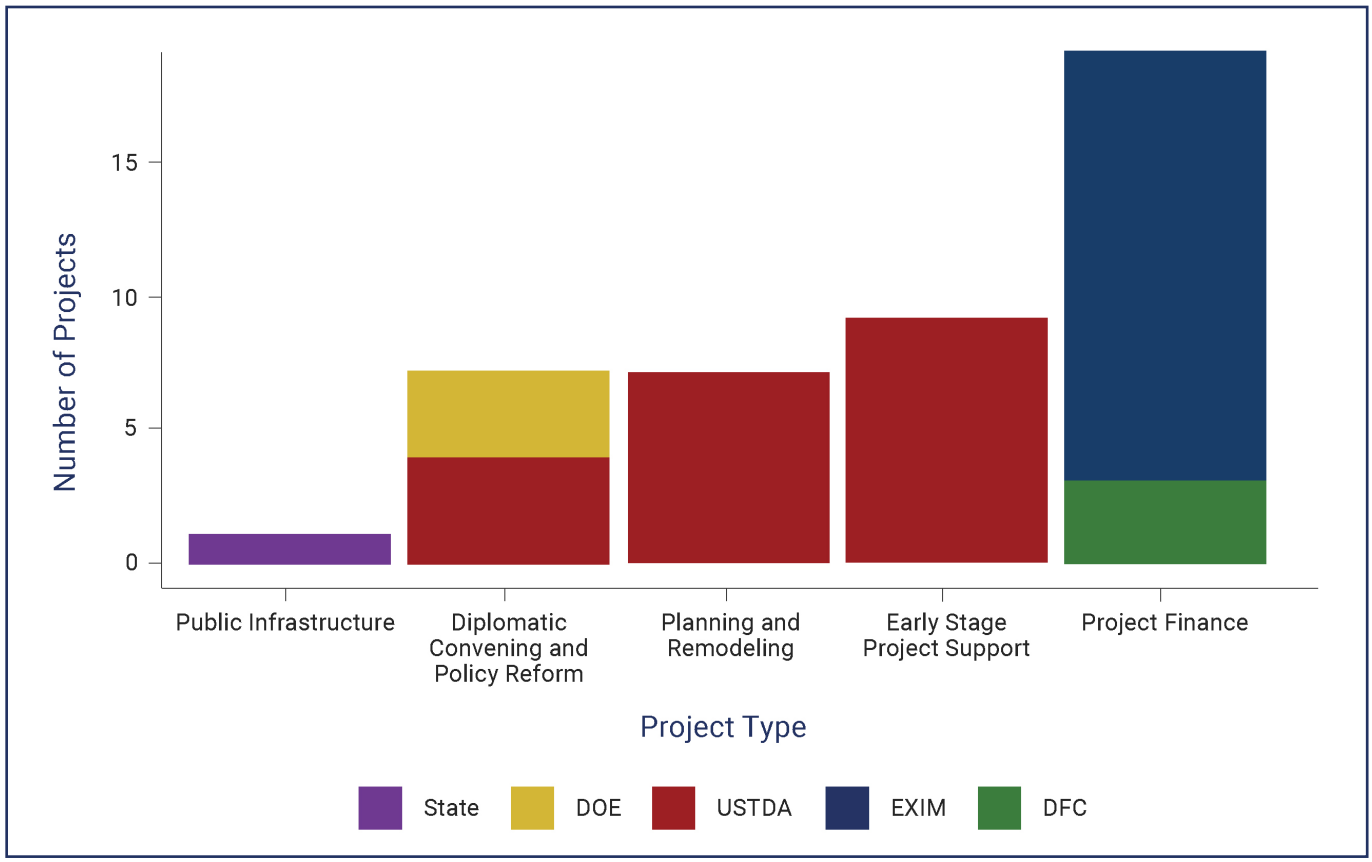


Source: ClearPath, IATI, data.gov, DFC Annual Reports

These 42 activities span the project development lifecycle, as shown in Figure 3. USTDA and DOE act as conveners and advisors for Brazilian regulators, policymakers and industry leaders. USTDA demonstrates a wide range of strategic and analytical capabilities across its convening, planning and technical assistance functions. The State Department's single energy award in Brazil was intended as a public infrastructure project for community solar, but the award was never disbursed. DFC and EXIM round out the U.S. government's capacity in Brazil with significant project finance activity. DFC acts as an originating lender or guarantor for projects with strategic significance, while EXIM partners with private banks and developers to insure or guarantee cross-border transactions.

In addition to their project finance capabilities, EXIM and DFC also perform technical assistance, though in different ways. DFC offers grants directly to engineering firms for technical assistance, while EXIM finances American engineering firms that export their services to customers abroad. From EXIM's point of view, it is a financing transaction, but it sits at the technical assistance stage of the project development lifecycle. Though relatively small for EXIM's portfolio, these kinds of deals represent an important first step in an ongoing relationship between EXIM and the importer in the partner nation. These early-stage transactions improve the creditworthiness of the project and allow EXIM to invest larger amounts later in the lifecycle of the project.

Figure 3. U.S. activities in Brazil, by project type.



Source: ClearPath, IATI, data.gov, DFC Annual Reports

Many agencies hold diplomatic convenings with foreign officials or support collaborations on policy reform between U.S. and foreign policymakers. These engagements vary widely based on the convening agency. For example, USTDA has met with Brazilian electricity regulators and utilities to support the adoption of American grid technologies, while DOE engaged Brazil's nuclear regulator to promote international nuclear safeguards for diplomatic purposes. In a similar way, many agencies support business development activities for private American companies. In addition to its public sector work, USTDA has identified Brazilian counterparties for American energy technology exports. EXIM and DFC both provide business development for their private partners, and the DOE provides technical assistance via its Markets Development Team. These public and private engagements would benefit from increased coordination across agencies to ensure that American businesses find the best opportunities in new markets (see the "Strategic Recommendations" section for more discussion on interagency coordination).

Figure 4. U.S. Agency International Capabilities[8]

	Technology Development	Planning & Modeling	Diplomatic Convening & Policy Reform	Public Infrastructure	Business Development for US Firms	Early Stage Project Support	Project Finance
DOE							
USAID							
DFC							
EXIM							
USTDA							
MCC							
Treasury							
State							
Commerce							
NSC							

To reflect the underlying foreign assistance contracts or term sheets, the following project-level dollar amounts are in nominal terms, rather than inflation-adjusted.

Department of Energy

In Brazil, the DOE has funded $1.8 million in energy-related grants since 2015, across three awards. These three awards originated with the International Nuclear Safeguards Engagement Program (INSEP) at the National Nuclear Security Administration (NNSA). This program funds U.S. National Laboratories to train and educate foreign nuclear regulatory bodies on materials accounting and other nuclear safeguards.[9] In addition to these three energy-related awards made via INSEP, the DOE has also funded $670,000 in training for nuclear export controls and other nonproliferation issues in Brazil since 2015. These awards support the 1.8 GW Brazilian nuclear industry by providing security and regulatory certainty to the fuel cycle. However, they do not leverage the DOE's significant internal expertise to encourage the deployment of nuclear technology in Brazil.

The DOE's Office of International Affairs also created the U.S.-Brazil Energy Forum in 2019, a platform for bilateral cooperation to promote trade and investment, advance regional climate goals and counter malign influence from foreign players.[10] At its second meeting in 2022, the USBEF started the U.S.-Brazil Clean Energy Industry Dialogue (CEID), a private-sector counterpart to USBEF that convened industry players from the U.S. and Brazil. These efforts were diplomatic in nature and did not require unique obligations from DOE. These dialogues have not resulted in any publicly announced investments in Brazilian energy infrastructure.

Department of State

The State Department has made only one energy-related obligation in Brazil since 2015. In 2020, the agency contracted with Insolar, a Brazilian solar company, to build rooftop solar in Favela da Mare, a neighborhood in Rio de Janeiro.[11] The project was initiated through the Environment, Science, Technology and Health (ESTH) section of the department, a wide-ranging program that allows U.S. embassies to contract for technical projects in their country.[12] However, Insolar faced financial trouble and eventually bankruptcy in 2022. As a result, the contract was cancelled and no money was disbursed.[13]

U.S. Export-Import Bank

EXIM ranks second among U.S. agencies in providing financing to Brazil's energy sector, both in terms of the dollar amount and the number of projects supported. EXIM's recent activity was driven by $39.6 million in coking coal transactions in 2019 and 2020, which involved the export of mining equipment from Wilson Creek and Warrior Met Coal Mining, American manufacturers, to the Companhia Siderúrgica do Pecém (CSP) steel mill in the northeast of Brazil.[14] CSP vertically integrated several steps of the steelmaking supply chain and was, at the time of its construction, the second-largest private investment in Brazil. It has direct conveyor access to the Pecém port and represents a "near-shored" supply chain for American steel imports.

EXIM also guaranteed Westinghouse Electric Company's $22 million contract with Eletronuclear, a subsidiary of Brazil's national electric utility Eletrobras. This contract involves engineering analysis for the long-term life extension of the Angra-1 nuclear power plant, a crucial step in a plan to extend the reactor's lifespan.[15] EXIM provided an investment guarantee to Santander Bank, which underwrote the export of these engineering services from Westinghouse. Eletronuclear is currently negotiating longer-term financing for this project with EXIM, which carries impactful geostrategic consequences for U.S.-Brazil energy relations.[16]

EXIM's approach to nuclear in Brazil reflects a broader strategy that it has also implemented in Poland and Romania. Because it is restricted from making large upfront investments before a project gains viability, EXIM begins its involvement with pre-project loans, services contracts and other small investments to signal interest and derisk the project so they can finance at a larger scale. This strategy helps EXIM partner with host countries earlier in the project development lifecycle, which can counter large, upfront project finance offers from Russia or China. If EXIM can win deals against Russian and Chinese competition, it brings on average 5% excess revenues home for the American taxpayer, collected from the foreign buyer.[17] Since 1992, EXIM has returned $9.7 billion of its revenues to the Treasury.

In 2022, EXIM made small but strategically significant investments in Brazil's upstream oil and gas industry. EXIM underwrote $4.6 million in insurance for Flexsteel USA's export of 2 kilometers of steel gas pipelines to Petrobras, Brazil's largest petroleum corporation. These pipelines transport natural gas through the Amazon, contributing to the reliability and resilience of the grid in the renewables-dominated northeast region of Brazil.[18]

U.S. Trade and Development Agency

Since 2015, USTDA has made 17 unique obligations in Brazil. They have contracted an additional 11 projects that have a regional scope in South America. In accordance with their mission to create U.S. jobs through the export of American goods and services, USTDA has contracted with American companies to perform $6.5 million in technical assistance, $2 million in feasibility studies, and $2.6 million in reverse trade missions (RTMs). At a regional and global level, they also contract for desk studies and definitional missions to identify opportunities for American exports.

USTDA's $8.5 million in contracts for technical assistance and feasibility studies in Brazil focus on implementing American innovations in grid technology. As Brazil's grid expands and drought conditions worsen hydroelectric reliability, smart grid technologies play an important role in ensuring efficient and reliable grid operation. USTDA has served as a matchmaker between Brazilian grid operators and American engineering companies with the technical expertise to implement smart grid solutions. For example, USTDA connected New York consulting firm Vrinda with Cemig, a Brazilian distribution company, in 2019 with a $648,673 outlay.[19] Vrinda helped Cemig develop interconnection, integration and management capabilities for distributed energy resources. Since then, Vrinda has continued to work privately with Cemig and the project is ongoing.[20] USTDA provides private American businesses like Vrinda with the contacts and credibility to initiate services exports, which allows those exports to continue after USTDA has ended its involvement. Brazil and other strategic partners stand to benefit from innovative American energy technologies, while USTDA strengthens America's strategic presence abroad by providing profitable export business to American companies.

In addition to firm-level exports of technical services, USTDA contracts for RTMs, which bring foreign project sponsors to the United States to observe the innovative design, manufacture and operation of American products and services to support their domestic infrastructure goals. In Brazil, USTDA contracted with Koeppen, Elliot, and Associates to implement a series of five RTMs focused on the power sector.[21] The most recent of these brought 13 representatives from government and the private sector in Brazil to Washington DC, Chicago and Silicon Valley to meet U.S. companies and attend demonstrations of innovative U.S. technologies.[22]

At a regional and global level, USTDA also contracts with American consulting companies to model the future of the energy sector to identify strategic opportunities for the U.S. government and American businesses. USTDA has contracted $1.2 million of definitional missions and desk studies in South America since 2015. These awards are small in size but strategically valuable for the agency. They allow USTDA to identify American exports that will be particularly transformative or successful in the target country, bringing additional business connections and revenue home to Americans. This strategic direction is visible in USTDA's awards in Brazil, which all involve grid or hydropower innovation.

USTDA's activity in Brazil demonstrates a strategic approach to American exports. The agency effectively identifies profitable export opportunities for American businesses and then connects foreign policymakers and project sponsors to American companies that can provide innovative energy solutions. Despite their small budget, USTDA catalyzes $231 in private American exports for every agency dollar.[23]

U.S. International Development Finance Corporation

Despite leading U.S. agencies in energy financing to Brazil, DFC maintains a relatively small presence in the country. DFC's predecessor, the Overseas Private Investment Corporation, made no energy investments in Brazil.[24] The majority of their funding, $267 million, has been allocated as an investment guarantee for a public lighting and smart infrastructure project in Rio de Janeiro. The remaining financing consists of equity investments in TechMet Limited, supporting its nickel and cobalt critical minerals mining operations. DFC's $55 million investment will support the development of TechMet's Piauí Nickel Project, which will produce an average of 27,000 tonnes of nickel and 900 tonnes of cobalt per year, with first production expected in 2028.[25] The project uses innovative heap leach technology to extract nickel and cobalt directly from laterite ores.[26] These minerals are key inputs to lithium-ion battery manufacturing, a large and growing domestic American industry. By securing American supply chains for critical minerals, this project also advances the U.S.' national security interests.

While the total dollar amount of the DFC's commitment is limited, these equity investments in TechMet are highly valued by the DFC. This is partly due to challenges the DFC has faced in broadly utilizing its equity tool because of an investment scoring issue, which is anticipated to be resolved in the agency's 2025 reauthorization. Nevertheless, the DFC has stated that it considers its ability to finance TechMet's critical minerals projects crucial for securing global supply chains and countering Chinese influence in the sector.[27]

In 2024, the DFC strategically located its first Latin American office in Brazil, signaling a growing commitment to the region.[28] This regional office is intended to help advance development and investment opportunities throughout Brazil and the wider Latin American region. The DFC also signed a cooperation framework agreement with Banco Nacional de Desenvolvimento Econômico e Social (BNDES), Brazil's development bank.[29] This agreement aims to deepen collaboration opportunities in critical sectors, including clean energy. These recent efforts underscore the DFC's acknowledgement of Brazil as a crucial partner and the importance of expanding business opportunities for American energy companies.

Chinese Energy Activity in Brazil

Despite significant activity from U.S. agencies in Brazil, the PRC's activity is orders of magnitude larger. Chinese policy banks and state-owned firms have financed $60 billion since 2015, more than 100 times greater than U.S. investments.[30] The PRC has attracted attention for its Belt and Road Initiative (BRI), a state-owned infrastructure and development finance program focused on the Eurasian continent but with a global scope. Though Brazil declined to formally join the BRI last year, it instead offered to "establish synergies" with the PRC investment strategy.[31] The PRC's state-owned firms now own utilities, oil and gas ventures, transmission lines and other critical energy assets across the globe.

China's interest in Brazil stems from their reliance on Brazilian commodities, including fossil fuels, iron ore, and agricultural products. China is Brazil's single largest trade partner, and in June 2025 alone, China imported $4.15B of soybeans, $2B of crude oil, and $1.59B of iron ore.[32] In return, Brazil imports from China a variety of finished goods, including cars, fertilizer, and semiconductors. As we will see, China's state-backed investment activity supports domestic Brazilian industries that export to China, and Chinese state-owned banks often seek commodity contracts in fossil fuels or iron ore as a form of repayment for debt. China is also able to flex its shipbuilding strength to provide the means of export for heavy goods like iron ore.

It is important to note that, while the PRC's state-owned finance undoubtedly plays a role in the Chinese Communist Party's (CCP) foreign policy, any single investment may not be directly or exclusively attributable to a policy directive.[33] Chinese state-owned enterprises (SOEs) seek profitable investments wherever they can find them, and often, these investments align with PRC strategic interests.

A complete analysis of all PRC-linked activity in Brazil's energy sector is beyond the scope of this report. Instead, this section is a representative summary of the PRC's energy finance in Brazil. The CCP's policy banks and state-owned banks tend to provide loans, export credit and other debt instruments to Brazilian energy companies. Meanwhile PRC state-owned energy companies make equity investments in Brazilian companies or finance greenfield construction directly. By combining data on official flows of debt and foreign direct investment (FDI) from SOEs, this report presents new totals of PRC state-owned energy finance in Brazil.[34] This report also uses asset ownership data to map PRC ownership of electric generation and transmission in Brazil.

Background on PRC Institutions

A wide variety of PRC-owned corporate institutions participate in Brazil's energy sector.[35] PRC debt can originate from either a policy bank or a state-owned commercial bank. Policy banks are agencies of the Chinese government with explicit strategic directives: the Chinese Development Bank (CDB) lends globally for development purposes, often targeting large-scale infrastructure projects, and the Export-Import Bank of China (CHEXIM) lends to Chinese exporters and to foreign borrowers that utilize Chinese goods and services. State-owned banks are corporations in which the Chinese government has partial ownership. These entities receive input from the CCP via the State-owned Assets Supervision and Administration Commission (SASAC).[36] After many years of decentralization initiated by Deng Xiaoping, Xi Jinping has aggressively reasserted state control in Chinese capital markets in the past decade.[37]

Figure 5. Selected Official and State-Owned PRC entities involved in Brazil's energy industry

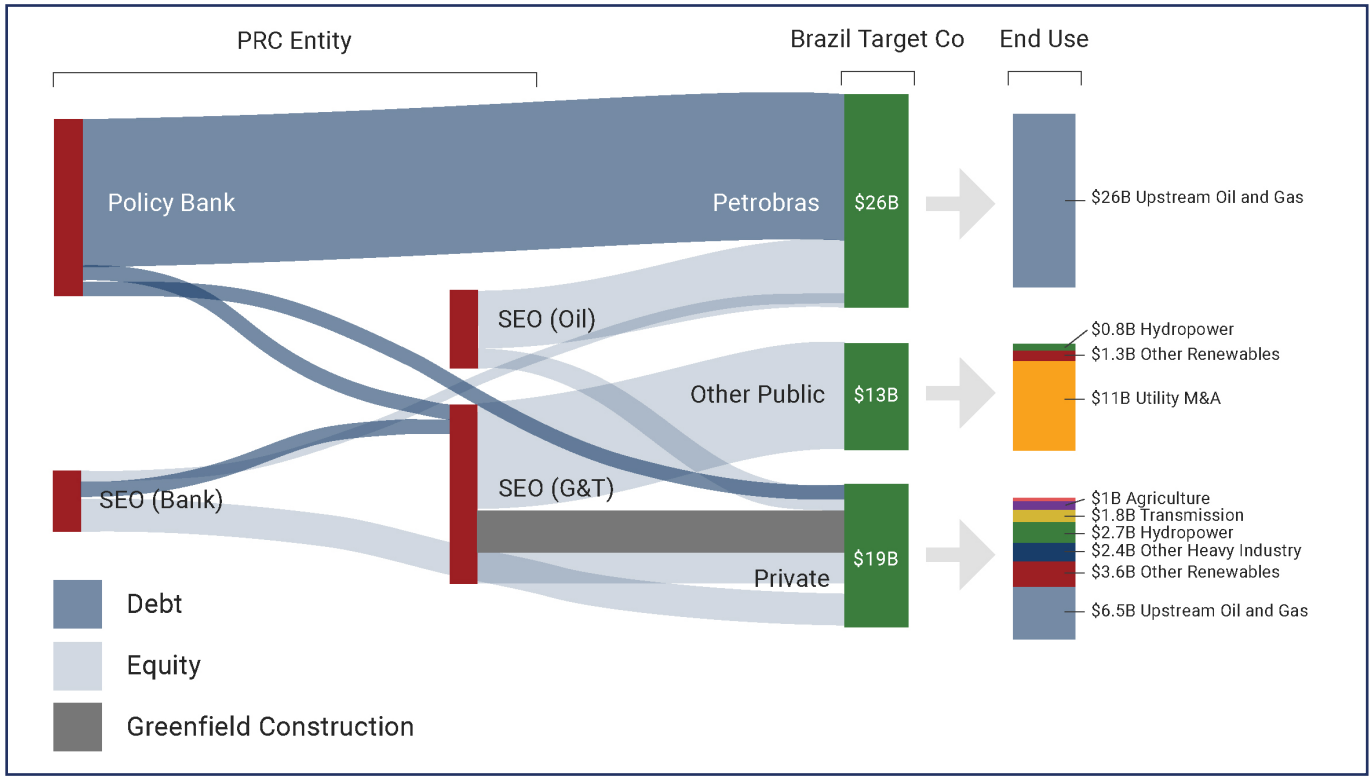
Acronym	Name	Sector	Policy Bank	SOE	Lender	Investor	Greenfield Construction	Long-Term Owner Operator
CDB	China Development Bank	Energy and Non-Energy						
CHEXIM	Export-Import Bank of China	Energy and Non-Energy						
ICBC	Industrial and Commercial Bank of China	Energy and Non-Energy						
BOC	People's Bank of China	Energy and Non-Energy						
State Grid	State Grid of Corporation of China	Generation, Transmission and Distribution						
CTG	China Three Gorges Corp.	Generation						
CGN	China General Nuclear Corp.	Generation						
CNOOC	China National Offshore Oil Corp.	Upstream Oil and Gas						
CNPC	China National Petroleum Corp.	Upstream Oil and Gas						

Beyond ICBC and BOC, there are a variety of state-owned enterprises (SOEs) in the energy industry that also receive direction from SASAC. The State Grid Corporation of China (State Grid) is the largest electric utility in the world. It operates the majority of the Chinese electric system and portions of several systems in other countries. In Brazil, it invests, builds, owns and operates transmission and generation of all types. The China Three Gorges Corporation (CTG) and the China General Nuclear Corporation (CGN) are large power producers who build, own and operate assets in China and around the world. In Brazil, CTG focuses on hydropower and CGN focuses on wind and solar, despite nuclear being in its name. China National Offshore Oil Corporation (CNOOC) and China National Petroleum Corporation (CNPC) are the two Chinese oil majors with significant operations in Brazil. Both invest in Petrobras, Brazil's national oil company, and partner with Petrobras on oil and gas plays in the Santos Basin.

Figure 6 depicts the pattern of PRC financial flows to Brazil since 2015. The single largest flow type, at $16.5 billion, is lending from the PRC's policy banks to Petrobras. The policy banks lent an additional $8 billion to Petrobras prior to 2015. The policy banks also lend to Chinese electric SOEs to support their mergers and

acquisitions (M&A) activity in Brazil's public utility industry, and they lend directly to private companies in Brazil. China's state-owned banks also lend to electric SOEs and make direct investments in Petrobras and other private companies in Brazil. The Chinese oil majors have an $8 billion equity position in Petrobras and related joint ventures in oil and gas extraction; they have also purchased $2 billion of equity in private oil and gas ventures since 2015. With some support from the policy and state-owned banks, the electric SOEs own $11 billion of Brazilian utilities. They also have invested in a variety of private Brazilian businesses and have financed $5 billion of greenfield construction in transmission and generation. The following sections describe the PRC's investments in greater detail.

Figure 6. Major financial flows from PRC entities to Brazil since 2015, in energy and other emissive industries.



End-use amounts may not sum correctly due to rounding. Flow types less than $1B not shown on the Sankey diagram.
Source: ClearPath, AidData, AEI.

Official Debt Flows

Though confidential term sheets make it difficult to observe the details of PRC debt financing in Brazil, public data nonetheless suggest a predatory pattern of activity from PRC entities in Brazil's energy sector.[38] We rely on the patterns identified in Horn et al. (2021) to identify predatory aspects of PRC lending in Brazil, despite the fact that term sheets for these deals in Brazil are mostly unavailable. Recently published data from AidData includes 371 term sheets, including 5 unique deals occurring in Brazil. In the energy sector, it includes a CDB-Petrobras loan from 2009 and a 2018 loan from the International Development Bank lending on behalf of the People's Bank of China through the China Co-Financing Fund to CELSE, a Brazilian power producer, for the construction of a 1.5 GW gas-fired power plant.[39] The debenture agreement for this deal broadly construes events of default to include any change in political conditions that threaten repayment of the loan.[40]

Energy Financing Power: America vs. China

China's strategy of extending significant debt levels to developing nations can lead to adverse consequences for the debtors and geopolitical gain for China.[41] If countries default on their debt or are forced to restructure terms, China can leverage this established economic dependency to gain access to strategic assets or exert political influence. A prime example is Sri Lanka, where CHEXIM financed the Hambantota port.[42] When the port failed to generate sufficient returns, Sri Lanka granted a 99-year lease to a Chinese state-owned company, effectively trading strategic control for financial relief. Similarly, in Laos, after China financed major infrastructure projects, it acquired a 90% stake in the country's electricity grid company during debt restructuring discussions, again highlighting leverage over critical infrastructure.[43] Due to Brazil's size and political influence, it is unlikely that a PRC entity would deploy a similar strategy in the Brazilian energy system. Instead, PRC actors use their significant financial involvement to guarantee import supply contracts of key commodities and exert diplomatic influence with a powerful partner in the Western Hemisphere.

Unlike lending from the United States, which often comes with conditionalities related to governance, environmental standards and human rights, Chinese debt financing typically lacks transparency. Its non-interference policy is attractive to nations seeking to avoid the stringent requirements of institutions like the International Monetary Fund or the World Bank. In contrast, the United States, along with other major developed economies, largely operates within established international financial frameworks like the Organization for Economic Cooperation and Development (OECD) Arrangement and the Paris Club, promoting transparency, responsible lending and coordinated debt relief, a stark difference from China's often bilateral and less transparent mechanisms.[44]

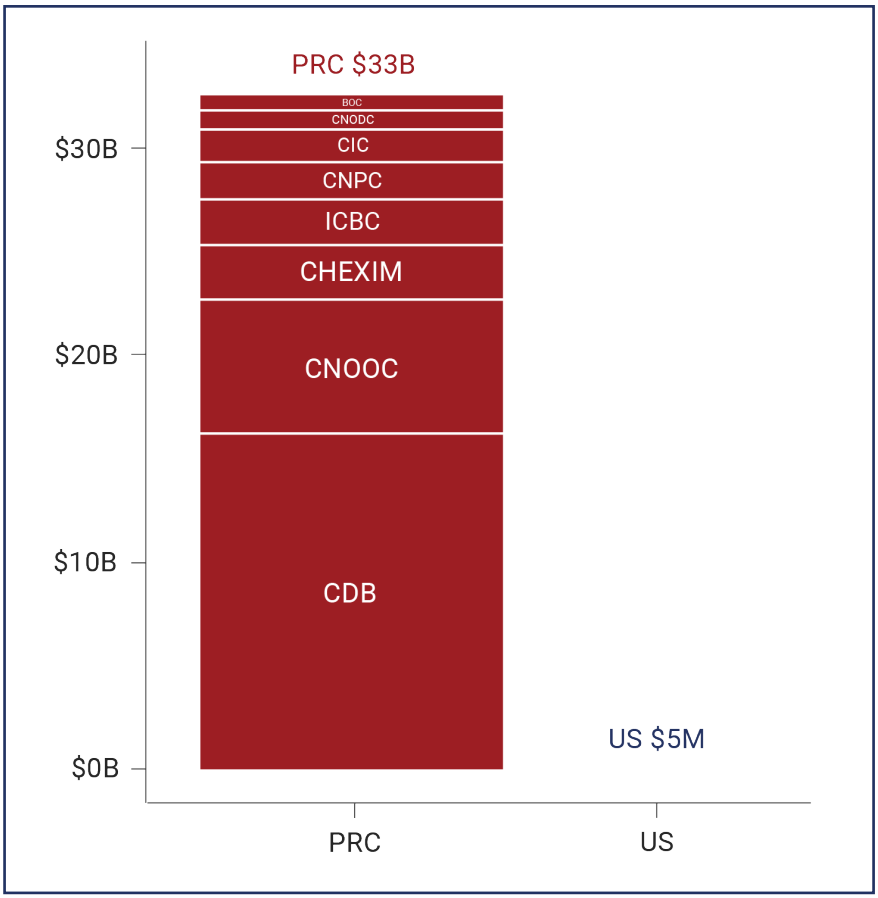
Chinese lenders also use liens, escrow and other special accounts that guarantee repayment in the form of commodity purchase agreements, often generated from the underlying asset. The beneficiaries of these agreements may not be the originating lender, but rather a related PRC entity with the capacity to receive and resell the commodity. In Brazil, for example, Petrobras obtained two lines of credit from CDB – $5 billion in 2016 and an additional $5 billion in 2017 – that were collateralized by oil supply contracts with several Chinese oil companies, including China National United Oil Corporation, a subsidiary of CNPC, China Zhenhua Oil, a subsidiary of NORINCO, Chemchina Petrochemical, a subsidiary of ChemChina, and UNIPEC Asia, Sinopec's trading subsidiary.[45] Because of Brazil's wealth of commodity resources across agriculture, fossil energy, and iron ore, these supply contracts are an essential piece of the PRC's engagement in the country.

These opaque bilateral relationships are often strengthened by the Chinese lender's willingness to refinance repeatedly with debtors, which extends the relationship far beyond the original intended tenor and, in the case of sovereign lending, threatens the fiscal health of the debtor nation. For example, the $10 billion credit line from CDB to Petrobras was used to meet Petrobras' existing debt obligations and allow for more efficient cash management. These existing obligations included $15 billion in existing debts to CDB for oil and gas exploration activities in the Santos Basin, including a $10 billion credit line from 2009 and a $5 billion structured loan in 2015, which were themselves partially collateralized by additional oil supply contracts with Sinopec and other Chinese oil majors. However, they were not fully repaid at the close of the transactions for the additional $10 billion of oil-collateralized credit in 2016 and 2017.[46] While these new credit lines were not official refinancings of Petrobras debt, they were used by Petrobras to ameliorate significant cash-flow problems which were driven in part by their existing debt obligations. They also display the CDB's willingness to extend credit to highly indebted borrowers in order to extend their contractual relationship and receive additional commodity commitments. On the other hand, the U.S. is obligated to adhere to OECD best practices for extending export credit, contracting transparency, and environmental and social guidance standards. The U.S. also coordinates debt restructuring and relief through the Paris Club, of which China is not a member.

Debt from the PRC's policy banks may also include repayment clauses that allow the lender to make capital calls on the basis of any threat – real or perceived – to any PRC interest in the debtor nation.[47] This could include business competition from any unrelated entity in the debtor nation, or policy or regulatory changes contemplated by the government of the debtor nation. The wide scope of these clauses, along with non-interference policies and a preference for bilateral engagement, has the effect of isolating the PRC's partners and shaping their economy and policy beyond the direct scope of the loan.

Official debt flows from PRC entities to Brazil focus on three sectors: upstream oil and gas, electric transmission and mining. Oil and gas transactions are by far the largest and most sophisticated. These deals closely resemble the activity of a private infrastructure investor, rather than the concessional, development-focused lending that a development bank typically undertakes. The CDB, along with the PRC's state-owned commercial banks, participate in syndicated lending with the world's leading financial institutions, including private American banks, to support extraction at one of the largest oil and gas discoveries of the 21st century: the ultra-offshore fields in the Santos Basin.[48] PRC entities have been involved in financing at least a dozen FPSO facilities that are in operation in the Santos Basin, and the Chinese oil majors own equity stakes in the development of several Santos oilfields.[49] The industry is profitable and economically significant to the Brazilian economy, which allows PRC actors to form close diplomatic ties with Brazilian leaders.[50] As shown in Figure 7, the PRC's investments in Brazilian oil and gas are orders of magnitude larger than the U.S.'s, and in critical upstream activities like exploration and extraction.

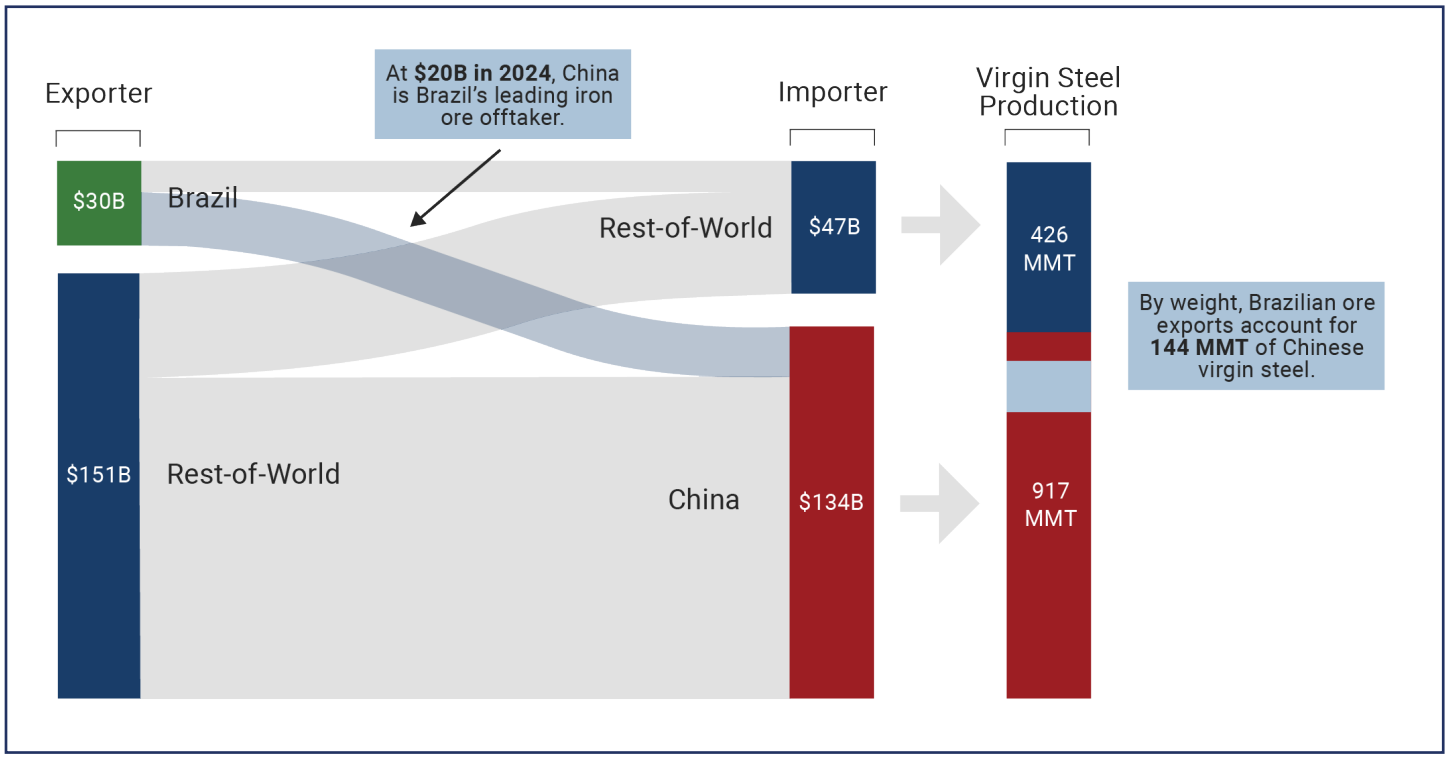
Figure 7. PRC and U.S. state-owned investments in oil and natural gas in Brazil, since 2015.



Source: ClearPath, AidData, AEI, data.gov

ICBC and BOC, Chinese state-owned commercial banks and the first and fourth largest banks in the world, respectively, have supported more than $2.6 billion in financing for Vale, Brazil's largest mining company. This includes construction finance or acquisition for 19 very large ore carriers (VLOC), and a $3 billion revolving credit facility intended primarily for refinancing purposes and syndicated across 27 banks, to which ICBC and BOC contributed $236 million. In Brazil, Vale is primarily a miner and exporter of iron ore – these investments from ICBC and BOC support China's large, growing, and highly emissive steelmaking industry.[51]

Figure 8. China-Brazil trade in iron ore.



Source: Observatory of Economic Complexity, Worldsteel.org

Brazil relies on China as the leading offtaker of its iron ore, as shown in Figure 8. Of the $30 billion in iron ore exported from Brazil in 2024, China imported $20 billion, or 67% of Brazil's total export volume and 11% of the global export market for iron ore.[52] These supply contracts form the backbone of the Chinese virgin steel industry, which dominates the global market with 68%, or 917 million metric tons (MMT), of total production by tonnage in 2024.[53] By weight, Brazilian ore exports account for 144 MMT, or 16%, of Chinese virgin steel production.[54] PRC investments in the steel supply chain in Brazil strengthen their BRICS alliances and support their domestic industries. Through EXIM's transactions with the CSP, a Brazilian integrated steel mill, the U.S. has also invested $53 million in Brazil's steel supply chain. EXIM should expand its ambitions in this sector to advance American-made steel and the commercialization of innovative steel-making processes.

One of Vale's very large ore carriers (VLOC), the *Vale Rio De Janeiro*, moored near Rotterdam, the Netherlands and carrying a full shipment of iron ore. (Creative Commons)

The CDB has also provided financial backing for China's largest electric utility, State Grid, to make aggressive investments in Brazil's transmission system. From 2012 to 2014, State Grid took on more than $1.2 billion in debt from CDB to finance buyouts of several Brazilian transmission companies. These companies are now owned and operated by State Grid.[55]

State-Owned Foreign Direct Investment

Foreign direct investment (FDI) from Chinese entities is harder to track than debt flows. Unlike debt, which has fixed tenors and repayment terms, FDI represents a long-term commitment from a PRC entity to develop, own and operate physical assets in Brazil's economy.[56] FDI originates from Chinese state-owned and private firms, and can be financed on-balance-sheet by the firm, or partially or wholly by debt from a policy or state-owned bank. In this section, FDI from SOEs is presented.

After a few early failed ventures in the 2000s, Chinese FDI has grown dramatically around the world.[57] The PRC has made infrastructure investments across Eurasia, Africa and BRICS countries to cement diplomatic ties and profitable economic relationships. In Brazil, PRC entities have invested heavily in the energy sector by leveraging in-house technical expertise and financial scale from state-owned electric utilities and the Chinese oil majors. Chinese FDI in Brazil's energy sector follows three themes: upstream oil and gas, transmission and distribution, and clean electricity generation.

CNPC and CNOOC – two of the largest oil companies in China – have each made significant state-owned investments in oil and gas plays in the Santos Basin. For example, CNPC and CNOOC each acquired a 10% stake in the Petrobras-operated Libras oilfield in 2013. In 2021, CNOOC acquired a 10% stake and CNPC, through a subsidiary, a 5% stake in the Buzios oilfield. These minority investments do not entail operational responsibilities but reward owners with equity oil, which Chinese oil companies can either sell or import to meet growing domestic energy demand.

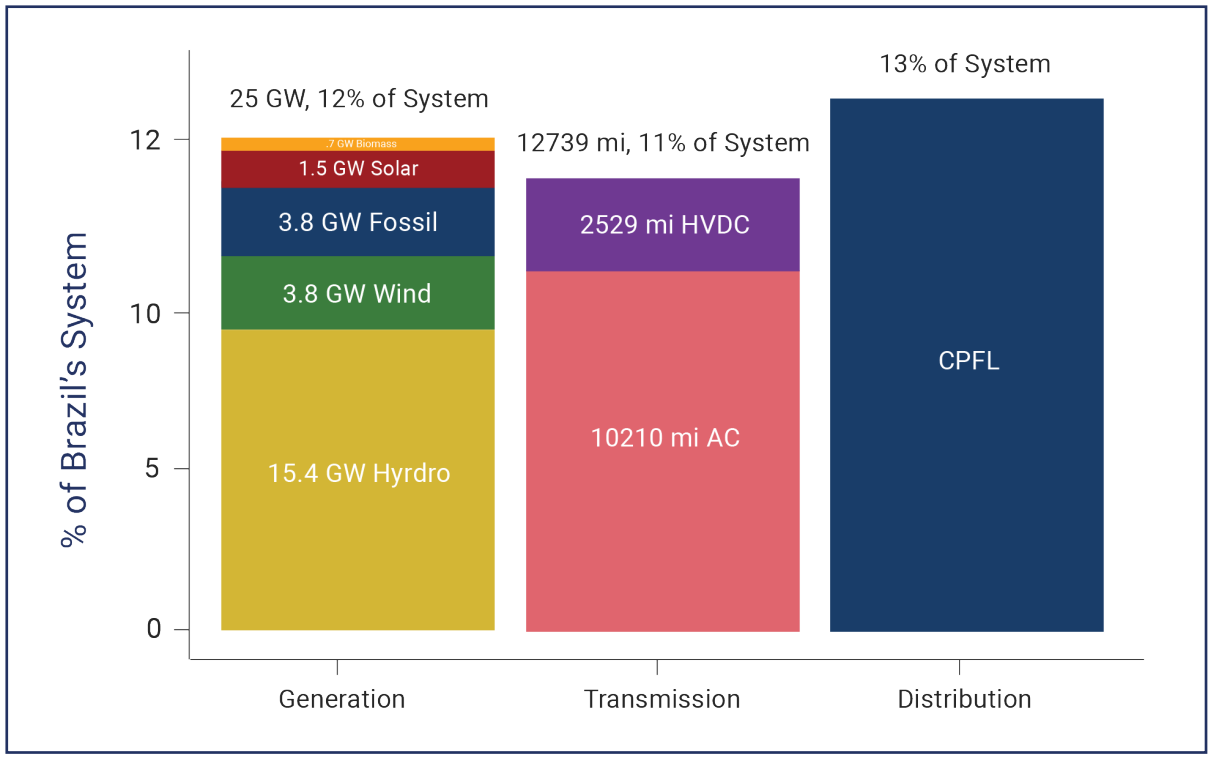
Several PRC entities are involved in the same oil and gas plays in Brazil. On the debt side, CDB has heavily supported Petrobras' investments in extraction from the Santos basin. The state-owned oil majors have taken a corresponding equity position in the future revenues from these plays, benefiting from the CCP's policy bank lending and establishing greater PRC influence in the ongoing ownership and operation of Brazil's assets. This is an instance where the CCP's centralized political economy benefits the semi-private institutions within its orbit.

State Grid, China's largest electric utility, has made investments in greenfield and M&A transmission assets in Brazil. Thanks to a series of loans from CDB, State Grid now owns and operates twelve Brazilian transmission companies whose assets total 3,700 miles of transmission lines and 32 substations and switching stations. In addition to these debt-financed transactions, State Grid financed on-balance-sheet the acquisition of an additional seven Brazilian transmission companies whose assets included approximately 1,860 miles of transmission in 2010 for $1.7 billion.[58] They also purchased 1,730 miles of Brazilian transmission lines from the Spanish utility ACS in 2012 for $940 million, and in 2021 the Brazilian utility CEEE for $520 million, which owns at least 2,920 miles of transmission.[59]

State Grid has leveraged its technical expertise in greenfield transmission development to bid in transmission auctions held by the Agência Nacional de Energia Elétrica (ANEEL), the national Brazilian energy regulator.[60] ANEEL identifies corridors for transmission infrastructure and generates a baseline cost estimate for the project.[61] They then seek bids from private developers – single companies or, more often, joint ventures – to construct the project at a percentage-point discount from the baseline cost estimate. The bidder who can offer the largest discount wins the bid, the right to build the transmission infrastructure, and the rate-based revenue that ANEEL allocates to the project. State Grid has won at least three of these concessions. In April 2022, they won a $3.6 billion, 930-mile project. In a December 2021 auction, they won a project of undetermined size.[62] In 2015, State Grid won the auction to build Belo Norte Bipole II, a 1600-mile line with 4 GW of capacity. This was the second stage of the Belo Norte transmission project, whose first stage was financed by BOC and built by Brazil's Eletrobras.[63] State Grid owns 50% of Bipole I and 100% of Bipole II. These infrastructure investments are of critical importance to energy reliability and affordability in Brazil, because they connect population centers in southern Brazil to sources of clean and reliable electricity in the sparsely populated northern part of the country.

Across their M&A activity and greenfield development, State Grid owns at least 12,739 miles of transmission, or 11% of Brazil's system, as shown in Figure 9.[64] They also own CPFL, Brazil's third largest energy company, which owns 13% of the distribution market in Brazil.[65]

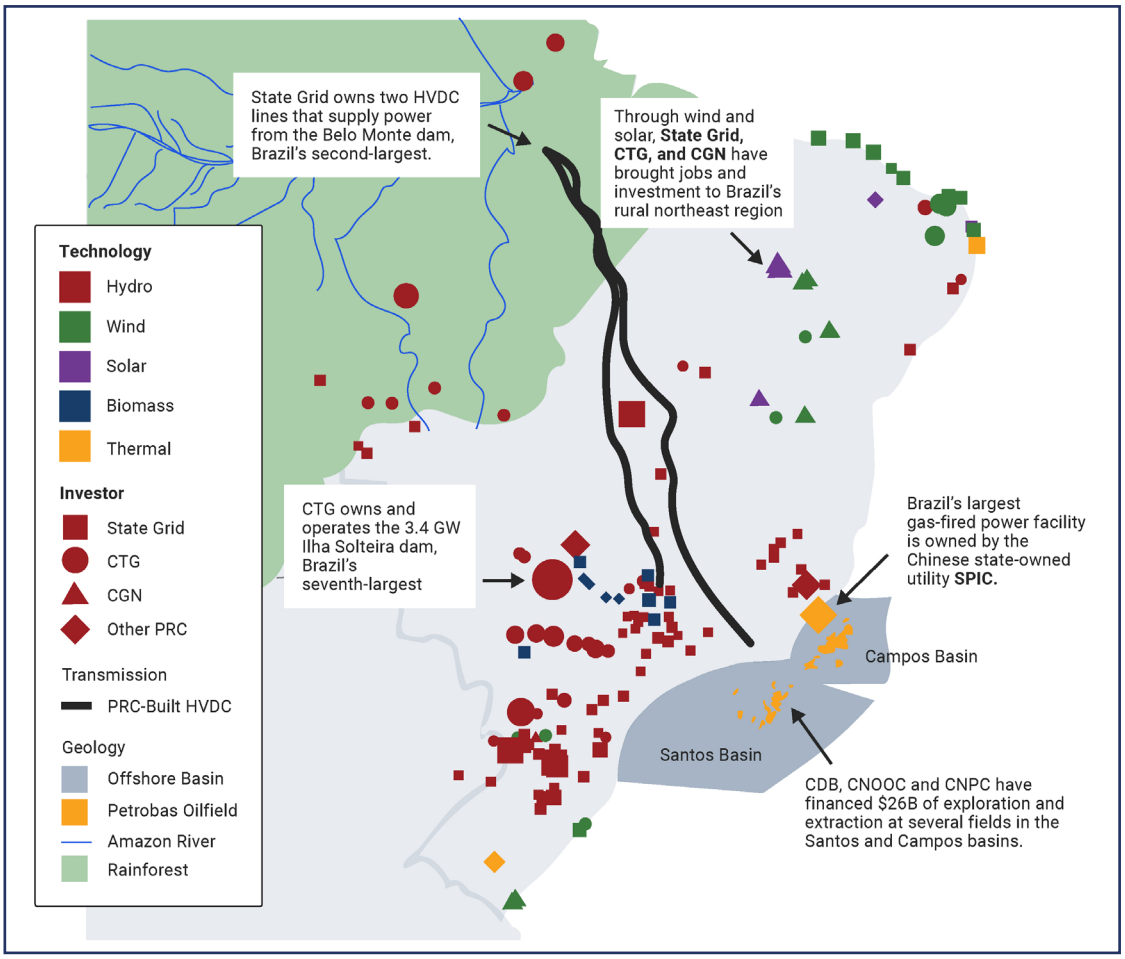
Figure 9. PRC ownership of Brazil's electric system



Note: CEEE owns an unknown amount of distribution in addition to its transmission assets, making the 13% ownership estimate a lower bound. Due to poor data availability for transmission tenders in Brazil, the 11% estimate is also a lower bound. Sources: ClearPath, BU CGI, AidData, MapBiomas, CPFL.

Boston University's China Global Power Tracker offers a comprehensive picture of Chinese generation asset ownership in Brazil, as shown in Figure 10. It captures M&A activity, including State Grid's buyout of CPFL, and greenfield construction. PRC entities own generation resources of all types, but Brazil's abundant water resources and in-house technical expertise at the China Three Gorges Corporation (CTG) result in a focus on hydropower. Across all technology types, PRC entities own 25 GW of generation in Brazil, or 12% of Brazil's total electric capacity in 2025.[66]

Figure 10. The spatial extent of China's energy assets in Brazil.



Strategic Recommendations for the U.S.

The PRC's energy finance in Brazil is large and strategically valuable to Chinese foreign policy goals and domestic industrial growth. Predatory lending behavior isolates Brazil from other foreign partners and creates a strong incentive for Brazil to make policy or business decisions that advance PRC interests. FDI allows state-owned Chinese firms to own and operate Brazilian energy assets indefinitely, giving them economic benefits, diplomatic influence, and significant leverage in the event of a conflict.[67]

The U.S. can sharpen its existing toolset to strengthen its geostrategic position and advance American economic interests.

Scale and Flexibility

There are strategically and economically valuable opportunities abroad in clean steel, upstream oil and gas, transmission, nuclear energy, and critical minerals. However, U.S. development finance institutions need to be modernized to work at scale and flexibly in order to best position American industry and innovators to seize these multi-billion-dollar investment opportunities.

Energy Financing Power: America vs. China

EXIM

In response to unfair Chinese financing, Congress created the China and Transformational Exports Program (CTEP) during EXIM's 2019 reauthorization to improve U.S. exports' competitiveness. While CTEP was a strong first step on the path to counter Chinese influence, more can be done to scale up EXIM's financing in critical sectors and regions. China continues to offer export subsidies and other unfair financing to establish footholds in critical markets.

- **Provide flexibility to support America's national interest**
    - Establish a National Interest Account (NIA) at EXIM to prioritize strategic projects vital to U.S. national interests, encompassing an all-of-the-above energy dominance approach. This NIA, with increased risk tolerance, will better position the U.S. to advance economic and geostrategic priorities in a global landscape where trade and export finance is increasingly focused on geostrategy.

EXIM's current 2% default rate cap is a unique requirement placed on the Bank that other countries do not face. This restraint prevents EXIM from financing capital intensive projects, many projects in strategic sectors and advances a risk-averse culture at the Bank. Similarly, EXIM's domestic content policy is the least flexible among export credit agencies globally, creating a significant obstacle for American innovators' and manufacturers' ability to leverage the Bank as a resource for competition.

- **Remove constraints hindering competitiveness**
    - Raise EXIM's default rate cap to align the bank with OECD norms while exempting NIA-eligible projects entirely to provide flexibility for strategic sectors like energy.
    - Modernize the metrics for EXIM's domestic content policy to fit today's shifting supply chains.

- **Modernize EXIM's mission**
    - Update EXIM's mission to support American jobs and advance U.S. national interests. This includes directing the Bank to proactively develop a project pipeline aligned with U.S. national security objectives and partner agencies like the DFC, fostering a clear understanding that global competitiveness is a core priority.

DFC

DFC's first use of its equity tool with TechMet was celebrated as a strategic and economic victory. By providing equity rather than debt, DFC gave TechMet greater bandwidth to develop critical minerals supply chains to support American national security and provide a profitable return to American taxpayers. Similar opportunities exist in other industries, which could be unlocked by correctly scoring these investments or by establishing a revolving fund.

- **Unlock DFC Equity Investments**
    - Currently, DFC's equity purchases are scored as a loss, despite the economic value of these investments. Proposed reauthorization text from Senator Jim Risch (R-ID) and the White House both circumvent this issue by establishing a revolving fund for DFC's equity investments.[68]
    - This fix will allow DFC to use its equity tool more broadly in industries critical to American national interests, like critical minerals.

Energy Financing Power: America vs. China

Today, due to current country eligibility rules and the European Energy Security and Diversification Act, it is easier for the DFC to support an energy project in the U.K. than Thailand.

- **Support energy security with a more strategic focus**
    - Rather than firm country exclusion lists, the DFC should be given greater flexibility to support energy security on project-level merits and with broader U.S. strategic goals in mind.

Energy infrastructure tends to be large and expensive, with Chinese financing often well into the billions for individual projects. Total state-owned Chinese financing for energy in Brazil alone would hit the DFC maximum contingent liability cap of $60 billion.

The DFC currently has a variety of constraints, from an individual project limit of $1 billion, a maximum contingent liability cap that it is quickly approaching, and a requirement to notify Congress of every project it approves over $10 million.

- **Unleash the DFC by reducing its constraints**
    - Raising these caps would give the DFC flexibility to support larger projects. For example, American investment in clean steelmaking in Brazil could require large dollar amounts, but would strengthen our diplomatic ties with Brazil, reduce Brazilian and American reliance on China's steel industry, reduce emissions from Brazilian steelmaking, and provide export markets for American steelmaking technology and American liquefied natural gas, a key input to cleaner steel production.[69]

Strategic Interagency Coordination

Simply increasing U.S. financial commitments would not be sufficient to guarantee American competitiveness and national security. The PRC can coordinate across its policy banks and SOEs, while the U.S. agencies work with broad or diverging mandates. The U.S. needs to lean on its primary economic advantage – a competitive and innovative private sector – while creating a platform for enhanced cooperation within the interagency and with world-leading American firms. This approach enables U.S. agencies to work in concert to support private businesses on regulatory harmonization, diplomatic and business connections, technical assistance, geopolitical risk mitigation and national security priorities.

America already has a model to build on. The Millennium Challenge Corporation (MCC) utilizes a compact framework that serves as a platform to coordinate the interagency, advance American national security interests, and support American energy innovations in foreign markets.[70] These compacts would be bilateral, U.S.-led engagements designed to:

- Create five- to 10-year agreements with clear, measurable outcomes targeting energy security and infrastructure.
- Develop bilateral partnerships that focus on joint security priorities and center on American foreign policy goals.
- Make strategic U.S. investments in partner nations' energy infrastructure.
- Use a coordinated approach which pulls together authorities and capabilities across the U.S. government, including, amongst others, DFC, EXIM, MCC, Department of Energy, and USTDA.

A compact could be designed according to a three-step process to assess and address the specific energy security needs in partner countries:

1. **Joint Energy Security Analysis** – Conduct a collaborative assessment between the lead office (e.g. the State Department) and partner countries to identify key constraints to energy security, similar to economic growth-based compacts used at MCC today.
2. **Compact Negotiation** – Develop a five- to 10-year agreement outlining a programmatic agenda of specific investments, policy commitments and mutual responsibilities. Employ tools and resources from relevant U.S. agencies.
3. **Implementation and Coordination** – Investments and policy reforms are executed by a coalition of U.S. agencies, coordinated by the lead office and overseen by an Interagency Working Group made up of liaisons from other agencies with oversight from the National Security Council.

Establishing a U.S. interagency platform would multiply capabilities and provide more comprehensive and strategic support to partners and allies. Agencies like USTDA and MCC can provide crucial early-stage support and complementary investments through grant financing, including feasibility studies, reverse trade missions, and infrastructure upgrades. For example, USTDA has demonstrated proficiency in connecting American engineering expertise to transmission operators in Brazil, while MCC has supported upgraded grid infrastructure in other partner countries.

These activities would directly support America's financing agencies, EXIM and DFC, by helping build a pipeline of viable projects. EXIM and DFC are well-equipped to derisk international investment by providing direct financing, guarantees, insurance products, and equity investments to American businesses and foreign partners. This collaboration would be guided by the State Department's diplomatic leadership, ensuring alignment with foreign policy goals; the Department of Commerce's commercial engagement; and the Department of Energy's technical expertise to support energy sector planning and project development.

Conclusion

Brazil is just one country, but the disparity shown in this data reflects a global pattern of Chinese investment that threatens American interests. PRC entities are making large investments in energy across the globe, not only in Brazil. A new vision for American energy leadership is needed to meet the challenge facing the U.S. today. To secure American energy security and prevail against the CCP, the U.S. must move beyond piecemeal engagement, with a clear strategic vision to achieve American energy leadership driven by private sector innovation and enabled by public sector leadership.

American companies are the strongest and most competitive in the world, yet the current policy paradigm limits their ability to reach new markets. Modernizing U.S. development finance institutions can catalyze American energy industries to compete and prevail against Chinese firms with cleaner, more reliable, and more affordable products and solutions. With an ambitious and coordinated approach, U.S. financing agencies should partner with innovative American companies to compete in new markets, bring home profits to American manufacturers, and ensure U.S. energy security.

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Disclaimer

Reviewers and discussants were not asked to concur with the judgments or opinions in this report. All remaining errors are the authors' responsibility alone.

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