
2017 China Climate Financing Report Briefing



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About the Report

International Institute of Green Finance, CUF (IIGF)

IIGF is China's first open and international research institute that commits itself to promoting the development of green finance. Its predecessor is the Research Center for Climate and Energy Finance, CUF (RCCEF) and it is an executive director of the Green Finance Committee of the China Society for Finance and Banking. IIGF puts the mission on its shoulders to establish an economic environment and social atmosphere of green finance spirit, and dedicates itself to building a China-specific professional financial think tank that comes in the first class domestically and takes the lead internationally.

Research Center for Climate and Energy Finance, CUF (RCCEF)

Founded in September 2011, RCCEF has issued the China Climate Financing Report for 7 consecutive years till 2017. Based on the generalized concept of global climate financing, RCCEF has established an analytical framework of climate financing flow and created a model of China's climate-related financing demands. Besides, it makes in-depth analysis from the perspectives of international climate capital governance and China's climate financing development year after year, accumulating a series of research findings on climate financing. Also, RCCEF has built an academic partnership with the Ministry of Finance on the strength of long-term trust and cooperation.

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Foreword

The Paris Agreement signed in 2015 has entered the stage of implementation. There were profound changes in the past year over the world. The global political and economic pattern has undergone a restructuring and transformation, impacting the climate governance structure and climate financing system. The most representative one of these events was United States President Trump's announcement of the withdrawal from the Paris Agreement on June 1, 2017. In spite of this, the determination of all countries to jointly develop green finance and work together to combat climate change has not been shaken. In particular, emerging economies have actively responded to climate change in recent years and have made South-South cooperation a priority, providing climate finance to each other. Out of all the developing countries' efforts, China stands out.

In recent years, China has attached great importance to the development of an ecological civilization, environmental protection, development of the low-carbon economy, and combating climate change. Green finance has become a key concept in national policy. During the opening session of the 19th Communist Party of China (CPC) National Congress, General Secretary Xi Jinping stated that "we should persist in the basic national policy of saving resources, protecting the environment, and treating the environment as our own life." The term of "green" was repeatedly and increasingly mentioned, from just once at the 18th CPC National Congress to 15 times this year, demonstrating China's determination to follow the path of sustainable development. China also actively advocates for the global development of green finance. Under China's presidency of the G20, green finance became a key theme at the G20 agenda for the first time. China also serves as a promoter for all countries that signed the Paris Agreement and provides climate finance to other developing countries to tackle climate change. China is gradually becoming the leader on the stage of international climate governance.

Climate finance has long been a key element of global climate negotiations and a tool to address climate change. At present, the world is focusing on how to fill the enormous gap between the supply and demand for climate finance. The Research Center for Climate and Energy Finance of the Central University of Finance and Economics (RCCEF) has closely followed the development of international climate finance since 2011 and published climate financing report for 7 years. Based on the experience and methodologies accumulated over the past 7 years, this report reviews the latest developments from the past year, reflects on the existing climate financing architecture, and analyzes how to mobilize private capital and increase the supply of finance for adaptation. In doing so, we hope to contribute wisdom from developing countries to the international community and to offer advice and suggestions to policymakers.

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01 The gap of global climate finance is expanding at an accelerated rate

In recent years, developed countries have made some progress in providing more climate financing for developing countries. According to the relevant statistics of OECD and UNFCCC, public climate finance provided by developed countries in 2013-2014 averaged \$40.7-41.5 billion USD dollar each year^{1,2}. In 2015, many developed countries and multilateral development banks made important commitments on capital increases. According to the analysis of OECD, these commitments will drive public funds to grow continually and the size may reach \$67 billion by 2020, an increase as high as 63.2% compared with the average public climate finance provided in 2013-2014.

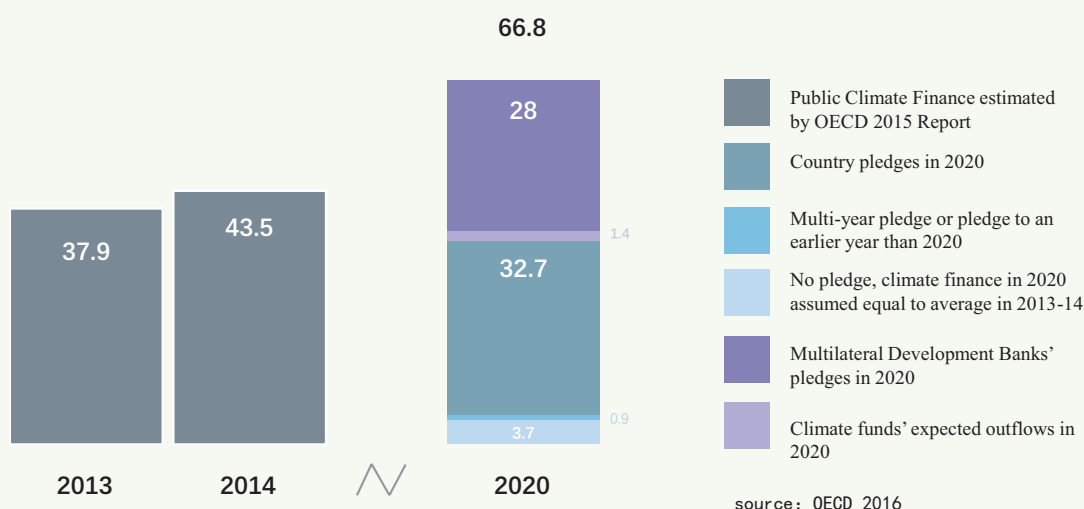


Figure 1 Estimated Public Climate Finance in 2013, 2014 and 2020 (in US \$ billion)

However, the size of climate finance provided and promised above is still not enough for developing countries to achieve the 2 oC goal set in the Paris Agreement. According to the forecast of the International Energy Agency (IEA), the energy sector alone will need \$16.5 trillion US dollars in 2015-2030 in order to achieve the goal of Paris Agreement.³ According to the forecasting methodology of Sam Fankhauser et al., the additional amount of money to meet mitigation and adaptation needs in the next decade may be as high as \$630 billion US dollars, with the demand for China's climate finance reaching \$205 billion dollars per year.⁴ According to the estimation from McKinsey, the climate finance gap of sustainable infrastructures from 2015 to 2030 will reach \$39-51 trillion dollars, with the gap of middle-income countries accounting for 65%.⁵ The size of the climate finance provided by developed countries is too small to satisfy the demand and the global climate finance gap is rapidly becoming larger.

1 OECD.2015.Climate Related Climate Finance in 2015

2 UNFCCC.2016.Compilation and synthesis of the biennial submissions from developed country Parties on their strategies and approaches for scaling up climate finance from 2014 to 2020

3 IEA (2015)

4 Sam Fankhauser, Aditi Sahni, Annie Savvas & John Ward (2016) Where are the gaps in climate finance?, Climate and Development, 8:3, 203-206, DOI: 10.1080/17565529.2015.1064811

5 McKinsey. 2016. Financing Change: How to mobilize private sector financing for sustainable infrastructure.

The difference between 39 and 51 trillion is based on different calculation methods. 39 trillion is a conservative estimation, excluding China's 13.4% growth in infrastructure investment and using the global average growth of 1.8%. 51 trillion is a more radical estimation, assuming that China can maintain the historical growth rate, which will pull the global average growth rate up to 4.3%

02 Climate finance architecture shows fragmentation trend

The climate financing system is becoming more and more complex, consequently the space of the climate finance under UNFCCC is squeezed

Over the past 25 years, the global climate finance transfer channels have continued to be enriched and the climate financing system has evolved gradually and become increasingly complex. Evolving from the early model depended largely on official development assistance with emphasis on a one-on-one country aid model, the climate financing system now transformed into a coexistence model of multilateral climate funds, regional climate funds, risk sharing mechanisms and other diversification models.

The evolution of the climate financing system actually represents the competition of many channels for limited public resources in developed countries. The space of the climate finance under UNFCCC is squeezed by more and more financial mechanisms and channels. Our analysis shows that bilateral channel is currently still the main channel for the transfer of climate finance and shows an increasing trend in the contribution of money. Specifically, the official development assistance provided by the members of OECD through bilateral channels reached \$29 billion US dollar on average in 2014-2015, an increase of 20% compared to that of 2013-2014⁶. Multilateral climate funds can benefit the world better, but the contribution is the smallest in terms of climate finance in all channels. The proportion contributed by multilateral climate funds is only 6% of the total amount of public climate finance in 2014, as a result the strength of the multilateral climate institutions has not been fully utilized. Multilateral development banks raised, managed, and distributed most of the public resources, but their balance sheets were too conservative and the 4: 1 ratio loan to capital ratio severely restricted the capital supply capacity.

The fragmentation trend of the multilateral climate fund system is particularly serious

The multilateral climate funds have addressed different funding needs during different periods, achieving some success in supporting developing countries combating climate change. However, there is a certain degree of overlap in the functions and needs to support (i.e. countries, projects), which affects the efficiency of the distribution, and sustainability of funds⁷. For example, the Adaptation Fund (AF) and the Least Developed Country Fund (LDCF) both support smaller adaptation projects, meanwhile the Green Climate Fund (GCF) currently also tends to support such projects.

In addition, different funds have different set of their own safeguards and application procedures, which makes the implementing entities low efficiency in terms of operation, especially for developing countries. In order to apply for financial support, the recipient countries have to apply according to the needs and standards of the climate funds. This complex application system hinders the funds to flow into the most vulnerable countries and the most priority fields.⁸

6 OECD, 2015, Climate Related Climate Finance in 2015

7 WRI, (2017), the future of the funds, exploring the architecture of the multilateral Climate Finance

8 WRI, (2017), the future of the funds, exploring the architecture of the multilateral Climate Finance

03 Adaptation financing still needs innovation of global climate public finance mechanisms

The gap of adaption is widening

Even if the world is able to meet UNFCCC's targets, the risks, impacts and costs of climate change will continue to increase sharply over the next period, and the gap in adaptation will continue to expand⁹.

Overall, the amount of international public climate finance which flows to adaptation has been increasing year over year, but it is still small in proportion to the total commitment of public climate funding. It is estimated that the current global climate adaptation needs are at least 2 to 3 times of the total amount of international public adaptation funds; in 2030 the demand for adaptation will reach 6 to 13 times of the current international public climate adaptation supply; and the potential gap in 2050 will continue to expand, becoming about 12 to 22 times of the current supply¹⁰.

Adaptation financing still needs the innovation of global public climate finance mechanisms

The successful achievement of climate adaptation targets depends on public climate adaptation funds playing their role of cultivating the market, creating a suitable investment environment for investors, encouraging innovation, and reducing risk to enhance the confidence of private investors¹¹. More and more climate adaptation tools and financing mechanism innovations have emerged all over the world, such as the Caribbean Catastrophe Risk Insurance Facility, climate elasticity financing mechanism raised by European Bank for Reconstruction and Development, the global climate finance lab, and social impact project financing. But to solve the problem of the adaption financing gap needs further increase of public funds input as well as guidance to fully mobilize private investment through the following methods:

- 1) Establish a complete law, policy, and regulatory framework.
- 2) Support developing countries in conducting climate adaptation research, demonstration adaption projects study, and data collection, etc.¹²
- 3) Use current public finance to establish a reserve for climate adaptation projects to enhance available credit. Specifically, it is possible to establish a primary loss guarantee fund by public funds whereby developed countries can further form a secondary loss guarantee to provide long-term and low-interest loan support for the adaptation projects of developing countries¹³.
- 4) Establish a risk guarantee mechanism and export credit.
- 5) Promote the public and private partnership (PPP), which is an effective instrument to, mobilize private investment, improve the management ability of the public sector, and diversify investment risks.

9 IPCC. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Intergovernmental Panel on Climate Change. Cambridge and New York: Cambridge University Press

10 UNEP. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya, 2016

11 WRI,(2017),the future of the funds, exploring the architecture of the multilateral Climate Finance

12 UNEP. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya, 2016.

13 Liu Qian, Wang Qiong, Wang Yao, Climate Change in the Era of the Paris Agreement: Global Progress, Governance Challenges and China's Countermeasures [J]. Chinese Journal of Population, Resources and Environment, 2016,26 (12): 14-21.

04 Climate financing mechanisms in emerging economies have developed rapidly

Emerging economies began to actively participate in climate assistance for each other as well. Some relatively well-known ones include New Development Bank, African Development Bank, Inter- American Development Bank, and Asia Infrastructure Investment Bank. Multilateral institutions can not only directly assist specific projects or local implement entities through subsidies, loans, debts, stocks, and credit lines, but can also achieve targets through supporting national policy, such as supporting a country's environmental change policy or ensuring the environmental issues become the main topic in the development strategy of the country.

The amount of foreign aid from China, the largest developing country, grew rapidly over the past decades. The amount of aid China provided to Africa has exceeded that of the World Bank. According to data, from 2001 to 2013 the amount of China's foreign aid rose from 743 million US dollars to 74.62 billion dollars, with an average annual growth rate of 21.20%. China's international aid growth rate is equivalent to 2 times of the world average growth rate (10.22%), 2.28 times that of the United States (9.30%), 3.96 times that of Japan (5.35%), 2.96 times that of the UK (7.17%), 1.72 times that of Germany (12.32%)¹⁴. As a branch of China's foreign aid, the climate aid undoubtedly shows a significant increase in recent years as well. According to the statistics, the total number of funds established by China is 14, totaling to nearly 140 billion US dollars. More details are shown in Table 1.

Table 1 Overview of China-foreign cooperation fund

Name of the Fund	Date of Establishment	Scale of Fund Investment Commitment (Billions of dollars)	Focus Areas	Geographical range of investment
Asian				
Silk Road Fund	2014	54.5	Infrastructure construction, energy, production capacity	Countries along the One Belt and One Road, mainly Asian countries
China-ASEAN Investment Cooperation Fund	2009	10	Infrastructure construction, energy, natural resources	China, ASEAN
China-ASEAN Maritime Cooperation Fund	2011	0.5	Maritime economy, environmental conservation	China, ASEAN
Euro-Asian Cooperation				
China-Central and Eastern Europe Investment Cooperation Fund	2012	11.5	Infrastructure construction, energy, manufacturing, communications	Central and Eastern Europe
Russia-China Investment Fund	2012	1 (Russia) + 1 (China) = 2	Infrastructure construction, agriculture, natural resources	70% invested in Russia, 30% in China

Latin America				
Sino-Latin American Production Capacity Cooperation Investment Fund	2014	20	Infrastructure construction, energy, natural resources, manufacturing, information and communication technology	Latin American countries
China - Latin America 's infrastructure special fund	2014	10	Infrastructure construction	Latin American countries
China - Latin America Cooperation Fund	2014	5	Infrastructure construction, energy, natural resources, agriculture, manufacturing, information technology	Latin American countries
China-Mexico Investment Fund	2014	2.4	Infrastructure construction, automobile industry	Mexico
Africa				
China-Africa Development Fund	2007	3	Mining, energy, manufacturing	Africa
African Development Fund	2014	1 (African Development Bank) + 1 (China) = 2	Infrastructure construction	Africa
China-Africa Industrial Capacity Cooperation Fund Company Limited	2015	10	Infrastructure construction, energy, manufacturing, agriculture, mining	Africa
Global				
South-South Climate Cooperation Fund	2015	3.2	Adaptation and mitigation of climate change	Developing countries
South-South Cooperation Assistance Fund	2015	2	No specific subject	Least developed countries, small countries, island countries
North America				
Sino-US Green Fund (Former name : China - US Building Energy Efficiency and Green Development Fund)	2016	3.05 (raised in the first batch)	Building energy efficiency, emission reduction, industrial structure upgrade	China (corporate with the municipal government)
Total number of funds: 14		Total scale of funding : \$ 13.82 billion	The most frequent areas: infrastructure construction, energy cooperation	Main focus countries : developing countries

(Source: compiled by the report team)

Other developing countries have also participated in South-South cooperation, contributing their own strength. For instance, Mexico and the European Union jointly launched the Latin American investment fund, India and France jointly launched the "International Solar Energy Alliance" (ISA) in 2015, the United Arab Emirates Abu Dhabi Development Fund (ADFD) and Abu Dhabi Renewable Energy Corporation (Masdar) signed an agreement to fund the United Arab Emirates - Caribbean Renewable Energy Fund to support the research and development of solar photovoltaic and battery storage technology in the Caribbean region.

In addition, developing countries began to fund to international multilateral institutions led by developed countries, mainly providing funds to the Global Environment Facility (GEF) and the Green Climate Fund (GCF). Although the overall contribution ratio was less than 1% in the total amount received by GEF and GCF¹⁵, the climate finance from developing countries is very symbolic and meaningful.

05 The Trump Presidency's impact on global climate finance and the new role of China

Climate financing leadership has shifted from Western countries to Eastern countries

Since his inauguration on the 20th of January 2017, President Donald J. Trump has dramatically changed US climate change policy. Amongst the most significant policy changes is the lifting of restrictions on fossil fuel production, cancelling payments to UN climate change programs, and, perhaps most importantly, the intention to withdraw from the Paris Agreement when formally possible by 2020. The most influential policies proposed by the Trump administration which have the most powerful impact on global climate governance and climate financing are as shown in Table 2:

Table 2 Policies and Actions which have the most significant impact on Climate Finance

Time	Main Policies or Actions
2017/1/21	Issue "American First Energy Plan", cancel Climate Action Plan
2017/3/16	Propose America First Budget Plan, Presidential Executive Order promoting Energy Independence and Economic Growth has dramatically cut budgets on climate change research, canceling payments to GCF and GIFs, as well as reducing bilateral climate financing
2017/6/1	Announce to withdraw from the Paris Agreement
2017/6/8	Pass the Financial Choice Act, Investors are no longer able to require companies to disclose the climate risk information through the shareholder proposal process.

(Source: compiled by the report team)

Based on the White House's budget paper the New York Times has analyzed the implications by budget items such as MDBs, development assistance, US Agency for International Development (USAID) operation, and other development and humanitarian assistance. Based on the budget it is not possible to specifically allocate reductions to climate finance, but as shown in the table 3 it is possible to make estimate that the US's reduction on climate financing through multilateral development banks, development assistance,

Table 3 Trump's 10-year budget estimated reductions by budget item

Budget Item	Obama 10-year budget	Trump 10-year budget	10-year change	10-year change %
Multilateral Development Banks (MDBs)	\$25.5bn	\$14.8bn	-\$10.7bn	-42.1%
Development assistance	\$31.5bn	\$6.4bn	-\$25.1bn	-79.6%
USAID operations	\$16.8bn	\$12.3bn	-\$4.5bn	-27.1%
Other development and humanitarian assistance	\$44.8bn	\$7.8bn	-\$37bn	-82.7%

(Source: New York Times)

USAID, and other development and humanitarian assistance will be approximately 42.1%, 79.6%, 27.1% and 82.7% over 10 years, respectively.

In fact, the role played by United States in the global climate finance architecture has always been relatively limited while China's foreign assistance (or ODA) has gradually increased proportionally within the total global foreign assistance (total global ODA) over the past few years. Today, China has become the world's fourth largest foreign aid provider¹⁶. Although European financial sector and climate think tanks have been making ongoing efforts in rebuilding the climate finance architecture, mobilizing private finance, and promoting the innovation of climate finance products and instruments, the climate financing hot-spots have undoubtedly turned to China, India, and other Asian regions. Consequently, global climate leadership is entering a transitional era.

The global investment trend towards new energy transformation has not been significantly affected

Investment in the new energy sector has risen rapidly in the past few years. Relevant data shows that even during the global recession period from 2008 to 2012, the growth rate of investment in the new energy sector was higher than that of other sectors.¹⁷ The Trump administration's new policy will be difficult to reverse this trend, mainly because investors' interest in low-carbon and new energy market has not been frustrated.

Even though United States announced the decision to withdraw from the Paris agreement, the MSCI World Low Carbon Target index and WilderHill New Energy Global Innovation Index's (NEX) rising momentum since the beginning of 2017 has not been affected. The Stowe Global Coal index dropped slightly during the few days following the announcement, but it didn't take long to rebound and stopped the decline since April. S&P 500 oil & gas exploration and production Sub industry GICS level, however, has not been boosted by Trump's "America First" Energy Policy and the decision to withdraw from the Paris Agreement and has maintained the downward trend since the beginning of 2017.

From the performance of China's new energy and traditional energy sector in the stock market, we can see that clean energy stocks outperformed the market and fossil fuel stocks within the few days following the "big" announcement. In the longer term, China's low carbon index went up from 4508.5733 on January 3rd 2017 to 5677.3856 as of October 27th, a 25.92% increase; the solar power index kept declining from March 2017, but it climbed steadily to 13.7% since June after the "Withdraw" decision was announced, indicating the announcement quelled the market's suspicious emotion; the coal index rose 21.3% and the oil index rose 15.4% from the 1st of June to the 27th of October, respectively. Overall, low-carbon investors' interest in the clean energy sector seems not to have been affected by a series of "de-climate" policies issued by President Trump, which means the global transition to clean energy is not affected by US' s new presidential administration. However, traditional energy seems to be rebounded.

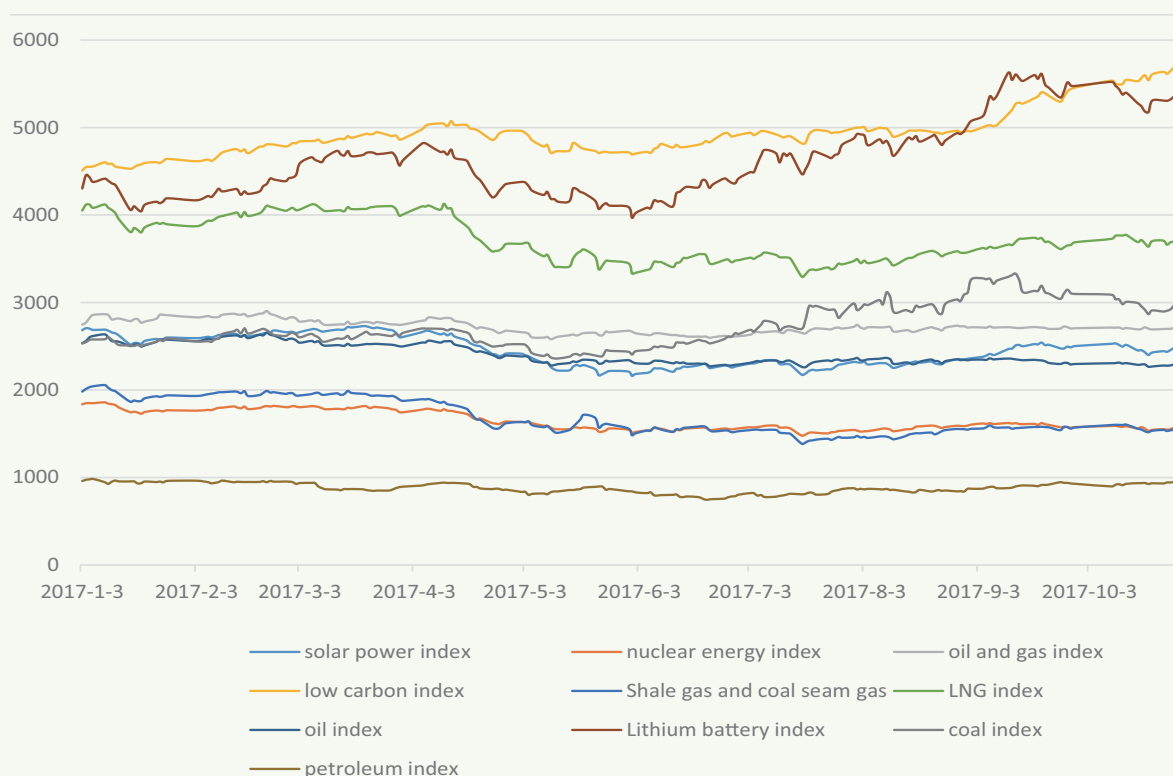


Figure 2 China's major stock index performance from January to October 2017

(Data Source: Wind)

Impact on China

A series of simulation research has already shown that there is high risk that the United States cannot achieve its emission reduction goal of reducing 26-28% below the 2005 levels by 2025. According to Dai Han-Cheng's latest study, the US withdrawal from the Paris agreement will squeeze China's emission space and increase China's mitigation cost. Specifically, under the 2-degree target, if the U.S. only reduces its emissions by 20%, 13%, and 0% below the 2005 levels by 2025, it will decrease CO₂ emissions space by 1.7%, 2.8%, and 5.0% in China, and the carbon prices will rise by \$4.4-\$14.6 US dollars / ton, the additional GDP loss will be \$21.98-\$71.1 billion in China in 2030¹⁸. Yet, there is also positive aspect, US's retreat may reinforce China's existing dominance in the clean energy sector¹⁹.

The international community hold high expectation that China will fill the global climate leadership vacuum left by US. However, as a developing country, China has not yet been capable to single-handedly fill the leadership vacuum. Some scholars have suggested that China can help rebuild global shared leadership by replacing the Sino—U.S. G2 partnership with a Climate 5 (C5) partnership that includes China, the EU, India, Brazil, and South Africa²⁰.

18 Dai Han-Cheng, Zhang Hai-Bin, Wang Wen-Tao, The impacts of U.S. withdrawal from the Paris Agreement on the carbon emission space and mitigation cost of China, EU, and Japan under the constraints of the global carbon emission space, *Advance in Climate Change Research XX* (2017) 1-9

19 Zhang Hai-Bin, Dai Han-Cheng, Hua-Xia Lai, Wang Wen-Tao, US withdraw from Paris, *Advance in Climate Change Research XX* (2017) 1-6

20 Zhang Hai-Bin, Dai Han-Cheng, Hua-Xia Lai, Wang Wen-Tao, US withdraw from Paris, *Advance in Climate Change Research XX* (2017) 1-6

06 The construction of China's green financial system has promoted innovation on climate financing in China

China's green financial system framework is maturing

"G20 Green Finance Report" issued in 2016 pointed out that the development of green finance requires clear policy signal. Driven by a series of influential national strategic policy papers, green finance special policies, and specific implementation guidelines, China's systematic green finance framework is gradually developing. Under the guidance of the top-level design, all kinds of stakeholders have actively participated in the activity of promoting green economic transformation, and making the financial system greener. China's latest progress and characteristics on green finance are as follows:

Explicitly put forward strategic framework and policy signals for green finance system. The issue of the *Guidelines for Establishing the Green Financial System* on August 31st, 2016 demonstrated that China has become the first economy in the world to establish a comparatively complete green finance policy system supported by the central government. Moreover, green development and ecological civilization has become a basic idea in the "13th Five-Year Plan", and green investment and financing needs are increasingly clear. Additionally, the development of fin-tech further drips down the concept of green finance into public. The Green Finance Committee of the China Society for Finance and Banking (GFC) has played a significant role in the practice of green finance, cutting-edge research, popularization of the concept, capacity building, and other aspects of integration resources and forming the backbone. Since its establishment in April 2015, all large banks and many large and medium-sized funds, insurance companies, and security companies have joined the GFC and the financial assets managed by member institutions have accounted for 2/3 of the total financial assets nationally.

The construction of China's green financial system has promoted the innovation of climate financing

The construction of the green financial system has a greatly supported the innovation of financial products and services in the climate financing. Green credit, as the earliest green finance product in China, has played a fundamental role in China's green financial architecture. The number of green credits has remained stable and the banks have taken the initiative to promote green transformation and product innovation. As of the end of 2016, the green credit balance of 21 major banks rose to 7.51 trillion yuan, accounting for 8.83% of the total loan.

In addition, the types of green bond have increasingly enriched, third-party assessment and credit rating agency is developing rapidly, and the credibility has gradually increased, transforming China into one of the world's largest green bond markets in 2016. Driven by policy, the use of Public and Private Partnership (PPP) in green and low-carbon sectors has been widened, the project's return mechanism is becoming completed, and as a result the private sector has begun to play a role in climate financing in China. Specifically, in 2016

there were a total of 7,826 low carbon PPP projects in China, 6.44 trillion yuan in total, a net increase of 1,214 and 967 billion yuan compared with the end of last year. Pilot Catastrophe Insurance projects have been carried out in various provinces and cities, which greatly reduced the government's fiscal budget pressure to prevent disaster and manage risk. In terms of China's carbon market, by 2016 the total cumulative transaction amount on the seven pilot carbon trading market is 2.5 billion yuan and the transaction amount in 2016 alone is 1 billion yuan, a 22.1% increase compared to that of 2015. Please see Table 4 for more detailed information on China's climate finance.

Table 4 Development Status of China Climate Financing

Type		Scale	Period (year)	Description	Data Sources
China Carbon Market	China's pilot carbon trading	Cumulative transaction amount is nearly ¥ 2.5 billion	2016	By December 31, 2016, the total transaction amount of pilot carbon markets in seven provinces and cities reached 160 million tons, with a cumulative transaction amount of nearly 2.5 billion yuan, and transaction of carbon quota online and offline in the secondary markets, which includes Fujian Province, was nearly 64 million tons in 2016, which increased 80% compared with 2015; the transaction amount was about 1.045 billion yuan, which increased nearly 22.1% compared with 2015.	Annual Report of Beijing Carbon Market 2016
	CCER	53 million tons of carbon dioxide equivalent	2016	By December 31, 2016, China Certified Emission Reduction Exchange Info-Platform has shown accumulated 2,742 projects approved by CCER publicly, 861 of which have been recorded, and 254 of which have generated 53 million tons of emission reductions.	China Certified Emission Reduction Exchange Info-Platform

Charity fund	Grant	Grant received by China Green Foundation	¥ 54.45 million	2016	Public welfare expenditure in 2016 was 42,430,000 yuan.	China Green Foundation 2016 Annual Audit Report
		Amount of domestic and foreign donations received by China used for eco-environment field	¥ 7.66 billion	2015	Eco-environment field received donations of 7.66 billion yuan total in 2015, which accounted for 6.01% and increased 3.41% compared with 2013	Report of China Charity Donation 2015
Traditional financial markets	Traditional international financial markets	Investment in renewable energy by China	\$ 78.3 billion	2016	Compared with 2015, total investment fell by 32%, which is the lowest level since 2013. But China is still the largest investor in the world.	Renewables 2017 Global Status Report
	Domestic financial market	Green credit balance of China major financial institutions in banking sector	¥ 7.51 trillion	By the end of 2016	By the end of 2016, the green credit balance of 21 major financial institutions in banking sector rose to 7.51 trillion yuan, accounting for 8.83% of the loan balance, which is expected to save 148 million tons of standard coal and reduce the emission of 427 million tons of carbon dioxide equivalent , 2.7146 million tons of chemical oxygen demand, 358,900 tons of ammonia nitrogen, 488.27 million tons of sulfur dioxide, 282.69 million tons of nitrogen oxides and save 602 million tons of water.	Report on Social Responsibility of China 's Banking Industry in 2016
		Energy conservation and environment protection loan balance of China banking sector	¥ 5.81 trillion	2016	Energy conservation, environmental protection projects and service loans balance of which is 5.81 trillion yuan.	
		Strategic emerging industry loan balance of China banking sector	¥ 1.70 trillion	2016	Energy saving and environmental conservation, new energy, new energy vehicles and other strategic emerging industries loans balance of which is 1.70 trillion yuan.	
		Energy conservation and environmental protection investment of domestic fiscal funds and national public finance	¥ 47.483 billion	2016	Energy savings of which is 62.265 billion yuan, and renewable energy is 86.12 billion yuan.	Wind Info
		Total amount of green bonds	¥ 238 billion	2016		Report on China Green Bond Market Status in 2016
		Scale of non - labeling green bond issuance	¥ 552 billion	2016		

	Domestic cleaning technology field	Scale of VC / PE investment obtained by China's clean technology industry	\$ 5.328 billion	2016	Compared with 2015, the number of financing cases decreased by 43.88% and the financing scale increased by 91.40%.	Financial data products of China-Venture : CV-Source
		Scale of completed transaction in China's clean technology industry mergers and acquisitions market	Disclosure transaction size is 12.477 billion US dollars	2016	The number of completed transaction cases is 156. The completed transaction scale is 19.093 billion US dollars. Overall, the number and scale of transactions announced by the clean technology mergers and acquisitions market show a downward trend, and the scale of the completed transaction cases has been greatly improved.	
Enterprise direct investment	International market and domestic market	IPO Financing of China 's Clean Technology Enterprises	\$ 326 million	2016	Only four companies of clean technology industry issued IP'Os in 2016, which decreased 55.56% compared with 2015. The scale of IPO financing was \$326 million US dollars, which fell 87.45% sharply compared with 2015. Among the 4 IPO business, the Shenzhen Stock Exchange listed one and the Hong Kong Stock Exchange listed three.	
PPP project	Projects in the project warehouse	Ecological construction and environmental conservation	¥ 8412.6 billion	By June, 2017		PPP Project Library of Ministry of Finance
		Forestry	¥ 412.34 billion	By June, 2017		
	Projects released publicly	Green and low-carbon projects	¥ 6.44 trillion	By June, 2017	In the PPP projects released by PPP comprehensive information platform publicly, the number of green low-carbon projects is 7,826 and the total amount of investment is 6.44 trillion yuan. Compared with the end of last year, net increase of projects is 1,214 and the net increase of investment is 9,670 billion yuan.	
International multi - bilateral cooperation institutions		Chinese-foreign cooperation fund	\$13.82 billion	2016		Public information arranged by report team

07 Fulfilling the Paris Agreement targets requires the establishment of an integrated global climate public goods supply system

In the background of the United States' significant change on climate policy resulting from a government shift, China's role to shoulder the responsibility of climate governance is more important than ever. China needs to actively promote the establishment of an integrated global climate public goods supply mechanism and as a result become the world's new rule maker and leader.

The current climate financing architecture, however, is over-reliant on the ODA system. The fundamental reason for this is the world has not yet formed a sound climate public goods supply concept and system. To fulfil the objective of scaling up climate financing as well as increasing efficiency and effectiveness of climate funding requires an independent financing architecture and matching financing tools for mitigation and adaptation, in particular, to reaffirm the core role of public finances and to broaden the source, increase the effectiveness of climate finance, thus mobilizing more large-scale private investment to fill the gap. Main initiatives and suggestions include:

- 1) Enhance the impact of China-led multilateral institutions and promote the international community and multilateral partnerships to reshape the international cooperation landscape, establishing a coordinated twin-track architecture. Establish climate public goods supply mechanism, financing system, and instruments along with ODA.
- 2) Advocate that the governments of the UNFCCC countries contribute to climate finance under the principle of "common but differentiated responsibilities". In order to fully implement the responsibility, they need to allocate specific quota to relevant ministries, for instance, Environment, Energy, Finance, Health, or Trade.
- 3) Establish a more comprehensive international public goods financing agency to assume responsibility similar to that of OECD Development Assistance Committee.
- 4) Redefine the regulations, department settings, funding arrangements, and financing instruments of the multilateral institution within the twin-track of ODA and climate financing.

Promoting the role and innovation of new multilateral institutions to combat climate change

The new multilateral institutions led by China cumulatively symbolize China's "soft power" in global climate governance. Based on original aid, investment and trade activities, the role and function of these multilateral institutions further require matching of the leading role of the supply framework of China's global public goods. We recommend that a unified top-level design should be introduced into future development in order to promote innovation of those new multilateral institutions, including governance structure and financing instruments. The main recommendations are as follows:

- 1) Facilitate infrastructure investment which is compliant with climate resilience goals. South countries along the "One Belt, One Road" are especially vulnerability towards climate change impact. New multilateral institutions should promote capacity building, standard setting, business model innovation of low-carbon, climate resilience infrastructure as the main focus, and establish special expert committees and departments as well as performance evaluation standards.
- 2) On the macro level, the main mission of ensuring the quality of residents' life and living environment of each country is aligned with sustainable development goals. Therefore, new multilateral institutions should take the climate goals and policies of recipient countries into consideration as well as refer to the targets of the Paris Agreement, combined with the Intended National Determined Contribution (INDC) proposed by each country to make sure that the projects invested meet each party's interest. More specifically, new multilateral institutions can mobilize private investment into low-carbon infrastructure and other green projects through innovative transaction structures, low-risk technologies, and localized know-how.
- 3) Emphasize cooperation and complementation with traditional multilateral institutions. Traditional multilateral institutions and new multilateral institutions can reshape a new global development financing system by co-financing certain projects and learning from each other to better meet the needs of developing countries.
- 4) Encourage mixed financing. It is necessary to scale up both public and private investment through new multilateral institutions. Meanwhile, financing from local development institutions should be mixed with that of multilateral institutions. Local institutions possess the expertise of local political and legal knowledge while international institutions are more familiar with best practices on projects, design, and financial practice. Mixed financing can not only scale up the financing amount as a whole but can enhance the effectiveness of the use of the money, thus creating a virtuous system.
- 5) Promote localization. The original intention of developing new multilateral institutions is to solve the problem in developing countries in terms of localization. We should further bring this core concept into climate finance. Developing countries are much more vulnerable to climate change impacts than developed countries but at the same time have unique power in addressing climate change. They need to fully communicate with each other and to learn

from each other to discover the problems and propose solutions on the basis of the specific situation within each country, hence integrating resources more efficiently and conducting business more effectively.

09 Taking South-South cooperation as a breakthrough, strengthening China's soft power on climate finance

The establishment of China's Climate Change South-South Cooperation Fund promotes the further development of South-South cooperation on climate change. However, currently China's foreign aid, foreign investment and trade still lack long-term integrated planning and have not yet formed an independent international development assistance system and management structure. Drawing on China's experience in international cooperation in the areas of climate change, regional cooperation, and green finance, and the advantages on policy practice, methodology, and technology of energy efficiency and emission reduction, we propose the following recommendations:

- 1) Establish the South-South cooperation management system and result evaluation mechanism. The establishment of a viable management system is the basis for the smooth implementation of South-South cooperation. In addition, it is necessary to establish and optimize the result evaluation mechanism in order to ensure the performance. A macro-assessment and micro-assessment model can be introduced. Macro assessment is mainly to evaluate the overall effect of South-South cooperation over a period of time, while micro-assessment focuses on specific projects.
- 2) Attract diversified climate financing source. The sources of South-South Cooperation Fund should not be limited to donations. With a professional fund management manner, more diversified sources should be included to improve the efficiency and effectiveness of the use of funds. In this case, projects need to be "profitable". Using both private capital and public capital to co-finance "green projects", the risk and profit can be shared. In addition, in order to mobilize the private sector, the Chinese government and the recipient governments can also make tax reduction commitments or other preferential policies. Besides, South-South funds can be used as a fund of funds to fund other regional climate funds, to seek coordinating development with traditional multilateral development banks such as World Bank and new multilateral development banks such as Asian Infrastructure Investment Bank.
- 3) Strengthen capacity building and establish a MRV system. China is both a recipient of climate finance and also a provider to other developing countries, but the relevant MRV system has been incomplete. However, comprehensive, timely, and comparable climate finance data is an essential element in optimizing global and national climate policies and supporting climate investment decisions²¹. Therefore, China needs to put its efforts into the construction of MRV system which can clarify the gap between demand and supply. Domestically, the MRV system is helpful to understand the gap between the coordination and management of funds. Internationally, it can ensure the effective use of the climate finance we provided. Specifically, a climate finance performance assessment can be developed through the integration of "top-down" and "bottom-up" methods²². Globally, the MRV system can provide the total size of climate finance, the transfer channels, tools and situations of different regions and sectors. At national and industry level, the MRV system will provide a more detailed assessment towards use of climate finance.

21 UNEP. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya, 2016.

22 UNEP. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya, 2016.



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