

ANNIVERSARY REVIEW OF CHINA'S GREEN FINANCE REFORM AND INNOVATION PILOT ZONES

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Abstract

It is estimated that China's green low-carbon investment demand during the 13th-Five Year Plan period ranges from 6.6 to 14.5 trillion RMB. China's national and local governments are only able to provide a fraction of this capital, creating a significant unmet financing gap. To meet the need for green low-carbon financing in its cities, China needs environmental and climate policies that allow markets to provide clear signals of investment opportunities and risks. These signals will in turn drive increased private investment in China's green and low-carbon sectors – parts of the economy that could be central in supporting growth the coming decades. At the same time, the financial sector must furnish innovative financing tool are tailored to the unique characteristics of different environmentally-friendly projects.

Green finance is now a component of China's drive to build an 'ecological civilization'. In June 2017, a State Council executive meeting chaired by Premier Li Keqiang tasked the provinces of Zhejiang, Jiangxi, Guangdong, Guizhou and Xinjiang to develop green finance reform and innovation pilot zones. Five overall provincial plans for these new pilots were subsequently issued by the People's Bank of China, the National Development and Reform Commission, and five other government agencies. On the basis of these policy documents, these pilot zones are now developing green finance measures in Chinese regions with different economic characteristics.

Starting 2010, NDRC has overseen the successive launching of three batches of low-carbon pilots, now totaling 87 pilot regions. Over the past eight years, these pilots have gained experiences that can be replicated and scaled up throughout China. They are driving innovation in green and low-carbon policies, but increased access to financial resources is necessary for them to facilitate investments in complex and long-horizon projects. China's green finance and low-carbon pilot efforts could be united to match financial capital with low-carbon development.

Marking the first anniversary of China's green finance pilot program, this report provides an overview of China's green finance low-carbon pilot zones. It summarizes the work plans, policies and actions in each pilot zone. In Section 7, iGDP offers an assessment of China's green finance pilots and suggestions for refinement of this pilot program going forward.

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1 Background

In September 2015, the Central Committee of the Communist Party of China and the State Council promulgated the "General Plan for Reforming the System of Ecological Civilization". Among other measures, it proposed to:

1. Promote green credit, strengthen the construction of relevant systems in the capital market, support the establishment of various green development funds, and establish corporate environmental information disclosure and environmental cost assessment systems; and

2. Establish a system of compulsory environmental liability insurance stipulating enterprises connected with high-environmental-risk industries.

China's 13th Five-Year Plan for National Economic and Social Development (2016-2020) also contains green finance goals: "Establishment of a green financial system, encourage the development of green credit, green bonds, and the establishment of a green development fund." In 2016, the People's Bank of China (PBOC), the National Development and Reform Commission (NDRC), and other five ministries jointly issued "Guidelines for Establishing the Green Financial System." This succession of policy documents shows that support for green finance has achieved consensus among China's leaders. Implementation is now underway.

In June 2017, a State Council executive meeting chaired by Premier Li Keqiang announced the creation of green finance pilot zones in selected areas within Zhejiang, Jiangxi, Guangdong, Guizhou and Xinjiang provinces. Subsequently, an overall plan for each pilot zone was jointly issued by the PBOC, NDRC, and other five ministries, with local green finance goals based on the economic and urban development characteristics of each area.

Cities are the main consumer of resources and energy, and the main emitters of greenhouse gas emissions (GHGs). According to the United Nations Development Program, cities consume two-thirds of the world's primary energy and generate 70 percent of carbon emissions¹, and this proportion is gradually increasing. China's National New Urbanization Plan (2014-2020) forecasts that the urbanization rate will reach 60 percent by 2020, and the Development Research Center of the State Council estimates that China's urbanization rate will reach 65 percent by 2030. This means that an additional 300 million more people will move to China's already densely populated cities, highlighting the importance of enacting policies that promote low-carbon urban development.

2 Green Finance Policy Framework

Prior to the release of "Guidelines for Establishing the Green Financial System", China had issued piecemeal green finance policies, addressing a range of issues including green credit, green insurance, green bonds, and environmental information disclosure. The State Council, the People's Bank of China, the Environmental Protection Department, banking and insurance regulatory authorities², and the stock exchanges all participated in policy formulation. This diversity of institutional attention illustrates the cross-sectoral nature of green finance policy.

This section provides a chronology of policies related to green finance issued by the central government and financial regulatory agencies. The objectives of these policies are to raise the investment rate of return of green projects, reduce the financing costs of green projects, and improve the availability of environmental information. Regional government policies are not covered in this report.



Green Credit	Guidelines for Energy Efficiency Credit China Banking Regulatory Commission; National Development and Reform Commission Encourages and guides banking institutions to actively carry out energy efficiency credit business, prevent risks associated with energy efficiency credit, and support industrial restructuring.	
Green Bonds	Announcement on Issuing Green Bonds in the Inter-bank Bond Market People's Bank of China Clarifies the requirements for the issuance of green bonds by financial institutions, the submission materials, the filing materials and other requirements for issuing green bonds.	2015
Green Bonds	Guidelines for Issuance of Green Bonds National Development and Reform Commission Office Identifies 12 key areas supported by green bonds, requirements of corporate entity audit and other incentive related policies.	
Top-level Design	Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China National People's Congress Establishes a green financial system, develops green credit, green bonds, and establishes a green development fund.	2016
Green Bonds	Notice on Launching Green Bond Pilot China Securities Internet System Co., Ltd Clarifies the scope of green corporate bond industry projects as well as operational and implementation related requirements.	
Green Bonds	Guidance Opinions of the China Securities Regulatory Commission on Supporting the Development of Green Bonds China Securities Regulatory Commission Establishes that raised funds of green debt must be invested in green industry projects, encouraging institutional investors to invest in green debt, and establishing a "green channel" for green debt approval.	2017
	Overall Plan for Systematic Reform of Ecological Civilization CPC Central Committee; State Council of the People's Republic of China Promotes green credit, strengthens capital markets, supports the establishment of various green development funds, improves the guarantee mechanism for energy-saving and low-carbon projects, establishes corporate environmental protection information disclosure and environmental cost assessment systems.	Top-level Design
	Catalogue of Projects Supported by Green Bonds Green Finance Committee, China Society for Finance & Banking Defines the scope of green bonds and green industry projects, fundraising and fund management standards, information disclosure and evaluation or certification of independent agencies.	Green Bonds
	Notice on Piloting Green Corporate Bonds Shanghai Stock Exchange; Shenzhen Stock Exchange Clarifies the definition of green corporate bonds and management implementation related rules.	Green Bonds
	Guidance on Building a Green Financial System People's Bank of China; National Development and Reform Commission; Ministry of Finance; Ministry of Environmental Protection; China Banking Regulatory Commission; China Securities Regulatory Commission; China Insurance Regulatory Commission China Securities Regulatory Commission Supports local development of green finance, and encourage qualified localities to motivate more social capital to invest in green industries through specialized green guarantee mechanisms and the establishment of green development funds.	Top-level Design
	Guidelines for Non-financial Corporate Green Bond Financing Instruments National Association of Financial Market Institutional Investors Regulates the conduct of non-financial companies in issuing green debt financing instruments and provides specific guidance, including encouraging the issuance of green debt financing instruments and regulations, stipulating a registration system, clarifying disclosure information, and encouraging third-party certification.	Green Bonds
	Cooperation Agreement on Jointly Developing Environmental Information Disclosure of Listed Companies Ministry of Environmental Protection; China Insurance Regulatory Commission Updates the mandatory environmental information disclosure system for listed companies and urges them to take actions on social responsibility for environmental protection.	Environment Information Disclosure

Top-level Design	Overall Plan for Building a Green Finance Reform and Innovation Pilot Zone People's Bank of China; National Development and Reform Commission; Ministry of Finance; Ministry of Environmental Protection; China Banking Regulatory Commission; China Securities Regulatory Commission; China Insurance Regulatory Commission The overall green finance pilot plan for Ganjiang New District of Jiangxi Province, Gui'an New District of Guizhou Province, Hami City of Xinjiang Uygur Autonomous Region, Changji Prefecture and Karamay City, Guangzhou City of Guangdong Province, Huzhou City of Zhejiang Province and Zhangzhou City.	2017	Administrative Measures on Compulsory Liability Insurance for Environmental Pollution (Draft for Comment) Ministry of Environmental Protection; China Insurance Regulatory Commission Regulates the scope of compulsory insurance coverage and insurance liability, the uniform terms and rates, the floating rate, liability limit, insurance contract, underwriting, notification obligation, contract cancellation, notice of contract cancellation to environmental protection department, insurance period and renewal, insurance method, etc.	Green Insurance

3 Provincial and Municipal Characteristics of Green and Low-carbon Development in Pilot Zones

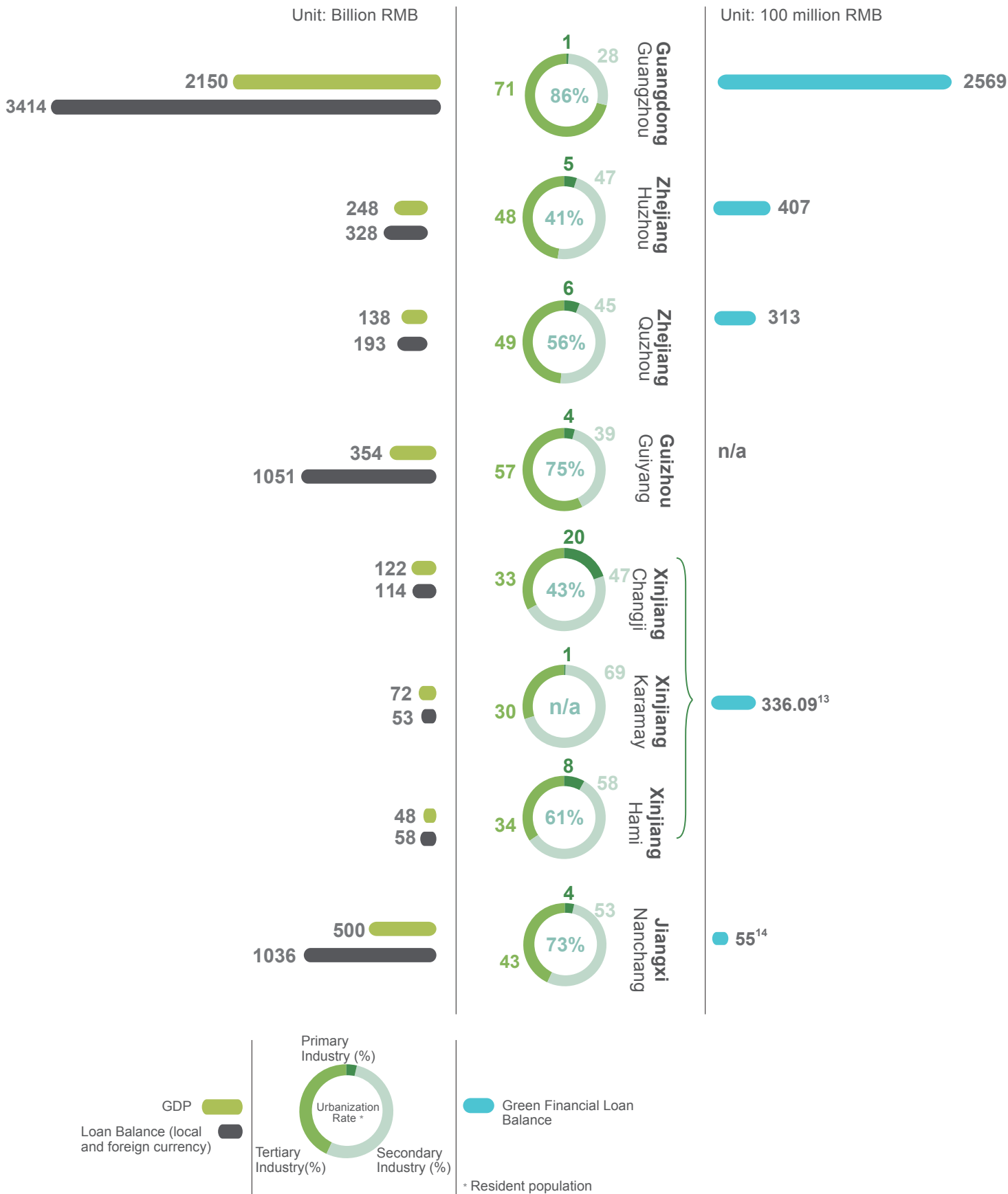
China's green and low-carbon pilot zones have been selected against two main criteria. First, they represent different stages of economic development. The pilots are located in China's eastern, central and western provinces, which vary in economic development, industrial structure, urbanization rates, and resource endowments. Second, the pilot zones have policy experience in green and low-carbon development. Many have been selected as green eco-city demonstration, low-carbon

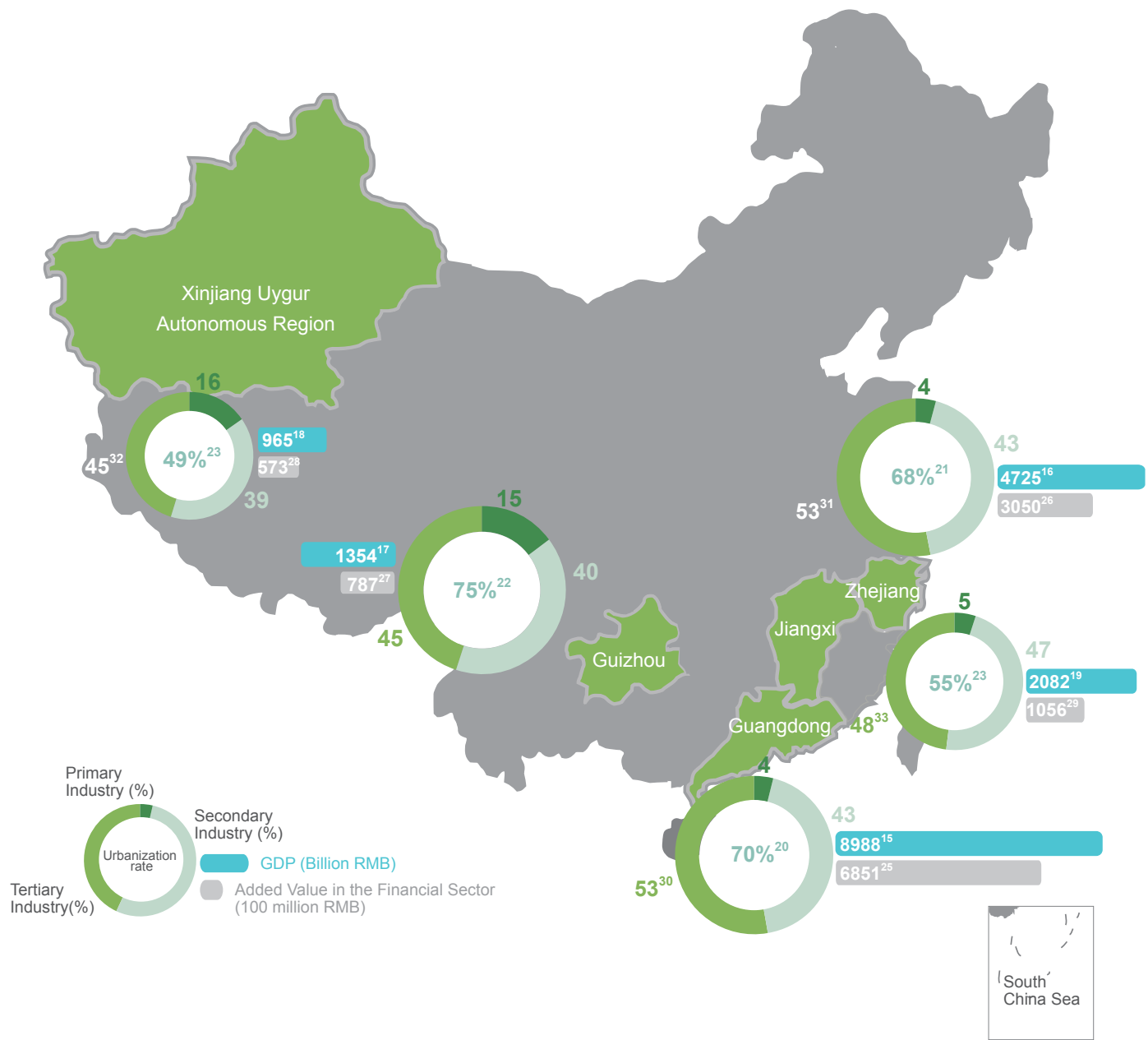
(city, industrial park, community) pilots, and ecological civilization demonstration zones. These demonstration projects have promoted low-carbon economic and industrial development to varying degrees, laying a foundation for green finance policy experimentation. This table includes macroeconomic indicators, social and economic characteristics, and other factors relevant to green development in China's five green finance pilot areas.

Green and Low-carbon Development in Pilot Zone Cities ³

	Guangzhou	Huzhou	Quzhou	Guiyang	Changji	Karam	Hami	Nanchang
Carbon Emissions Peaking Year	2020		2022	2025	2025			2025
Low-carbon Pilot City	●	● ⁴	●	●	●			●
Low-carbon Pilot Community	●	● ⁵	● ⁶		● ⁷	● ⁸		
Carbon Emissions Trading Pilot	●							
Comprehensive Demonstration of Fiscal Policy for Energy Conservation and Emission Reduction				●				
New Energy Pilot Demonstration City				●				
National Low-carbon Industrial Park Pilot				●				●
New Energy Vehicle Promotion and Application City	●			●				●
Transit Metropolis pilots	●	●		●				●
Green Circular Low-carbon Traffic Pilots	●			●				●
Green Ecology Demonstration City				●				
Urban Demonstration of Renewable Energy Building Applications				●				●
National New Urbanization Comprehensive Pilot	●	●	●					
Ecological Civilization Pilot Zone		●	● ⁹	●	●			●
National Smart City Pilot	●		● ¹⁰	●	●	●		●
Pilot of Kitchen Waste Utilization and Harmless Treatment	●	●	● ¹¹	●		●		●
Domestic Waste Classification Demonstration City (District)	●	●		●				

Overview of the Socio-economic Development of the Pilot Zone Cities in 2017¹²





4 Green Finance Pilot Zones Overall Plans

In June 2017, the People's Bank of China, the National Development and Reform Commission, the Ministry of Finance, the Ministry of Ecology and Environment, the China Banking Regulatory Commission, the China Securities Regulatory Commission, and the China Insurance Regulatory Commission jointly issued five overall green finance plans for Ganjiang New District in Jiangxi Province, Gui'an New District in Guizhou Province, Hami, Changji and Karamay in Xinjiang Uygur Autonomous Region, Huzhou and Quzhou in Zhejiang Province, and Huadu District in Guangdong Province.

These plans lay out pilot requirements regarding objectives, activities and complementary measures. The main tasks include building a green financial system, promoting innovation in green financial products and service methods, broadening the financing channels for green industries, building environmental rights trading markets, and constructing green financial infrastructure. The plans have different emphases based on the different industry and economic conditions in each pilot zone.

4.1 Overview of the Overall Plans

The figure below shows the main content of each overall plan. The square area indicates the frequency of occurrence in the plan - the larger the square area, the more pilot zones are

setting this target or applying this measure. A smaller square area may reflect the local specialty of the pilot zone.

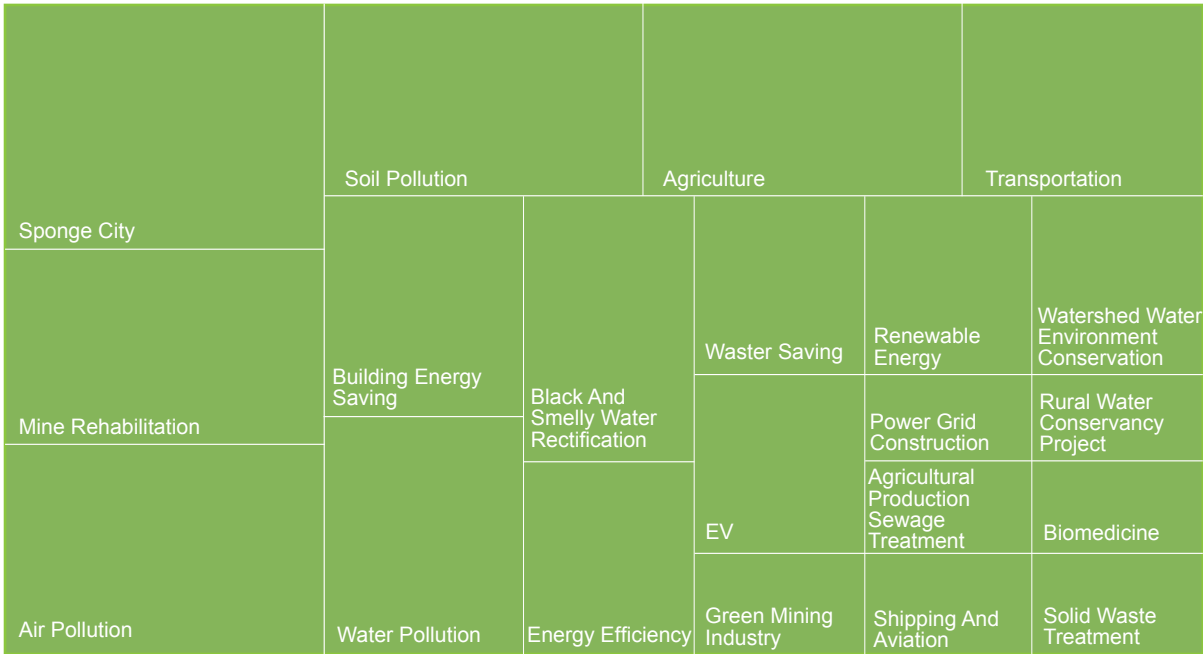
Targets				Main Tasks				
Preliminary establishment of the green finance system		Green finance grows		Establish the Organizational System of Green Finance				
	Explore experiences that can be emulated and propagated	Industry with high pollution, high energy consumption and over capacity has decreased		Establish green financial business divisions in bank or green finance specialized branches	Establish privately-owned banks, securities companies and insurance companies	Establish green specialized institutions		
	The scale of green credit increases	The coverage of green insurance expands	"Basic establishment of organizational structure system, product service system, supporting service system and market operation mechanism "		Evaluation index of green credit implementation	Speed up the reform of rural credit cooperatives into rural commercial banks	Establish banks in villages and small towns	
	Optimize the industrial structure and upgrade industry	Green bond increases in the scale of social finance	Green equity finance increases in the scale of social finance		Introduce equity investment funds, venture funds and other business patterns	Establish automobile finance companies		
Rate of non-green loans				Rating of the green banks				
Green Financial Risks Prevention and Resolution Mechanism				Broaden the Financing Channels of Green Industries				
The communication and interaction system and accountability system with stakeholders		Customer critical environment and social risk internal reporting system		Financing tools of green enterprise debt, corporate debt and non-financial debt		Acquisition and reorganization of green enterprises		
Green financial risk pre-warning mechanism	Information disclosure system	Reasonable investment and financing risk compensation system for green projects	Green financial bonds		Local government bonds		Energy-saving service industry investment funds	
Establish a sound environmental and social risk assessment and management process	Financial institutions implements stress tests on environmental and social risks	Make clear of the environmental standards and requirements for credit access	Green enterprises go public		Development of financing channels for domestic and foreign stocks and bonds in green enterprises	Green equity financing	Regional equity exchange market creates green environmental protection sector	
Improve the quantitative analytical ability for project environmental benefits and costs	Combine the environmental risk management with the performance appraisal system of financial institutions	Establish green credit risk monitoring and evaluation mechanism	Green financial information sharing system		Build Environmental Rights Trading Markets		Study data system construction of carbon sink and carbon investigation in bamboo forest	
Finance Service Mechanisms for Upgrading Green Industry	Green financial service platform			Establish green industry guarantee fund and transfer loan fund	Promote the construction of green financial infrastructure including green rating, green equity index and environmental impact assessment system	Support wind power, photovoltaic and other enterprises to declare voluntary emission reduction projects		Standardize and integrate forest right and grain trading market
	Service channels for green industry (project)				Financial data service platform			
	Alternative project library	Support the development of medium and small-sized cities and distinctive towns		Green payment project	Design financial evaluation index, support green enterprise credit, green loan business approval, investment monitoring and performance evaluation	Construction and application of rural credit system and assessment of farmer household credit rating act as the main basis for evaluation for credit rating of the project	Promote carbon asset mortgage and loan business	Guide the establishment of carbon funds

Green Insurance										Complementary Measures																			
Insurance fund investment on green project					Amend the laws or administrative regulations of compulsory liability insurance on environmental pollution					Establish green development professional insurance Company																			
					Promote environmental pollution liability insurance			Put more efforts on agricultural insurance			Development of oil pollution and damage liability insurance in Huzhou																		
								Establish green insurance compensation fund		Wind power and photovoltaic power generation index insurance																			
Guaranteee insurance of green enterprise loan					Green architecture insurance			livestock & poultry insurance for small holders		Contract energy and contract water-saving breach insurance		Financial institutions pay attention to the situation of enterprises insuring environmental pollution liability insurance in the catalogue of Supreme People's Court and Supreme People's Procuratorate																	
								Deepen the pilot work of compulsory liability insurance on environmental pollution			The first major equipment insurance																		
Innovation In Green Financial Products and Service					The innovation of hypothecation model on environmental rights and interests																								
The innovation of hypothecation model on environmental rights and interests					Innovation in green credit products																								
Securitization of green credit assets					Green industry funds					New energy automobile lease service																			
Contract energy management, water conservation management and environmental service finance			Credit products of PPP project		Establish financial risk mitigation funds			Medium small and micro-enterprise transferloan funds and the linked products of government, bank and insurance																					
								Enterprises with excessive emission under strict control over increasing new credit line																					
Green credit hypothecation guarantee model			Securitization of green financial assets		Investment and loan linkage pilot		New Energy vehicle consumption loan products			Innovation of loan products for fuel-saving and technically-improved small freight vehicles																			
Communication and Cooperation			Innovation of green credit product		Funds from overseas enter the pilot zone to set up institutions to carry out green project investment			Strengthen cooperation with Hong Kong and Macao		Support cross-border financing under the framework of a full-scale macroprudential policy																			
Green credit policy										Support foreign parent companies or subsidiaries of foreign-funded enterprises in pilot zones to issue RMB green bonds in domestic interbank market by rules																			
Industry standard			Employ experts to provide advice		Green financial trading institutions and foreign exchanges set up joint ventures			Promote the reform of enterprise foreign debt registration system management		Support foreign parent companies or subsidiaries of foreign-funded enterprises in pilot zones to issue RMB green bonds in domestic interbank market by rules																			
Policy Support										Financial support																			
Integrate and guide government industry funds										Improve risk sharing mechanism of revenue and cost					The major policy matters shall be submitted separately					Take the results of ratings as a reference for financial subsidies and government projects									
										Support green financial institutions by using monetary policy tools like rel oan and rediscount			Link environmental risk management of financial institutions , green credit implementation and green bank rating results with supervision ratings and institutional access to senior executives			Give policy support to financial institutions in the pilot zone			Support foreign financial institutions to set up branches										
													Take the results of ratings as a reference for financial subsidies and government projects			Policy measures to reduce the cost of issuing and managing green bonds			Strengthen the cooperation with Silk Road Fund, Asian Infrastructure Investment Bank, BRICS Development Bank and other institutions										
										Set up the credit guidance for green enterprises and green projects			Strengthen multilateral development of financing system																
Law Enforcement																													
Establish a corporate environmental and social responsibility investigation mechanism										Establish a corporate environmental information disclosure mechanism										Establish a complaints exchange mechanism for major environmental risks									
Increase inspection and enforcement of energy, environment, safety supervision, etc.										Strengthen social supervision																			
Talent Guarantee					Formulate high-level financial talent supporting policies					Organization and Coordination																			
Establish a committee of green financial reform experts or think tanks, hire consultants										Make clear of the responsibility division, supervision and enforcement regulations					Green finance reform and innovation enforcement regulations					Financial reform and innovation leader group									
Strengthen cooperation with third-party organizations to cultivate comprehensive talents in the fields of finance and environmental protection					Deepen cooperation with universities, research institutions and financial institutions to conduct financial development research					Cultivate comprehensive talents in finance and environmental protection					Advocacy programs					Performance evaluation by third-party									

4.2 Focus Areas Within Each Overall Plan

The overall plans of each pilot zone describe the main areas and industries for green finance development. These include sponge city construction, green mines, air pollution, and soil pollution - areas that are consistent with the national environmental protection goals in the 13th FYP and also reflect local green transformation priorities.

The graph below shows the main supported areas in each overall plans. The size of each square is proportional to the number of cities active in the policy area. The bigger size of the square, the larger the number of cities.



5 Innovative Practices in Pilot Zones

The overall plan is the core guidance document in each pilot zone. These plans serve as the foundation for specific actions such as policy design, implementation rules, and division of responsibilities. This

section summarizes the specific actions in each pilot area in the past year.

5.1 Supporting Policy

In the initial stage of green finance pilot activity, local governments are tasked with providing relevant policies for stakeholders such as banks, institutional/private investors, and project developers. Supporting

policies differ from the provincial level to the district level depending on local development characteristics. The following chart details the specific supporting policies in each pilot zone.

Supporting Policy		Guangdong		Zhejiang		Guizhou	Xinjiang Uygur Autonomous Region			Jiangxi
Pilot Zone		Huadu District, Guangzhou	Huzhou	Quzhou		Gui'an New District, Guiyang	Hami	Changji	Karamay	Ganjiang New District, Nanchang
Overall Plan	Overall Plan for Building a Green Finance Reform and Innovation Pilot Zone in Guangdong Province	Overall Plan for the Construction of Green Financial and Innovation Pilot Zone in Huzhou City and Quzhou City, Zhejiang Province	Overall Plan for the Construction of Green Finance Reform and Innovation Pilot Zone in Huzhou City and Quzhou City, Zhejiang Province			Overall Plan for the Construction of Green Finance Reform and Innovation Pilot Zone in Gui'an New District, Guizhou Province	Overall Plan for Building a Green Finance Reform and Innovation Pilot Zones in Hami, Changji, and Karamay, Xinjiang Uygur Autonomous Region			Overall Plan for Building a Green Finance Reform and Innovation Pilot Zone in Ganjiang New District, Jiangxi Province
	Green Finance Five-Year Plan	13th Five-Year Plan for Green Finance Development in Huzhou City ³⁴	13th Five-Year Plan for Green Finance Development in Zhangzhou City (under preparation)			—	Planning a corresponding five-year plan			Construction Plan of Green Finance System in the '13th Five-Year Plan' of Jiangxi Province ³⁵
Provincial Document	—		Promoting the Action Plan for the Construction of Green Finance Reform and Innovation Pilot Zone in Huzhou and Quzhou City ³⁶			Mission List of Building Green Finance Reform and Innovation Pilot Area in Gui'an New District ³⁷ , Implementation Opinions on Accelerating the Development of Green Finance ³⁸ , Implementation Rules for the Construction of Green Finance Reform and Innovation Pilot Zone in Guizhou Province	Implementation Opinions on the Construction of a Green Financial System in the Autonomous Region ³⁹ , "Implementation Rules for the Pilot Program of Xinjiang Green Finance Reform and Innovation Pilot Area, Notice on Conscientiously Implementing the Spirit of the 19th National Congress of the Communist Party of China to Accelerate the Construction of the Pilot Area for Green Finance Reform and Innovation in Xinjiang			Implementation Opinions of the People's Government of Jiangxi Province on Accelerating the Development of Green Finance" ⁴⁰ , Implementation Rules for the Construction of Green Finance Reform and Innovation Pilot Area in Ganjiang New District ⁴¹
Municipal Policy Document	—	National Green Finance Reform and Innovation Pilot Zone Construction Implementation Plan in Huzhou City ⁴²	Opinions of the Municipal Government of Quzhou City on Promoting the Construction of a Green Finance Reform and Innovation Pilot Zone ⁴⁴			—	Implementation Plan for the Construction of Green Finance Reform and Innovation Pilot Zone in Hami City; "Integrated Action Plan for Ecological and Environmental Issues"; "Hami City Energy Consumption and Strength Dual Control and Control of GHG Emission Targets Implementation Plan	Changji Prefecture Construction Green Finance Reform and Innovation Pilot Zone Implementation Plan ⁴⁵ , Notice on Strengthening the Guiding Opinions on the Construction of the Green Finance Franchise System ⁴⁶	Implementation Plan for the Establishment of a Comprehensive Green Financial Innovation Pilot Zone in Karamay City; Green Technology Demand in Karamay City	—

Supporting Policy	Guangdong	Zhejiang	Guizhou	Xinjiang Uygur Autonomous Region	Jiangxi
District Document	Implementation Rules of Green Finance and Green Industry Innovation and Development in Huadu District, Guangzhou ⁴⁷ ; Implementation Rules of Green Finance and Green Industry Innovation and Development in Huadu District, Guangzhou ⁴⁸ ; Implementation Rules for the Development of Green Listed companies in Hued District, Guangzhou ⁴⁹ ; Green Finance and Green Industry Innovation and Development in Huadu District, Guangzhou ⁵⁰	-	Three-Year Action Plan for the Development and Construction of the Green Financial Port in the Western Region of Gui'an New District (2015-2017) ⁵¹ ; Policy Measures to Support Green Finance Development in Gui'an New District; Gui'an New District Green Finance Reform and Innovation Pilot Area Construction ⁵² ; Implementation Plan	-	Implementation Opinions on Promoting the Development of Green Finance ⁵³ ; Work of Green Finance Reform and Innovation Pilot Area in Ganjiang New District
Bank	-	Huzhou Green Bank Evaluation Standards ⁵⁴ ; Huzhou Green Finance Specialized Organization Construction Code; Huzhou Green Bank Franchise System Construction Code ⁵⁵ ; Notice on Promoting the Construction of Banking Green Finance Franchise System in Huzhou ⁵⁶ ; Green Banking Three-Year Action Plan in Zhejiang; Green Finance Franchise System Supervision Standards	-	-	Opinions on Supporting the Development of Green Bank Institutions in Ganjiang New District, Jiangxi Province ⁵⁷ ; In 2017, the banking institution of Ganjiang New District, Jiangxi created the 'Green Branch Bank' Working Plan ⁵⁸ ; Interim Measures for the Administration of Green Branches in Ganjiang New District in Jiangxi ⁵⁹ ; Notice on Doing a Good Job in the Establishment of 'Green Branches' in Banks in Jiangxi Province in 2017 ⁶⁰ ; Interim Measures for the Administration of Green Branches of Ganjiang New District in Jiangxi
Green Credit	-	Taxonomic Labeling Mechanism of Green Credit	Implementation Measures for Green Credit Evaluation; Opinions on Supporting Green Credit Products and Collateral Innovations	Comprehensive Service Program on Green Credit ⁶¹	Interim Measures for the Assessment and Evaluation of Green Credit Work and Differentiation Supervision; Implementation Opinions on Green Credit Work of Jiangxi Banking Industry

Green Project/ Enterprise	Measures for the Management of Green Enterprises and Project Library in the Green Finance Reform and Innovation Pilot Zones ⁶² , Rules of Green Enterprise Certification;	Working Guide on Green Evaluation in Quzhou City; Certification Evaluation Methods on Green Enterprise in Huzhou City ⁶³ ; "Green Project Recognition Evaluation Methods in Huzhou City" ⁶⁴ , Rules of Green Finance Project Evaluation; Rules of Green Financing Enterprise Evaluation	Guiding Opinions on Credit Grants for Green Enterprises and Typical Green Projects in Guizhou Province; Establish certification standards for green businesses and projects	-	Develop standards for green project
	-	Notice on Deepening Green Insurance Innovation and Accelerating Environmental Pollution Liability Insurance in Huzhou City, ⁶⁵ Safety Production and Environmental Pollution Comprehensive Liability Insurance	Implement Innovation Plan on Green Insurance Work in Gui'an New District	-	-
	Guidelines and Policy compilation for Green Finances; Green Financial Products Compilation in Guangzhou City; Compilation of Project Financing in Green Industry	Construction Plan for Green Finance and Credit Information-sharing Platform"	Guiding Opinions on Green Finance to Promote Forestry Reform and Development; Green Financial Risk Monitoring and Evaluation Measures; Green Financial Risk Early Warning Working Plan in Gui'an New District; Opinions on Supporting the Instruction and Cultivation of Green Finance Professionals in Gui'an New District	Implementation Rules of Monetary Policy Tools that Support Green Economy Development in Green Finance Reform and Innovation Pilot Zone (Provisional)	-
Industrial Policy					

5.2 Institutional Set-up and Complementary Measures

In 2017, pilot zones started to build institutional mechanisms and complementary measures to provide a foundation for activating green financial markets, including establishing leadership working groups, talent introduction mechanisms, arranging transformation funds, and establishing databases to provide support from different angles. The table below summarizes institutional mechanisms and safeguards in each pilot area.

Pilot Zone	Guangdong province		Zhejiang province		Guizhou province		Xinjiang province			Jiangxi province
	Guangzhou	Huadu district	Chouzhou	Quzhou	Guian new district	Hami	Changji state	Karamay	Ganjiang new district	
Green Financial Reform And Innovation Leadership Group	Set up a group	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Set Up An Office	✗ no special office, the provincial Finance office to undertake the daily work.	–	✓, Set under the municipal Finance office	✓, Set under in the Finance Office of the provincial government.	✓, Set under the Finance Office of the provincial government.	✓, Set under Urumqi Central branch of the People's Bank.	–	–	✓ Set under the Finance Office of the provincial government.
	Group Leader	Administrative leaders in province	Secretary, Mayor	Mayor	Governor	–	Vice president of the Autonomous Region party committee, chairman of the Autonomous Region	–	–	Executive Vice Governor
Financial Investment	Work Mechanism	Guangdong green financial reform and innovation work leading group working system	–	Under research and formulation	Provincial Government Finance Office set up a special working class from Guiyang Central Sub-branch of People's Bank of China, Provincial Environmental Protection Department and relevant financial institutions	–	–	–	–	Joint conference system of green finance
	Management Methods Of Special Funds	Huadu District of Guangzhou supports the management measures of green finance and green industry development special fund	–	–	Measures for the management of Financial Industry Development Award in Guizhou Province	–	–	–	–	–
	Establish Special Funds	1 billion yuan per year	1 billion yuan per year	1 billion yuan per year ⁶⁶	–	–	–	–	–	–
Talent Guarantee	Talent Subsidy Policy And Fund	✓	✓	✓	✓	–	–	–	–	✓

Green Project/Enterprise Library	Green Project/Enterprise Library	✓	✓	✓	✓	
Capacity-Building	Establishment Of Expert Committees/Advisory Group	Green Finance Special Committee of Huzhou Finance Society ⁶⁷ Green Finance Reform and Innovation Expert Advisory Committee ⁶⁸	Green Finance Special Committee of Quzhou Financial Society	–	Green Finance Special Committee of Jiangxi Provincial Finance Society ⁶⁹	
Cooperation	Promoting the establishment of the first pilot regional joint conference mechanism	China Standardization Research Institute cooperates with Huzhou People's government to promote Huzhou green manufacturing and green finance standardization construction work ⁷⁰	–	A report on the construction of Guizhou's green finance system by the Guiyang branch of the People's Bank ⁷¹	Xinjiang Green Finance reform and Innovation Pilot Zone work leading group signed strategic cooperation agreement with Lianhe Equator ⁷²	The Green Finance Research Institute of Central University and Jiangxi Provincial government Finance office work together to deepen Beijing-Jiangxi Green Financial cooperation ⁷³
Green Finance Specific Branch	ICBC, Bank of China, CCB and other banks upgrade Huadu branch to Green Branch, Guangzhou Branch, Industrial Bank, Pudong Development Bank has set up the Green Finance Division, the construction Bank in Huadu District set up a green financial innovation center	There are thirteen green franchises in the city, of which Huzhou Bank has become one of the pilot financial institutions for environmental information disclosure in China and the United Kingdom, Anji agricultural and commercial firm set up a bank green Finance Division with small legal person, and Nanxun agricultural firm set up a green franchise branch ⁷⁴	There are fourteen green finance pilot banks, six demonstration banks, the coverage rate for agency type is 100 percent. The People Property Insurance Quzhou Branch establishes the first Green Insurance Business Department in the system. ⁷⁵	The Guiyang branches of Industrial Bank, Huaxia Bank, Agricultural Bank of China, Guizhou Bank and has set up the green finance division; PICC Insurance Group has set up a green Product service innovation laboratory in Gui'an new district; the Green PPP finance division is established at the Guiyang branch of Pudong Development Bank; the original Guiyang branches of Bank of China and CCB has carried out green transformation; Guiyang Bank has set up a green finance division. ⁷⁶	Nine Green Finance Divisions and one green Finance special branch have been set up ⁷⁷	24 banking financial institutions in the district have established color Finance division, Green outlets or green counters
					Xinjiang Karamay Kunlun Bank Zhonglou Sub-branch	ICBC and other six banks has set up green sub-branch in the Ganjiang new district; Jiujiang Bank has set up green finance division; the Construction Bank, Industrial Bank and postal Reserve Bank has set up green Branches; PICC property Insurance has set up Green Innovation Laboratory

5.3 Green Financial Products and Service Innovation

Green finance support focuses on pollution control, infrastructure construction, building, transportation and industry as well as clean energy. Projects within these areas have different features and require

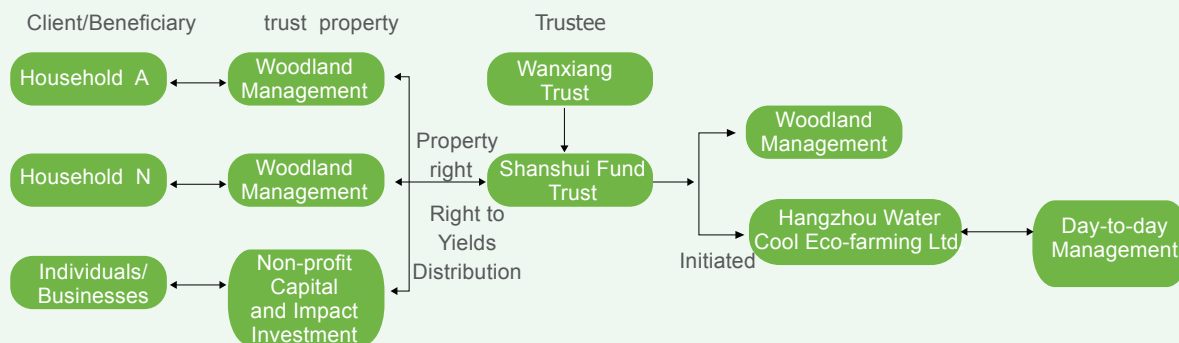
different kinds of green financial products to meet capital needs. Information sharing mechanisms also help to lower the threshold for enterprise financing.

Case 1

Longwu Land Trust⁷⁸

Founded in 1981, Longwu reservoir provides drinking water for about 4000 people living in surrounding villages. In 2014, the water quality was found to have dangerously high levels of nitrogen, phosphorus, and dissolved oxygen, originating from pesticides and chemical fertilizer used by local farmers to boost the yield of Moso bamboo. To help finance water resource protection projects, Hangzhou Wanxiang Trust set up Shanshui Fund Trust in November 2015. With The Nature Conservancy in an advisory capacity, the trust brought scientific management and environmentally-friendly industrial development to

nearly 500 mu (about 82.37 acres) of bamboo forest water. Upon admission into the trust, farmers signed a contract describing management rights. Public welfare assistance and impact investment were also included. A part of the fund was used to pay for the trusteeship of farmers' forest land, and limited funds were used to set up Hangzhou Shuike eco-agriculture development Co., Ltd. gradually transforming the farmer's mode of production and income structure. The trust structure is as follows:



After two years, the water quality of Longwu Reservoir improved to the first level (previously it was at level four), the indicators of total phosphorus and dissolved oxygen decreased greatly (only total nitrogen didn't see reduction). Shuike company also advanced the

production of green agricultural products in Qingshan Village to promote green consumption, community leadership and ecotourism. Local farmers were able to increase incomes by means of agritourism and the public deepened its awareness of environmental protection.

Case 2

Huzhou Online Green Finance Service Platform for SMEs⁷⁹

Huzhou Finance Affairs Office built an online financing service platform for small and medium enterprises, call "Ludaitong", as the innovative finance approach of linking banks and enterprise. The platform performs three functions. First, as a green credit and loan product market it helps SMEs communicate their financing needs and identify lending banks. Second, the platform promotes the transformation of bank services. Banks provide on-the-spot services after enterprises communicate their financing needs. Third, the platform enables financing information and data to be shared and exchanged between enterprises, and provides a reference for banks to evaluate enterprise credit.

By integrating data from Zhejiang Public Data Management Center, Huzhou Information Center and a third party, the platform improved the credit database for enterprises. The financing channels for enterprises were enriched by gathering credit and loan product information from financing institutions throughout the city. Financial services were further strengthened by allocating service resources for the relevant departments and city financing institutions. The platform emphasized providing SMEs with comprehensive financial services by widening the financing channels, aiming to establish a precise exchange platform between the funders and enterprises, and improving the service efficiency of financial institutions.⁸⁰

6 Pilot Zone Progress to Date

Guangdong Province

- By the end of March 2018, the green loan balance of banks in Guangzhou was 259.6 billion RMB, increasing by 34.7% compared to last June when the pilot zone was approved. This was higher than the total loan growth rate of 20%.⁸¹
- By the end of December 2017, Huadou District had 784 new companies with registered capital of more than 10 million yuan growing 50%; the green loan balance in banking industry was 5.105 billion yuan, accounting for 6.52% of total loan balance.⁸²

Zhejiang Province

- By the end of 2017, the green credit balance of the whole province was 687.5 billion RMB with year-on-year growth of 44%.⁸³
- The green credit balance reached 79.99 billion yuan in Huzhou, accounting for 24.38% of the total credit balance. The overall scale of green industry funds in the whole city has now reached 23.521 billion RMB.⁸⁴
- The green credit balance of Quzhou reached 31.27 billion yuan, accounting for 13.3% of total loans.⁸⁵

Guizhou Province

- By the end of 2017, the green loan balance of the whole province (according to green loan statistical caliber of People's Bank of China)⁸⁶ was around 168.97 billion yuan, accounting for 8.1% of the total RMB loan balance of financial institutions in the province. Thirteen financial institutions have already established or are preparing to establish green branches (or a green financial business division) in Gui'an New District. Guizhou Bank and Guiyang Bank are preparing to issue green financial bonds and list 60 green companies in the Guizhou Stock Exchange Center within a year. Four green funds were set up and more than 3.8 billion RMB was collected.⁸⁷

Xinjiang Uygur Autonomous Region

- By the end of 2017, the green project in Xinjiang Uygur Autonomous Region had a total of 1664 projects, including 365 complete green projects conforming to the green standard and 1299 normal projects.⁸⁸ The balance of green loans in banking financial institutions was 189.377 billion RMB. By the end of March 2018, the credit balances in three pilot zones were 33.609 billion yuan, accounting for 14.27 percent of the loan balances, among which the green credit balance in Hami was 22.566 billion yuan, increasing 26.41 percent year-on-year, and was higher than the average growth of loans by 21.04 percent. The non-performing loan rate was zero, lower than the average rate of non-performing loans by 1.46 percent percentage points. Green credit accounted for as much as 39.09 percent of the RMB loans, up 6.66 percent from a year earlier.⁸⁹

Jiangxi Province

- At the end of 2017, the balance of green credit in Jiangxi province exceeded 170 billion yuan with 38.4 percent growth, among which the balance in Ganjiang new district was 5.5 billion RMB, with growth of 29.6 percent. A total of thirteen green enterprises were listed in the NEEQ, and there were more than 200 green enterprises listed in the Jiangxi Joint Equity Trading Center. In 2017, Pingxiang HSBC successfully issued Jiangxi's first green enterprise bond with a circulation of 2 billion yuan.⁹⁰

7 Summary and Recommendations

Although the green finance pilot zone overall plans have different areas of emphasis, they are all designed to promote economic and industrial restructuring through the establishment of a green financial system, and to help drive local green development. The focus of the work in each pilot zone over the past year has been on building institutional mechanisms, where government plays a leading role but

allows markets to allocate resources to support the construction of ecological civilization with higher efficiency and lower cost. After a year of practice, the green finance work in the pilot zones has been fruitful. According to PBOC, as of the end of March 2018 the balance of green loans in the five pilot zones had reached more than 260 billion RMB, with a 13 percent increase since the initial approval

of the pilot zones. This rate of increase is higher than other loans in the pilot zones. As the total volume has expanded, the non-performing rate of green credit assets was only 0.12% - 0.94% lower than the average non-performing rate in the pilot zones.

Working plan priorities vary by pilot zone

The plans for Quzhou and Huzhou prioritize upgrading the industrial structure. Local plans have promoted livestock insurance products, such as insurance coverage for deceased pig stock, as well as ship oil pollution damage liability insurance.

Huadu District in Guangzhou is highlighting overseas investment cooperation, especially financial cooperation in Hong Kong and Macau and the support of overseas investment in local green finance. It is also committed to innovation in new energy vehicle financial products.

The three pilot zones in Xinjiang Uygur Autonomous Region draw on the abundant natural resources of the region, focusing on the development wind power and photovoltaics, and improving the development level of high-end manufacturing through innovative financial products such as wind power and photovoltaic power generation index insurance.

Given the high proportion of primary production in the Guizhou, the green financial products and services in this pilot zone focus on modernizing agriculture, rural water conservancy projects and rural production, and sewage treatment. Rural development is emphasized in building the financial infrastructure, using household credit ratings as the basis for project credit rating.

In Ganjiang New District in Jiangxi Province, to support key industries and infrastructure, the pilot will establish a construction and development guidance fund for the development of Ganjiang New District through a state-owned capital operation company. Fiscal risk mitigation funds, SMEs loan transfer funds, political and banking insurance products for SMEs, and other products will play a role in supporting the development of green finance policy.

Progress made in institutional mechanisms, policies and complementary design

Pilot areas have established green finance work leading groups to promote the work of the green financial pilot zones through government leadership at the provincial and municipal levels. Working groups in some pilot zones are led by the provincial or municipal government leadership, reflecting the provincial government's importance in the construction of the pilot zone.

In terms of policy design, some pilot zones have established a policy framework consisting of provincial, municipal, district and industry regulations, covering green credit, green insurance, industry supervision, and evaluation indicators. But it is important to note that green finance involves not only the financial industry and regulatory authorities, but also the ministries of ecological environment, development and reform, agriculture, housing construction and transportation. Policy formulation needs to be based on the establishment of information sharing and cooperation mechanisms. Inter-departmental cooperation and policy docking mechanisms are not clearly stated in working plans, but they are likely to appear in the "Implementation Rules" to be issued in each pilot zone.

In terms of the complementary mechanisms, some pilot zones have set up special funds to ensure the effective implementation of the pilot work. In addition, the pilot areas have established a talent guarantee mechanism and subsidy funds to attract new professionals to pursue careers in the green finance industry. They have also promoted local green financial research institutions or platform institutions to strengthen exchanges and cooperation with other regions.

Building the green financial system, green credit grows fastest, and low-carbon elements need to be strengthened

"Guiding Opinions on Building a Green Financial System" shows that the green financial system mainly includes green credit, securities market, green development funds, green insurance and environmental equity markets. Specific work in these areas includes policy mechanism design, statistical system construction, evaluation indicators, information sharing mechanisms, and finance tool development.

Notably, green credit is the focus of the pilot areas at this stage. Pilot areas have carried out work in green project/enterprise identification, green credit performance evaluation systems, credit statistics systems, and environmental risk stress tests. This has improved key indicators such as the green credit balance.

It should be pointed out, however, that low-carbon considerations do not currently play a prominent role in pilot area working plans. Despite the fact that "Guiding Opinions on Building a Green Financial System" calls for "institutional arrangements for supporting the green economy transition through financial instruments, such as green credit, green bonds, green insurance, carbon finance and related policies" and emphasizes the development of carbon-related financial products and derivatives such as "carbon futures contract, carbon swaps, carbon options, carbon leases, carbon bonds, carbon asset securitization and carbon funds", carbon finance has not yet been assimilated into the green financial system frameworks of the pilot areas.

Some pilot zones have proposed actions on forest carbon sinks, carbon stock assessment, carbon inventory, carbon emission rights collateral, carbon funds and other aspects. These practices are distinguished with the Guiding Options in terms of the scale and comprehensiveness.

Given the fact that five green finance pilots are located within China's national low-carbon pilots and one provincial low-carbon pilot city. These low-carbon pilot cities have proposed peak years for carbon emissions and have already accumulated years of experience in low-carbon research, industrial restructuring, institution-building, and policy measures. It is precisely in these low-carbon development pilots where green finance can lend support to low-carbon efforts.

Financial product and service innovation needs to correspond to the attributes of green projects

Low-carbon infrastructure can be divided into purely public welfare projects, quasi-public welfare projects, and commercial projects, depending on the products and services provided by the infrastructure and the possibility of charging based on the services used. Pure

Fields	Industries	Properties	Investment and Financing Mode
Pollution Control And Ecological Restoration	Water pollution, air pollution, soil pollution, etc.	Strong public welfare great investment long cycle period	Policy bank loans financial funds commercial bank loans
Resource Saving And Efficient Utilization	Power transmission, natural gas, heat transmissions, and water supply system, etc. Sewage/solid waste treatment, etc.	Quasi-public welfare great investment Long cycle period steady revenue	PPP (franchise, government purchase of service) green corporate bond green asset pledge
Transportation	Rail Transit	Strong commercial property great investment Long cycle period steady revenue	PPP (franchise, government purchase of service)
	Bus Transit	Quasi-public welfare (relying on government subsidies) Investment scale is smaller than rail transit. Stable revenue	Green bond
Energy	Scale-up Renewable Energy Power Station	Strong commercial property great investment Long cycle period steady revenue	Green bond Green credit
	Distributed power station	Commercial property small investment (small scale) Long cycle period steady revenue	Green finance lease
Architecture	Energy saving reconstruction of existing buildings newly-built energy saving buildings	Commercial property small monomer size, large overall investment	Green credit Green insurance

public welfare projects can be developed by special government funds and financial leasing. Quasi-public welfare projects such as water conservancy, power generation facilities, water supply pipelines, waste treatment, and sewage treatment can cover costs with pricing, while government authorities guide the provision of capital. Commercial projects such as power transmission and distribution, and natural gas production and transportation can be mainly supported by private capital.

Certification methods for green project/ enterprises need to be unified, and environmental quality improvement should be incorporated in green financial work assessment

The pilot zones are prioritizing the establishment of green project/ enterprise certification methods. Almost all pilot zones have developed certification methods and established green projects/enterprise catalogues, but the standards for green projects have not yet been nationally unified. Additionally, public information about regional standards is limited, making it difficult to fully understand the specific conditions of each pilot zone. This diversity of standards is hampering market integration, coordinated development, and international cooperation. Comparing every pilot zones, Huzhou's standard system stands out as relatively complete, with certification methods and specifications including green projects, green enterprises, and green banks already established.

The "Financial Industry Standardization System Construction and Development Plan (2016-2020)", released in 2017, lists green finance standardization as a key project. Standardization will lead to the adoption of product standards, information disclosure standards, and financial institution green credit ratings. The ultimate goal is to build a green financial standards system, involving different levels of national standards, industry standards, group standards, and corporate standards. Green finance pilot zones can provide experience in standard setting for the construction of the national green financial standards system.

Innovation in local green finance is still in the early stages. In addition to the need to strengthen the standards system, the pilot zones are also faced with such challenges as inadequate access to environmental information, imperfect green financial statistical systems, and lack of knowledge of environmental protection, energy conservation, and emission reduction. During the 13FYP period, the core objective of environmental governance is the improvement of environmental quality, to be measured by changes in specific environmental indicators. To complement this national effort to improve environmental governance, green finance pilot zones should incorporate environmental indicators into their performance appraisal systems.

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- ⁹ Provincial Ecological Civilization Pilot Zone
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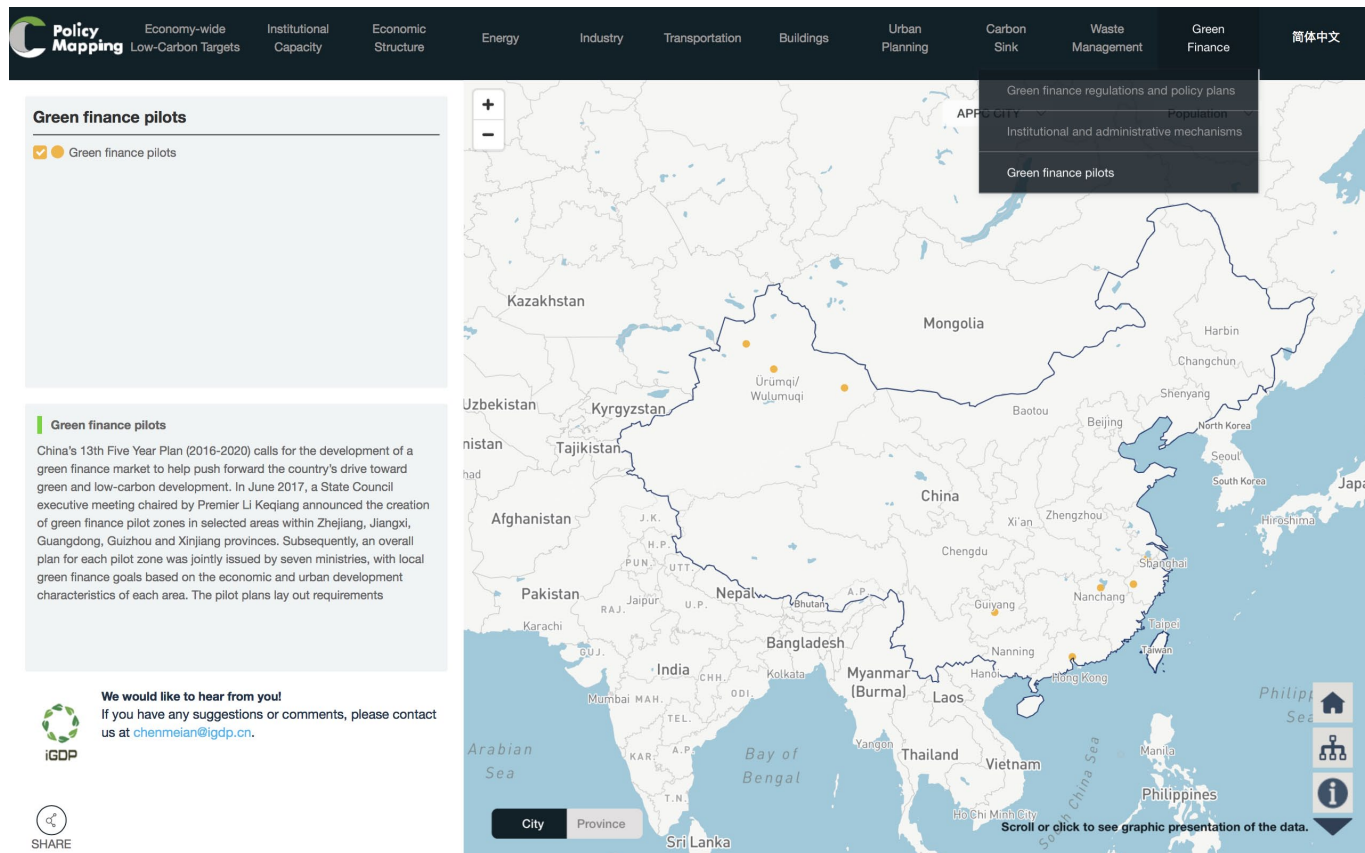
iGDP Policy Mapping

iGDP Policy Mapping is an online database and interactive platform that tracks China's green and low-carbon development policies and actions at both national and subnational levels. iGDP Policy Mapping promotes best practices and learning-by-doing by displaying publicly-available key policies and performance indicators on low-carbon development. The iGDP Policy Mapping team also regularly issues Policy Progress Factsheets and Regional Low-Carbon Development Performance Reports.

To address climate change and promote green and low-carbon economic growth, the Chinese government has launched multiple pilot programs at the subnational level. Pilot provinces and cities are encouraged to explore and test policies that can then be scaled-up to the national level. Because these pilots differ in their geographic, demographic, and economic characteristics, they have developed a wide variety of policies, measures, and other approaches that fit local conditions. iGDP Policy Mapping uses a comprehensive policy framework and a consistent set of indicators to provide a structured overview of these different low-carbon policies throughout China.

iGDP Policy Mapping applies a holistic framework of ninety-nine indicators under eleven categories to track efforts and progress on low-carbon development. The eleven categories are: Economy-wide Low-Carbon Development Targets, Institutional Capacity, Economic Structure, Green Finance, Energy, Industry, Transportation, Buildings, Urban Planning, Carbon Sink, and Waste Management. These categories and indicators are based on commonly-used international and domestic analytical frameworks for the assessment of green and low-carbon policy. The policy data in iGDP Policy Mapping comes from government documents on low-carbon development issued by the State Council and others central government agencies during the 12th Five-Year and 13th Five-Year Plans, China's official statistical yearbooks, and the websites of provincial and municipal governments.

iGDP Policy Mapping, which can be accessed at www.cepm.igdp.cn, is continuously expanding to cover more cities and policy areas. It is updated annually, with the most recent update occurring in December 2018.



About innovative Green Development Program

Innovative Green Development Program's (iGDP) mission is to advance robust policy and actions to address green growth challenges at the subnational level. We create analytical tools, share professional knowledge, and facilitate multidisciplinary dialogues that foster integrated solutions for regions, cities and communities. To tackle the climate change challenge, we believe real solutions lie at the intersection between the economy, environment and energy, and require innovation in policy, business and public behavior.

iGDP was launched with funding and operational support from Energy Foundation China. iGDP also serves as the committee member of the China Green Finance Committee and the executing agency of the Green Low Carbon Development Think Tank Partnership.

Our areas of focus are:

- Sustainable Cities
- Green Economic Growth
- Climate Policy
- Behavioral Change

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