中国人民银行
THE PEOPLE'S BANK OF CHINA
Research Bureau of People's Bank of China

UNEP

Inquiry: Design of a Sustainable Financial System

ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM

Detailed Recommendations 2: Develop Green Funds

2

This is a background paper to the report: *Establishing China's Green Financial System*
published by the Research Bureau of the People's Bank of China
and the UNEP Inquiry into the Design of a Sustainable Financial System.

Detailed Recommendations 2: Develop Green Funds

By integrating the social and environmental concerns of investors and their financial investment objectives, green industry funds are endowed with the mandate to pursue maximal overall social welfare instead of purely commercial interests. Green industry funds not only proceed from an economic perspective but take into account the environmental impacts of investment objects as well.

(I) Definition of green industry funds

Green industry funds come in various types. In terms of the level of government participation, green funds can be divided into government-backed environmental protection funds, green funds of PPP, as well as purely market-based green funds; in terms of investment objects, green funds can be divided into green industry investment funds, green bond funds, green share funds, green hybrid funds, etc. These types of green funds have different objectives, fund sources, investments, operational mechanisms and organizational patterns.

Green industry funds are a category of green funds encouraged by the State Council. The *Opinions of the State Council on Strengthening Major Environmental Protection Work* promulgated in 2011 explicitly stipulate that environmental industry development funds should be established through multiple channels to broaden the financing avenues for the development of environmental industry. According to the *Interim Administrative Measures for Industry Investment Funds* (hereinafter referred to as the 'Measures') promulgated by the National Development and Reform Commission, industry investment funds refer to a collective investment system of interest and risk sharing through equity investment and operational management services for unlisted companies. Investment fund companies are established by offering fund shares to investors and fund managers will act as fund advisors or otherwise, fund advisors and custodians can be entrusted for the management and custodianship of fund assets to be invested in such areas as start-ups, corporate reorganization and infrastructure constructions. In addition, the Measures also stipulate that industry funds may only be invested in unlisted companies and that the investment areas reflected by the name of a fund shall account for no less than 60 percent of the aggregate value of fund assets. Idle funds arising from the process of investment can only be deposited in the bank or used for the purchase of negotiable securities including treasury bonds and financial bonds. According to this regulation, green industry funds should be invested in unlisted green enterprises. In addition, more than 60 percent of the total value of fund assets should be invested in the area of green and environmental industries. Green industry funds fall into the category of industrial investment funds.

(II) Experiences of industry funds in developed countries

1. Characteristics of industry investment funds of the US, Japan and Europe

China's industry investment funds are reincarnated from Western venture investment and private equity funds and represent an innovation with both the common attributes of similar foreign funds and Chinese characteristics as well. In Western countries and Japan, Southeast Asia and Chinese Taiwan and Hong Kong, industrial investment funds mainly appear in the form of venture capital or venture investment funds.

2. Inspirations for China's green industry funds

International experiences of green industry funds provide us with the following inspirations:

First, green industry funds can broaden financing channels and create a diversified structure of investment entities. Many green projects are high risk and thus incompatible with the financing channels dominated by fiscal funds and bank credit. In the long run, green industry funds should be financed by the private sector. Policy and institutional adjustments should be made to broaden the financing channels of green industry funds and develop a diversified structure of investment entities with the joint participation of private capital, pension funds, financial institutions, overseas capital and government funds.

Second, efforts should be made to identify appropriate organizational patterns of green industry funds in light of Chinese characteristics. Restricted by existing laws and regulations, contract type and closed organizational patterns, green industry funds are appropriate for China's national situation. In the long run, limited partnerships are more suitable for green industry funds. By integrating capital with professional talents and based on a clear division of rights, responsibilities and revenues, limited partnerships can increase the professionalism of decision-making and mitigate the potential risks and liabilities assumed by limited partners while incentivizing and restraining the conduct of managers.

Table 1: Green PE funds of developed countries

	US	**Japan**	**Europe**
Fund sources	Mutual funds account for 54 percent, consortiums and insurance companies account for 11 percent each, and companies, 8 percent. Most fund sources of industry funds in the form of limited partnerships are pension funds (mainly corporate pension funds), individuals and households.	Financial institutions including securities companies, banks and insurance companies are major sources of industry investment funds in Japan and Europe with very few personal investments.	
Organizational pattern	Most US industry investment funds are in the form of limited partnership companies. As major investors, institutional investors such as pension funds and individual investors are limited partners who only assume limited liabilities without taking part in specific business operations: general partners are usually technical experts engaged in venture investments responsible for the identification, review and decision-making of investment projects and serve as directors of start-ups, provide guidance and oversight of corporate operation, take full charge of the business management of industry funds and assume unlimited liabilities. Despite a limited share of investment, general partners may extract a certain proportion of overhead cost from a fund's business revenues and share fund revenues upon fund maturity and termination.	Most of Japan's industry investment funds are owned by large corporations, banks and limited liability companies of local governments, with corporate internal structure modelled after banks featuring an organizational structure of separate functions including an investment department, a review department and an information department. Investing in one project requires the coordination of multiple departments, which results in inefficiency. Most business operation and management staff are from banks. Due to a conservative mindset and the lack of a technology background, they lack capabilities to conduct risk assessment and screening of start-up projects. As a result, only a small proportion of Japanese industry fund investments have been allocated to start-up projects.	Most of industry investment funds in Europe derive from banks and mainly invest in corporate expansion and M&As with an organizational pattern similar to Japan's.
Investment areas and stages	Start-up stage of high-tech companies	Sophisticated stage of corporate development with limited risks	
Capital exit mechanism	IPO and corporate M&A	IPO, corporate mutual shareholding	IPO, corporate M&A

Source: compiled by authors of this paper

Third, create the growth enterprise market (GEM) and the OTC market. The Growth Enterprise Market (GEM) of the US, Japan and Europe provides financing for emerging enterprises and an exit channel for venture capital. China's growth enterprise market (GEM) should try to reduce listing threshold and transaction costs, enhance market transparency and regulation and adopt a strict delisting system.

(III) The case for developing China's green industry funds

1. Necessity for developing green industry funds

The State Council and the Ministry of Environmental Protection have vigorously called for developing green industry funds, mainly as a result of pressure arising from the shortage of environmental protection funds. Prior to the 1990s, most environmental industry funds derived from government fiscal funds. With growing pressures of environmental protection, fiscal funds became insufficient and attracting private capital into environmental industry became an urgent priority.

Bank lending served as an early means of attracting private capital into the environmental protection sector. Therefore, within the green finance policy system, green credit was launched the earliest. However, bank lending is appropriate for mature enterprises, as loans generally require a mortgage guarantee or good corporate profitability, which are difficult to be satisfied by many newly established and high-risk environmental companies. Hence, it is necessary to provide these companies with equity investments through industry funds.

Demand for green industry funds also derives from the tendency towards large-scale environmental investments. Great differences exist in the demand of various environmental industries for financing. Financing demand for most companies in the sector of soil restoration, for instance, is between five million yuan and 50 million yuan (US$ 0.8 – 8 million) while this figure would normally reach a few billion yuan for companies in the sector of wastewater treatment. It is unlikely for two or more wastewater plants to exist in the same region given their natural monopoly. In this situation, environmental infrastructure projects like wastewater treatment would require massive investments through multiple financing channels and methods and cannot be satisfied by a single financing channel. In addition, a company must possess sufficient capital in order to apply for bank loans. Otherwise, excessive leverage ratio would cause serious financial risks. For these reasons, industry funds are required to provide equity financing for large or high-risk environmental projects.

Green industry funds have the following advantages for environmental industry investments: first, green industry funds have a relatively long investment duration, which is generally over ten years and thus provides long-term and stable financing support for the environmental industry. Second, green industry funds are able to scatter risks within a certain range and thus will not be excessively averse to investment risks of individual projects. Third, green industry funds put a premium on long-term future corporate revenues, which will greatly increase the possibilities of financing for companies that cannot be profitable in the short term but enjoy great potential in the long run.

2. Create green industry funds through a PPP model

Some low-profit green industries require government intervention in the form of green industry funds. Depending on the level of fiscal participation, green industry funds can be divided into green industry funds through a PPP model and green industry funds of a purely market-based nature. Environmental projects with a desirable profitability and investment return have no difficulty accessing financing. However, compared with the international investment and financing market for environmental protection, China's environmental industry remains in an early stage. Due to limited profitability and the significant risks of the environmental industry, it is necessary for the government to promote the development of green industry funds through a PPP model.

On the basis of their investment targets, green industry funds can be classified into region-based funds and industry-based funds that invest in one or a few select industries. The first type, region-based funds, will mainly invest in regional environmental projects that can span multiple industries. Two examples would be the Tianjin Eco-city construction fund and the pilot Hai River water system environmental fund. The second type, industry-based funds, will dedicate their resources not to certain geographical regions but rather to a single or a number of environmental industries, such as a new energy industry fund and a soil remediation industry fund. Regardless of their focus, green industry funds all require government assistance in their funding, but the extent of government input, as well as the level of intervening government – whether central, regional, or local, can vary depending on the characteristics of the fund. Generally speaking, local governments would play a dominant role in such aspects as fund-raising and investment allocation for green industry fund with significant regional attributes. First, because these funds have already specified their scope of investment as local environmental projects at their establishment, which have significant positive externalities to local economy, these funds should require greater involvement of the local government. The local government must support these funds by creating a cooperative relationship featuring explicit contracts, clear responsibilities and shared interests and risks between government and private capital. In addition, because these funds mainly target regional environmental programs, careful program planning and design can provide mutual benefits and risk control effects to other industry chains in the same region. By contrast, green industry funds that target certain environmental sectors often are already receiving indirect government support (such as subsidies for new energy programs that they invest in), frequently provide attractive returns to private investors, and have greater market potentials and externalities. Therefore, this second type of funds will only need a smaller proportion of funding support from the local government, and the local government will not register as a general partner of these funds, only as a limited partner.

3. Feasibility for establishing green industry funds

First, the overall policy environment is ready. According to the relevant provisions of the *Interim Administrative Measures for Industry Investment Funds*, industry investment funds can be divided into venture investment funds, corporate M&A investment funds and infrastructure investment funds by different investment areas; obviously, green funds are infrastructure investment funds and consistent with the scope of investments under policy encouragement. Second, the *Opinions on Encouraging and Guiding the Healthy Development of Private Investments* have already identified various policies to encourage private capital participation in water conservation projects, land consolidation, the geological environment restoration of mines, support of private capital investments in urban sewage treatment and urban afforestation.

Third, the potential sources of fund capital are extensive. Potential financial sources for investments in green industry funds are extensive and include pension funds, insurance funds, state-owned enterprises (SOEs), private enterprises, government funds and overseas investors. Pension funds and insurance capital are seeking long-term investment opportunities and very interested in green industry funds focused on sustainable development, but lack sufficient avenues and fund management institutions with good performance. Many SOEs are also seeking green investment opportunities in the process of structural transition. Some international institutional investors that took part in various green investor networks are also seeking opportunities for green industry investments in China. Some private enterprises in China have already started to create green investment funds using their own capital.

(IV) Policy recommendations on promoting the development of green industry funds

Green industry funds will serve as the platform through which private capital can converge into professionally managed green investments and are an important supplement to green credits. In this section, we propose the following five recommendations to support the development of green industry funds:

(1) Encourage governments at all levels to sponsor or participate in green industry funds through a PPP model. The low-profit attribute of environmental industry requires government fiscal participation and support. Establishing green industry funds through a PPP model is an important means to propel the development of green industry funds. We believe that **government roles and participation methods should be determined according to the attributes of different green industry funds.** Generally speaking, local governments should play a dominant role in the raising and investment directions of green industry funds that have significant local attributes and local externalities. The government may participate at both levels of equity and management in the form of general partner.

However, local governments may only participate as limited partners for green industry funds that invest in a particular environmental industry, especially those industry funds that have received other government policy support (such as new energy subsidies).

(2) Stipulate that relevant PPP support policies are applicable to green industry funds. Current PPP arrangements are mainly used for individual projects. PPP green industry funds, therefore, can be thought of as an innovative extension of the traditional PPP model. To support this new funding model, the government should **first** recognize the model as a PPP industry fund arrangement, so that it may enjoy the favourable policies applicable to individual PPP projects. Specifically, on the basis of the *Opinions on Implementing the Third-party Treatment of Environmental Pollution* (State Council General Office [2014] No.69), it should be further clarified that new investment and operation models (such as licensing), review and approval facilitation, fiscal subsidies or incentives, green bonds and other policy preferences and financing instruments are also applicable to the industry funds of PPP model. In addition, other localities should formulate operational rules that fully reflect the spirit of contract management. Take Tianjin Eco-City for instance, the government licensed its operation in the form of Tianjin municipal government regulations; the criteria that the government uses to evaluate the operation of the fund pool by the concessionaire are also extremely detailed, exhaustive, actionable and practical. Other localities may draw upon the Tianjin model by promulgating regulations and operational guidelines for green industry funds through a PPP model to create a stable legal environment.

(3) Accelerate the implementation of green securities policies to assist the IPOs of environmental companies. The main exit mechanism for green industry funds is helping the environmental companies they invest in going public. But at the moment, China's green bond policies are still primarily focused on restrictive measures in the form of mandatory information disclosures and environmental impact reviews. Due to a lack of incentivizing policies for the green industry and enterprises and supportive measures for green start-up companies, green industry funds will have a difficult time pulling their funding support from these companies. In the US, Japan and Europe, the second board market serves as one of the main mechanisms for the exit of green industry funds from their investees. Similarly, China should hasten its pace in lowering the listing criteria and transaction costs of the GEM, improve the transparency and regulation of market and implement strict delisting regimes.

(4) Develop organizational patterns of green industry funds suitable for China. Due to the current restrictions, green industry funds in China are primarily organized as contractual and closed companies. From a long-term perspective, limited partnership is a more suitable form for green industry funds, as it can organically integrate capital with industry professionals, improve the competency of decision-making arising from a clear division of responsibilities, rights and benefits, and, without compromising the incentives and constraints placed on its managers, lessen the risk and potential liability of its limited partners.

(5) Suggest that national and local governments issue policies to support green industry funds

According to the *Interim Administrative Measures for Industry Investment Funds*, industry investment funds, based on their investment sector, can be classified into start-up investment funds, corporate restructuring investment funds and infrastructure investment funds. Accordingly, some green industry funds should be classified as infrastructure investment funds, and therefore belong to government's 'encouraged' sectors for investment. In its *Opinions on Encouraging and Guiding the Healthy Development of Private Investments*, the government has proposed a number of national development policies aimed at encouraging private capital to participate in the construction of hydraulic engineering projects, soil restoration projects and mining region geological restoration projects, as well as supporting private capital to invest in sewage treatment and urban landscaping industries. Such policies should be refined. Local government can also support green industry funds by providing for lower entry barriers, tax breaks, subsidies and favourable land policies in their detailed operating guidelines.

THE GREEN FINANCE TASK FORCE

The Green Finance Task Force was initiated by People's Bank of China (PBC) Research Bureau and the UNEP Inquiry into the Design of a Sustainable Financial System in 2014. The Task Force brought together leading Chinese financial policy and regulation experts together with experts from the private sector, academia and think tanks, as well as international experts.

A number of organizations have lent great support to this Task Force, chief among them are Chongyang Institute for Financial Studies of Renmin University, the Ecological Finance Research Center at the Renmin University of China, the Eco Forum Global, the International Institute for Sustainable Development, the Green Credit Special Committee of China Banking Association, and China Finance 40 Forum.

Advisor: Pan Gongsheng, Deputy Governor, People's Bank of China
Domestic Convener: Ma Jun, Chief Economist, Research Bureau, People's Bank of China
International Convener: Simon Zadek, Co-Director, United Nations Environment Programme Inquiry into the Design of a Sustainable Financial System

TASK FORCE MEMBERS

An Guojun	Research Associate, Institute of Finance and Banking, Chinese Academy of Social Sciences
Chen Zheng	Research Associate, Shenzhen Stock Exchange
Chen Yaqin	Head of Marketing Division, Environment Finance Department, Industrial Bank
Guo Peiyuan	General Manager, SynTao (expert on corporate social responsibility)
Guo Sanye	Deputy Secretary General of China Banking Association
He Qiaonv	Chairman, Beijing Orient Landscape Industry Group
Huang Chaoni	Head of Business Development – Asia, Trucost
Huang Jianhui	President, Research Institute, China Minsheng Bank
Jiang Peixing	CEO, Zhong De Securities
Jin Hainian	Chief Research Officer, Noah Private Wealth Management
Lan Hong	Deputy Director, Ecological Finance Research Center, Renmin University of China
Li Donghui	Director and SVP, Beijing Orient Landscape Industry Group
Li Jianqiang	Research Associate, Research Bureau, People's Bank of China
Liang Pingrui	General Manager, Environment Finance Department, Industrial Bank
Lu Hanwen	Deputy Director-General, Project Appraisal Department II, China Development Bank
Qi Liang	CEO, China Securities
Sheng Hetai	Vice President, People's Insurance Company (Group) of China
Sang Qiang	Senior Manager, Strategic Planning Department, People's Insurance Company (Group) of China
Su Ting	International Sustainability Development Research Institute
Wang Guijuan	Research Associate, Research Institute for Fiscal Science, Ministry of Finance
Wang Lu	Deputy Director General, Credit Reference Center, People's Bank of China

Wang Wen	Executive Dean, Chongyang Institute for Financial Studies, Renmin University of China
Wang Yao	Director, Research Center for Climate and Energy Finance, Central University of Finance and Economics
Xie Hongxing	Secretary-General, Clean Air Alliance of China
Xin Benjian	Senior Research Associate, Chongyang Institute for Financial Studies, Renmin University of China
Xu Wen	Research Associate, Research Institute for Fiscal Science, Ministry of Finance
Yang Shuying	Research Associate, Policy Research Centre for Environment and Economy, Ministry of Environmental Protection
Yao Bin	Research Associate, Research Bureau, People's Bank of China
Ye Yanfei	Deputy Director-General, Statistics Department, China Banking Regulatory Commission
Yin Hong	Deputy Director, Urban Finance Research Institute, Industrial and Commercial Bank of China
Yin Lihai	Director, Tax Policy Department, Ministry of Finance
Yu Xiaowen	Director, IISD China Office
Yu Zhenli	Research Associate, Research Institute for Fiscal Science, Ministry of Finance
Zhao Lijian	Program Director, Environmental Management, Energy Foundation China
Zhang Hai	Director of the Secretariat, Eco Forum Global
Zhang Jialin	Chairman, Aron Capital Management
Zhang Yong	Executive Director, Eco Forum Global
Zheng Tingying	Executive Deputy Director, Ecological Finance Research Center, Renmin University of China
Zhou Yacheng	Partner, Zhong Lun Law Firm
Zhou Yueqiu	Director, Urban Finance Research Institute, Industrial and Commercial Bank of China
Zhu Shouqing	Senior Associate, Sustainable Finance Program, World Resources Institute

INTERNATIONAL EXPERTS

Mark Halle	Vice-President, International Institute for Sustainable Development
Sean Kidney	CEO, Climate Bonds Initiative
Alexander Barkawi	Founder and Director, Council on Economic Policies
Stanislas Dupré	Founder and Director, 2° Investing Initiative
Butch Bacani	Programme Leader, UNEP FI Principles for Sustainable Insurance Initiative
Sony Kapoor	Managing Director, Re-Define
Susan Burns	CEO and Co-founder, Global Footprint Network
Romulo Sampaio	Professor of Law and the Director of the Research and Policy Center for Law and the Environment (CDMA) at Getulio Vargas Foundation (FGV) School of Law in Rio de Janeiro.

中国人民银行
THE PEOPLE'S BANK OF CHINA
Research Bureau of People's Bank of China

The People's Bank of China

No.32 Chengfang street,
Xi Cheng district, 100800
Beijing, China
webbox@pbc.gov.cn
86-010-66194114
www.pbc.gov.cn/

Inquiry: Design of a Sustainable Financial System

Inquiry: Design of a Sustainable Financial System

United Nations Environment Programme International
Environment House
Chemin des Anémones 11-13
Geneva, Switzerland
inquiry@unep.org
+41 (0) 229178995
www.unep.org/inquiry

www.unep.org/inquiry