

Financing of green infrastructure in Guangzhou

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Outline

- 1 Environmental Pressure in the GBA
- 2 Environmental Governance in the GBA
- 3 Guangzhou Green Finance System
- 4 Financing of green infrastructure



1. Great Environmental Pressure in the Guangdong-Hong Kong-Macao Greater Bay Area

1

Severe Water Pollution Situation

2

Ozone Becomes Leading Air Pollutant For Four Consecutive Years

3

Environmental Governance Conflicts



2. Current governance status - mainly by administrative actions

Environmental cooperation between Guangdong and Hong Kong

Environmental cooperation between Guangdong and Macao

Small pearl river delta joint conference

Pan-pearl river delta environmental cooperation

The inadequacy of bay area governance

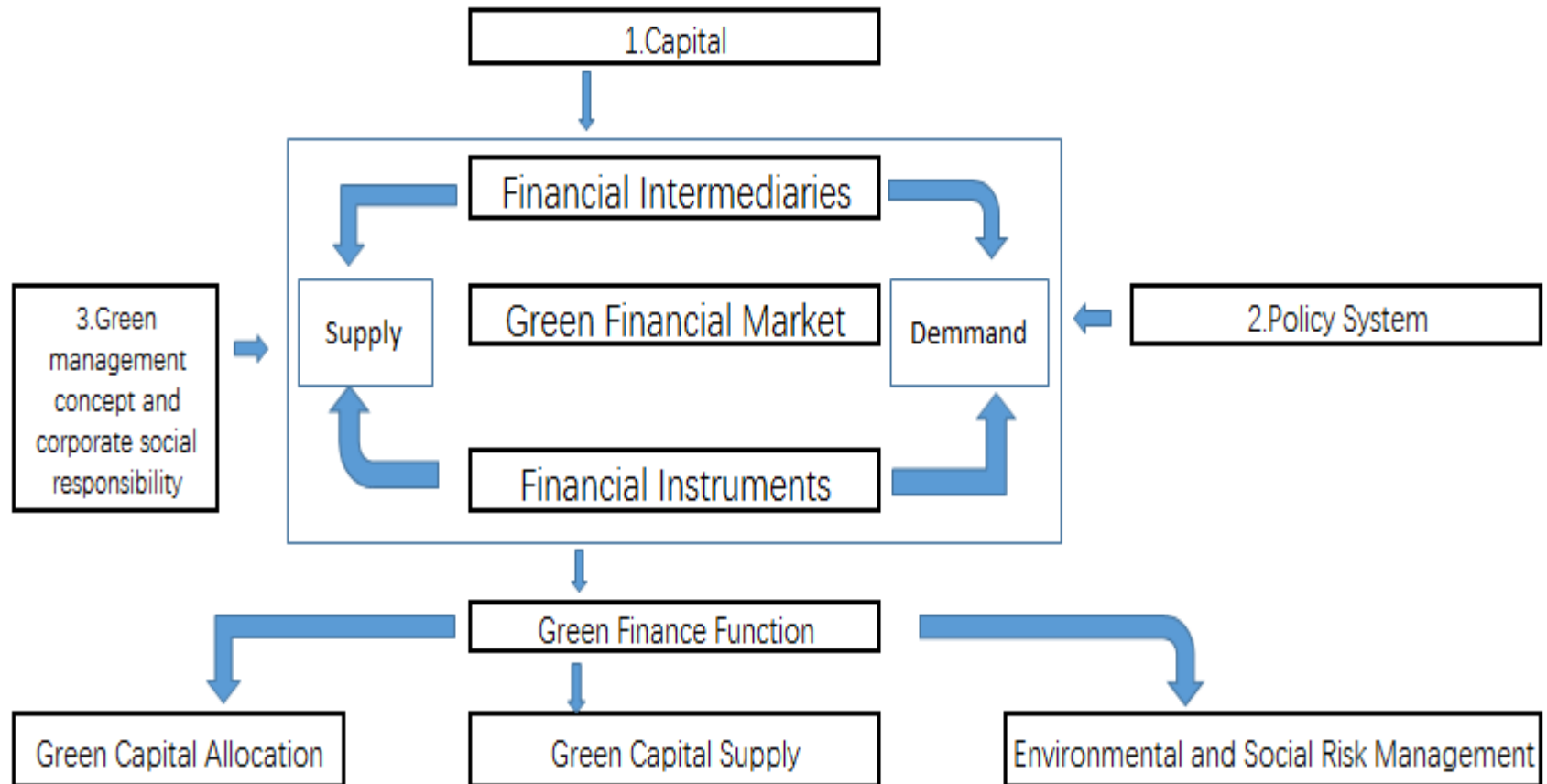
High administrative costs

Inefficient administrative behavior

Low level of public participation

No long-term mechanism has been formed

Green Finance, a new approach to environmental governance



Process of action mechanism in green financial system

Three objectives: reduce negative externalities, improve the supply of green products, and promote the benefits of environmental rights and interests



The advantages of green finance in environmental governance

Capital

Motivation and Efficiency

Public participation



The Advantage of Green Finance in Bay Area Development

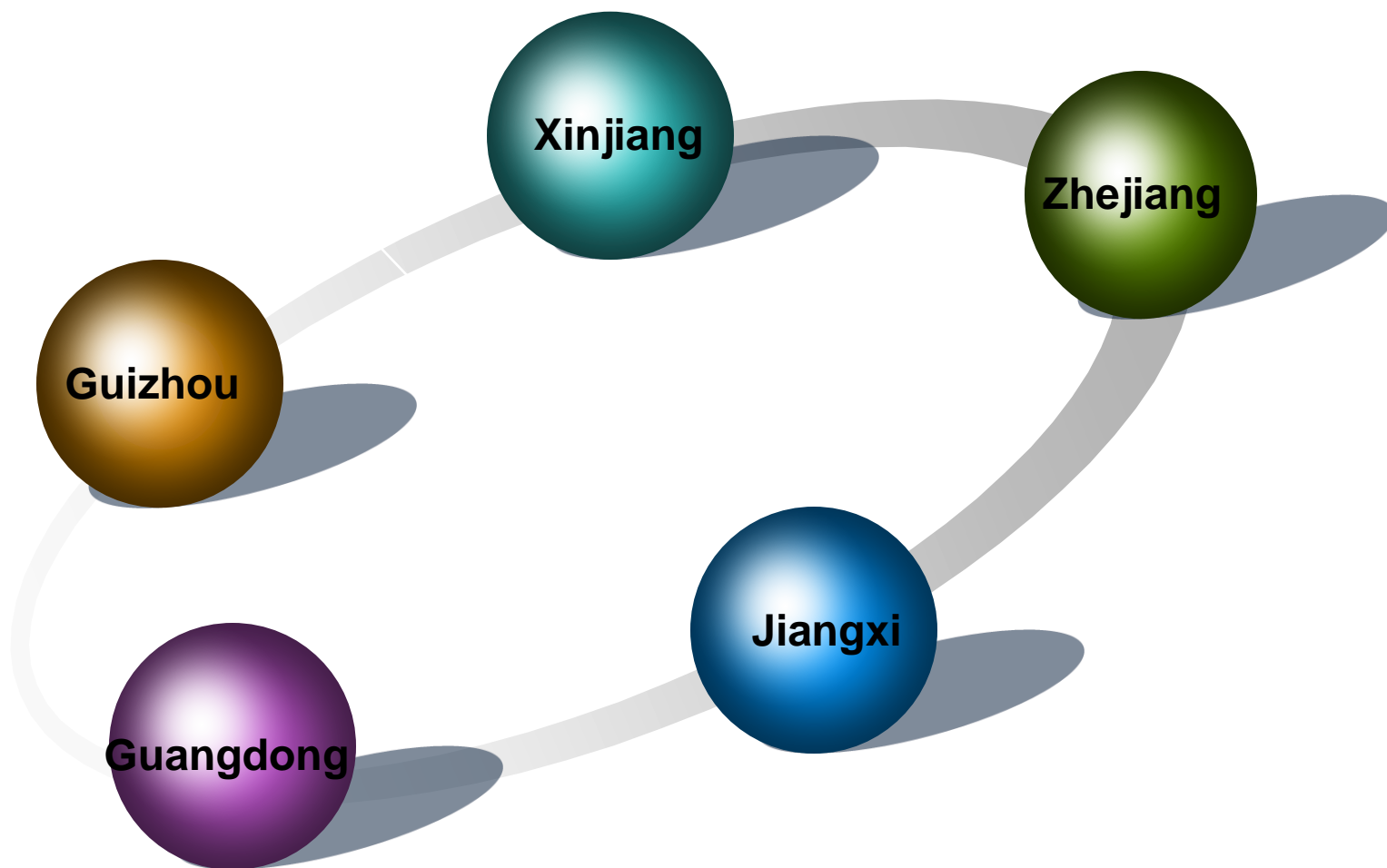
The Pilot Area of Green Finance Reform

Pilot Carbon Trading

Good Economic Foundation



China's practice: regional green finance reform pilot area





Five pilot areas: differentiated exploration

Zhejiang	The basic conditions for green development are superior, and innovative green finance is transforming and upgrading traditional industries.
Guangdong	Guangdong has a strong economy strength and focuses on the innovation of financial products and services.
Xinjiang	Xinjiang is the core area of the silk road economic belt and exploring green finance can support local industries.
Guizhou	The first national eco-civilization pilot areas in Guizhou can develop high-end industrial systems.
Jiangxi	Jiangxi has one of the first national eco-civilization pilot areas to develop green industry with good green resources.



Guangzhou green finance reform experimental area with Huadu district as the core area

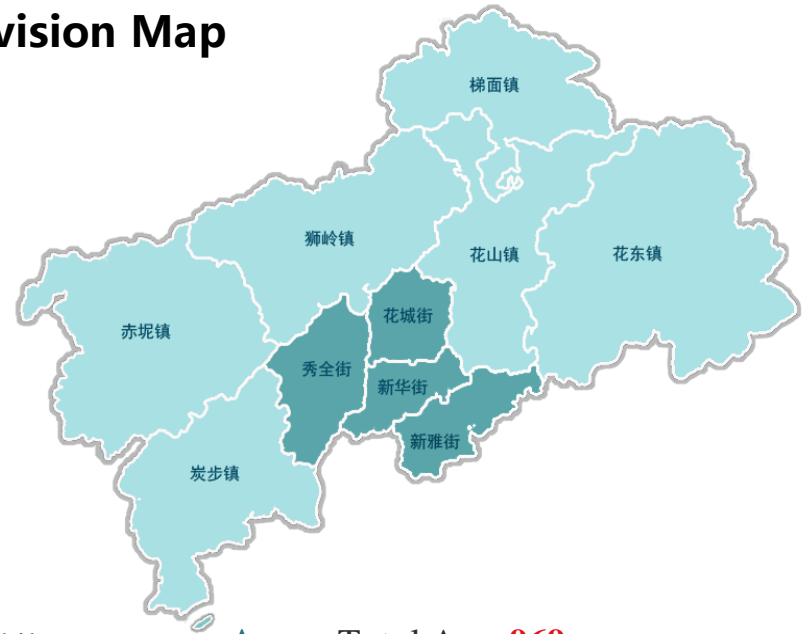
Guangzhou Administrative Division Map



□ **Area:** Total Area **7434.4** Square kilometer, with **11** districts.

Population:
Registered Population: **8.71 million**,
Permanent Resident Population :**17.6 million**

Huadu District Administrative Division Map



Area: Total Area **969** Square kilometer
(1/10,000th of the national land area)

Population:
Registered Population: **749,000**,
Permanent Resident Population :**1.472 million**

Four Important Orientation of Guangzhou Green Finance Reform Experimental Area

Green finance reform and innovation test field

Demonstration area for the coordinated development of green finance and green industry

New platform for cooperation and development in
Guangdong-Hong Kong-Macao Greater Bay Area

The booster for One Belt One Road construction

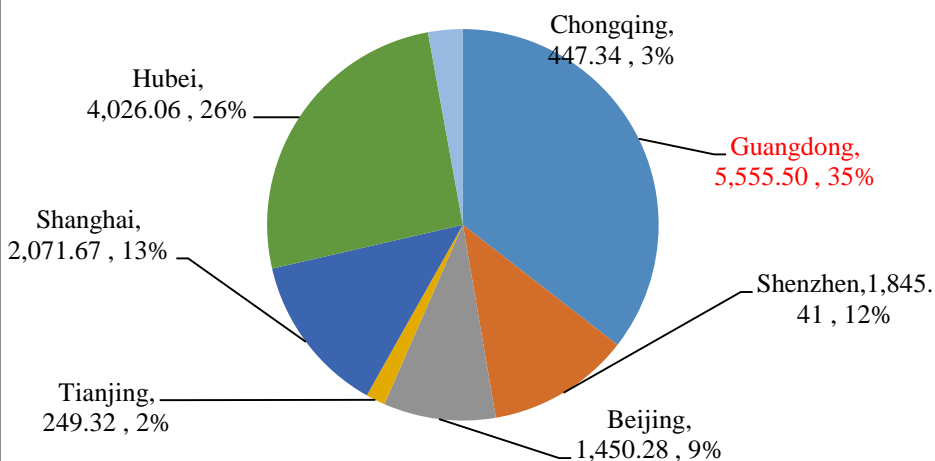
Orientation

Pilot carbon trading in seven provinces and cities

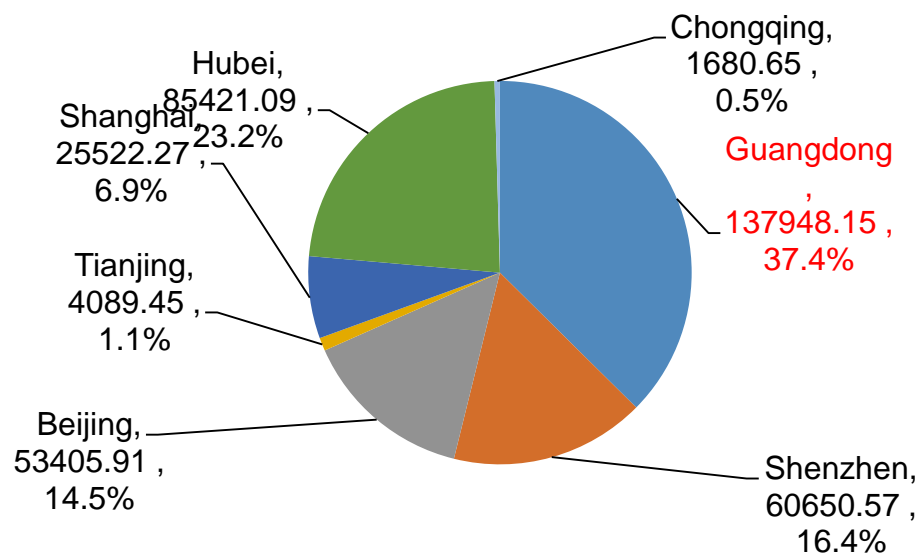


Quota trading in the national carbon market

**The proportion of total transaction volume
(ten thousand tons) in seven pilot markets nationwide**



**The proportion of total transaction amount
(ten thousand yuan) in seven pilot markets nationwide**



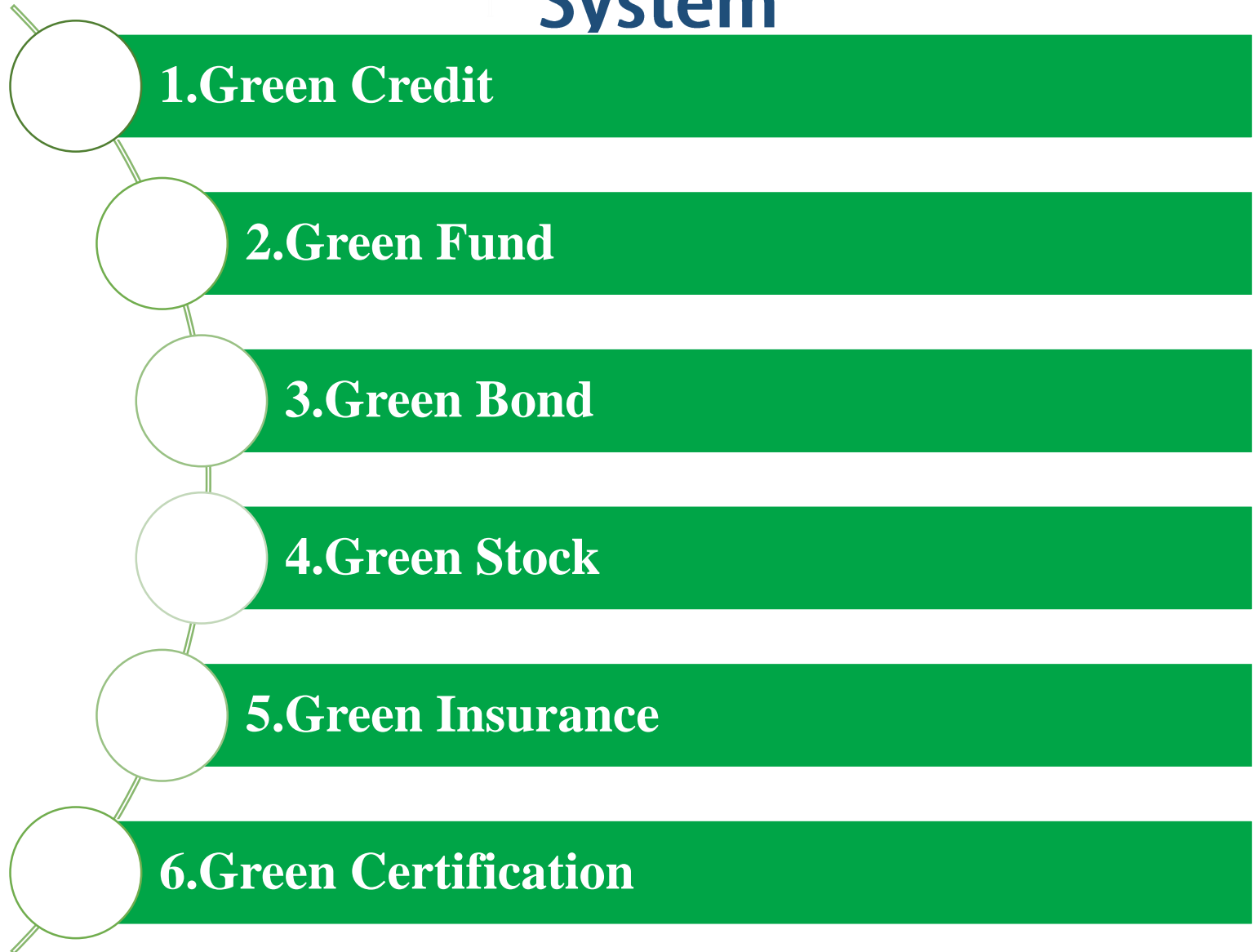
The quota for the national carbon market reached 156 million tons, amounting to ¥ 3.687 billion (excluding forwards).

(up to 7 May 2017)

Good Economic Foundation

指标 (2015年)	粤港澳 大湾区	东京 湾区	旧金山 湾区	纽约 湾区
 占地面积 (万平方公里)	5.6 	3.68 	1.79 	2.15 
 人口 (万人)	6671 	4347 	715 	2340 
 GDP (万亿美元)	1.36 	1.8 	0.8 	1.4 
 人均GDP (万美元/人)	2.04 	4.14 	11.19 	5.98 

3. Guangzhou Green Financial System



3. Green Finance Development Method of Huadu District



1.Green Credit

2.Green Fund

At the end of March 2018, the green loan balance of Huadu banking sector was about 10.071 billion yuan, accounting for **15.83 percent of the total loan**, up from 9.38 percent at the beginning of 2016.

5.Green Insurance

6.Green Certification

3. Green Finance Development Method of Huadu District



1.Green Credit

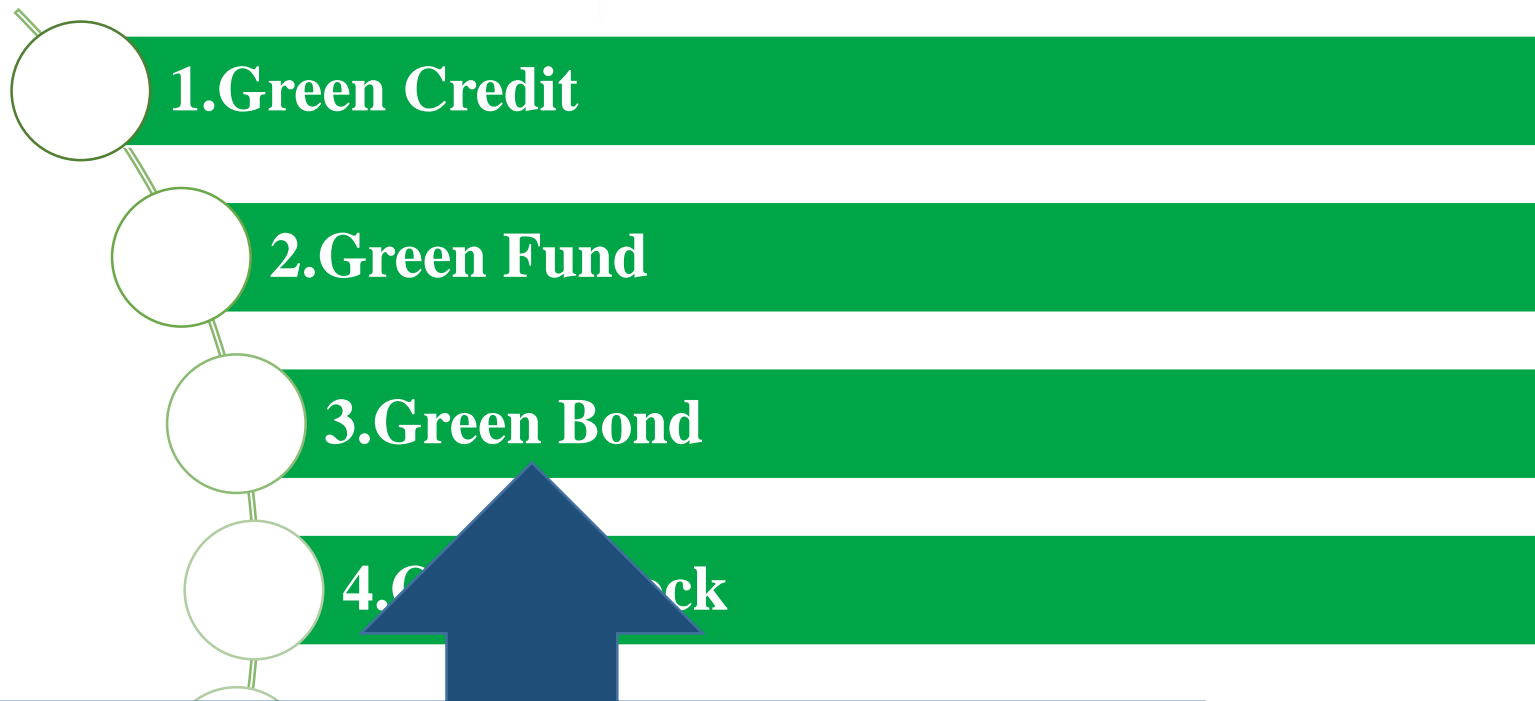
2.Green Fund

Green Bond

Set up green finance holding group, airport investment fund, Guangzhou north railway station fund, **green low-carbon development fund**, total scale 6.1 billion yuan.

6.Green Certification

3. Green Finance Development Method of Huadu District



Guangdong Huaxia Bank was approved to issue 5 billion yuan (3 billion yuan) of green finance bonds. Guangzhou Bank issued 5 billion yuan of green financial bonds. Guangzhou Development Group Incorporated issued 2.4 billion yuan of green enterprise bonds. Guangzhou Yuexiu Group and Guangzhou Paper Group issued 2 billion yuan of green bonds.

3. Green Finance Development Method of Huadu District

Set up "Guangzhou green environmental protection board" in the pilot area, **reserve 50 enterprises to be listed and plan to add 50 new listed green enterprises** every year to widen the financing channels of green enterprises.



3. Green Finance Development Method of Huadu District

From 2017, Huadu district allocates no less than 1 billion yuan of special funds each year: subsidies of up to 1 million yuan for green credit and green bonds. **Huadu district provides subsidies of up to 100,000 yuan to enterprises participating in green insurance, and the amount shall be 30% of the enterprise premium.**

Green Bond

Green Stock

5.Green Insurance

6.Green Certification

The green financial risk prevention and control platform has listed over 30,000 enterprises in Huadu district, carried out classified inspection and evaluation report for enterprises and realized the continuous monitoring and dynamic analysis of the green financial risk status.

3. Green Finance Development Method of Huadu District



1.Green Credit

2.Green Fund

3.Green Bond

On May 25, 2018, Huadu district issued the "methods for identifying green enterprises" and "methods for identifying green projects", and preliminarily selected over **1,200 green enterprises and projects.**

5.Green Insurance

6.Green Certification



4. Financing of Green Infrastructure

1

- Green Agriculture

2

- Green Traffic

3

- Green Homeland

4

- Green Architecture

5

- Garbage Power

6

- Sewage Treatment



1. Green Agriculture



图片来源：视觉中国 www.vcg.com

Set up "**Green agriculture insurance plus**", vegetable weather index and other insurance, the government subsidizes 80% of the premium.



2. Green Traffic



The green credit fund of 5 billion yuan was used to launch 4,902 new energy buses in 2018.



2. Green Traffic



The construction of Guangzhou north railway station by PPP model will save about 11 million yuan of interest every year with preferential interest rate.



3. Green Homeland



LED project received 100% credit from the bank with 20% margin, and 100 million yuan of loans saved 6 million yuan of financing costs.



4. Green Architecture



In 2017, Huadu district built 641,000 square meters of newly green buildings.



5. Garbage power generation: Guangzhou No.5 resource thermal power plant



**Cheap loans have kept financing costs 15 per cent below
the People's Bank of China's benchmark interest rate**



6. Sewage treatment: Huadu water purification company



Bank of China provides 1 billion yuan of low-cost credit financing, saving 9.8 million yuan for every 100 million yuan of loans. Guangzhou bank provides 340 million credit loans, with interest rates 10% lower than the benchmark rate.



5. Garbage power generation: Guangzhou No.5 resource thermal power plant

Forming an ecological chain:

garbage recovery - garbage treatment - thermal power generation - sewage treatment

**The agricultural development bank of China
lent 1.1 billion yuan**

**Guangzhou bank provides
596 million yuan credit financing**

**Payments come from government purchases
of services and electricity generation**

**By means of repayment,
the financing cost is 15%
lower than the
benchmark interest rate
of the people's bank of
China.**



6. Sewage treatment: Huadu water purification company

- ◆ **Bank of China provided 1 billion yuan of low-cost credit granting financing**

- **Every 100 million yuan of loans can save 9.8 million yuan in financing costs**

- ◆ **Guangzhou bank provides 340 million credit loans**

- **Interest rates are 10% below the People's Bank of China's benchmark rate**

Huadu district government buys sewage treatment services, and encourage and guide social forces into the public sector.



The experience of green finance development

- First, green finance mainly aims at **environmental protection**.
- Second, green finance needs the appropriate support from the government at the initial stage of its development.
- Third, **the government** needs to play a leading role in the development of green finance.
- Fourth, the middle and late stages of the development of green finance require the government to exit at an appropriate time.

Discussions

1. What is Green Finance

- Green finance is also finance, so it need to control risks, and business needs to be sustainable. At the same time, the goal is not to maximize returns. Green projects have advantages over traditional ones. All green projects have certain attributes of public goods, with a large audience and a natural monopoly. For example, the sewage treatment plant has the nature of natural monopoly, and the benefits should not be excessive, but the benefits should be stable (8% profit).
- The difference between public finance and finance: it involves the investment and financing of environmental products and the design of tools. Therefore, the innovation of mechanism and green financial products is needed .
- Compared with traditional finance, Green finance, on the basis of three characteristics, has environmental ecological benefits.

Discussions

2. The model pattern of green finance

- **Three categories (as defined by the head office of the people's bank of China) :**
 - pure finance: supported by the **commercial bank**
 - pure public goods: supported by public finance. Banks do not support it except for **policy banks**
 - Quasi public goods

Discussions

• 2. The model pattern of green finance

- **Model innovation, product design.** Especially in the financial product, **financing methods** (such as reference in the first eight years of the world bank debt is not only interest payments), **mortgage** (can draw lessons from international experience, the world bank, Citigroup, standard chartered bank has some precedent, by investigating the green project **future earnings** as the evaluation standard for green project financing) for innovation. Guangdong needs to promote, refine and summarize. Guangdong has international advantages.
- Another model can be added: **carbon currency**, carbon credits, extending to all fields. Such as planting trees, public transportation and garbage classification, forming a positive feedback mechanism.

3. Green industry standards

(1) there are differences in domestic standards

- In 2018, the green bond catalogue needs to be updated. There are two standards in the current catalogue. The NDRC and the people's bank of China had conflicts. For example, the distributed energy, the rough (can be issued) and the fine (cannot be issued) stipulated by the NDRC. Solution: breakthrough in the local, criterion in the central

(2) differences between international standards and domestic standards; International countermark

- How to specify the real green industry directory, there are two international standards, think that we are pan-green
- The international standard only recognizes carbon, so desulfurization and denitrification equipment is not recognized internationally. **Can we keep up with international standards in the future but work in stages? At the same time, regional characteristics will be formed.**
- Standard definition: avoid **false green, drift green, pan green**, should be **true green, deep green**
- Dimensions: four. low-carbon economic areas (fossil, new energy, supply chain), circulation (resources), ecological environment protection (pollution, environmental friendliness, ecological industrial chain)
- Level: industry to enterprise, project (Huadu is more detailed.)

Thank you for your attention!

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