



Green Financing & Green PPP implementation in China

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Short Introduction about TAES & Tianjin City

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Tianjin Academy of Environmental Sciences (TAES)



- TAES was founded in 1975. Which is the largest no-profit environmental scientific research institution in Tianjin and direct controlled by Tianjin EPB.
- TAES has over 700 employees including 440 staffs and 300+ contract workers.
- **The main research area:**
 - R&D of EP Technology & EP Engineering
 - Climate Change/Low Carbon development Research
 - Environmental Planning & EP Policy and Regulation Research



→ 120 Km from Capital Beijing

Tianjin

- Formerly known in English as **Tientsin**, is a metropolis in northern coastal Mainland China with a total population of 15,469,500.
- Tianjin is the fourth largest in China and It is also governed as one of the four direct-controlled municipalities of the country.
- Tianjin is a dual-core city, main urban area and Binhai New Area. Tianjin's GDP reached 1.572 trillion Yuan in 2014, recorded China's highest per-capita GDP with \$17,126. (Wikipedia)
- **Highest Water Price in China, tiered pricing ¥ 4.9~8.0 RMB/ton for household**



Policy & Regulation

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- 2014 Responsible Insurance of Environmental Pollution
- 2014 Carbon Market Pilot Trading in 7 cities(NDRC)

◆2014 Guidelines on Innovation of Financing Mechanism in Key Area and Encouraging Private Investment(SC)

- 2014 Guidelines on PPP Model Operation (MOF)
- 2014 Establishment of PPP Centre (MOF)
- 2014 PPP Demonstration Project Library (MOF&NDRC).

◆2016 Guidance for Building Green Financial Mechanism (6 Ministries) National strategy (13th Five Year Plan) & G20 leaders Summit

Before 2013



- 2004 Administrative Measures for Municipal Public Utilities Franchising(MOC)
- 2012 Green Credit Guidelines(CBRC)

2014



- 2015 Guidelines for Green Bond Issuance (NDRC)
- 2015 Green Bond supported Project Catalogue
- 2015 Promote PPP Model on Public Service Area(GOSC)
- 2015 Administration Measures for Franchising of Infrastructure and Public Utilities (6 Ministries)

2015



2016



2017



2017 Fully Implement PPP Model on Government Involving Sewage and Waste Treatment(MEP)

Facts & Data

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Strength

- During 2015-2020, **Over 85%** of the country's total green investment needs to be financed by private capital.
- 2016: 21 domestic banks & finance institutions have green credit balance of **7.26 trillion RMB**, accounting for 9% of total loan, which environmental protection and energy-saving projects make up 5.57 trillion RMB.
- 2016: Total Green Bonds issued is about **220 billion**, Accounting for 40% of world's total over same period. By estimated, China's annual issuance of Green bonds will reach 50 billion US.

Green Finance As a National Strategy

PPP Implementation Under Rapid Urbanization

- Supply-Side Structural Reform since 2015
- GDP growth rate: 6.7% in 2016
- Energy Structure Adjustment
- Green economy & Sustainable development strategy

Economic slowdown

Environmental degradation

Weakness

Opportunity

- Urbanization Rate: 40% in 2017 to **70%** in 2030
- 4000+ WWTPs mainly distributed in Urban and County area with sewage treatment rate of 90%
- By the end of 2016, 11260 PPP Projects (MOC) with Total Investment of 17 trillion Yuan RMB. **EP: 7-10%**
- 90% of 20000+ EP enterprises is small sized business (less than 50 employees)
- "Trillion level" PPP market have emerged

- Environmental degradation (PM2.5 & Water Pollution)
- 2015 UNFCCC Paris Agreement: CO₂ Emission ↓ 60-65%
- New EP Act released in 2015
- following **air, water** and **soil** pollution control and prevention action plan

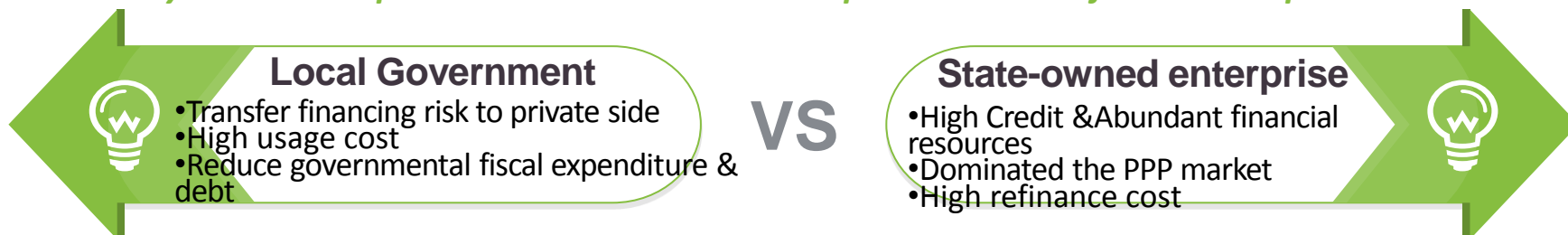
Threat

Main Challenges & Problems

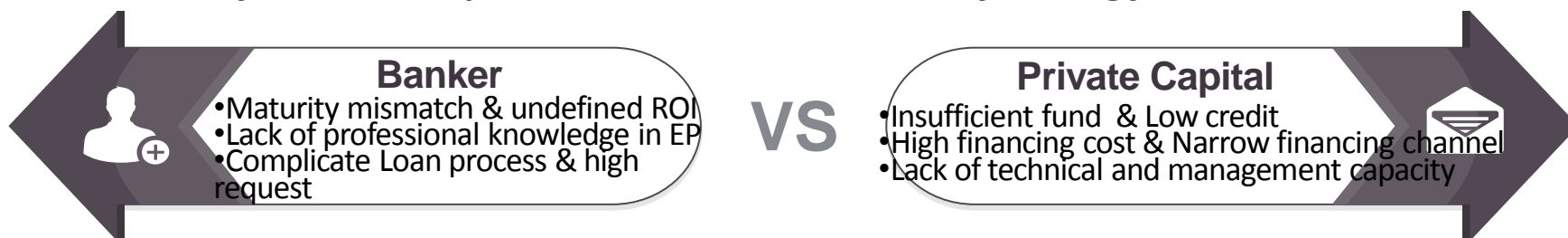
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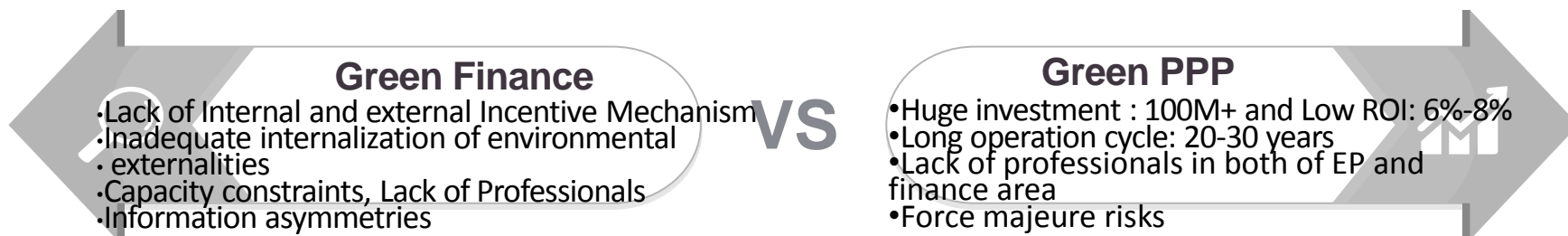
Always tend to cooperate with state-owned enterprises to reduce financial & operational risk



Refuse to lend to private investor under traditional financing framework



Innovative financing mechanism for PPP implementation on Urban infrastructures



Good Practices: Shizuishan example 1

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Application of PPP model on Environmental Protection Industry Fund (Green Fund)

Project	Specification	Investment	Operation
Industry Park East Region WWTP	Short term:10000 m ³ /day Long term:20000 m ³ /day	0.16	In 2015, Shizuishan local government cooperate with Tongyong Fund management company to set up an Industry Development Guiding Fund with a planed size of 0.3 billion RMB during 2015-2019 (Government injected 60 million for upfront investment and recruiting private capital and financing in accordance with the 1: 3 or 1: 1 shareholding ratio) . And also establish of a number of sub-funds supported by mother fund and to special investing in wastewater industry or wastewater project by equity investment(maximum 30%). Apply PPP model to financing 4 WWTPs construction and set up SPV to operating projects by BOT model .
Industry Park WWTP	Short term:10000 m ³ /day Long term:50000 m ³ /day	0.24	
Fine Chemical WWTP	Short term:10000 m ³ /day Long term:20000 m ³ /day	0.15	
Textile Industry WWTP	Capacity:10000 m ³ /day	N/A	

Background

Shizuishan is a prefecture-level city in the Ningxia Hui Autonomous Region, Northwest, China. It was the national energy base in 1st five-year plan period. Now days, **Coal mining industry, metallurgy and chemical engineering industry** are still the major industries supporting the local economy.

Over the years, subject to extensive development and huge environmental cost , Shizuishan City has listed on the **top 10 most polluted cities** in China in 2007 and was once described as the best place to make a film about the end of the world. (Wikipedia)
City's water pollution problem is getting worse and local fragile ecology is in a seriously threatened.

The Guiding Fund is a policy introduced fund that is set up by the Shizuishan municipal government and take a **three-level management model**: the Fund Steering Committee, City-level Fund Management Company and Sub-Funds managers.

China's largest bank to screen loans for environmental risk



Published on 23/03/2016, 2:50pm

ICBC says it's time to take tougher line on major polluters, citing regulatory pressures linked to air pollution and emission standards



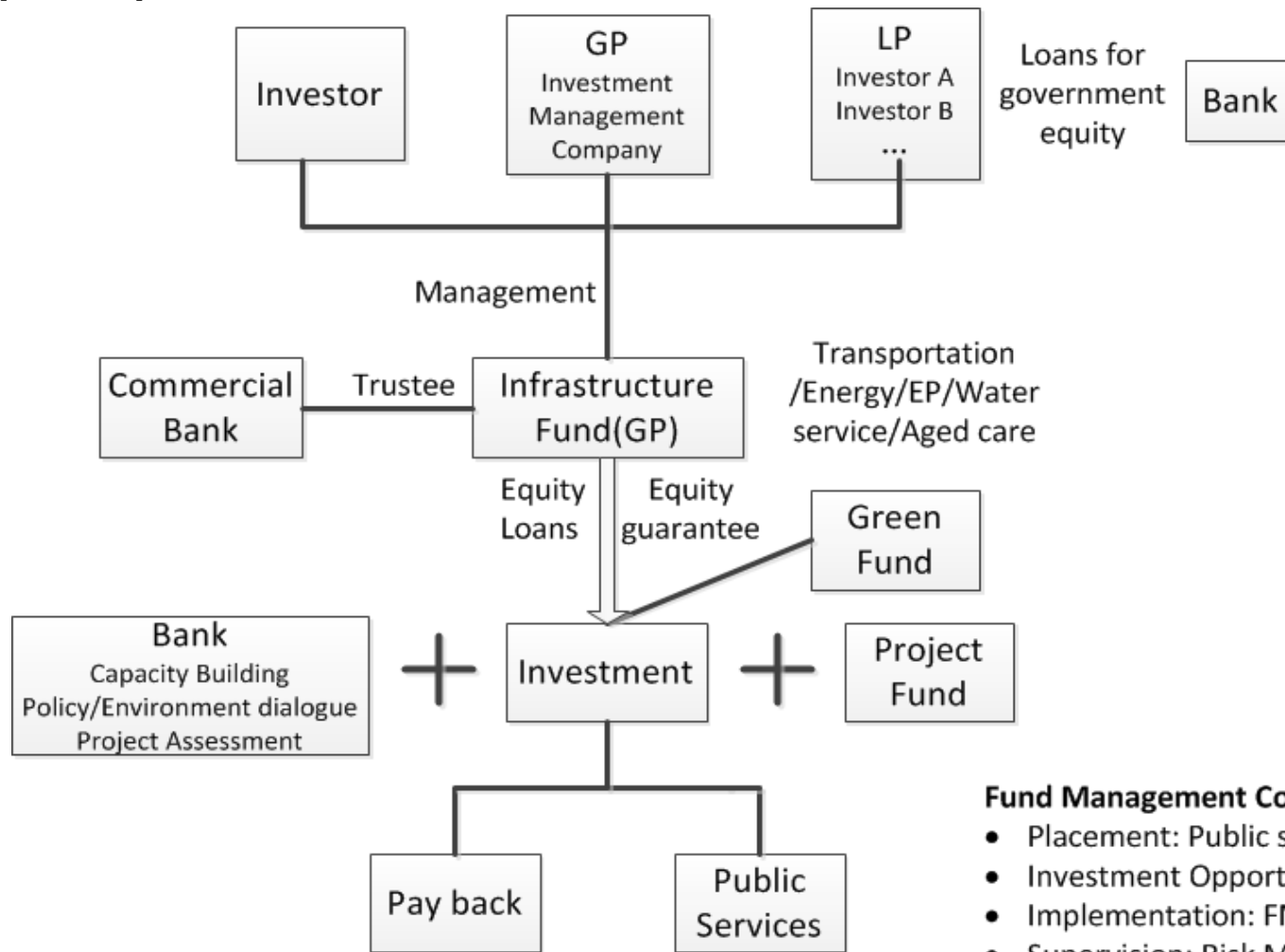
Heavy industry and energy companies dump their waste into the Yellow River as it snakes through Huinong district, Shizuishan, Ningxia (© Lu Guang / Greenpeace)

Good Practices :

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Typical Operation Model of PPP model Environmental Protection Industry Fund



Fund Management Company

- Placement: Public sector & Private capital
- Investment Opportunity Selection: Fund Manager
- Implementation: FMC staffs
- Supervision: Risk Management
- Exit

Good Practices : Shizuishan example 2

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Issuance 300 million Green Corporate Bond to Finance 4 WWTPs Project

Project	Total project Investment	Financing investment	Operation
Lingbao 3rd WWTP & Pipe Network	14,278.40	9,000.00	In 2016, BoTian Environment Group(603603.SH) issuance 300 million RMB Green Corporate Bond with a period of 5 year . The coupon rate is 4.00% -5.30% . the bonds using a one-time issue, each face value of 100 Yuan, the issue price of 100 Yuan. Western Securities is the lead underwriter of this issuance , CITIC Construction Investment as co-lead underwriter. AnYoung Huaming Accouting firm has implemented a third party independent certification for BoTian's green industry projects and issued an independent limited certification report before the issuance of the bond.
Pingyuan Industry Park WWTP	16,718.44	10,500.00	
Shizuishan Industry Park East Region WWTP	7,401.84	4,500.00	
Shizuishan Fine Chemical WWTP	9,004.92	6,000.00	

Background

- On September 19, 2016, the China Securities Regulatory Commission (CSRC) has approved BoTian Environmental Group to public issue a green coeporate bond with a total face value no more than 300 million Yuan RMB to qualified investors.
- October 12, BoTian Environmental Group public issued a **3 +2 years** of green corporate bonds in the Shanghai Stock Exchange, the issue size of **300 million yuan**, the bond code 136749.SH.
- The term of the bond is 5 years, with the issuer option to rise the coupon rate at the end of the third year and the option of investors to sell back.
- This bond is guaranteed by **Zhonghe SME Financing Guarantee Co., Ltd** with full amout and unconditional irrevocable guarantee.
- By the Shanghai New Century comprehensive assessment, the issuer's main credit rating AA-, the current bond credit rating AAA.
- The fund raised by Green Bond will financing above 4 WWTPs



Good Practices : Conclusion

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PPP model Green Fund

- ✓ The Guiding Fund is indeed a policy introduced fund set up by the local government and Operating in a market-oriented way. It mainly includes two parts: ***government finance and social recruiting***
- ✓ Application of PPP model on Green Fund can give full play to the government finance a "***leverage***" amplification effect, innovating financial capital investment methods and increase the supply of industrial capital.
- ✓ To attract private capital investment to support the key industrial areas and environmental protection industries such as wastewater treatment facilities and services.
- ✓ Applying Green Fund in PPP model can also effectively avoid "rent-seeking" and "cheat for subsidy" on project, prevent the corruption.
- ✓ Government-Led Green Fund will enhance the credit of project itself and attract private capital investment on PPP projects.

Good Practices : Conclusion

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Green Corporate Bond

- ✓ This issuance of this bond can be described as a ***milestone*** in the development of green finance in China, because it is first Green Corporate bond issued by a ***Non-listed private enterprise***
- ✓ It also demonstrated how to expand the low-cost green financing channels for non-listed private enterprises, and contributed to broaden the scope of green bond issuers, in order to promoting the comprehensive and healthy development of China's green financial mechanism.
- ✓ The success of the Green Corporate Bond has great significance on industry and market. Before that, the central enterprises and state-owned enterprises always received more finance supporting, but indispensable private enterprises in the current environmental industry rarely benefit from green financing.
- ✓ Actually, private enterprises normally have more advantages in effectiveness of resource utilization and Capital market can best reflect the future value of the company's pre-judgment

Lesson Learnt

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Green Funds

- "leverage" effect on public capitals
- Enhance the credit of project itself
- To attract more private capital investment on PPP project

Green Bonds

- Fast and effective financing method for private enterprises (Non-listed enterprises)
- low financing cost

Work



Private Capital

Not work

Green Credits

- Low rate on ROI & Long operation cycle
- Maturity mismatch & High Refinancing Cost
- Complicate Loan process & high credit request for private capital
- Undefined Environmental & Social Risk

Green IPO

- Environmental Protection Examination
- Mandatory Environmental Information Disclosure
- IPO Barrier: by the end of 2016, CSRC has received 760 IPO applications, **only 45** of them have approved to IPO
- Green Index and Green IPO

Bonus example:

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Anthony Modeste transfer to Tianjin QuanJian FC





Season	Status	Payment	Lesson Learnt
2017	Loan	<€ 6 million	<ul style="list-style-type: none"> • Avoid to pay same amount of regulation fee (less than € 6m) • Confidence in Club's profitability in future 2 years • Expectation for any Change or call off on CFA's transfer regulation • Reduce expenditure & financing risk
2018			
2019	Buy out	€ 29 million	
	Total	€ 35million	

Background

- Former **1. FC Köln striker**, 25 goals in 2016-2017 season.
- Tianjin Quanjian FC, first year of Chinese Super League but Huge Investment, Alexandre pato (€18m) & Axel Witsel (€20m) as well as other Chinese National team players.
- Chinese Football Association (CFA) has released tough regulation to limit on **mega-money transfer** for foreign player on June 20, 2017
- For any **unprofitable club**, transfer fee over 45 million Yuan RMB(**Approximately € 6M**) in 2017 season need to be paid same amount of regulation fee for transfer, and the fee will inject into China Football Development Foundation for training of youth football player.
- The transaction of Modeste was completed after above regulation took effect.



TRANSFER DETAILS

Transfer period Season 17/18 - Jul 12, 2017		
 1. FC Köln	→	 TJ Quanjian
 1.Bundesliga	Competition	Chinese Super League 
First tier	League typ	First tier
Peter Stöger	Manager(s)	Fabio Cannavaro
Dr. Jörg Jakobs	Sporting director	-
Market value at time of change £18.00m		
Age at the time of the transfer 29 years 02 months 28 days		
Remaining contract duration at 1. FC Köln 03 Years 11 Months 18 Days (Jun 30, 2021)		
Transfer fee £31.23m		

Thanks!

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