Eco-industrial parks in China

Dr. Lei SHI
Environmental Science & Engineering
Tsinghua University

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- EIPs in China: background and history
- EIPs as win-win solutions: from both micro- and macro- perspectives
- EIPs as eco-innovations - from strategic niche to mainstream
What is EIP

➢ An Eco-Industrial Park is a community of manufacturing and service businesses located together on a common property. Members seek enhanced environmental, economic, and social performance through collaboration in managing environmental and resource issues.

(Lowe, Eco-industrial Park Handbook)

Win-Win solution at industrial Parks

We have talk more about …
EIPs, Success or not?
David Gibbs (2009):
It is evident from the research findings that making industrial ecology operational through EIP development is at an early stage of development.
…, the in-depth interviews and site visits revealed the problematic nature of developing this (EIP) into reality.

Q: What about EIPs in China

Part I
Background and History of EIPs in China
Background and History of EIPs

1978
1984
1992
2001
2003
2010

Economic & Tech Development Zone

Policy demonstration zone
from planned economy to market economy

High-tech Industrial Parks

To develop high-tech sectors
Innovation country
Background and History of EIPs

1978
1984
1992
2001
2003
2010

MEP Pilot EIPs

Guangang Cane-sugar EIP

Cleaner Production Promotion Law

Tianjin TEDA EIP

Shi H, 2009

Geng Y, 2004
Background and History of EIPs

2003
- EIP Guidelines

2005
- To fasten circular economy development
- EIP Tech. Standards
- Regulation on EIP management
- EIP: TEDA, Suzhou IP, Suzhou High-tech Park
- Circular economy promotion law

2010
- EIP: Wuxi High-tech Park, Yantai EDA, Weifang EDA

The biggest national experiment in EIPs - CHINA

MEP, 36 EIPs

NDRC, 13+20 EIPs

More EIPs at Provincial and Municipal levels
From Economic View: IPs have been the mainstream of China’s development

National 194
Provincial ~1300
Others ~ 3000

From Environmental View: Environmental Problems appeared in different periods of 20 century in developed countries concentrated in China in recent 30 years

Domestic wastewater
Smoke pollution
GHG
Heavy Metals
Organic Pollutants
Nutrients
Nuclear pollution
POPs
Secondary pollution
Growth creates
Resources and environmental risks...
...but also opportunities for innovation and reformation.

E I P
IPs provide the platforms;
Res. & Env. make it happen.

EIP, mainstream? The vision!

EDTA 1984 -
High-tech 1992 -
EIPs 2001 -
Strategic niche

Sustainability transition

Sustainable development is the iron principle
Part II

EIPs as win-win solutions in China

EIP Cases - Yixing
EIP Cases - Zhuhai

To replace 36 boilers in 18 companies;
To save fuel oil 582t/h
To reduce SO$_2$ 22,000 tons

EIP Cases – Beilun, Ningbo

[Diagram of environmental and industrial processes]
Phase 1
Phase 2
Phase 3
Phase 4

Part III
EIPs as eco-innovation at parks’ level
What is Eco-innovation

- Eco-innovation is the production, assimilation or exploitation of a novelty in products, production processes, services or in management and business methods, which aims, throughout its life cycle, to prevent or substantially reduce environmental risk, pollution and other negative impacts of resources use (including energy use). Novelty and environmental performance are the two distinguishing features. (MEI, 2007)

Three peculiarities of eco-innovation

- The double externality problem
- The regulatory push/pull effect
- The increasing importance of social and institutional innovation.

Rennings K, 2000
What is Eco-innovation

Rennings K, 2000

Life cycle of industrial park
Coupling of land-infrastructure-enterprise

IP is a dynamic system comprised of land use, infrastructure establishment, enterprise recruitment & development. The three components are highly interlinked and should be operated carefully to make money flow to run smoothly.

Step out the isolated island – the road of TEDA
Qiansheng. Pi, The Director of TEDA

EIP – from strategic niche to mainstream development

➢ Technological trajectory (path dependency)
➢ Spaces for experimentation, to open windows for tech., information, funding
➢ Government as enabler, a powerful recruitment group is important
➢ Regional competitiveness (social embeddedness)
Thanks for your attention!

slone@tsinghua.edu.cn