



# Resource Efficiency/Circular Economy Policies and Approaches in China

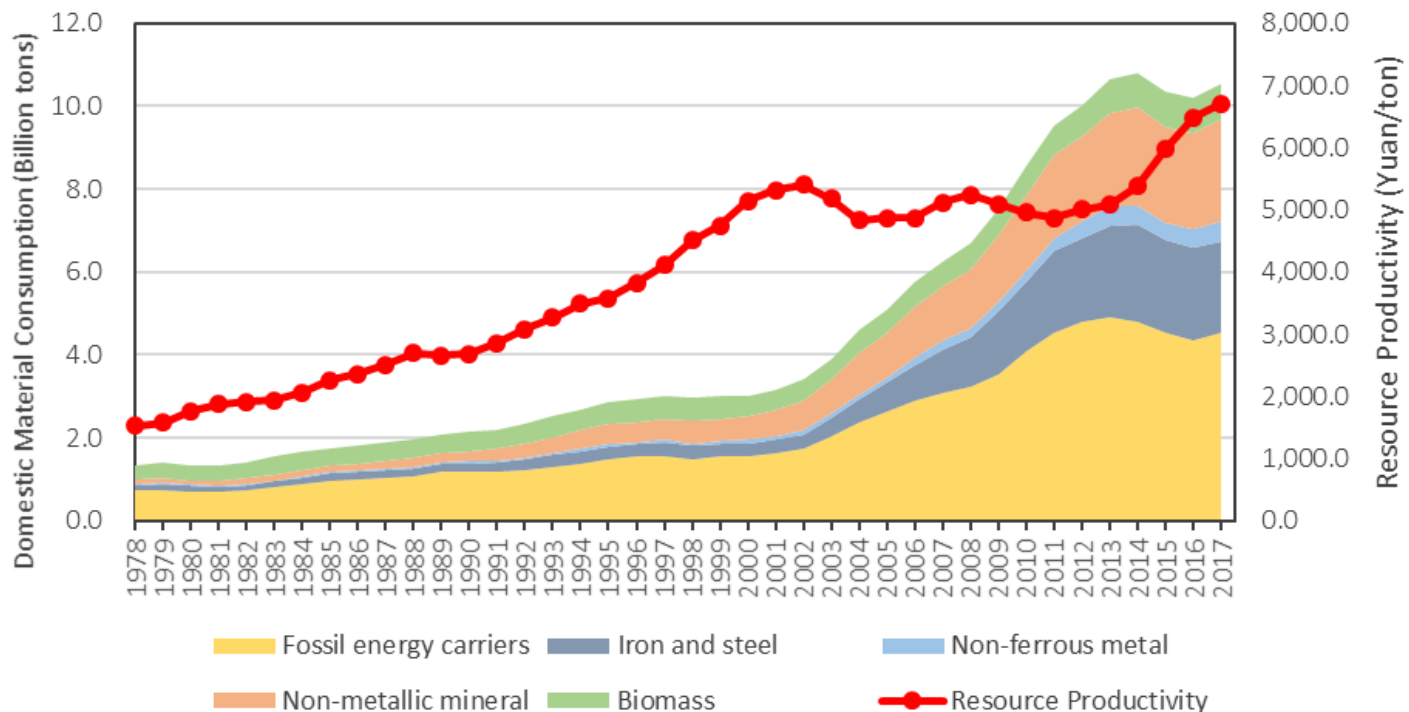
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# Resource Efficiency and Circular Economy in China

- As an important emerging country and the second largest economy in the world, China has to pay high attention to resource efficiency.
- The main challenge currently facing Chinese society is to balance people's need for an increasingly better life and the need for rectifying **imbalanced and inadequate** economic growth.
- China is committed to ecological civilization and a **green, low-carbon and circular** economic system. Circular economy plays an important role in the transition **from high-speed growth to high-quality development** in China.



Source: Institute for Circular Economy, Tsinghua University

\* Sand and gravel material are not included in the accounting

**Domestic Material Consumption and Resource Productivity in China**

# Legislation and Institutions on Circular Economy in China

## Laws & Regulations

### **Law on Promotion of Circular Economy of P. R. China (2009)**



*Regulations on the Piloting of Remanufacturing of Automobile Parts & Accessories (2008)*

*Regulations on the Designation of Government-Encouraged Projects on the Comprehensive Utilization of Resources (2006)*

...

Local regulations of Shanxi, Shaanxi, Guangdong, Guizhou, Shandong Provinces and Dalian, Wuhan, Changchun Cities etc.

### **National Level**

### **Specific Measures & Plans**

### **Local Level**

## Development Plans

### **The 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> Five-Year Plans for National Economic and Social Development**

- Including specific chapters, columns and sections on circular economy

### **Circular Economy Development Strategy & Near-Term Action Plan (2013)**

### **Guiding Actions for Circular Development (2017)**

...

**Most provinces have specific circular economy development plans**

## Inter-Ministerial Joint Meeting System on Developing Circular Economy (established in 2006, 14 ministries involved, coordinated by NDRC)

1. National Development and Reform Commission
2. Ministry of Environmental Protection\*
3. Ministry of Industry and Information Technology
4. Ministry of Science and Technology
5. Ministry of Finance
6. Ministry of Land and Resources\*
7. Ministry of Housing and Urban-Rural Development
8. Ministry of Water Resources
9. Ministry of Agriculture
10. Ministry of Commerce
11. State-owned Assets Supervision and Administration Commission of the State Council
12. State Administration of Taxation
13. National Bureau of Statistics
14. State Forestry Administration\*

\* Currently Ministry of Environmental Protection is changed into Ministry of Ecology and Environment. And Ministry of Land and Resources and State Forestry Administration are merged into newly established Ministry of Natural Resources.

# Guiding Actions for Circular Development

(jointly promulgated by 14 Ministries in 2017)

## Overall requirements

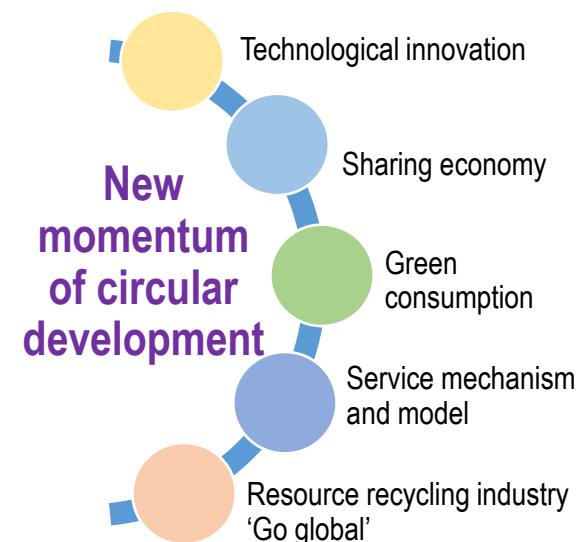
## Guiding ideology

## Fundamental principles

## Main targets



Industrial recycling system	Urban recycling system	Resource recycling industry
Enterprises' circular production	Urban low-value waste resource utilization	Industrial waste recycling
Industries' circular connection	Circular linkage of production system and living system	Recycled resources recycling
Industrial parks' circular development	Construction of circular economy demonstration city	Remanufacturing
		Regional resource recycling system



## Major Special Projects

Circular transformation of industrial parks

Industry and agriculture combination

Recourse recycling and utilization base

Comprehensive utilization base of industrial wastes

Internet Plus

Coordinated development of Beijing-Tianjin-Hebei regional circular economy

Renewable products and remanufacturing

Recycling technology & innovation

Pilot institutional innovation zone

Best practice promotion

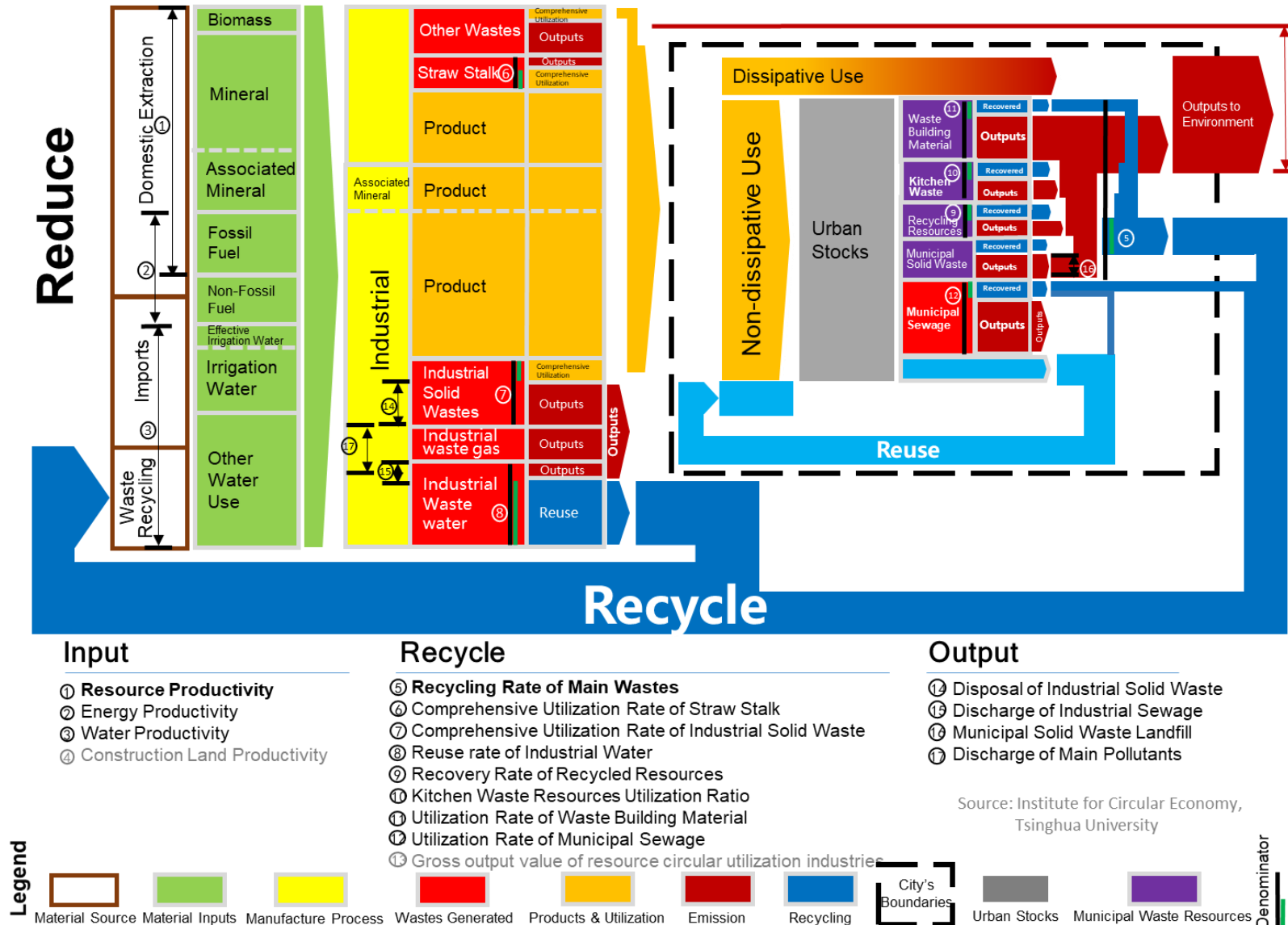
## Safeguard measures

- Regulations and rules
- Price and tax policy
- Fiscal and financial policy
- Capacity building on statistics
- Supervision and management

## Organizing and implementation

- Implement the responsibility of the local governments
- Clarify the responsibility of enterprises
- Encourage the participation of the whole society
- Strengthen organizational coordination

# Evaluation Indicator System of Circular Economy Development of China (2017 Edition)



jointly promulgated by:

- National Development and Reform Commission
- Ministry of Finance
- Ministry of Environmental Protection
- National Bureau of Statistics

## 2 Headline Indicators

- Resource productivity
- Recycling rates of main wastes

European Commission (http://ec.europa.eu/index\_en.htm) > Environment (http://ec.europa.eu/environment/index\_en.htm) >

**ENVIRONMENT**  
Environment Newsroom

Bing Zhu discusses the development of China's Circular Economy Indicator System

30/03/2018

  
(http://ec.europa.eu/newsroom/ENV/picture.cfm?id=229648&src=0&universe=658)

Dr. Bing Zhu is Director and Professor of the Institute for Circular Economy at Tsinghua University, China as well as a Guest Research Scholar at Energy Program of International Institute for Applied Systems Analysis (IIASA), Austria. Now a Member of the Inter-Ministerial Panel of P. R. China on Circular Economy, he works with his team to actively provide scientific support for China's circular economy and resource efficiency. Prof. Zhu is also the Member of UN Environment Programme's International Resource Panel (IRP), the Member of Advisory Panel of National Natural Sciences Foundation of China (NSFC) on Cooperation with International Organizations, and Vice Chairman of Circular Economy Committee of Chinese Ecological Economics Society.

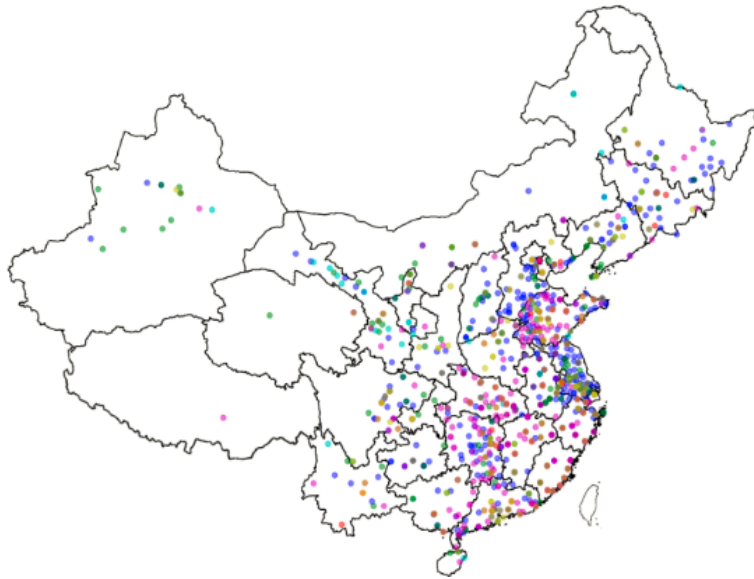
Dr. Bing Zhu is Director and Professor of the Institute for Circular Economy at Tsinghua University (http://www.tsinghua.edu.cn/publish/newsroom/), China as well as a Guest Research Scholar at Energy Program of International Institute for Applied Systems Analysis (IIASA) (http://www.iiasa.ac.at/web/home/research/researchPrograms/Energy/About-Energy-Program-en.html), Austria. Now a Member of the Inter-Ministerial Panel of P. R. China on Circular Economy, he works with his team to actively provide scientific support for China's circular economy and resource efficiency. Prof. Zhu is also the Member of UN

Source: Institute for Circular Economy,  
Tsinghua University

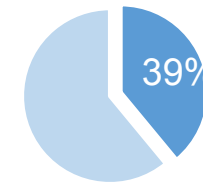
[https://ec.europa.eu/newsroom/ENV/item-detail.cfm?item\\_id=618580](https://ec.europa.eu/newsroom/ENV/item-detail.cfm?item_id=618580)

# A Survey of Industrial Parks (IPs) in China

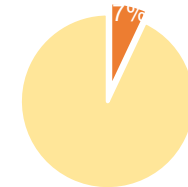
- In 2015, the Institute for Circular Economy of Tsinghua University, under the guidance and support of the NDRC, conducted a survey of 1,656 national and provincial-level IPs regarding their economic, resource, and environmental situations.



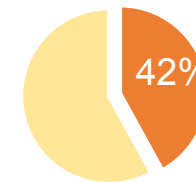
Categories	No. of IPs	Proportion
Machinery & equipment	288	17.4%
Chemical industry	218	13.2%
Metallurgy & nonferrous	133	8.0%
Construction materials	51	3.1%
Comprehensive industries	399	24.1%
High-tech	171	10.3%
Industry-agriculture composites	121	7.3%
Light industry	169	10.2%
Others	106	6.4%
total	1,656	



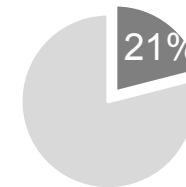
**GDP**  
26.4 trillion RMB



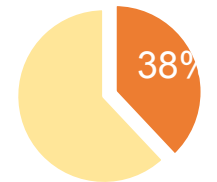
**Industrial Water Use**  
9.65 billion tons



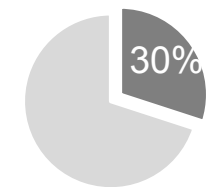
**Energy**  
1.3 billion t.c.e



**Industrial Wastewater**  
4.31 billion tons



**Constructed Land**  
18,900 km<sup>2</sup>



**Industrial Solid Wastes**  
970 million tons

**Spatial Distribution of the Surveyed IPs**

**Categories of the Surveyed IPs**

**Economic, Resource and Environmental Overview of the Surveyed IPs (as % of national total)**

- In 2018, there are 2,543 ratified national and provincial IPs, and probably more than 5,000 municipal or county-level IPs.
- A large proportion of China's GDP is produced in IPs. Meanwhile IPs are venues with the highly concentrated consumption of raw materials and energy, and with highly concentrated generation or discharge of various pollutants and greenhouse gases.
- IPs are regarded as a key to improving resource efficiency and pursuing sustainable development.



# Programs by the Chinese Government to Promote the Sustainable Development of IPs

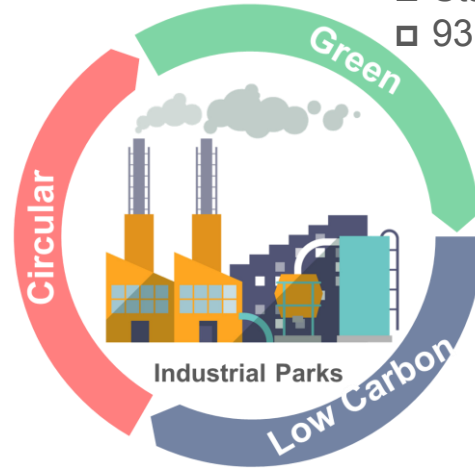
## Circular Transformation of Industrial Parks Program (CTIP)

- ❑ Led by **National Development and Reform Commission (NDRC)** and Ministry of Finance (MOF)
- ❑ Started in 2011
- ❑ 129 approved national demonstrations and pilots



### Seven Main Tasks of CTIP Program

1. Rationalize spatial layout
2. Optimize industrial structure
3. Build circular industrial chains
4. Utilize resources efficiently
5. Centralize pollution treatment
6. Make infrastructure green
7. Standardize operational management



## National Demonstration Eco-Industrial Park Program (NDEIP)

- ❑ Led by **Ministry of Ecology and Environment (MEE)**, Ministry of Commerce (MOFCOM), and Ministry of Science and Technology (MOST)
- ❑ Started in 2007
- ❑ 93 approved national demonstrations and pilots



## National Low-Carbon Industrial Park Pilots (NLCIP)

- ❑ Led by **Ministry of Industry and Information Technology (MIIT)** and National Development and Reform Commission (NDRC)
- ❑ Started in 2013
- ❑ 51 approved national demonstrations and pilots



# Outlook from Personal Viewpoints

## **A circular economy supporting China's carbon neutrality ambition**

- *President Xi Jinping has announced at UNGA that China aims to have CO<sub>2</sub> emissions peak before 2030 and achieve carbon neutrality before 2060*

## **Full-chain plastic pollution treatment guided by circular economy principle**

- *“Opinions on Further Strengthening the Treatment of Plastic Pollution” was promulgated by Chinese central government in January 2020*

## **Agricultural-Industrial compound circular economy**