Development of Recycling Industries in China: Policies and Progress

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Recycling Industries Are an Important Part of China's Circular Economy

"Circular Economy" refers to the sum of all activities of reduce, reuse and recycling during production, circulation and consumption. ··· "Recycling" refers to the practice of utilizing wastes, either directly as raw materials or indirectly through regeneration.

— *Law of the People's Republic of China on Promotion of Circular Economy (2009)*

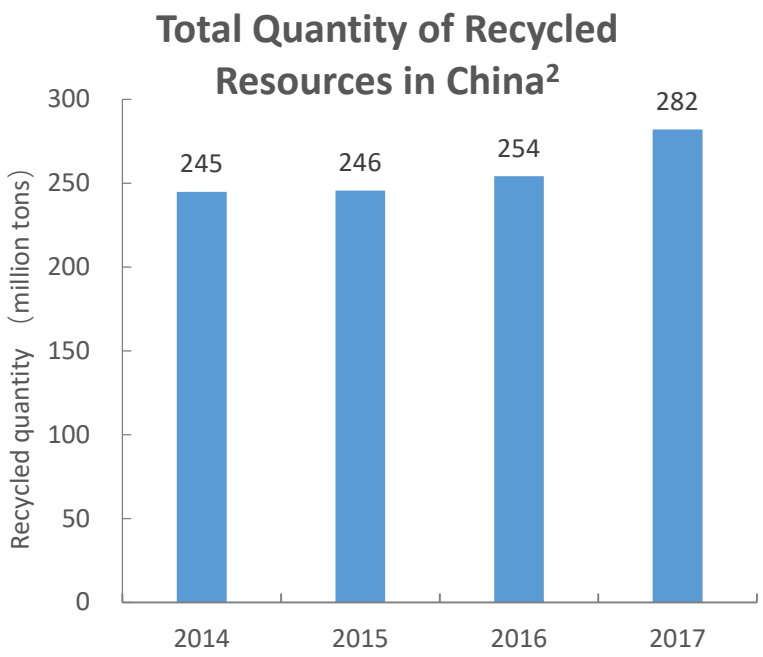
The development and utilization of recycled resources has become an important source of resource supply in China, and has played an active role in alleviating resource constraint, reducing environmental pollution, creating jobs, and improving people's livelihood.

— *Guidance on Accelerating the Development of Recycling Industries (2016),*
by Ministry of Industry & Information Technology, Ministry of Commerce, and Ministry of Science & Technology

- The Guidelines for the 13th Five-Year Plan (FYP) (2016-2020) contains clear instructions on the development of recycling industries
  - ✓ Promote the development and utilization of "urban mines"
  - ✓ Carry out Extended Producer Responsibility (EPR) system
  - ✓ Improve recycling networks, and strengthen the linkage between sorting-based household garbage collection and the recycled material recovery
- Recycling industries, together with high-efficiency, energy-saving industries and advanced environmental industries, are regarded as one of China's strategic emerging sectors in the 13th FYP

Current Status of the Development and Utilization of Recycled Resources in China

- **Large scale:** In 2017, China recycled 282 million tons, representing more than half of the world total.
- **Rapid growth:** Between 2014 and 2017, the amount of recycled resources grew at an average annual rate of approximately 3.6%.
- **Large variety:** There is a large variety of recycled resources. The dominant types include: waste iron & steel, waste paper, waste plastics, waste nonferrous metals, and waste glass.
- **Great potential:** According to an estimate by China National Resources Recycling Association (CRRA), China's recyclable resources will amount to 500 million tons by 2025 as various products will reach their end of life in large quantity.[1]

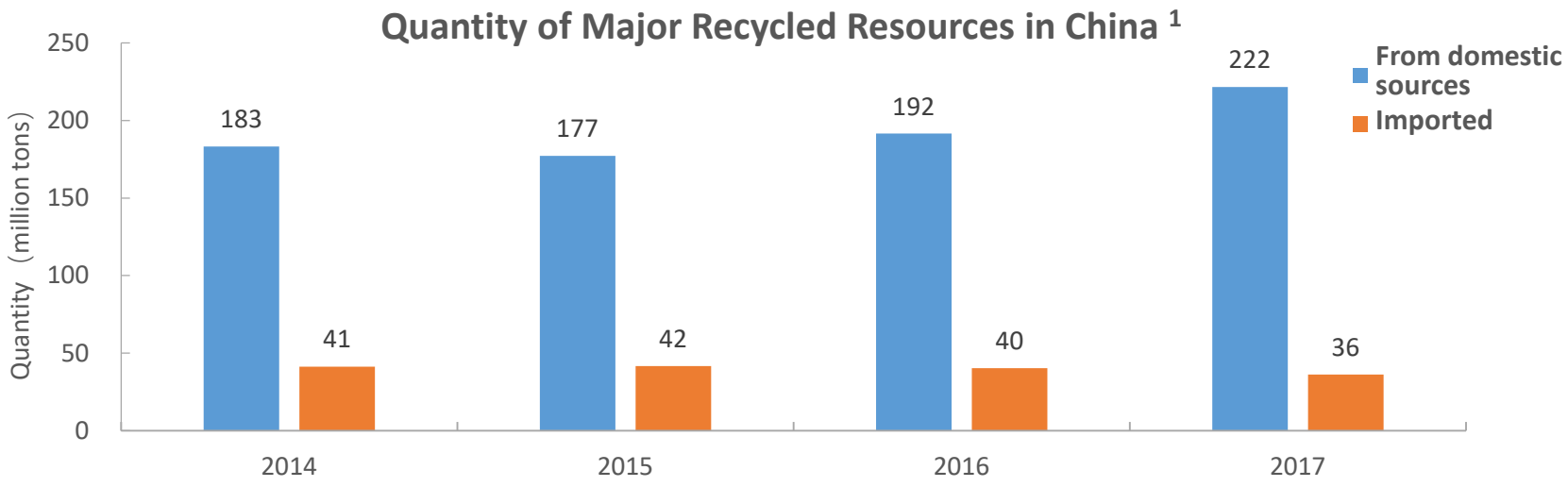


[1] *The amount of recyclable resources represents the prediction about China's potential in the recycling of domestic resources.*

[2,3] *Report on Development of China's Recycling Industries (2018), Ministry of Commerce and China National Resources Recycling Association.*

Trends of China's Recycling Industries

- **Leading enterprises and leading industrial parks keep emerging**. Due to voluntary market consolidation, a number of large-scale recycling enterprises have emerged. Driven by key national projects, a number of industrial parks focusing on recycling have emerged.
- **Technology and equipment development is rapid.** With 15 years of development, the leading enterprises in China's recycling industries have reached internationally advanced levels in technology, equipment and treatment capacity.
- **Market innovation is accelerating.** With wide use of internet, IOT and big data technologies, a number of online trading and service platforms have emerged in recycling industries.
- **The recycled resources are mainly from domestic sources.** The recycled quantity from domestic sources is steadily growing, whereas the quantity of import is gradually decreasing. Between 2014 and 2017, imported quantity decreased by approximately 2.7% annually.



[1] *Major recycled resources include: waste iron & steel, waste nonferrous metals, waste plastics, waste paper, and waste textiles. Report on Development of Recycling Industries in China (2018), Ministry of Commerce and China National Resources Recycling Association.*

Policy Drivers for China's Recycling Industrial Development

- Laws and regulations are increasingly sound, and serve as the basis for industrial management.
- More and more policies and plans are developed to ensure orderly development.

Laws

- Law on the Promotion of Circular Economy
- Law on the Prevention and Control of Environmental Pollution Caused by Solid Wastes
- Law on the Promotion of Cleaner Production

Regulations

Collection System
- Regulation on the Recycled Resources Collection

Scrap Vehicles
- Regulation on the Recycling of Scarp Vehicles

WEEE
- Regulation on the Recycling and Treatment of WEEE
- Regulations on the Levying and Use of WEEE Treatment Fund

Used Power Batteries
- Provisional Regulation on the Recycling and Reuse of Used Power Batteries from New Energy Vehicles

Polices

- Instructions on Establishing a Complete, Advanced Recycling System for Waste and Used Commodities
- Medium and Long-Term Plan for the Construction of Collection System of Recycled Resources (2015-2020)
- Instructions on Promoting the Transformation and Upgrading of Recycling Industries
- Guidance on Accelerating the Development of Recycling Industries

Standards and norms

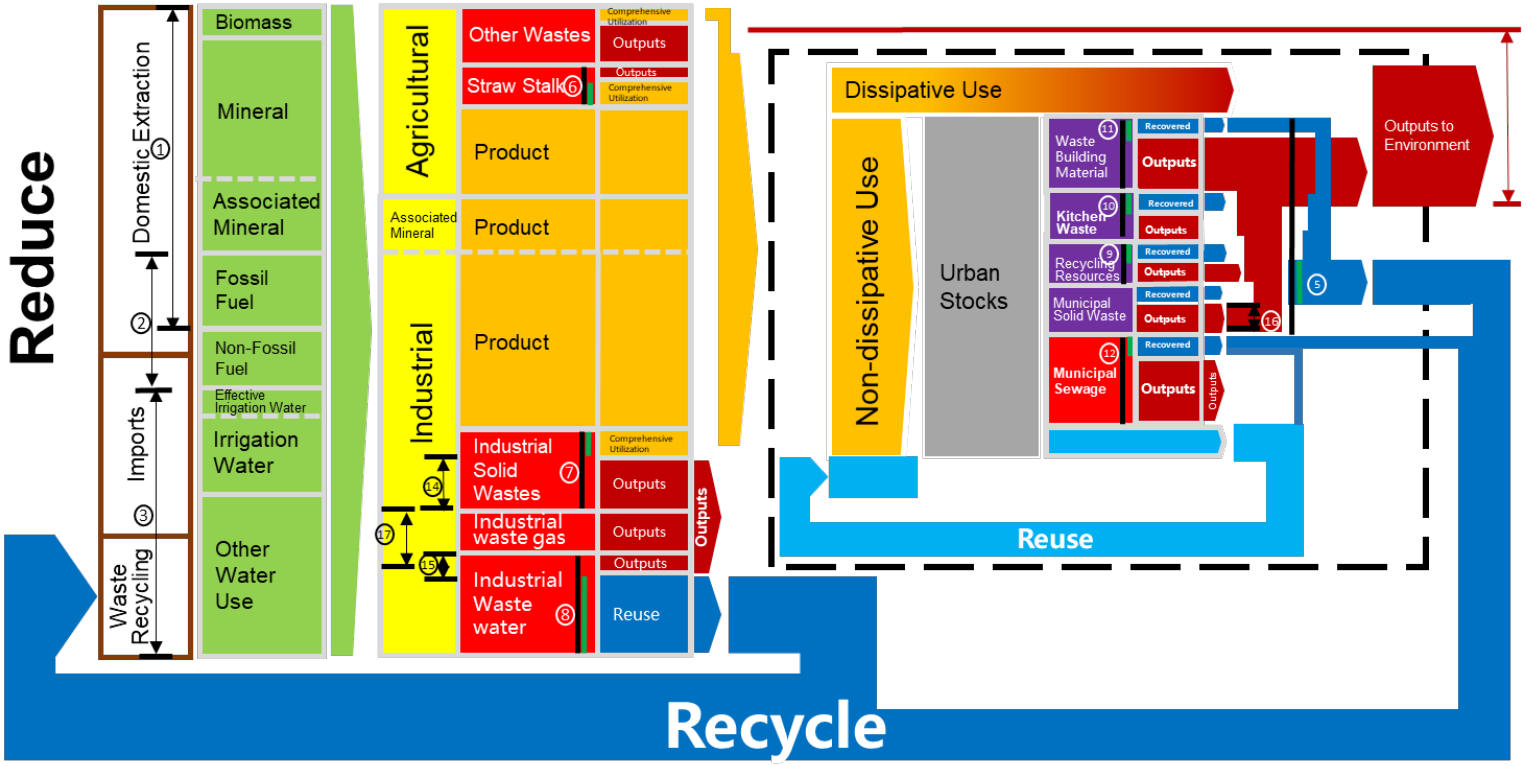
Waste Plastics
- Industrial Norms and Conditions for Comprehensive Utilization of Waste Plastics

WEEE
- Guidance on Examining the Eligibility and Licensing for WEEE Treatment Enterprises
- Technical Standards for the Prevention and Control of Pollution Caused by WEEE Treatment

Used Power Batteries
- Norms and Conditions for Comprehensive Utilization of Used Power Batteries from New Energy Vehicles

by National People's Congress | by State Council | by Ministries

The Importance of Recycling Industries Is Highlighted by the Evaluation Indicator System for Circular Economy Development



In the *Evaluation Indicator System for China's Circular Economy Development* (2017),

- **Recycling rate of main wastes**, together with **resource productivity**, are listed as Comprehensive Indicators. The former describes how much wastes of all types are recycled and reused, among which recycled resources is a main category.
- Among the remaining 15 indicators, two are for recycled resources:
  - ✓ **Recovery rate of main recycled resources**
  - ✓ **Gross output value of resource circular utilization industries**

Demonstrations and Pilots Lead the Way for Recycling Industries

12th FYP: Urban Mine Demonstration Bases

- The National Development and Reform Commission (NDRC) and the Ministry of Finance (MOF) promulgated *Notice on Building Urban Mine Demonstration Bases* in 2010.
- **The Urban Mine Demonstration Bases** aim to promote the recycling of recycled resources, demonstrate and popularize advanced technologies, and explore management models and policy mechanisms with Chinese characteristics.
- During the 12th FYP, China built 41 national-level Urban Mine Demonstration Bases, which leveraged almost 100 billion yuan of investment.

Distribution of Urban Mine Demonstration Bases

13th FYP: Resource Circular Utilization Bases

- In 2017, NDRC, MOF and the Ministry of Housing and Urban and Rural Development (MOHURD) promulgated *Instructions on Promoting the Building of Resource Circular Utilization Bases.*
- **The Resource Circular Utilization Bases** commit to promote the integration of urban infrastructure, the sorting of garbage, the resource circular utilization, and the development of new type of cities.
- **Current status:** 50 resource circular utilization bases have been built across China.
- **Overall objective:** By 2020, the recycling rate of wastes should be increased at least 30% in the areas served by these bases.

Distribution of Resource Circular Utilization Bases

Key Barriers and Future Trends of China's Recycling Industries

Key Barriers

- **The collection system is not sound enough.**
  - ✓ The recycling industries face such problems as: lack of planning in terms of the distribution of collection stations, lack of coverage and soundness in terms of the collection system, and lack of order in terms of the collection process.
- **The industry lacks concentration.**
  - ✓ Some SMEs are selective in terms of the types of wastes that they collect, and they often engage in homogenous competition.
  - ✓ During the collection and treatment processes, some small enterprises cause such problems as improper dismantling, disorderly disposal and secondary pollution.
- **The Extended Producer Responsibility (EPR) system needs to be further improved and popularized.**
  - ✓ The EPR system should be carried forward, with a view to building a sound waste disposal system.

Future Trends and Outlook

- **Policies and regulations will continue to be improved.**
  - ✓ Mandatory sorting of household garbage has raised new requirement for the reform of recycled resource collection management system.
  - ✓ The EPR system will be extended from electric and electronic equipment to other product categories.
- **The import ban has brought new opportunities for Chinese recycling enterprises.**
- **Innovative models will keep emerging.**
  - ✓ With the application of internet, IOT and big data technologies, more recycling models and management approaches will emerge, which will contribute to the development of the recycling industries.
- **Improved technologies will continuously boost the competitiveness of recycling industries.**
- **More stringent environmental standards will drive the development, transformation and upgrading of recycling industries.**

Thanks for your attention!

Disclaimer: This presentation is based on personal observation and literature review. It does not necessarily reflect the official position of any agency of Chinese government.

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