



# Circular Economy for Carbon Neutral in China

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- 1. Zero-carbon strategy**
- 2. Policy of Circular Economy and waste management of China**
- 3. Circular economy and carbon reduction**
- 4. Plastic recycling value chain in China**

# Background: SDGs and Globalization

- Climate governance and Paris Agreement
- Consumption is increasing
- Green and digital transformation
- Energy: infrastructure, renewable
- Resources: conservation, carbon sequestration
- Cooperate level: ESG and LCA

SDG policy : The 14th Five Year Plan (2021-2025)

lays down the strategy and pathway for China's **includes concrete environmental and efficiency targets.**

# Carbon reduction “1+N” Policy Framework

Indicator: Carbon intensity, total CO2 emission

—————→ NDC ←————

15<sup>th</sup> 5YP

60~65%

25%

6B

1.2B

peak

CO<sub>2</sub>/GDP  
emission

non-fossil-fuel

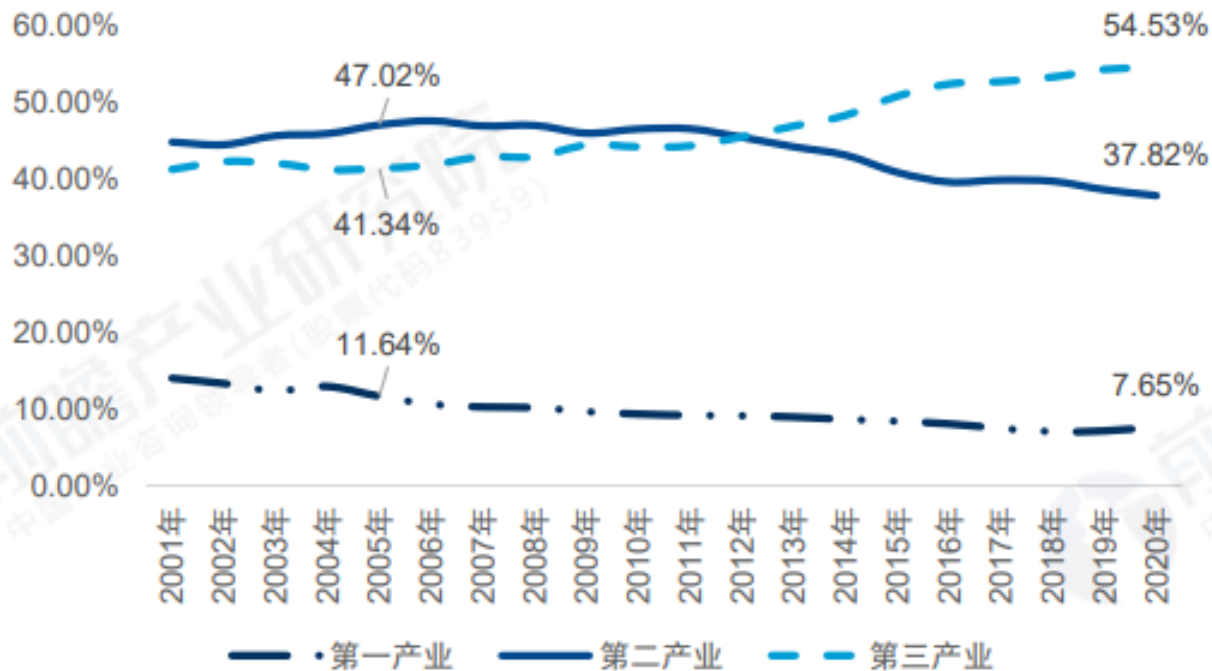
Forest stock  
increase

Renewable  
energy  
capacity

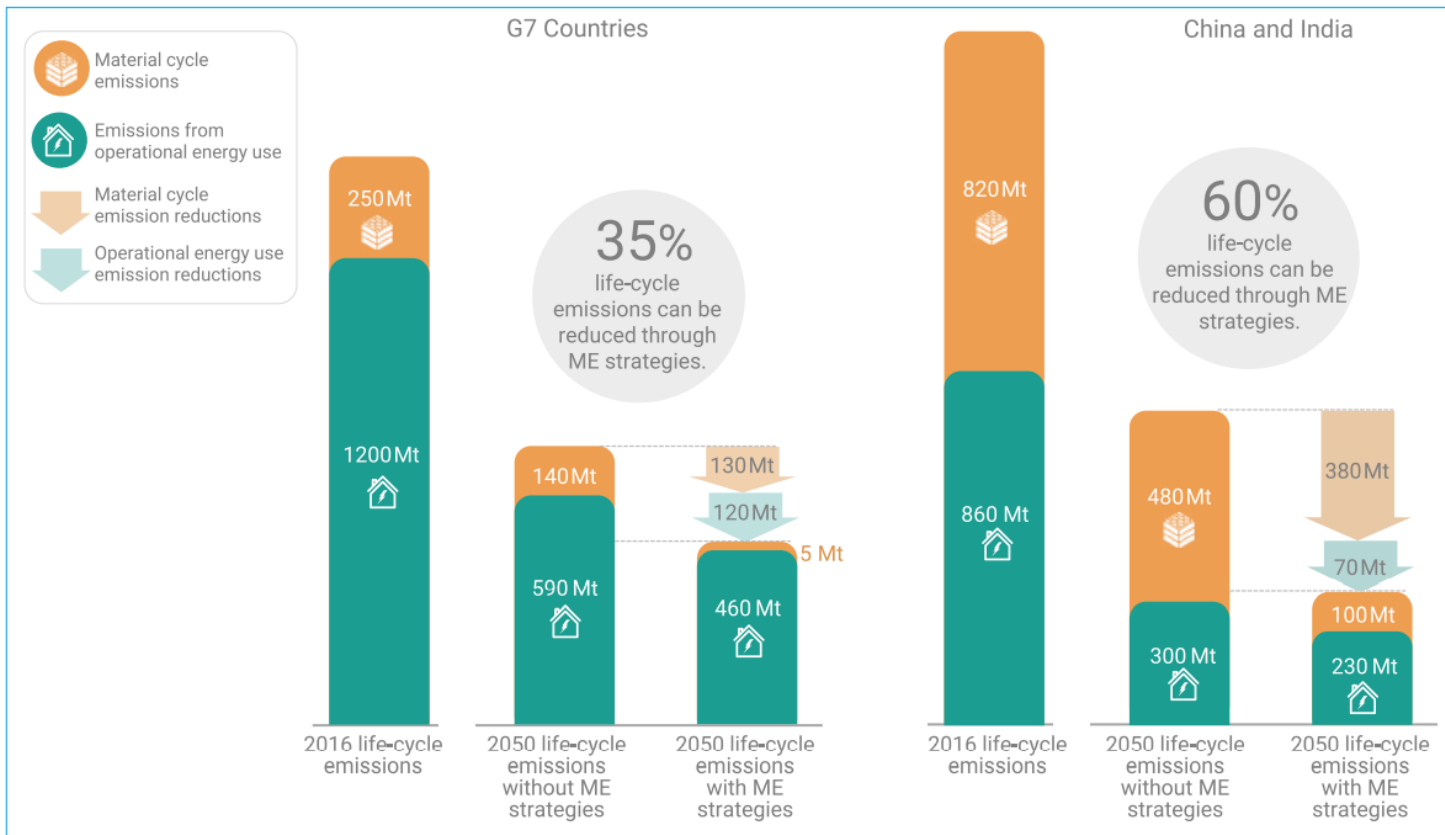


# Consumption is increasing: % of three sectors of GDP (%)

三大产业占国内生产总值比重（单位：%）



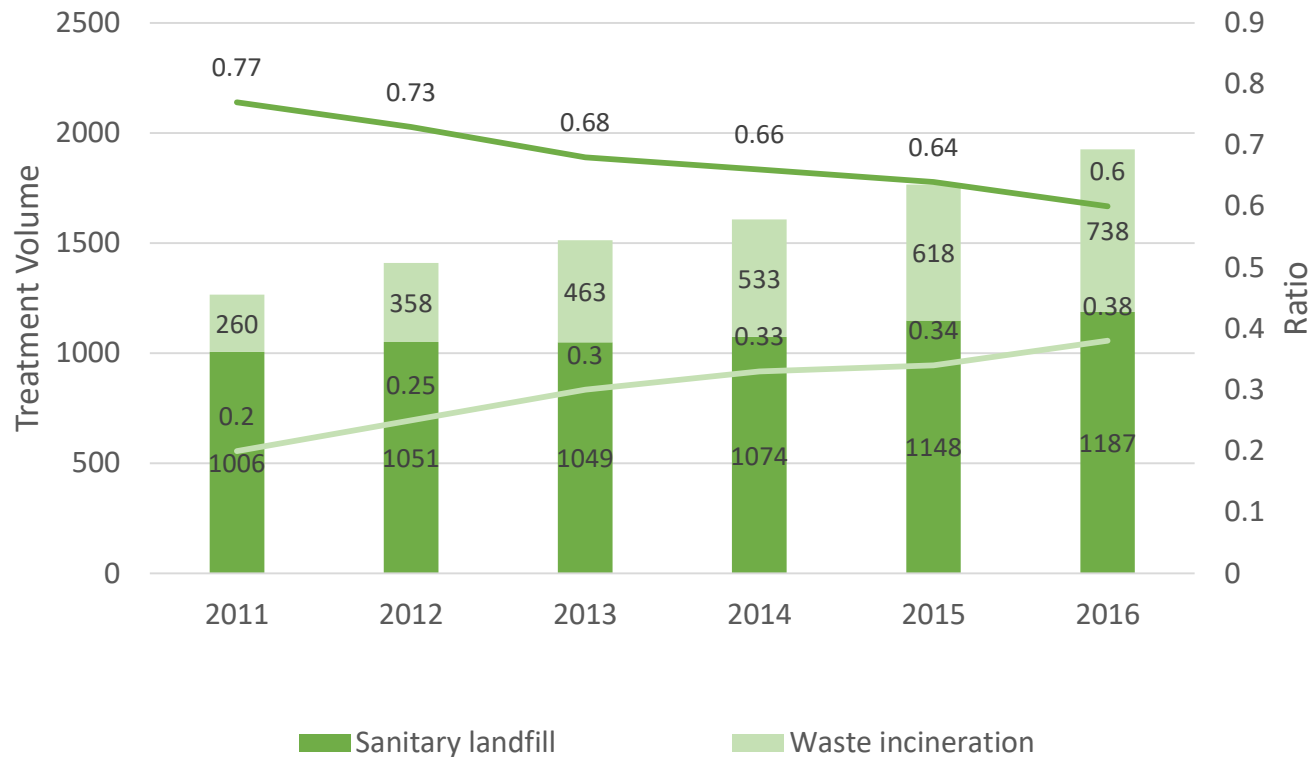
# Consumption emission in Home in China



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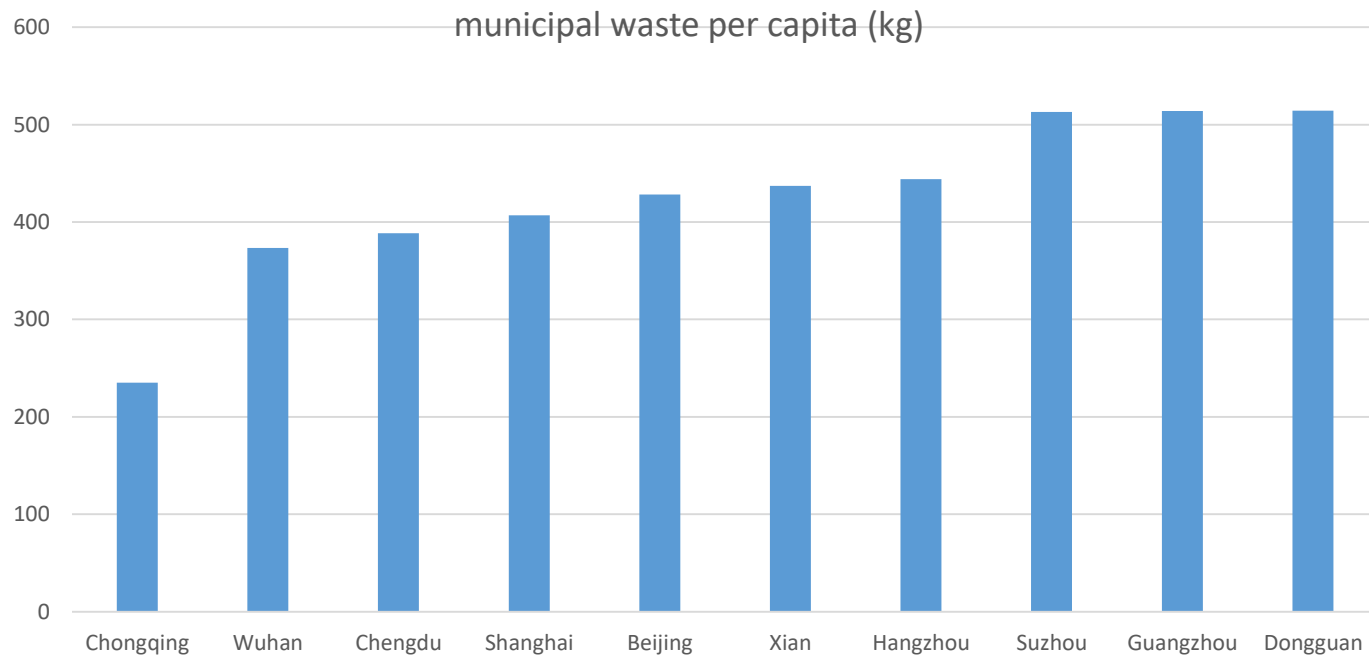
# Waste Management treatment (%)

Unit: 10,000 tons/year





# Waste per capita



# National green low carbon and circular Development Economic System (2021)

**Whole life Cycle of Development:** from planning, design, investment, production, transportation, green delivery, consumption , high –efficiency

- By 2025, the system will be built
- By 2035, the green industry will be in scale and energy resource efficiency will reach international level

**Green production of chemical industry,** building materials, leathers, ,re-manufacturing sector.

**Product labeling and promotion**

**Solid waste integration application**

**Green Standards development :** exhibition, decoration, promote the use of raw and auxiliary materials with low volatile organic content in automobile repair, decoration and other industries.

**Upgrading industry park circularity level.**

**Green supply chain:** material, packaging, Promote waste sorting and recycling, implementing EPR

**Financing:** enhance taxation

**Energy, water , Carbon market**

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# Carbon Emission and Market

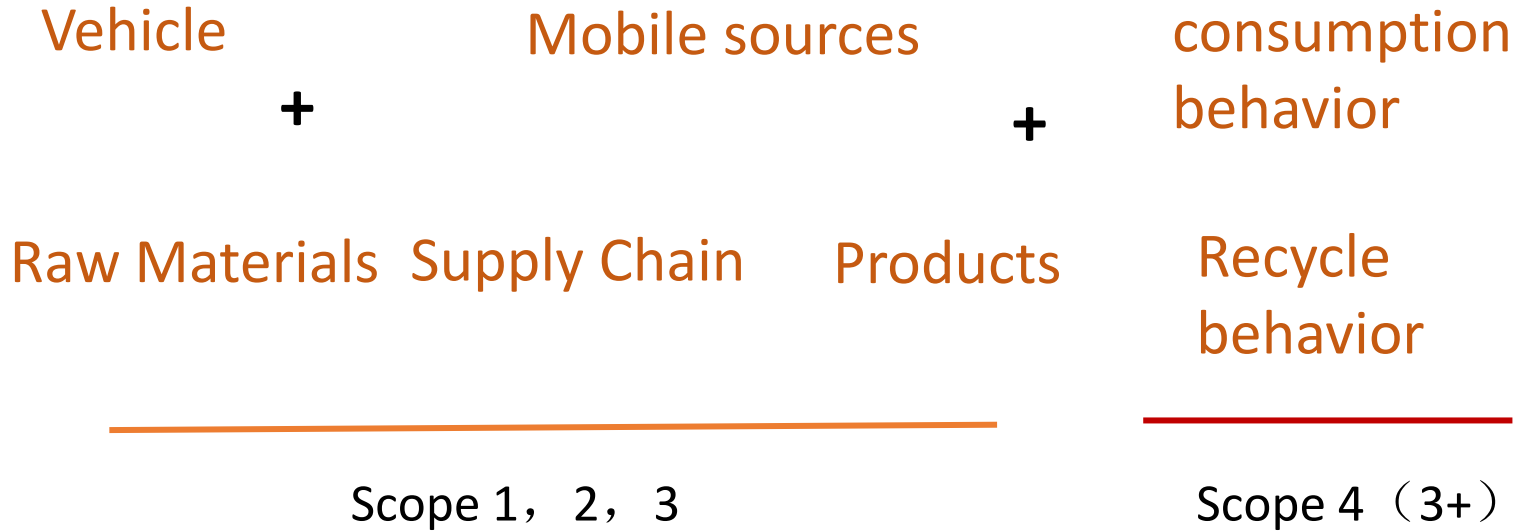
**Carbon Source**  
+



**Carbon Sink**  
-



# Relationship of Sector Emission and Consumption



## Supply Chain:

Eight supply chains account for more than 50% of global emissions

Food



construction



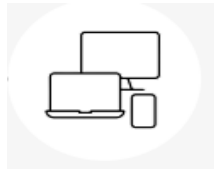
fashion



fast-moving consumer goods



electronics



automotive



professional services



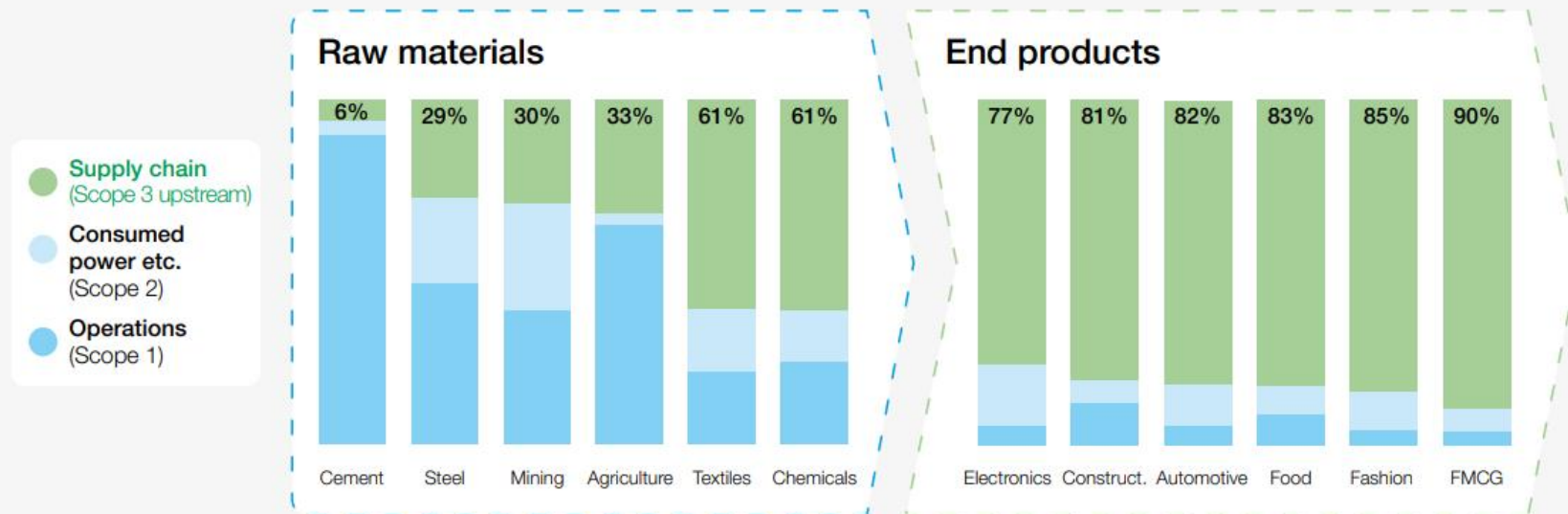
freight





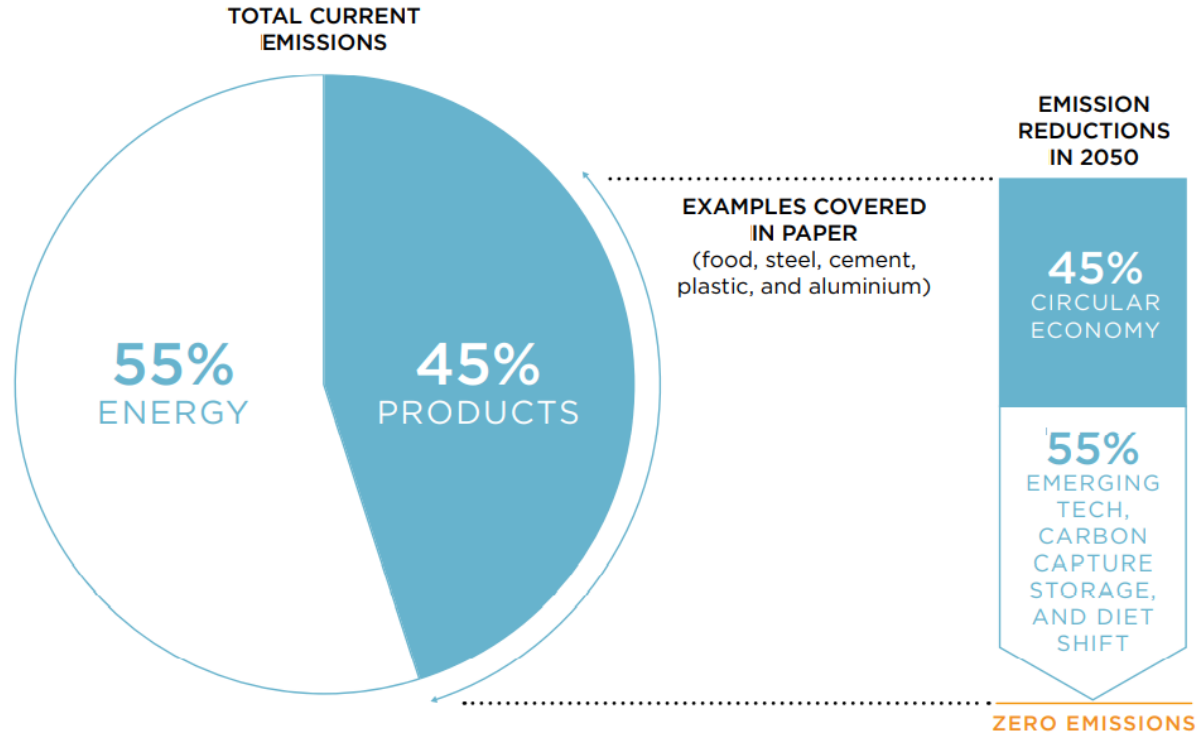
# Emissions in supply chains exceed operations

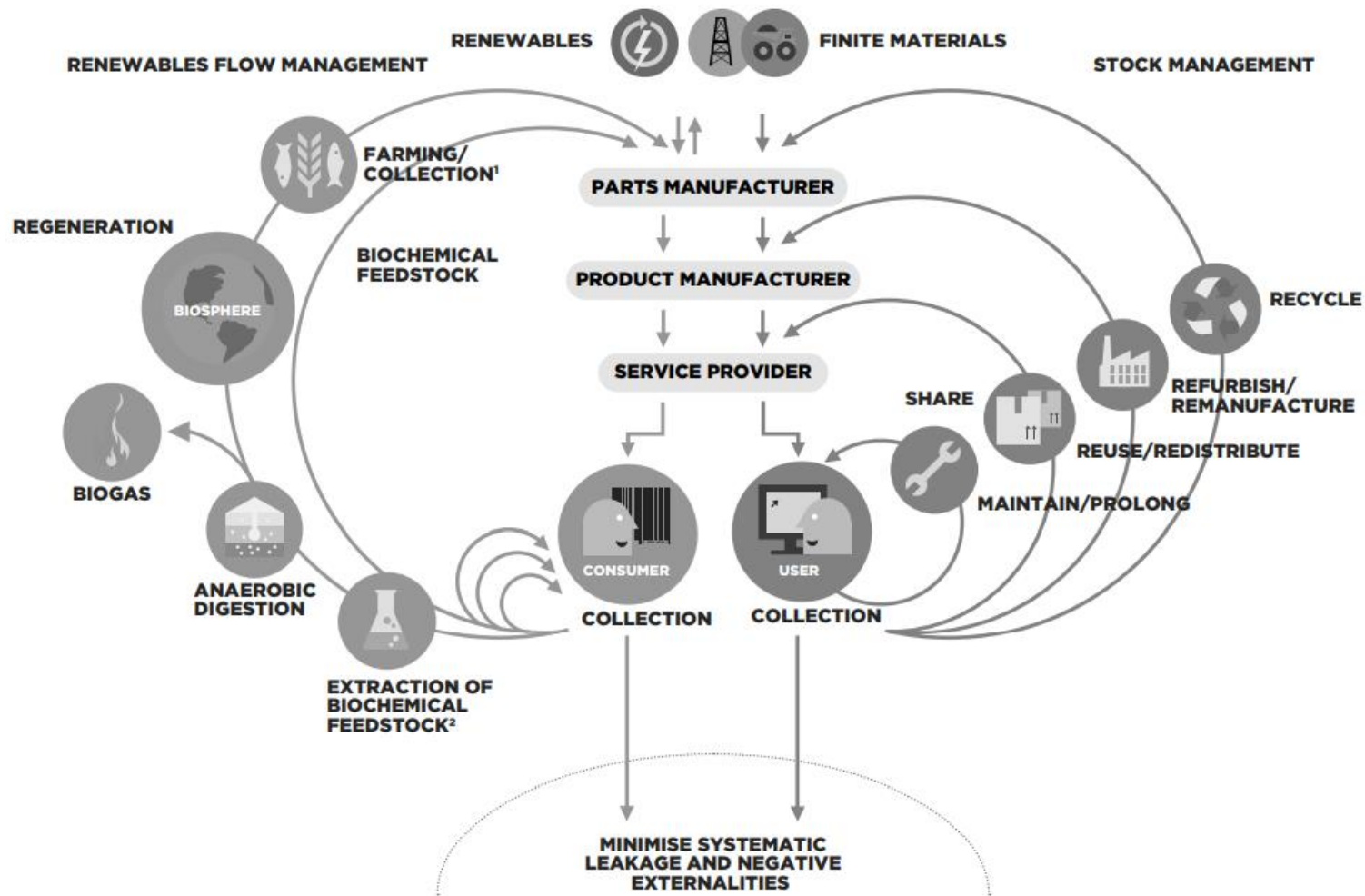
Emission split in Scopes 1, 2 and 3 upstream for selected industries (CO<sub>2</sub>e, 2019)



**Note:** Top companies selected based on number of reported Scope 3 upstream categories and industry fit;  
FMCG = fast-moving consumer goods

# Circular Economy and Carbon Reduction







Design out waste and pollution  
**to reduce GHG emissions**  
across the value chain

Keep products and materials in use  
**to retain the embodied energy**  
in products and materials

Regenerate natural systems  
**to sequester carbon**  
in soil and products

# A prosperous net-zero-emissions economy by mid-century is Mission Possible

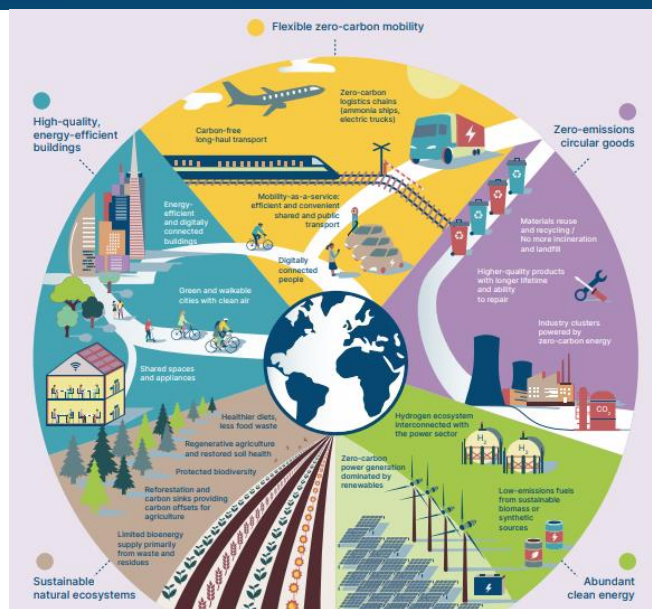
High-quality,  
energy-efficient  
buildings

Flexible  
zero-carbon  
mobility

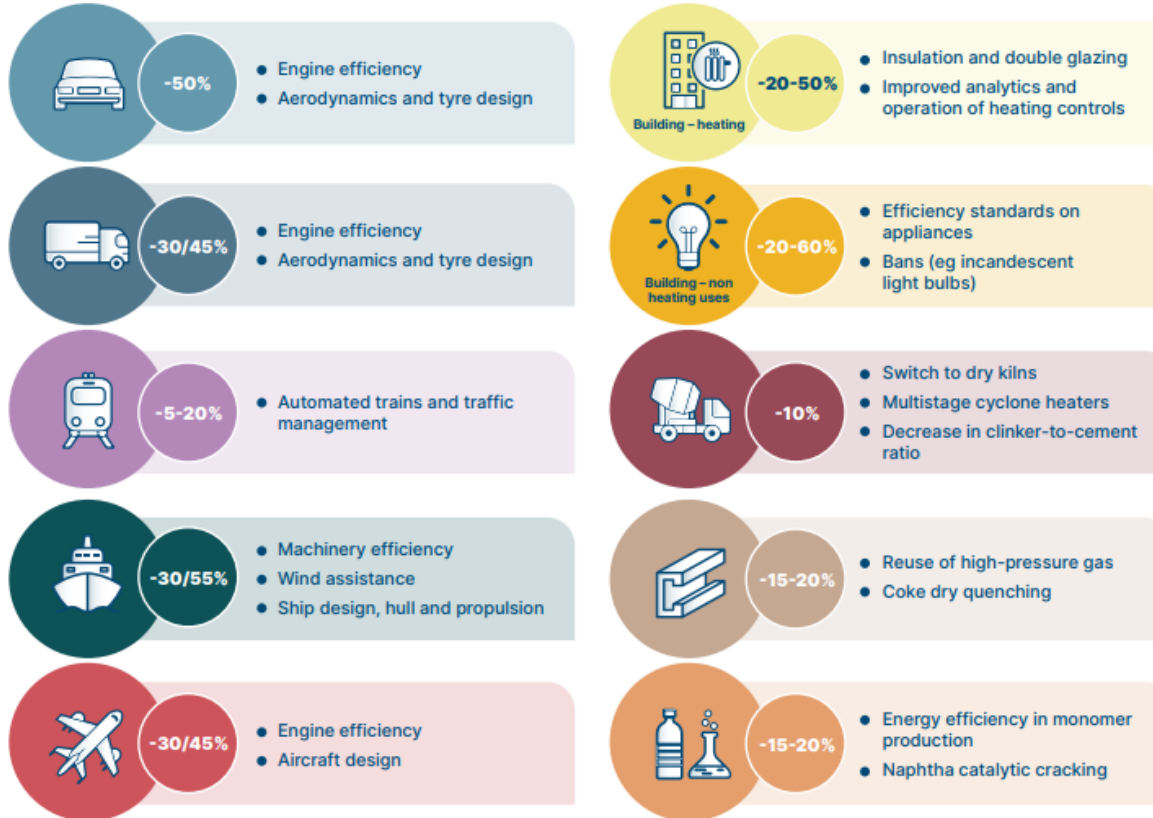
Zero-emissions  
circular  
goods

Abundant  
clean  
energy

Sustainable  
natural  
ecosystems

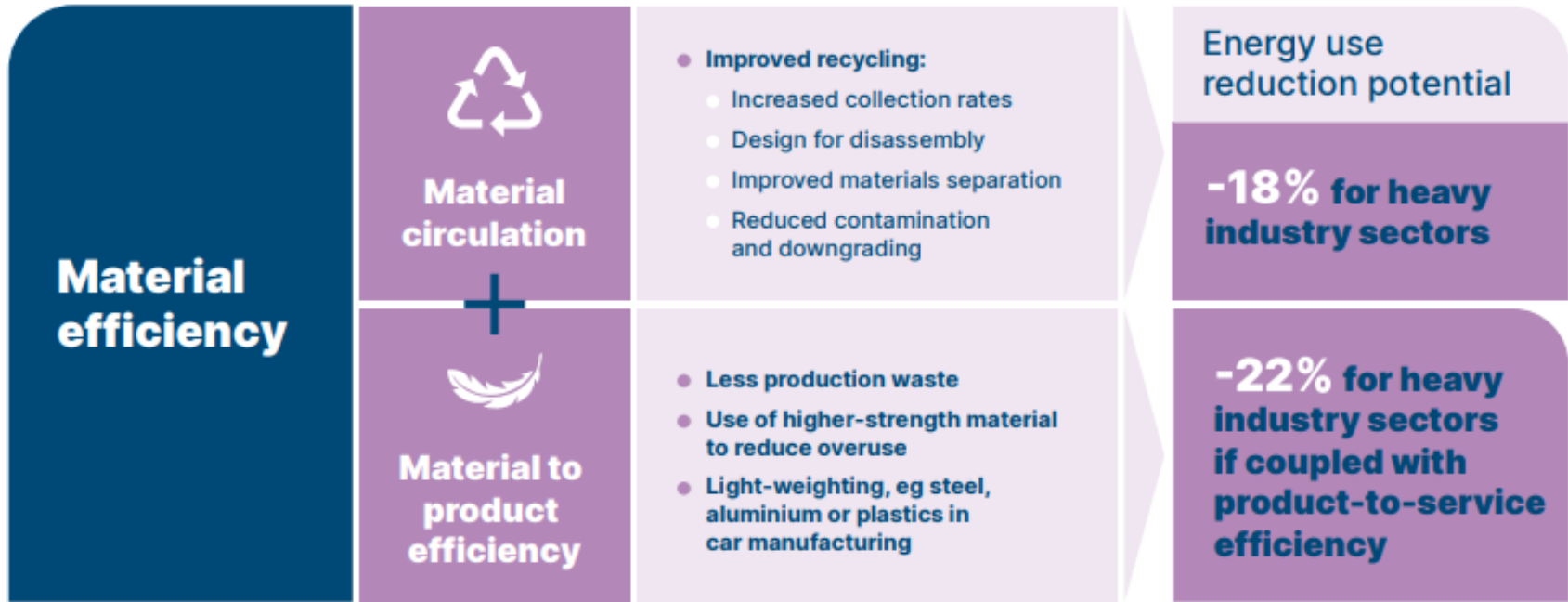


# 1/ Energy Efficiency: Major opportunities in transport and buildings, and important but smaller opportunities in industry



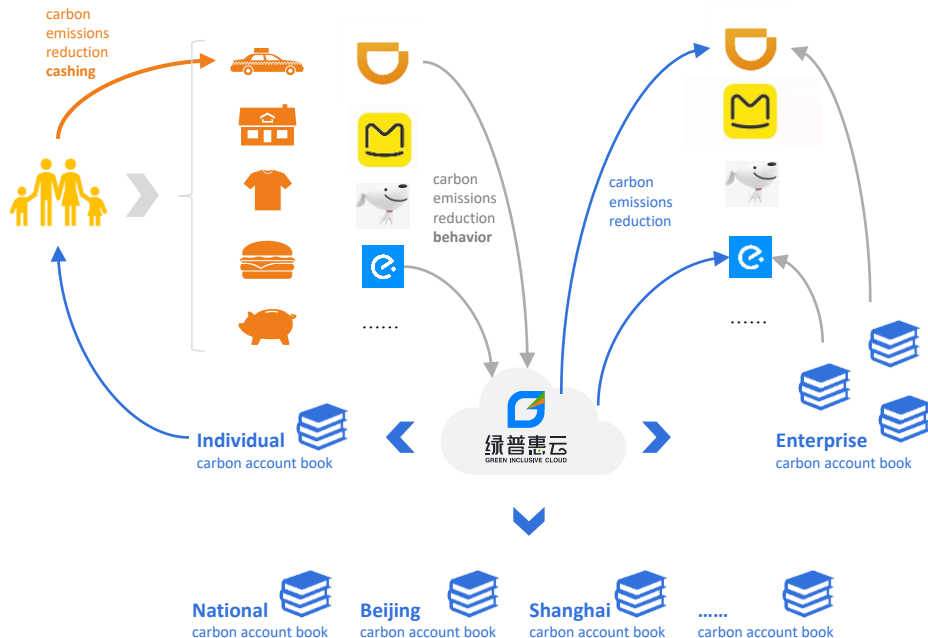


## 2/Material Efficiency: cut emissions from harder-to-abate industrial sectors by 40% by 2050



SOURCE: Material Economics analysis for the Energy Transitions Commission (2018)

# carbon inclusive elements



✓ **标准** standard

✓ **量化** quantity

✓ **记账**

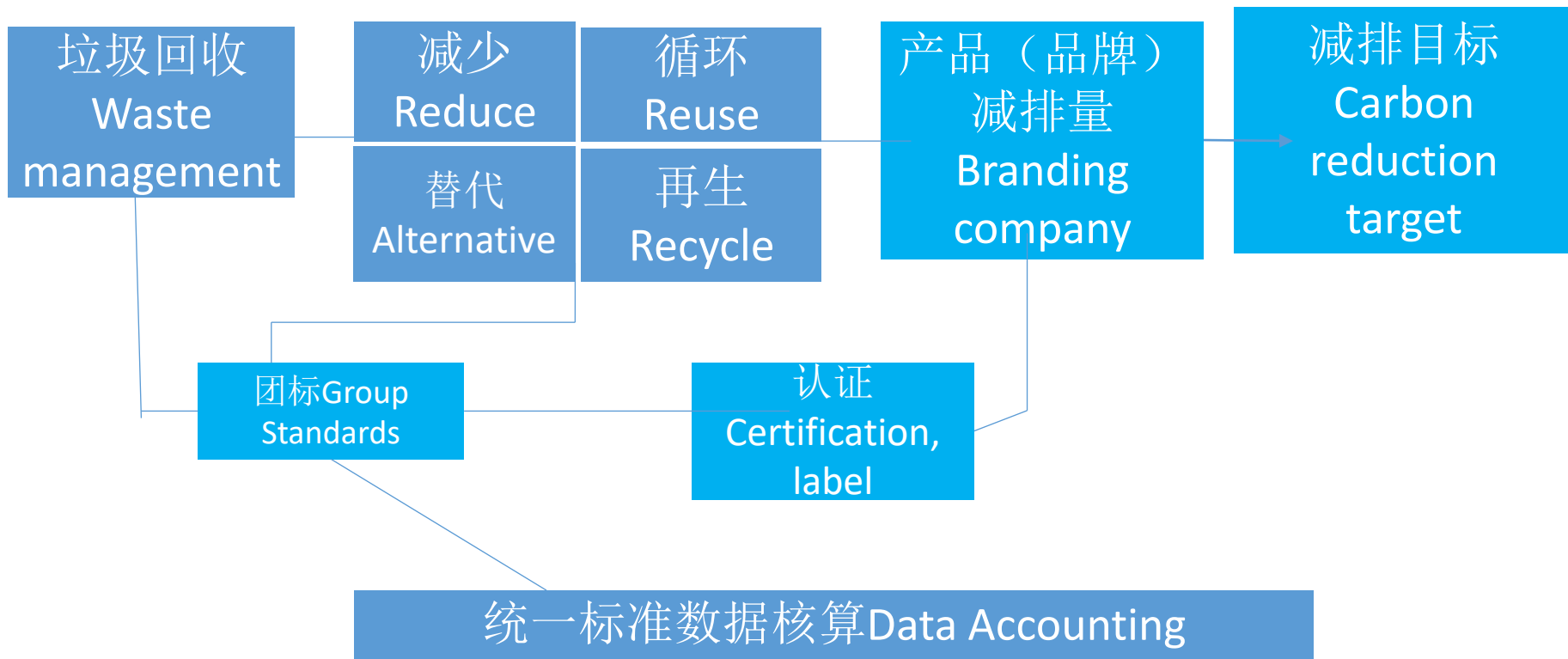
✓ **市场化**

✓ **滤重**

**doublecounting**

✓ **真实性** real

# circular economy and carbon

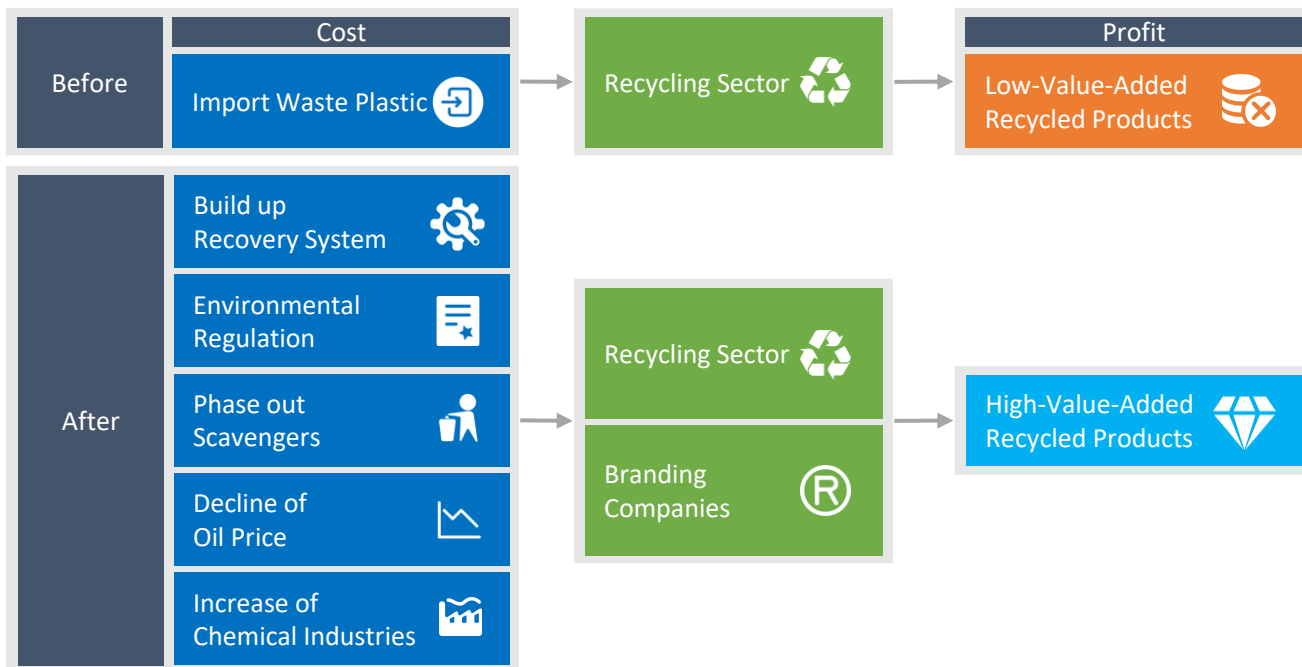


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# China Plastic development

- China is a big producer and consumer of plastic in the world with about 100 million tons produced annually
- about 30% of the total global production.

# Change of Value Chain of Single-use plastics





# Recycling process in China

Upper End: Recovery

Mid-End: Recycling

Recycled Products  
Application

Garbage  
Classification

Scavenger  
Ecosystem

Initial Sorting by  
Bailing Station

Manual/Machine  
Sorting

Machine  
Processing

Melt Down to  
Pellets

Textile

Bottles

Plates



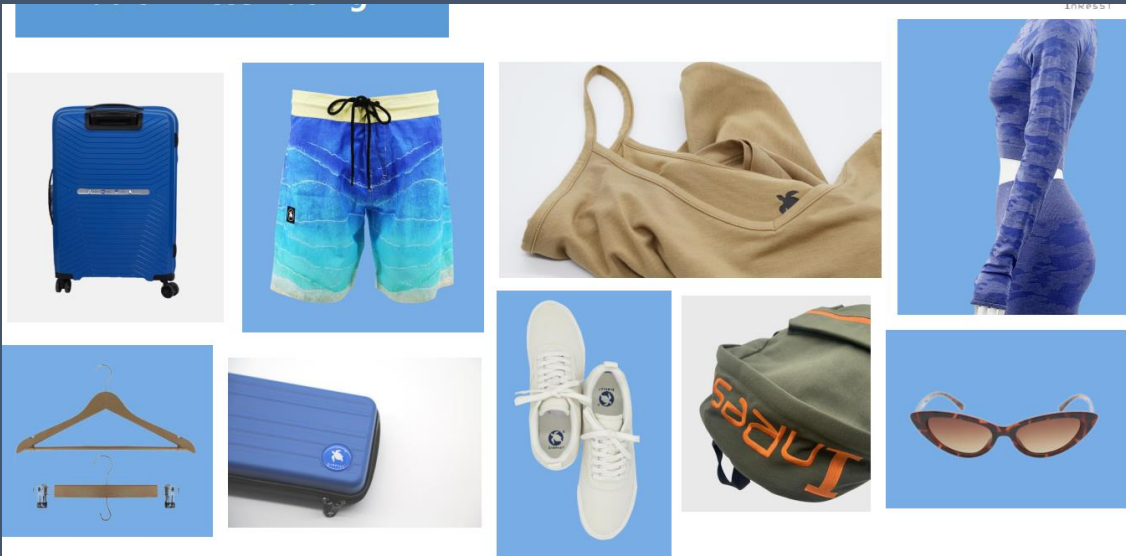






# Equipment and Processing Technology

# Business model: from Fishnet to High-value products



one in the past 6 years

ycled 30,000 tons of discarded fishing gear,  
r local women, the elderly and the disabled



打开网站: <https://tv.cctv.com/2019/09/20/VIDEeV1Ywzk3YtGc616bNGEY190920.shtml>

## From bottle cap to net: (rPE, rPP )





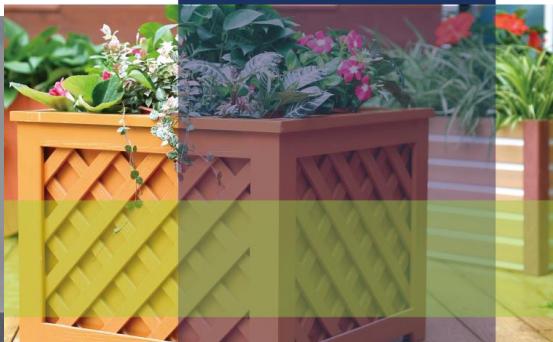


## Plastic wood railing style



花箱 树池  
Flower Box

## 环卫设施 Sanitation facilities



# Incentive recycling

- Collect flexible packaging->S bag
- 1kg=144 energy credit
- Digital technology



即日起

拾尚回收再升级，回收软塑包装赢蚂蚁森林能量，每公斤可得144g能量，每人每天最多可得9763g能量。

Step 1

✓ 支付宝搜索小程序 拾尚回收

温馨提示：微信小程序“拾尚回收”也可用，但是无法收集蚂蚁森林能量哦。





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Thank you!