



China's Practices and Business Approaches in the Recycling of Waste Textiles

TESSD Working Group on Circular Economy (March 11)

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Jinjin Ma CACE

2025

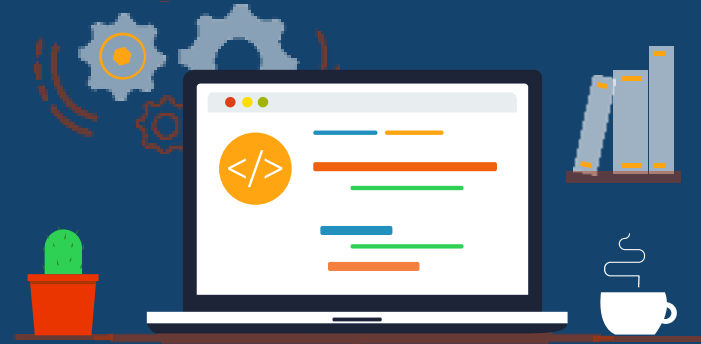
01 PART

Introduction of CACE

Introduction of CACE



- Established in 1995;
- Administrated by N DRC and others departments
- Collaborate with governments, industries, and businesses
- Providing policy reserach, industrial planning, technical standards development, and promotion of innovative business models,etc
- Driving the transition to a circular eocnomy across the whole society



02 PART

Overview of Waste Textile Recycling in China

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Annual waste textiles:

23.3 million tons (2023)

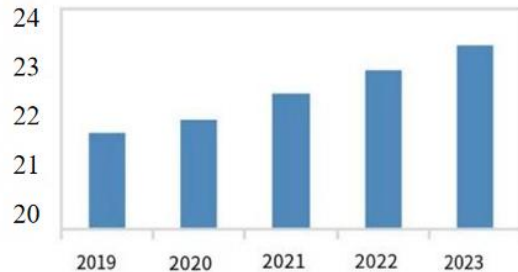
Annual Utilization of waste textiles:

5.53 million tons(2023)

Environmental impact (estimate by CACE):

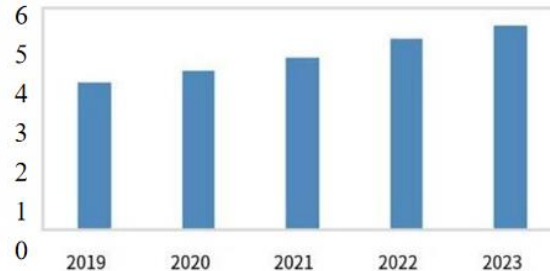
- Saved 7M tons crude oil
- Reduced **19.91M tons CO₂**
- Conserved **33.2B m³ water**

(Mt) Quantity of waste textile production in China



Production of waste textiles in China from 2019 to 2023

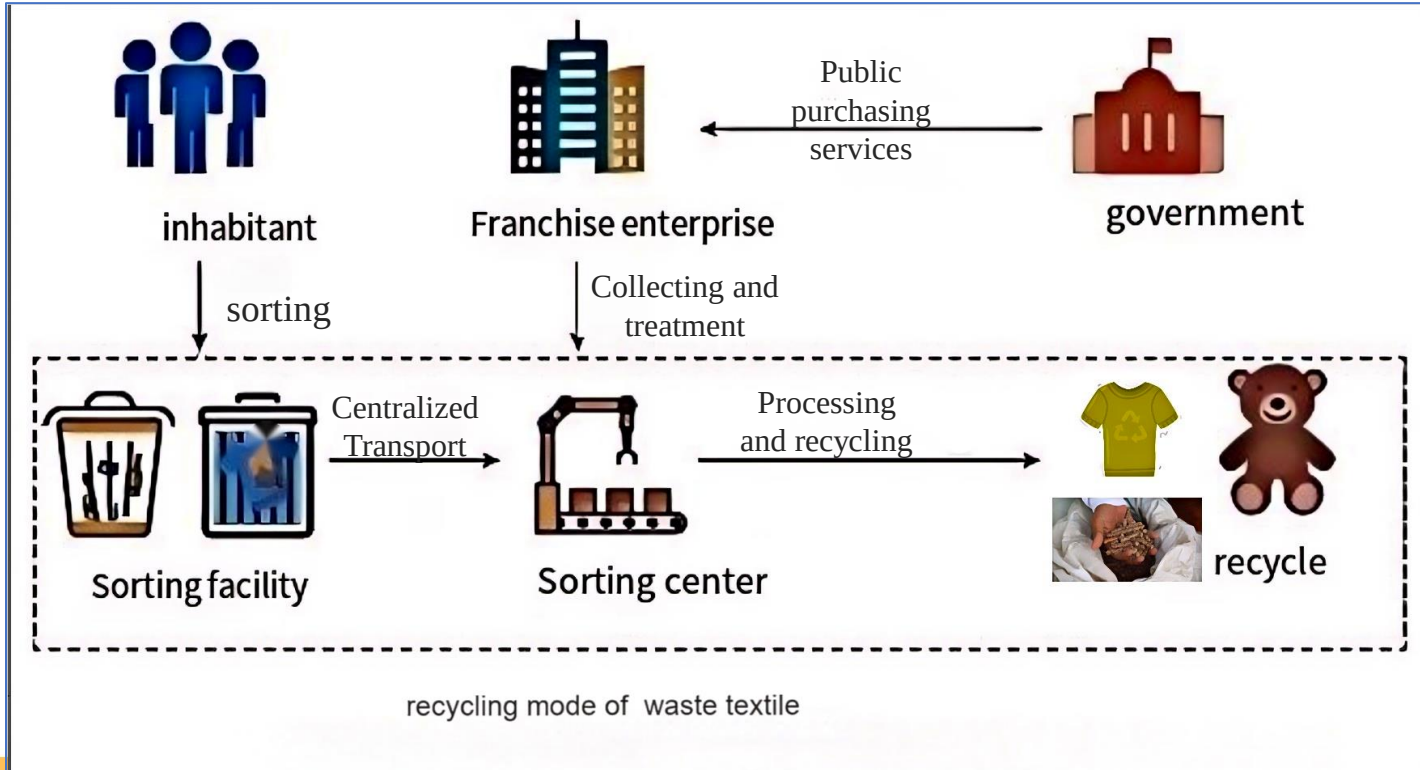
(Mt) Utilization amount of waste textiles in China



Utilization of waste textiles in China in 2019-2023

Government-driven system:

- municipal solid waste recycling system;
- renewable resource collection networks;
- others



Enterprise-driven business models

01

Traditional offline collection (e.g., recycling bins)



02

Internet + Collection Platforms such as Feimayi, and Alipay;



03

Fashion brands fulfilling their producer responsibilities in establishing textile waste recycling system



Diversified application channels:

- yarns, non-woven fabrics, construction materials, agricultural insulation covers, and automotive interior fabrics.
- New recycled materials R&D like Qingdao's pioneering technology for separating and recycling polyester-elastane blends to realize the high performance use.



Fiber Composite Board

R&D Progress: successful separation on poly-cotton, poly-wool, poly-cotton-elastane blends, with > 99% recovery.



polyester + cotton
Before After



polyester + wool
Before After

◆ First company to master chemical recycling technology for blended fabrics with three different materials.

◆ First to master chemical recycling for four types of blended fabrics: polyester-elastane, polyester-cotton, polyester-cotton-elastane, polyester-wool.



Regenerated elastane yarn

polyester (63%),
cotton (32%),
elastane (5%) blends



DMT



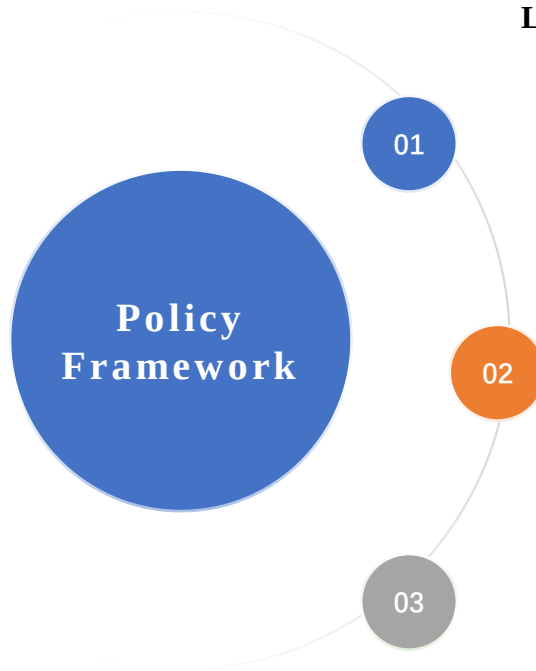
Regenerated Cotton skeleton

New recycled materials R&D

03 PART

Policy and Regulatory Framework

Policy and Regulatory Framework



Laws and regulations:

Adopted the Law on the Promotion of Circular Economy(2008) - stating that the development of circular economy is a major strategy for the country's economic and social development.

"Government-propelled, Market-guided, Enterprise-implemented, Public-engaged" Guideline

The Implementation Opinions on Accelerating Waste Textile Recycling (2022) /Guidelines on Accelerating the Construction of Recycling System for Waste Material (2022) :

set clear goals: **25% recycling rate (2m tons of regenerated fiber) by 2025, rising to 30% (3m tons) by 2030**

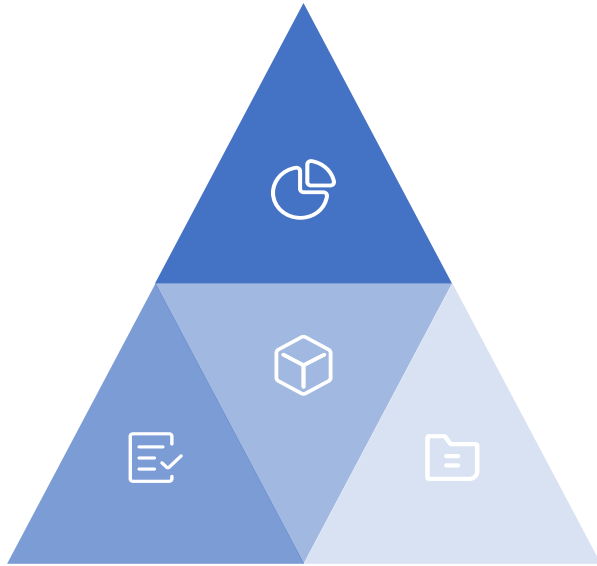
Complementary policy measures:

e.g. Tax incentives for R&D in recycling technologies and VAT/income tax reductions for resource utilization enterprise

04 PART

Recommendations for International Cooperation

Challenges and Recommendations for Developing China's waste textile recycling industry



Challenges:

- Insufficient coverage of recycling networks;
- Technological gaps in recycling and sorting processes compared to global advanced practices;
- Improve industry standards and certification systems.

Recommendations:

- Strengthen international cooperation and exchanges with WTO members to share the best practices in standards and certifications, and advanced technologies or models;
- Establishing global collaborative partnerships on accelerating the textile waste recycling and contributing to sustainable development worldwide.



THE END

THANKS



Tessellation Group

China's Practices and Business Approaches in the Recycling of Waste Textiles

Max Wong, Sustainability Director

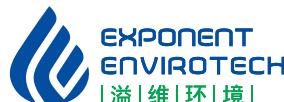
11 Mar 2025

An aerial night view of a city, likely New York City, with numerous skyscrapers and streets. The image is overlaid with a complex network of glowing blue and white digital lines and dots, suggesting a data-driven or futuristic urban environment. A large, solid blue triangle is positioned in the lower-left corner, partially obscuring the city view.

DEFINING THE STATUS QUO FOR TOMORROW

BEST-IN-CLASS OPERATIONS

TESSELLATION
APPAREL
SOLUTIONS



SYMMPIX



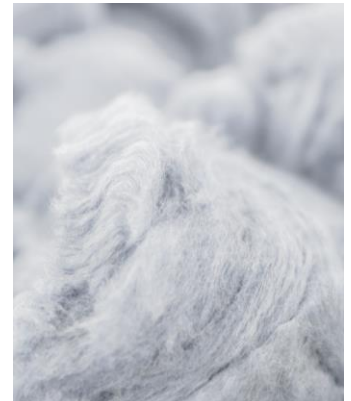
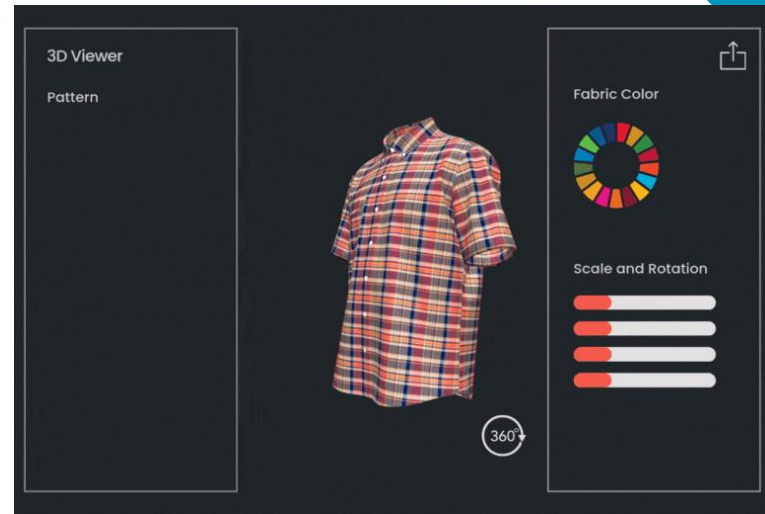
IDEAS TO ACTUALIZATION



SUSTAINABLE DEVELOPMENT **GOALS**



Recycled Materials



Recycled Uniforms



400 L

Water saved



60 G

Fertilizers & pesticides
saved



45 G

Dyeing auxiliary saved





PURIFY

Responsibly treat
unavoidable water
discharge to keep
freshwater ecosystems safe



REDUCE

Improve resource
efficiency by recycling
and reducing the use of
chemicals and freshwater



ELIMINATE

Eliminate water or
chemical use with
innovative technologies

With an innovative **non-aqueous solvent** as a medium, and proprietary and patented process, **Exponent Envirotech** is the first to industrialize **waterless dyeing** for cellulose fibers

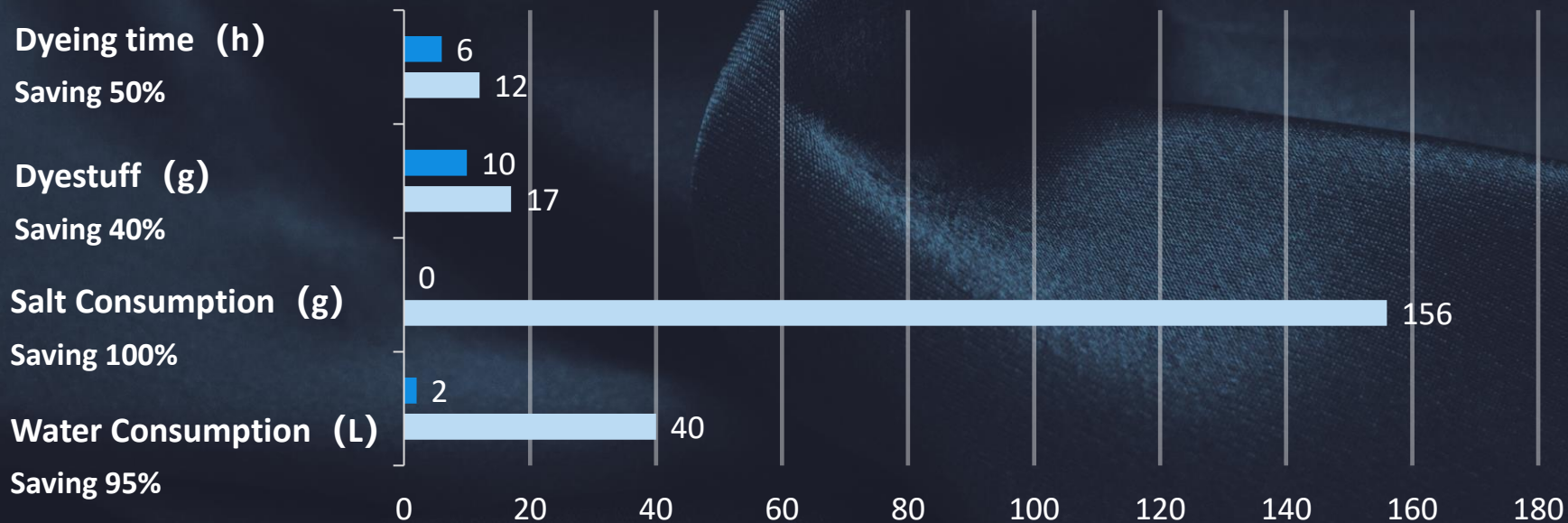


Cellulose fiber



Reactive dyes

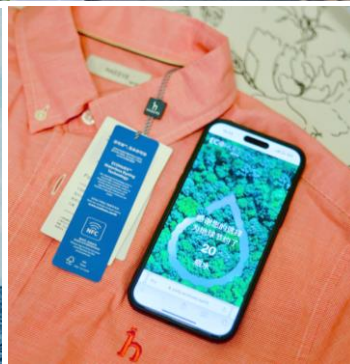
Saving Costs and Saving the Environment





DETERMINANT × EC³HUES
漢可染

Waterless Dyeing



Thank You

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