

# Recycling of PET Packaging in China

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**Arnold Wang**

**Deputy Secretary General, Plastic Packaging Committee**

**Advisor, Circular Economy Committee**

**China Packaging Federation**

**&**

**General Manager**

**Beijing Shi Chai Environment Consulting Co., Ltd**

# Regulation Development

- Opinions on Further Strengthening the Control of Plastic Pollution
- Law on the Prevention and Control of Environmental Pollution by Solid Wastes
- The “14th Five-Year” Plan of Actions for Plastic Pollution Control-NDRC
- Administrative Measures for the Use and Reporting of Disposable Plastic Products in the Commercial Sector-Ministry of Commerce
- FCM not allowed to adopt recycled content (**including rPET**) yet
- Only one EPR scheme for packaging is running: beverage carton-Supervision by NDRC



# **The State Council issued an important policy on the eve of Chinese lunar new Year**

- By 2025, a waste recycling system covering all fields and links will be initially established.
- By 2030, a comprehensive, efficient, regulated and well-organized waste recycling system will be built up, and the value of various waste resources will be fully utilized, and the overall level of waste recycling will rank among the top in the world.



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## DfR: a complicated local situation

- CGF's golden rules
- China Packaging Federation's 2E standard
- CPRA's 2E standard
- CPRRA's DfR standard
- Low compliance in general



# Mechanical Recycling

- Highly depend on “garbage scavengers” :informal system
- Collect items: PET bottles, carrugated paper boxes, big rigid packaging and EPS blocks, and aluminium cans mainly
- Enjoy a high PET bottle collection ratio and a huge bottle to textile recycling indsutry.
- Company to company difference leads to process to process difference
- Recycling machines sold around the world





# Chemical Recycling

- 📌 PET Depolymerization:
  - Zhejiang Jiaren:DMT
  - SK Chemical & Shuye:BHET
  - Fujian Cyclone:BHET
  - Yinjinda:BHET to PETG
- 📌 PMMA
  - Ronglian Environment
- 📌 Polyolefin-Pyrolysis
  - Sinopec
  - Comy
  - Phelix
  - Others



# Collection-automation in baling stations

- Symbolic formal systems
- Family owned baling stations
- Difficult to be recognized by brand owners
- AI and automatic sorting machines are replacing manual sorting quickly for saving labor cost
- PET trays will be separated from bottles



# Washing, Grinding, Pelleting and SSP

- Fragmented market: dominated by domestic washing line producers
- De-labeling machine at the front of washing line
- Bottle sorting at the front and flake sorting after hot-washing and air floating
- Pelletizing: both imported and domestic machines
- SSP: Polymetrix, ZZDT, etc

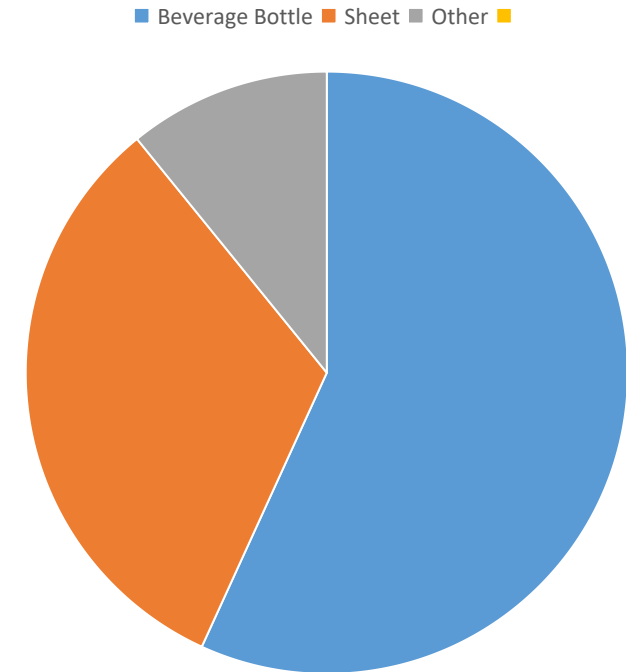




# A fragmented PET tray market

- Local demand for bottle grade virgin PET in 2023: 7.56 million tons
- Resin for sheets comes from both virgin PET and recycled PET
- No regulation to promote adoption of recycled content for trays
- Mainly driven by export demands or cost reduction

China Bottle Grade PET Market



# Recycling of PET trays

## Source:

- Trays for electronics and industrial products
- Tray for raw food, fruit and vegetables
- Others

## Challenges:

- Lower collection ratio than that of bottle
- Black trays
- Silicon and ink on surface
- Applications: Fibre, strapping, etc
- Food contact not allowed yet



Who are local  
food grade rPET  
players?



# Beverage bottles in HK SAR have adopted food grade rPET for around 10 years





# Taiwan allows rPET to be used in beverage bottles from end of 2022



## Flake to Resin(FTR)



華潤化學材料





**Arnold Wang**

86-13522699717

arnold\_wangren@hotmail.com

<https://www.linkedin.com/in/wangren/>