

Dependence on China for Recycling

How This Will Change

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Export of plastic waste from europe is easy ... and cheap



EU-27

- 25,2 M tonnes of post consumer plastic waste
- 6,4 M tonnes is collected for recycling
- 3,0 M tonnes is exported to Asia (= 46 %)



: exchange of common interests on recycling of plastics



19 members – 16 countries,

“optimise national effectiveness
through international co-operation
and exchange of experiences”

- European PET bottle platform
- Plastic Data Alliance
- European AGRI working group
- EUCertplast
- Best Recycled Plastic Product
- **Export of Plastics to Asia**



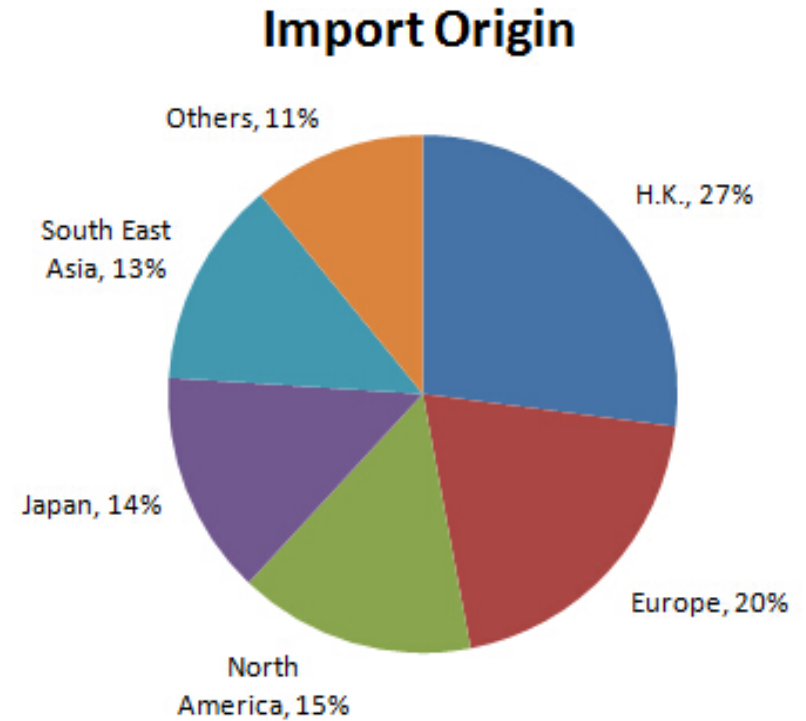
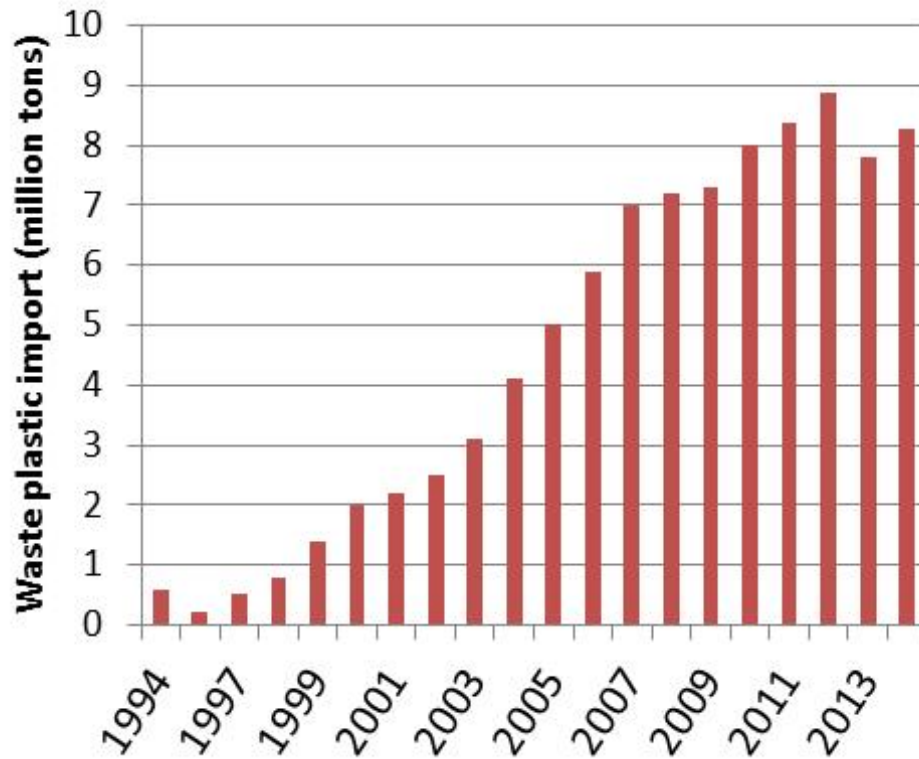
EPR organisation of industrial packaging in Belgium





Observations of the Chinese plastic recycling industry

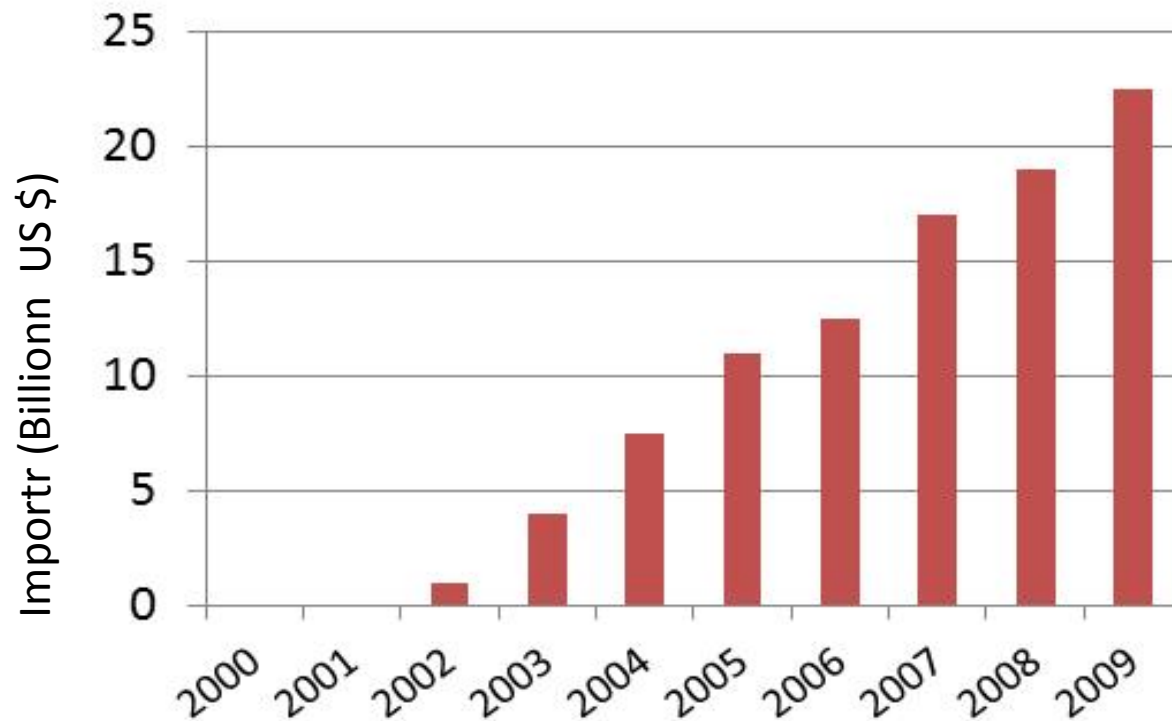
Evolution of import of waste plastics



- Increased collection and recycling in Europe / US / ...
- Delocalisation of plastic recycling industry

Scrap import is reflecting industrial activity of China

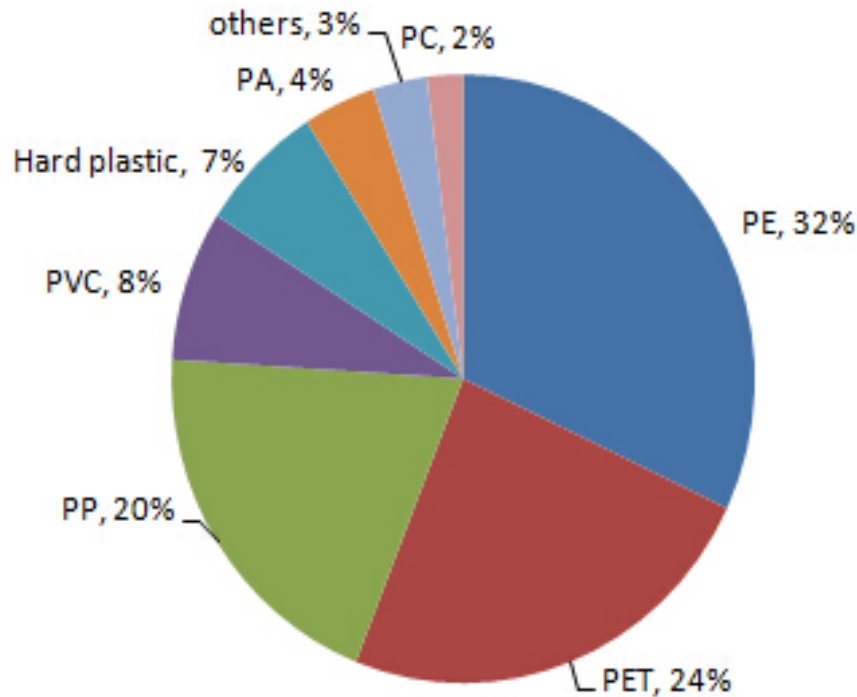
Evolution of US import of laptops from China



Source : US International Trade Commission Dataweb

Plastic recycling industry in China

Type of plastics imported in China



PE : Which material is exported ?

Quality

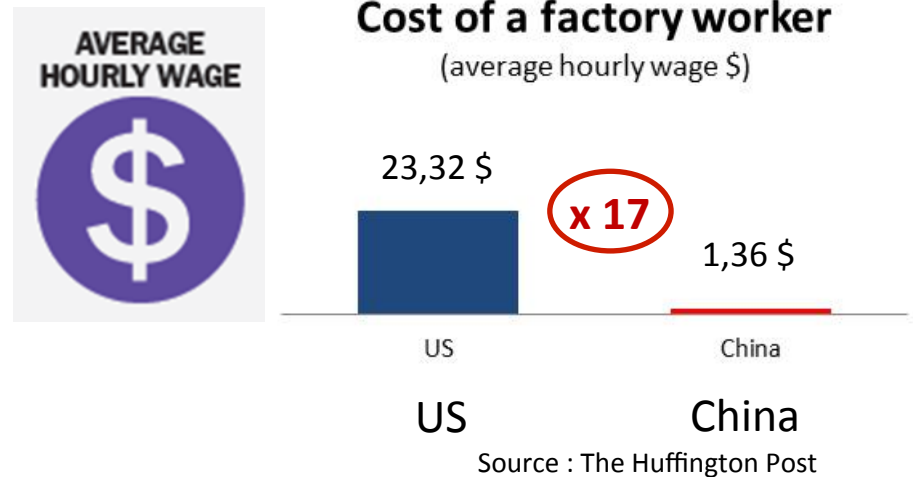


Preferred
export quality

Why do we export to China ?



1) LABOUR COST



2) DEMAND OF RECYCLATE



Prime - local collection - import



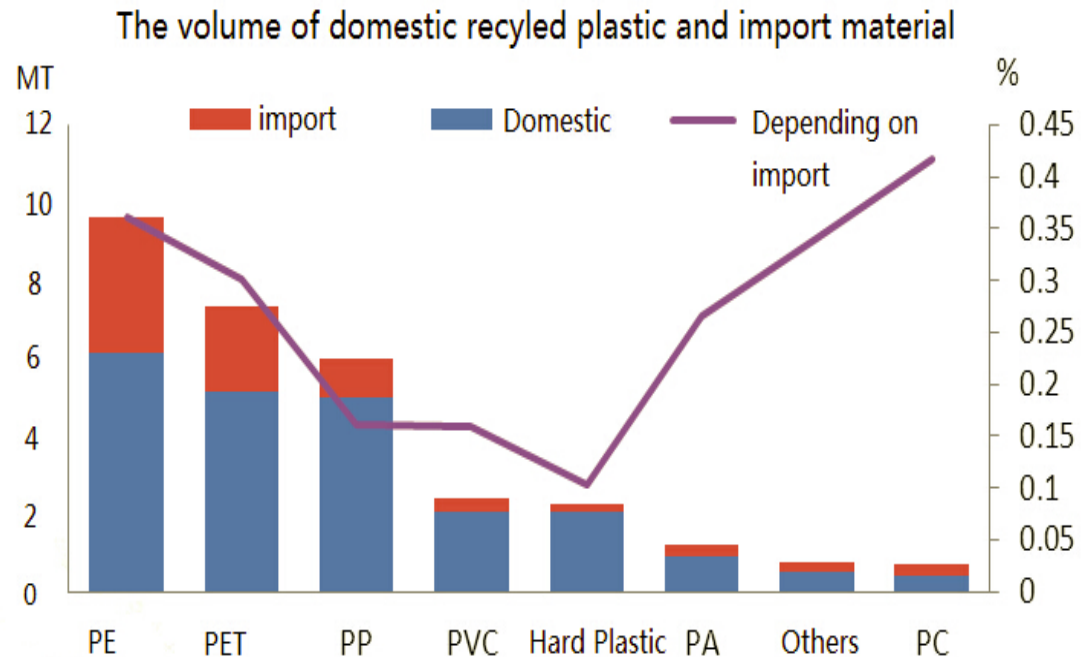
Prime material
48 M ton



Domestic collection
15 M ton



Imported scrap
8,4 M ton



Import focussed on PE and PET

Location of the plastic recycling industry

LARGE RECYCLERS,
ENGAGED IN
DOMESTIC RECYCLING



**LARGE RECYCLERS, HANDLING
IMPORTED PLASTIC SCRAP**

High quality LDPE film, HDPE
Tianjin, Hebei, Shandong

PET, HDPE, PP, EPS
Shanghai, Zhejiang, Jiangsu

Lower quality LDPE film
Fujian

Cleaner material, engineered plastics, ...
Guangdong

Size of plastic recycling industry

IMPORTED PLASTIC SCRAP

≥ 3000 licenses

Average capacity : 15,8 kton

Professionalisation,
stock market, foreign capital,
strong government controll



DOMESTIC WASTE

Thousands of small and
micro-sized recyclers

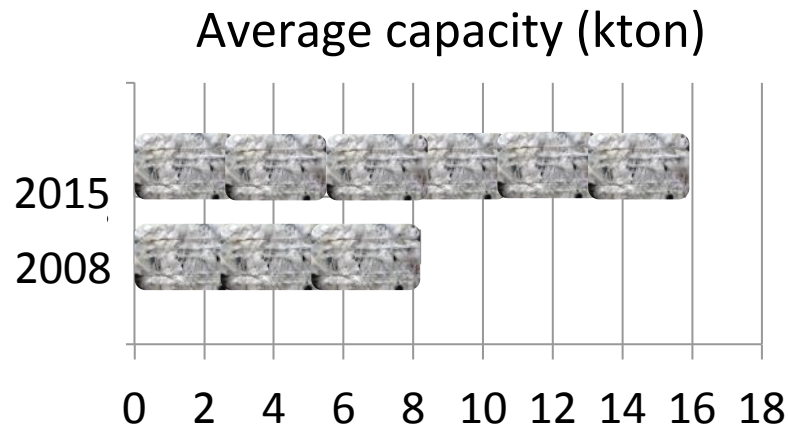




Recent evolutions in China, affecting the plastic recycling sector

Increased professionalisation

Companies importing plastic scrap



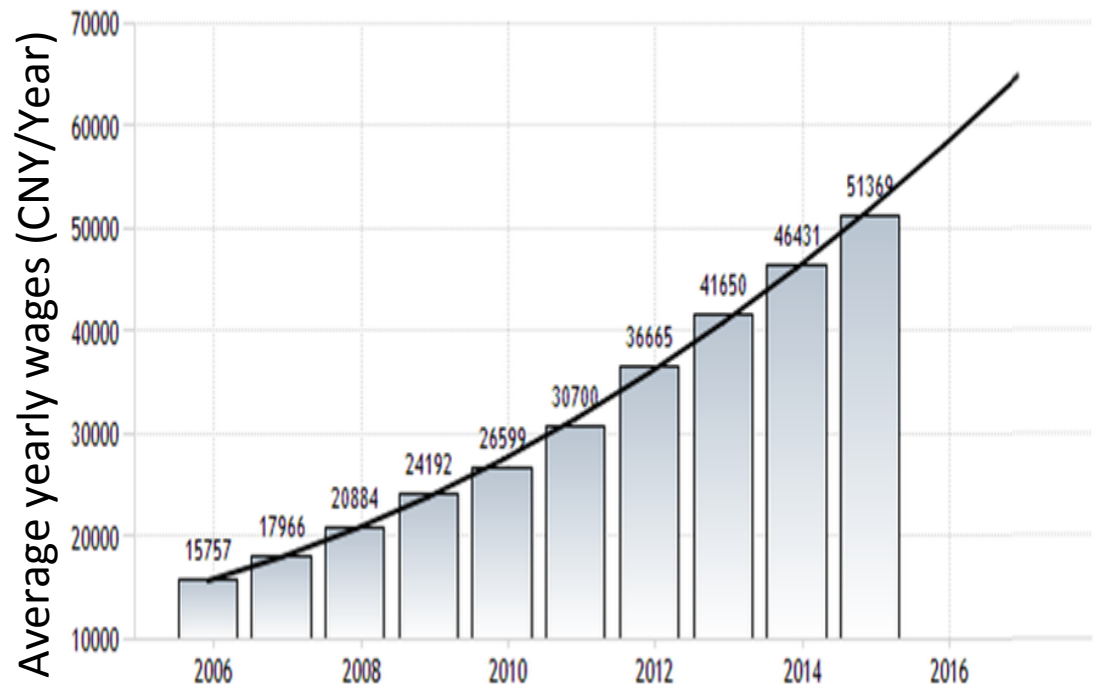
➔ Evolution towards :

- Less fragmented, more consolidation
- Higher professionalisation
- Increase in industrialisation

Increased salary cost



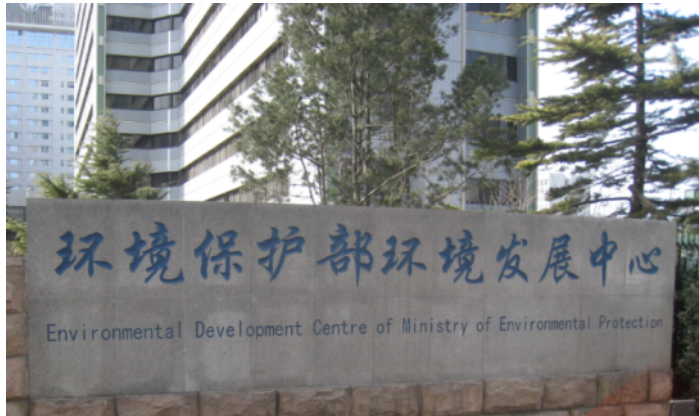
CHINAS AVERAGE WAGES IN MANUFACTURING



SOURCE: WWW.TRADINGECONOMICS.COM | NATIONAL BUREAU OF STATISTICS OF CHINA

salary x 3 in 10 year !

Increased control of authorities



Green Fence



MEP

Waste import license to be obtained by the Chinese recycler

AQSIQ

License of Overseas Supplier Enterprise of Imported Scrap Materials

CCIC

Certificate for Pre-shipment Inspection of Recycling Scraps to China

Increased vertical integration



Profitability is under pressure

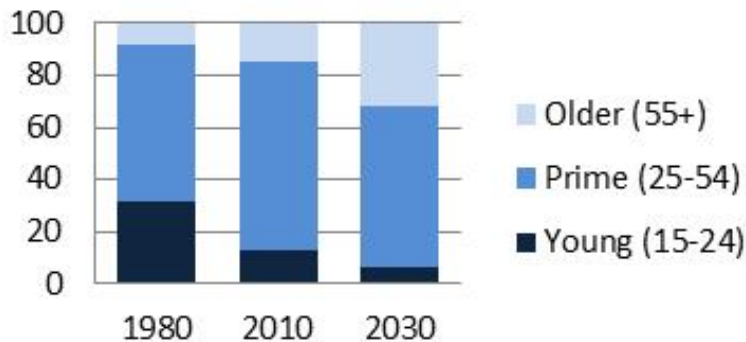
- ➔ Increase in capacity
- ➔ Increase profitability
- ➔ Increase in vertical integration; recyclers extending their activity to the production of end-products



Six statements on future plastic recycling in China

A billion people, but no labour force for the plastic recycling industry ?

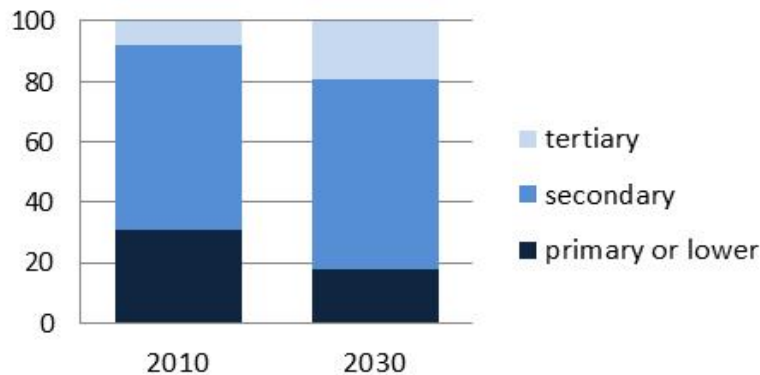
Work force by age category



Due to one-child policy, population in China is aging more rapidly than in other countries.

Strong competition for labour force with foreign multinationals.

Level of education of workers



Eduction level is increasing and the number of unemployed labour forces is decreasing.

Source : United Nations Population division, ILO, McKinsey



It will be increasingly difficult to find labour force in China to work in the plastic recycling industry

Plastic recycling in China will be too expensive



Source : Reuters : Economist Intelligence Unit

- Salaries are increasing fast in China, compared to other Asian countries
- Also other costs for Chinese recyclers are increasing (import duties, exchange rate, ...)



Labour force in China will become too expensive, pressure on profitability of business

Local collection will replace imported plastic scrap



OBSERVATION 1

Local collection of PET bottles is very well developed.



Local collection will replace imported plastic scrap

OBSERVATION 2

Limited availability of good quality
LDPE film from packaging waste



Local collection will replace imported plastic scrap



OBSERVATION 3

Local plastic film contains a high percentage of recyclate, often of no superior quality.

This material is less suited for a second recycling. Recycling is in competition with incineration due to high energy demand in China.



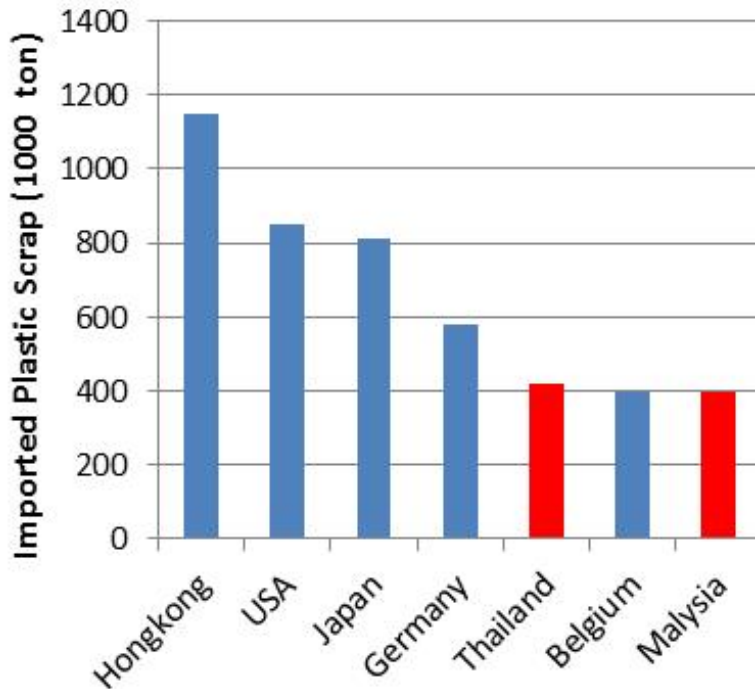
PET : locally collected PET will compete with imported PET



LDPE : industry will rely on import of large amounts of LDPE

Will plastic recycling move out of China ?

Import in China in 2014



Source : China Scrap Plastics Association

- Chinese entrepreneurs start business in **other Asian countries** (Malaysia, Thailand, Indonesia, ...).
- After (partial) processing, the material is **re-imported** in China for further converting.
- **WHY ?**
 - lower salaries
 - less government restrictions
 - more labour force
 - free of import duties



Lower qualities will be increasingly recycled in other asian countries, but business will remain chinese

From “push to pull model” in Europe ?

DEMAND



“Double the use of recycled resin in plastic packaging by 2020, using 2010 as reference”



“Use 50 million pounds (or 22.7 Kton) of recycled plastic in its new products by 2020”

Future strong demand for recyclates :

- Environmental image
- Circulair economy and sustainability concern
- Ambitious targets

Reaction

- Petrochemical companies produce special brands, containing a high percentage of post consumer recycle, combined with specifically engineered pellets.

ANSWER



Daplen MD250SY - 50% PCR content



CYCOLOY™ 30 – 50 % open-loop PCR PC



Demand will increase and petrochemical companies will produce engineered pellets with a high % of PCR, which will stimulate demand of locally produced recyclates.

Technological development makes recycling in Europe competitive again



Use of markers to easily separate different types of plastics

Polymark project (EU funded)

<http://polymark.org/content/about>

Separate different types of plastic film by optic sensors

www.wrap.org.uk/content/resources-enable-recycling-household-plastic-films



As for rigid plastics, automatic separation of film will produce homogeneous qualities.

Homogeneous/standardised qualities can be recycled in Europe.

Plastic recycling is fascinating !



- We need Chinese outlets and markets (as much as they need us!).
- China will evolve into an economy with less low-skilled labour forces and higher costs.
- Plastic recycling business will relocate worldwide, looking for cheap labour.
- Future increasing demand and technological development will stimulate recycling in Europe.
- This evolution will not be disruptive, but will evolve medium-long term.

Questions?



Thanks for listening.

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