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The new era and perspective of global plastic waste stream economics

By Dr. Steve Wong (黃楚祺)

Executive President, CSPA

Chairman, Fukutomi Company Limited

Plastic waste – economic values vs. environmental cost

1. Plastic scrap classification – post-industrial, post-consumer

1.1 Plastic scrap classification – post-industrial, post-consumer

1.2 Import by China – increasing volume on post-consumer scraps since 80s as post-industrial scraps cannot meet the demand

1.3 Gain cost competitiveness by using of recycled materials, but paid environmental cost

Plastic waste – economic values vs. environmental cost

1. Plastic waste recycling – environmental cost

1.4 Pollutions in air, water and soil, affecting the well-being of human life

1.5 Post-consumer scraps of higher pollution – entailed Operation Green Fence / National Sword

1.6 Import ban implemented by China on solid waste – plastic waste included

Plastic waste – economic values vs. environmental cost

1. Plastic waste recycling – environmental cost

1.7 Prohibit the import of plastic waste from living source by end of 2017 and by end of 2019 prohibit all other plastic waste items which can be replaced by domestic supply

1.8 China absorbed 7 million tons of plastic waste or 60% of the total world exports of plastic waste every year

1.9 An alarming situation of environment cost has been alerted

New home for plastic waste

2. New home for plastic waste within scope of China's import ban
 - 2.1 Unwillingness to bear the environmental cost for recycling solid waste from other countries – getting more sensitive nowadays
 - 2.2 Where is the new home for 7 million tons of plastic waste, if stopped importing into China

New home for plastic waste

2. New home for plastic waste within scope of China's import ban

2.3 About 2.5 million tons can easily find its outlets

2.4 The remaining ones would be uncertain – posting threats to increasing landfills, incineration and ocean debris

Recycling and circular economy

3. A shared responsibility

3.1 Plastic waste recycling instead of exporting – a primary responsibility

3.2 To pursue for circular economy – a shared responsibility

3.3 Avoid environmental cost arising from landfills, incineration ocean debris



Recycling and circular economy

3. A shared responsibility

3.4 To increase recycling at source and promote circular economy at home by exporting countries for industry sustainability – California an example

3.5 To promote circular economy, China has targeted to increase rate of recovery and volume on solid waste recycling by 40% from 246 million tons in 2015 to 350 million tons by year 2020

Impacts and opportunities to the recycling industry

4. The impacts

- 4.1 Many recyclers in China relying on imported plastic scraps have to stay out
- 4.2 Supply and demand imbalance situation to last for some time
- 4.3 Declining plastic scrap prices due to import ban – enormous stockpiles in exporting countries but lack of alternative outlet

Impacts and opportunities to the recycling industry

4. The impacts

4.4 A number of recyclers in China cannot access to domestic supply of plastic waste will have their operation base moved out to other places

4.5 Ripple effect on end-product makers such as photo-frame from EPS, film-blowing, profiles, pipes, etc. may have to follow the recyclers for production feedstock supply

Impacts and opportunities to the recycling industry

4. The impacts

4.6 South-east Asian countries are popular places for relocation

4.7 The risk of change in government policy should not be ignored

4.8 Market disruption causing supply shortage for recycled plastic pellets in China

Impacts and opportunities to the recycling industry

4. The opportunities

4.9 The escalating prices of recycled plastic pellets yield lucrative margins for recyclers

4.10 Recycle with low plastic scrap cost outside China and send the recycled plastic pellets to China – an opportunity

4.11 The world market to reshape in next two years



New era for waste stream & flow

5. To change at user level

5.1 To discard the use of “single-use plastics”



5.2 Use of laminated films, laminated materials and bio-degradable materials should be greatly reduced for better recycling rate and less landfills, less incinerations

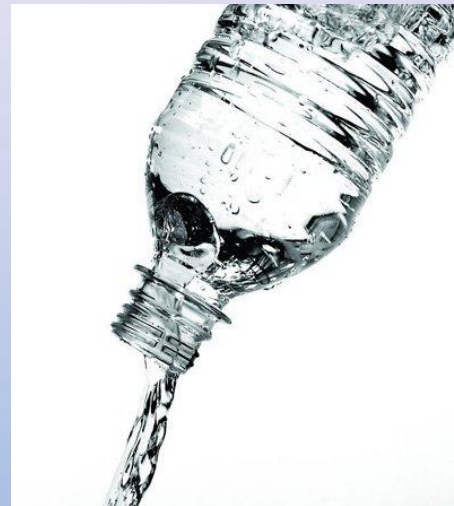
New era for waste stream & flow

5. To change at user level

5.3 The living behavior of human being is sending 8 million tons of plastic waste to our oceans every year

5.4 Need to raise awareness of environmental cost & reduce usage

5.5 Upstream waste sorting at household levels



New era for waste stream & flow

- 5. To preserve waste flow for recycling
- 5.6 Upstream waste sorting right from consumer levels



- 5.7 To raise waste recyclables



Sustainability

- Sustainability for our future generations – ocean debris

6.1 Food chain hazards – 8 million tons of plastic waste a year is threatening our life and health (over time, plastic exposed under the condition of the sun and salt will break up into micro plastics)

6.2 Intake of micro plastics can cause carcinogenic, infertility, affect growth, hormonal abnormality and other diseases

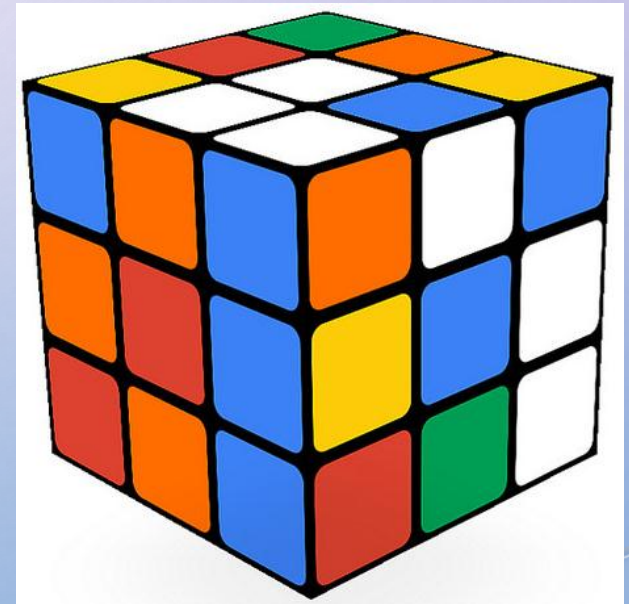


Sustainability

6. Sustainability for our future generations
 - 6.3 To put it under control before it is too late
 - 6.4 To change the living behavior of human being – reduce use of plastics and avoid non-recyclable plastics
 - 6.5 Raise public awareness – for the benefit of our future generations

Sustainability

- 6.6 To support “blue-economy” as we can benefit from sustainable use of the oceans
- 6.7 Reduce use of plastics – change our living behavior. Can we stop using plastics?
- 6.8 The world market spectrum will change, but the sustainability of recycling industry would not





Thank you

- By Dr. Steve Wong (黃楚祺)
- Executive President, CSPA
- Chairman, Fukutomi Company Limited