

New Ideas for Sustainable Business and Lessons from Pioneers
in Circular Economy and Climate Change
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Latest Trend of Circular Economy

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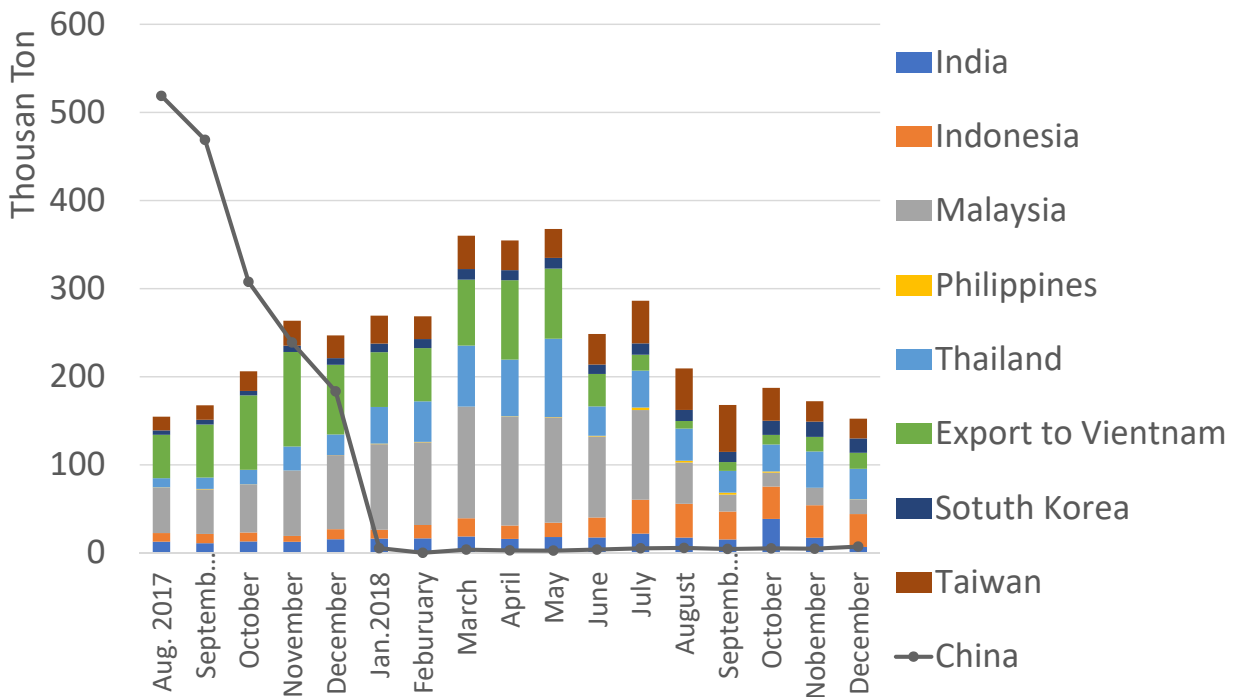
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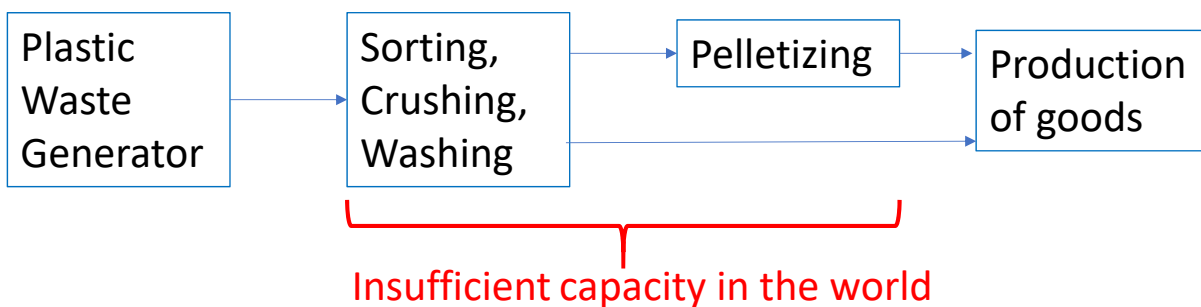
Two Main Driving Force in Recent Movements toward Circular Economy

- Marine Plastic Litter Issue
 - Plastic recycling can reduce the volume of plastic waste going into ocean.
 - Prohibit or reduce single use plastics.
 - Promote recycling of plastic waste
- The Chinese import restriction on plastic waste other recyclable waste
 - Countries which exported recyclable waste should find other destination of recyclable waste and/or invest in recycling facilities.

Import of Waste Plastics by Asian Countries



Challenges for plastic recycling



- Recycler may not want to invest in sorting, crushing and washing facility, because
 - China may allow import some types of plastic waste in the near future. (I do not believe, but some recycler believe.)
 - Country where they will invest in the facility may prohibit the import in the future.
- Some recyclers try to get short-term profit, because unsorted plastic waste is cheap and because strong demand of re-pellet is still existing in China.

To Create the Business Environment for Investment

- It is necessary to reduce uncertainty for regulatory environment, in order to encourage investment in sorting, crushing, washing and pelletizing facility.
 - According to Chinese experts on recycling and waste management, it is not likely to remove import restriction on recyclable waste, because the policy was introduced by the top politician.
 - Other countries, which imported plastic waste after Chinese restriction, introduce stricter import restriction.
 - Conference of Parties of the Basel Convention amended the Annexes, in May 2019. Plastic waste contaminated other waste and missed plastic waste (except PET with mixture of PP and PE) will be controlled in the Basel Convention.
 - Recyclers may not invest in recycling facilities, if they can secure some amount of stable supply of recyclable waste. It is better to allow import of plastic waste, under some condition, such as prior informed consent.

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Design for Recycling

- A best practice for PET bottle design is the voluntary standard for the design of PET bottles, developed by Japan's Council for PET Bottle Recycling.
 - PE or PP which gravity are less than 1 should be used for caps, in order to sort caps from PET.
 - Prohibit coloring PET, because waste PET with color has limited demand of recycling.
 - It is also recommended to have perforation on the labeling.



Perforation on the labeling of PET bottle.

This voluntary standard in Japan followed the enactment of the Container and Packaging Recycling Law, which applies extended producer responsibility (EPR) to manufacturers and importers.

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Ensure the demand of recycled products

- It is also important to ensure that demand exists for recycled products. Some recycled products may not satisfy the level of quality desired by customers or defined in conventional industrial standards for products made from virgin materials.
- To ensure an adequate level of quality for recycled products, and to reduce the transaction cost between the suppliers and buyers of recycled products, industrial standards should be developed for recycled goods.

JIS Code	Title of Japan Industrial Standard
JIS A5731	Recycled plastics inspection chambers and covers for rainwater
JIS A5741	Products of wood-plastic recycled composite
JIS A5742	Products of wood-plastic recycled composite – assembled decks
JIS K6930	Reclaimed granulate moulding materials of agricultural polyvinyl chloride film
JIS K6931	Reclaimed plastics bars, rods, plates, and piles
JIS K6932	Recycled plastics stakes
JIS A9401	Recycled plastics medial strip block
JIS A9402	Recycled plastics buffer for parking
JIS K9797	Un-plasticised poly(vinyl chloride)(PVC-U) three-layer pipes with recycled solid core
JIS K9798	Un-plasticised poly(vinyl chloride)(PVC-U) three-layer pipes with recycled foamed core