



# Asia recycling – prospects for a developing market

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# Asia Recycling Prospects for a developing market

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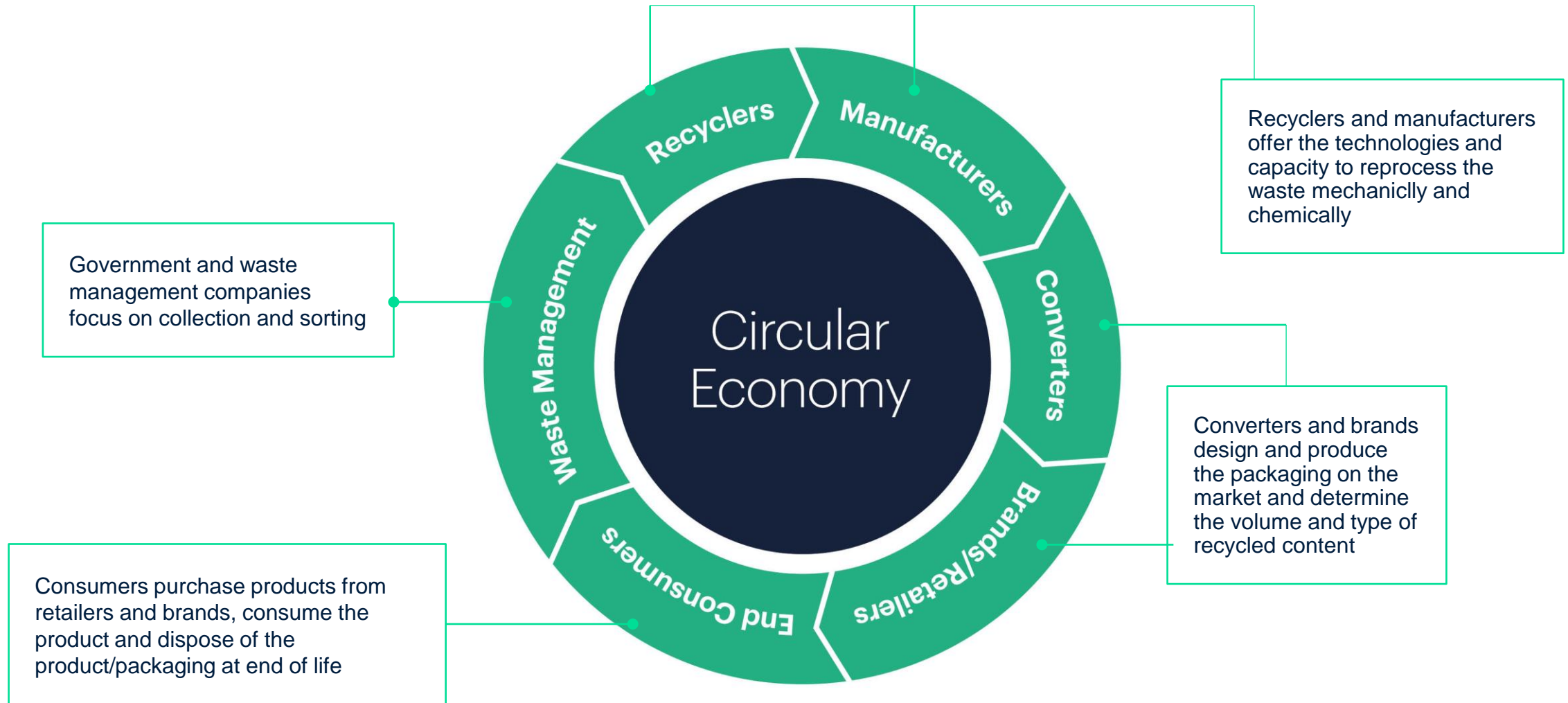
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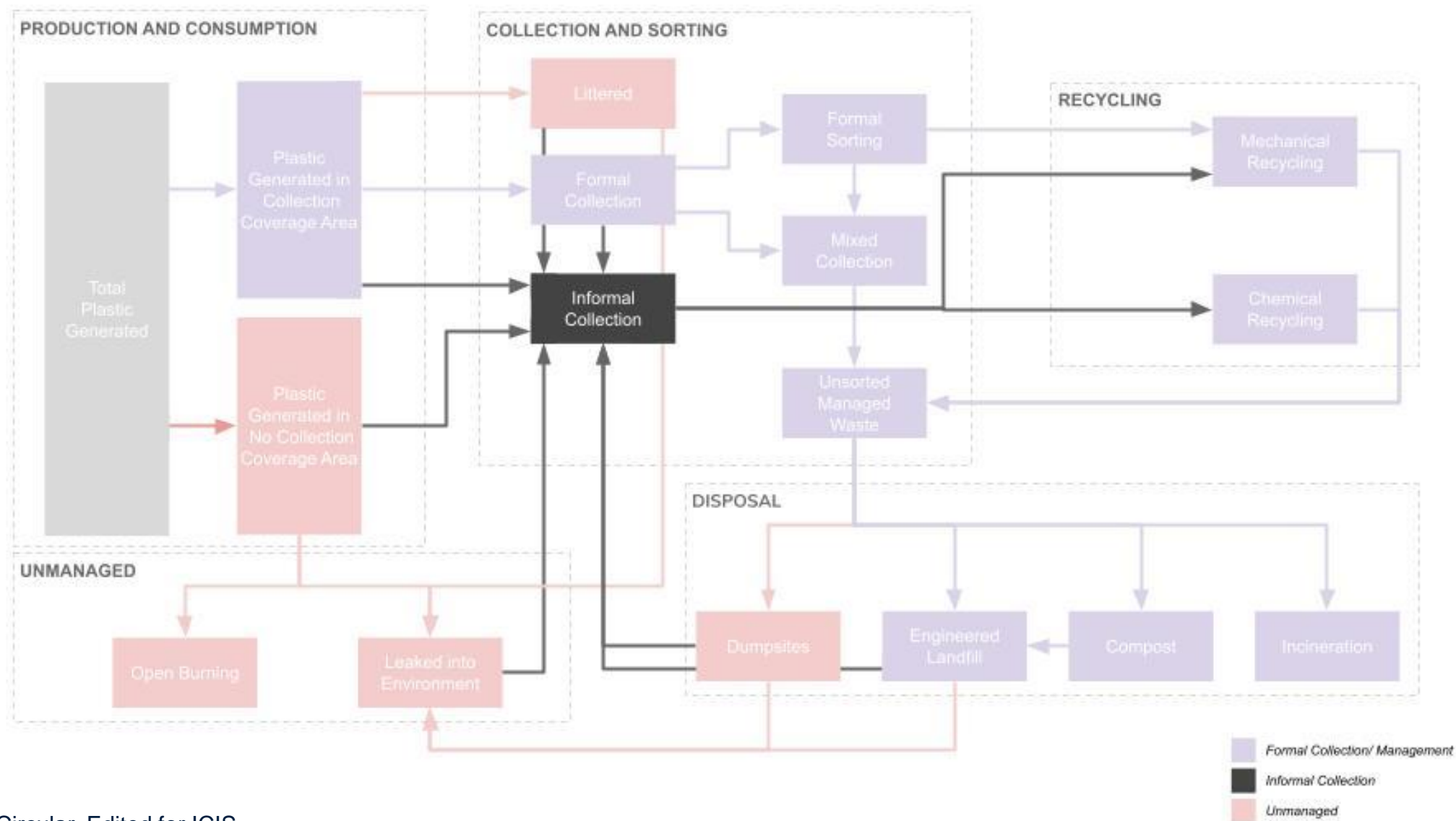
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# Recycling value chain



# Asia's Recycling value chain



# Recycling in APAC post 2018

**Exporting markets frenzied – shifted exports to elsewhere in Asia, especially countries in SEA**

Malaysia the new top destination for the world's plastic in 2018. Indonesia saw a 250% increase in plastic waste imports. In Vietnam, inbound shipments surged 200%.

**Countries like Vietnam & Thailand explore total waste ban. Australia and South Korea announced a phased ban on waste exports.**

Jan 2018

Early 2018

Mid 2018

End 2018

2020

**National Sword Policy: China banned the import of 24 scrap materials**

Estimated 111 million tones of plastic waste displaced

**SEA countries imposed tighter waste import restrictions**

Malaysia repatriated 150 containers of illegal plastic waste. In September, Indonesia said it was returning containers of contaminated waste to Australia.

**Countries to manage own waste**

Australia announced Recycling Modernisation Fund

# Investments in the region



## Government funded

### **\$190m fund to boost recycling in Australia**

A \$190 million Recycling Modernisation Fund will be launched with the aim of generating \$600 million of recycling investment and underpinning a billion-dollar transformation of [Australia's waste and recycling capacity](#).

The fund is a centrepiece of the government's plan to build a local recycling industry, following a phased ban on exports of used plastics, paper, glass and tyres.

## Industry funded

### **Singapore VC firm launches US\$106 million fund to address Asia's ocean plastic crisis**

SINGAPORE: Singapore-based venture capital firm Circulate Capital launched a US\$106 million (S\$144 million) fund dedicated to preventing plastic pollution in Southeast and South Asian oceans on Wednesday (Dec 4).

The fund addresses the "financing gap" between private capital and the resources Asia's waste sector needs, said Circulate Capital.

## India

- ❑ Proposed target to ensure 100% recycling and reuse of PET plastic.
- ❑ Proposed target of recycling at least 75% of other types of plastics.
- ❑ It also aims to ban recyclable waste such as plastics, metals, glass, paper and other biodegradable waste from reaching landfills by 2025.

## Sri Lanka

- ❑ Single use plastic ban starting Mar 2021.

## Indonesia

### National Plastic Action Partnership (NPAP)

- ❑ Double plastic waste collection to 80% by 2025.
- ❑ Double recycling capacity.
- ❑ 70% reduction in marine plastic debris by 2025.
- ❑ Plastic pollution-free by 2040.

## Singapore

- ❑ Brand owners, manufacturers, importers, supermarkets with an annual turnover of more than \$10mil to adhere to Mandatory Packaging Reporting & submit 3R plans in 2021.
- ❑ Deposit return scheme for various containers rolling out in 2022.
- ❑ EPR for packaging waste to follow through in 2025.

## Japan

- ❑ Reduce disposable plastic waste by 25 percent by 2030.
- ❑ 100% of containers and packaging be designed to be reusable or recyclable by 2025.
- ❑ Aims for a 60 percent recycling rate for containers and packaging by 2030, and 100 percent utilization of used plastics by 2035.

## Korea

- ❑ By 2030, Korea aims to reduce plastic wastes by 50% and recycle 70% of the waste plastics.

## China

- ❑ 30% reduction of single use plastics by 2025.
- ❑ Single-use straws banned by the end of 2020.
- ❑ Non-degradable bags will be banned in major cities by the end of 2020 and in all cities and towns by 2022.
- ❑ Hotels must not offer free single-use plastic items by 2025.

## Australia

### 2025 National Plastic Targets

- ❑ 100% reusable, recyclable or compostable packaging.
- ❑ 70% of plastic packaging being recycled or composted.
- ❑ 50% of average recycled content included in packaging.
- ❑ Phase out single use plastics.

❑ Australasian Recycling Label



# Brand owner pledges



- Korea Cosmetic Association declared the '2030 cosmetics plastic initiative'
- Create packaging of single material
- Reduce petrol chemical based plastics by 30%
- DRS equivalent in stores

- Cut single-use plastics by 50% by 2025
- Establish guidelines for using recycled materials in its branded products
- First supermarket chain in Asia to make such a commitment

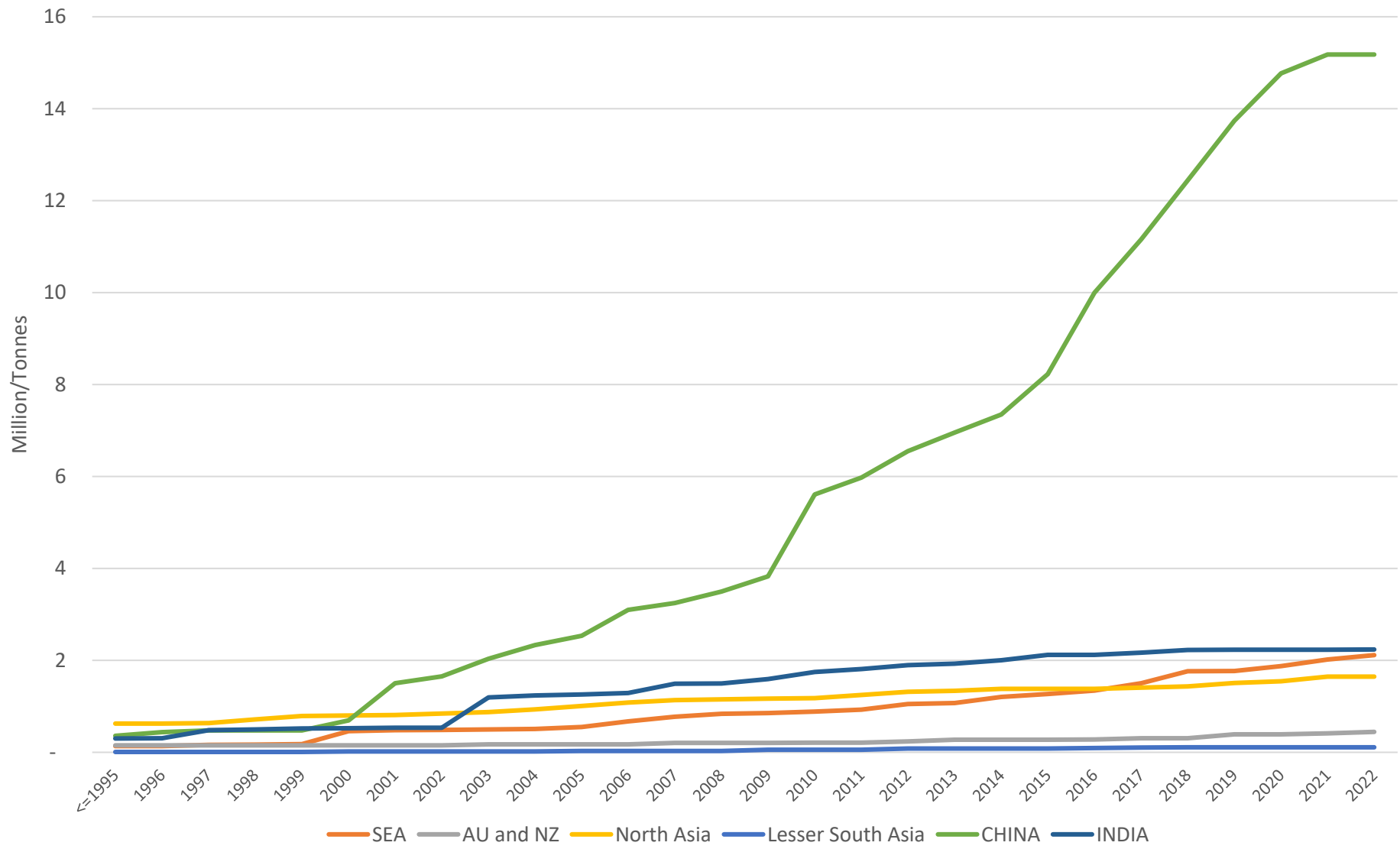


- Fully move away from virgin plastic derived from fossil fuels by 2030
- 100% recyclable packaging to enable bottle to bottle recycling
- Use 50% sustainable plastic packaging (R-PET) across primary packaging by 2025

- By 2021, launch 100% R-PET bottles
- 100% of packaging reusable, recyclable, or compostable by 2025
- 25% of recycled material on plastic packaging by 2025
- 50% of recycled material on beverage bottles, and 100% for Evian bottles by 2025
- By 2025, launch 100% bioplastic bottles
- By 2025, support collection and recycling in top 20 markets



# Increase in mechanical recycling capacity

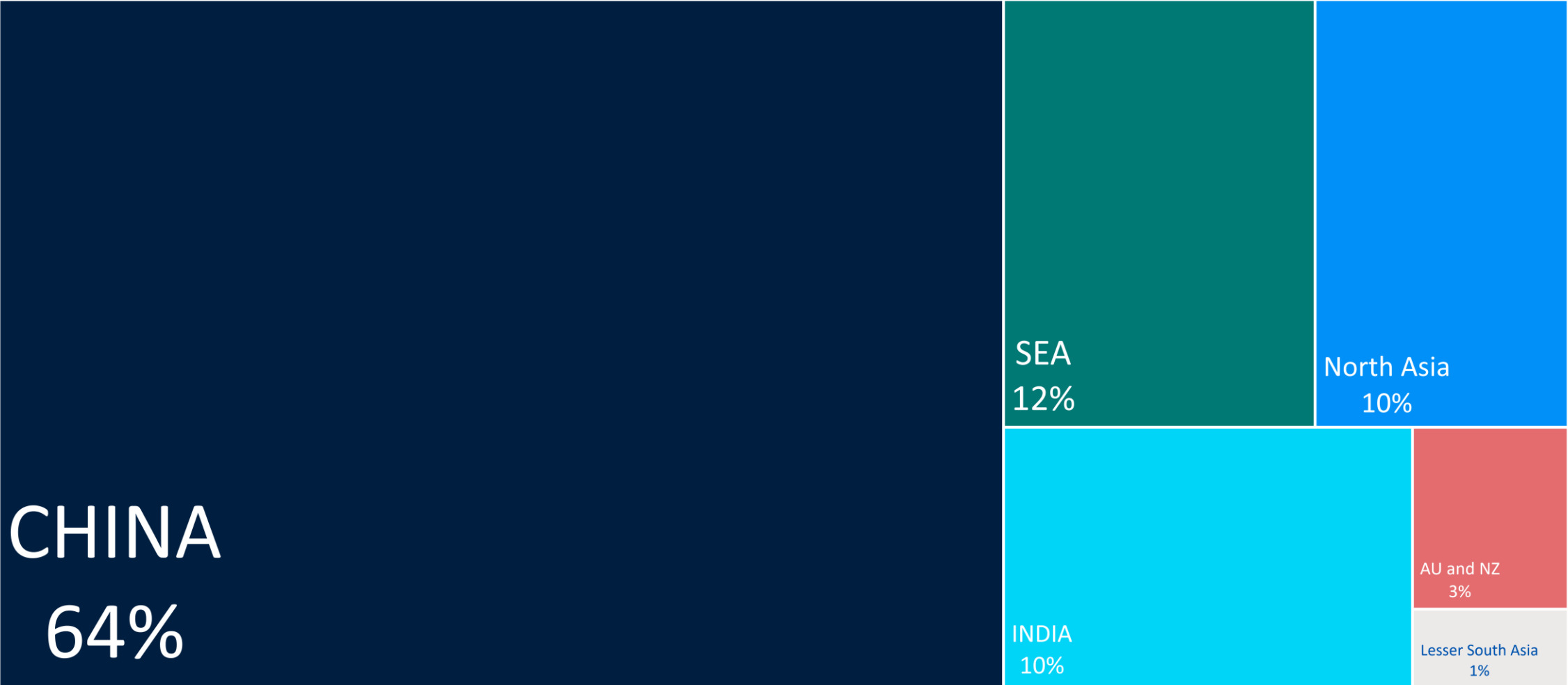


Source: ICIS, Recycling Supply Tracker

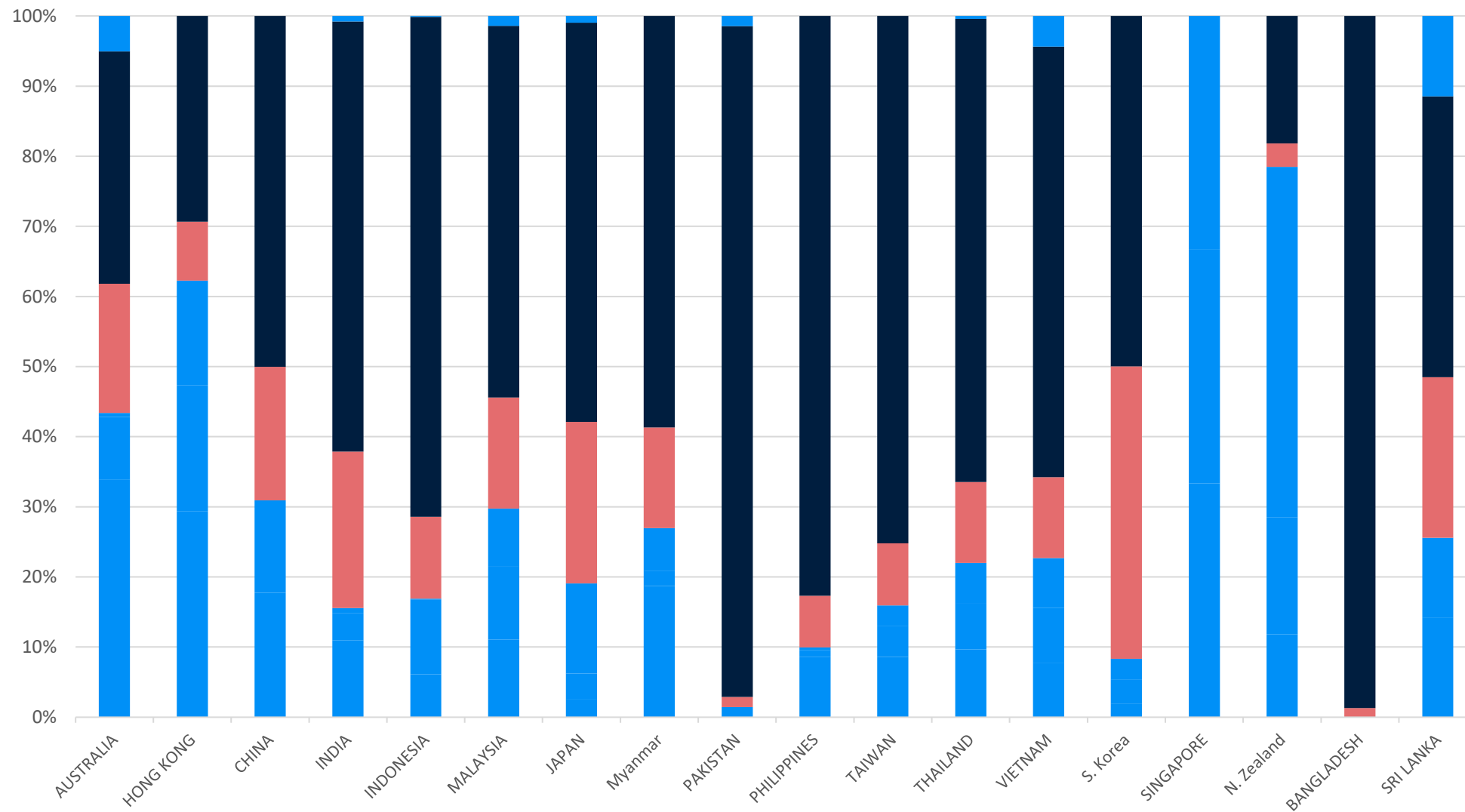
# Recycling capacity in APAC



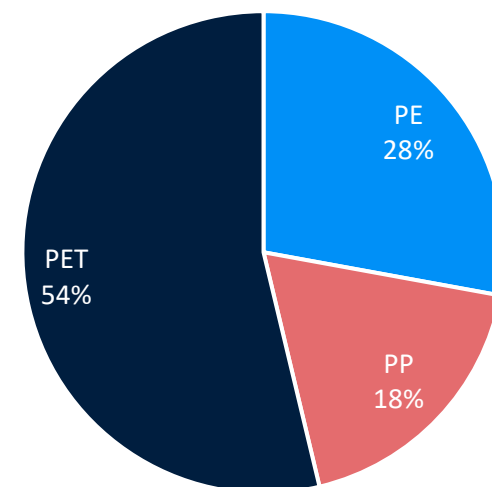
*\*Lesser South Asia countries includes Pakistan, Bangladesh and Sri Lanka*



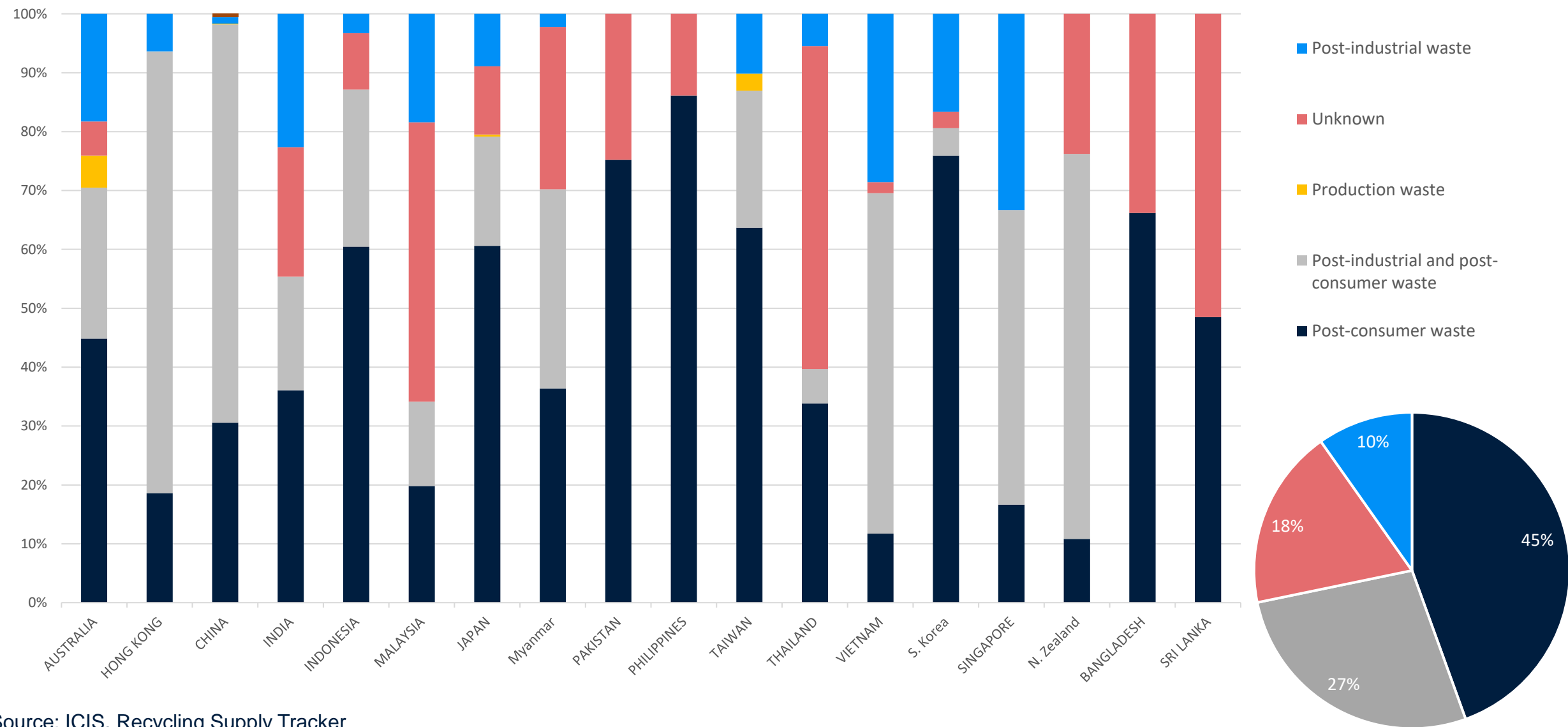
# Recycled polymer output



PET  
PP  
PE



# Feedstock sources



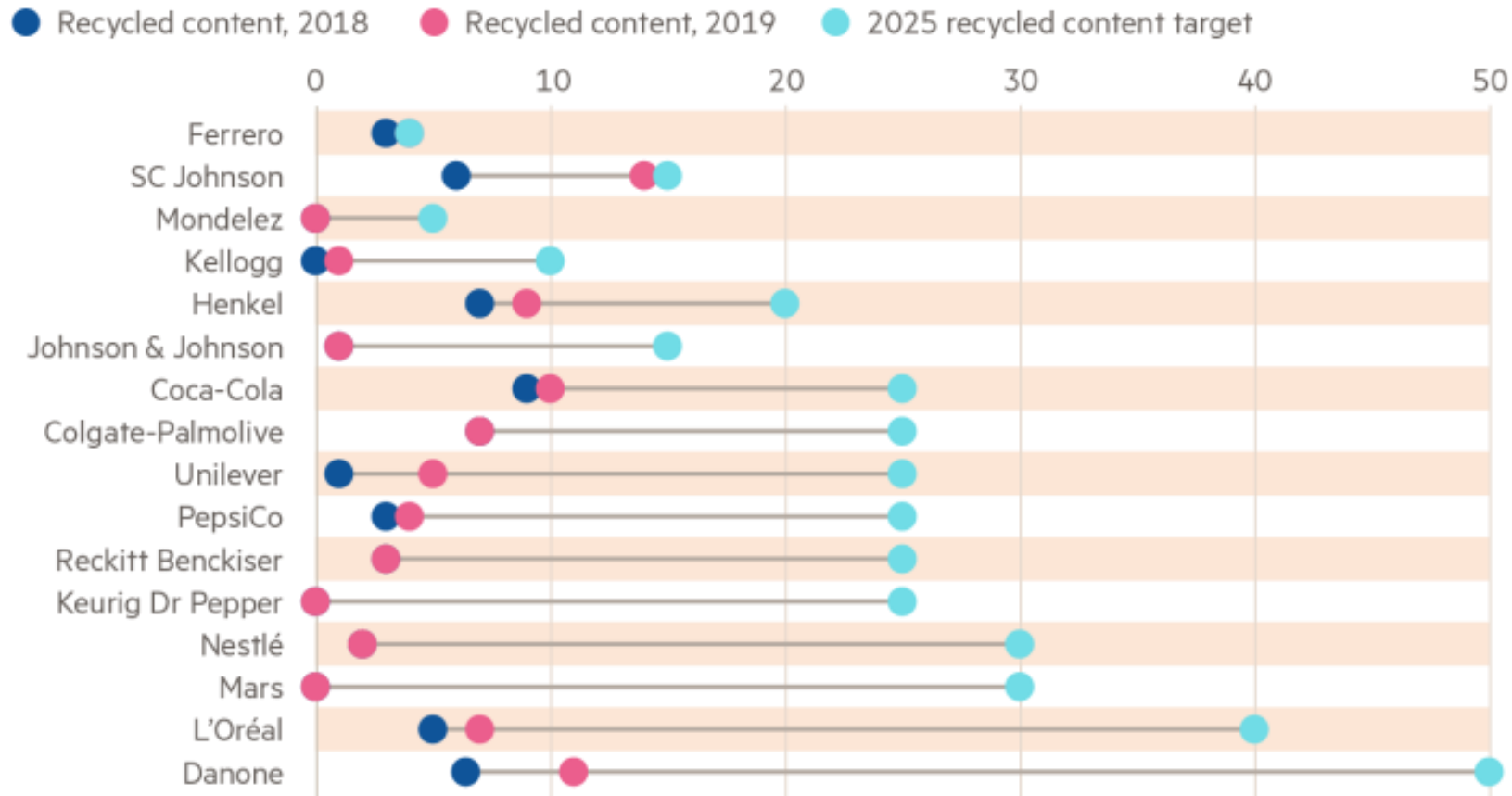
Source: ICIS, Recycling Supply Tracker

# FMCGs and their progress



## Consumer goods groups fall short of recycling targets

Amount of post-consumer recycled plastic in their packaging (%)



# Carrots and sticks



## Negative reinforcement

### Coke, Pepsi, Bisleri fined for violating plastic waste disposal rules

While, Bisleri has been fined Rs 10.75 crore, PepsiCo India Holdings and Hindustan Coca-Cola Beverages have been penalised Rs 8.7 crore and Rs 50.66 crore



## Positive support

### Companies awarded for contribution to plastic waste reduction, recycling

On June 4, 2019, the Cabinet decided to offer tax incentives to companies using biodegradable packaging. According to the Office of the Prime Minister, companies will be allowed to claim deductions from the assessable income regarding the Corporate Income Tax (CIT) in the amount of 1.25 times the expenses for biodegradable plastic packaging purchased between 1 January 2019 and 31 December

# Opportunities & Barriers to overcome



## **Increase in capacity**

- Increase in food grade capacity
- Challenges: countries agreeing on definitions, regional certification



## **Civic societies playing a larger role**

- Cross sector collaboration: National Packaging Association Pact (NPAP), Alliance to End Plastic Waste (AEPW)

- Industry led voluntary Packaging Recovery Organisations (PROs)

A PRO is a setup in which packaging producers are responsible for organizing and funding the collection, sorting, and/or recycling of post-consumer packaging materials in the community.

- Activist groups enacting changes

## **Municipal Solid Waste management /**

### **Domestic end of life management**

- Countries taking steps to develop end of life waste management capacity on shore

e.g. Australia (Recycling Modernisation Fund) & Singapore (Integrated Waste Management Facility, NewOil)

## **Up and coming developments**

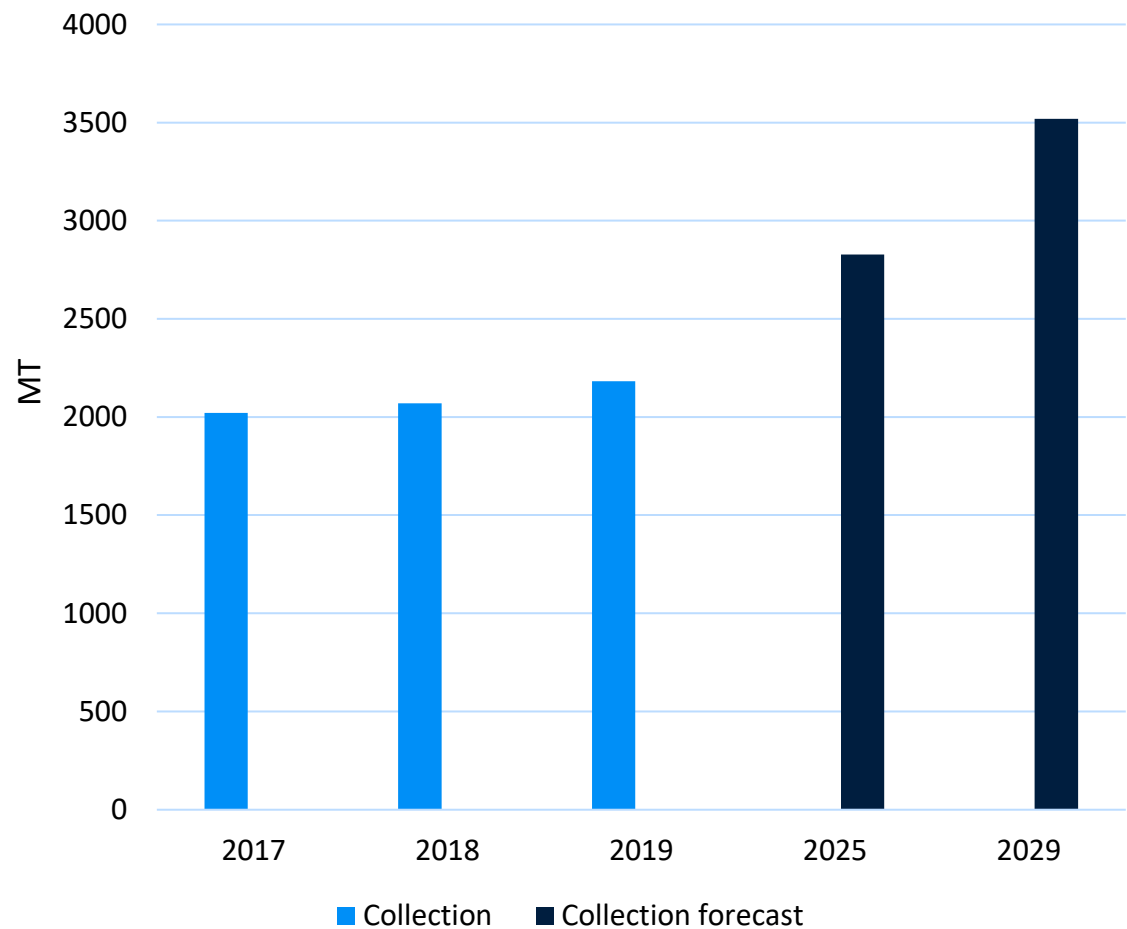
- Chemical recycling
- Bioplastics

e.g. In 2018, the Japanese Ministry of Environment made an announcement for the inclusion of USD 45.0 million in the FY2019 budget for developing products manufactured from bio-plastics.

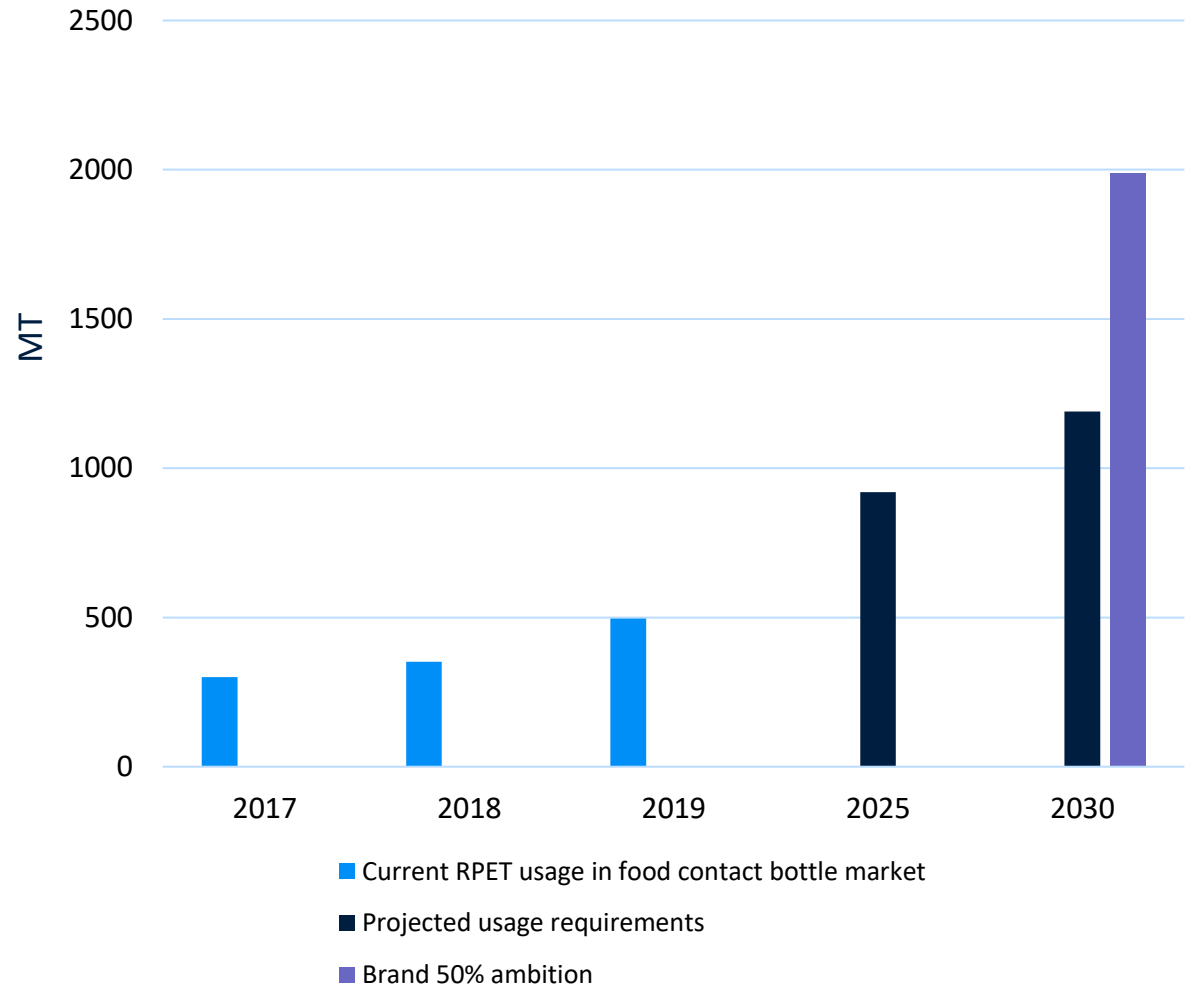
# Challenges remain elsewhere: EU R-PET



European collection volumes current and projected



European R-PET usage in food contact bottles current and projected



# Brand-owner pledges more than beverages....



L'ORÉAL

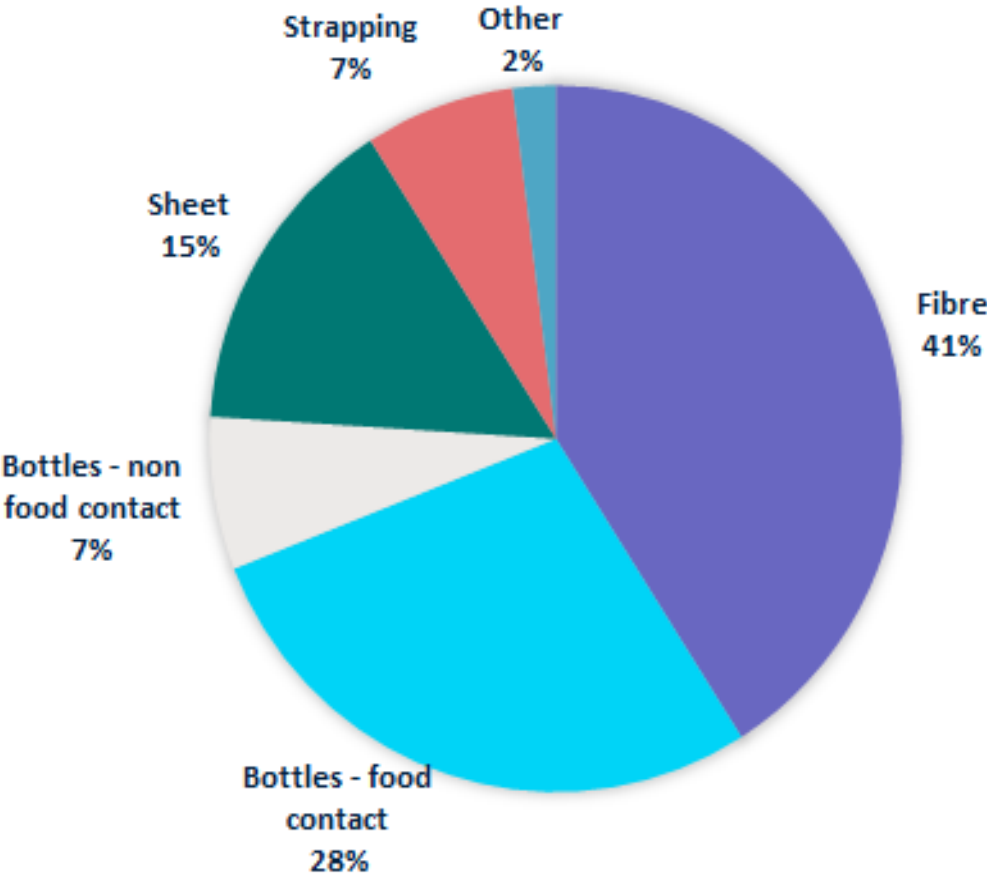


And the list goes on....

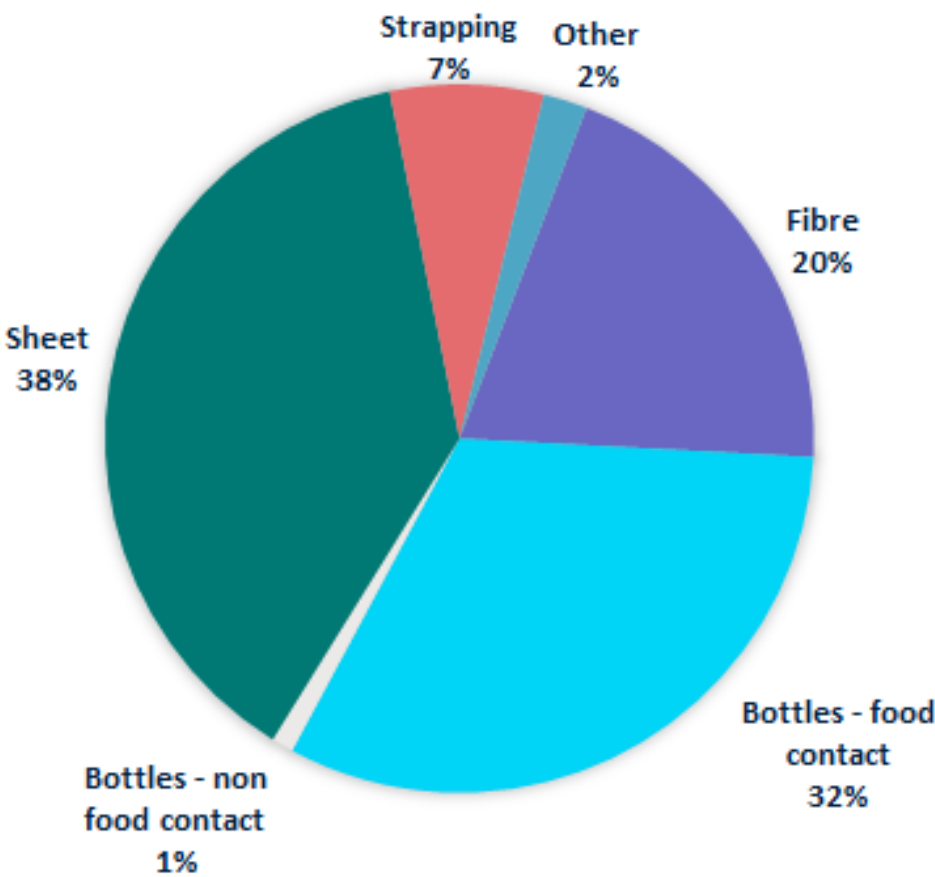
# US PCR Bottle End Market 2019



US/ Canada R-PET End Markets

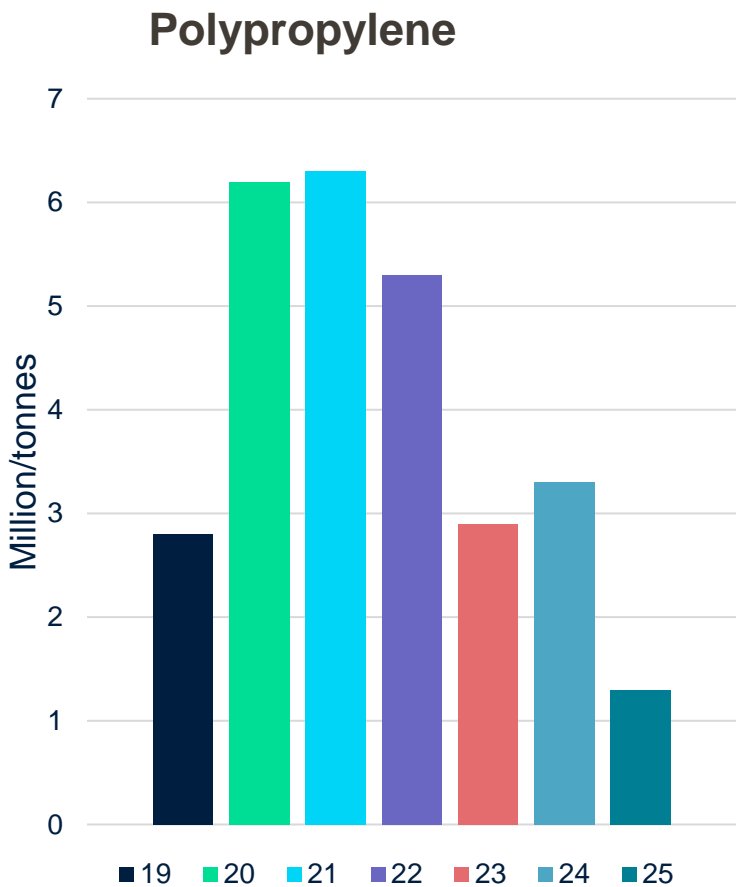
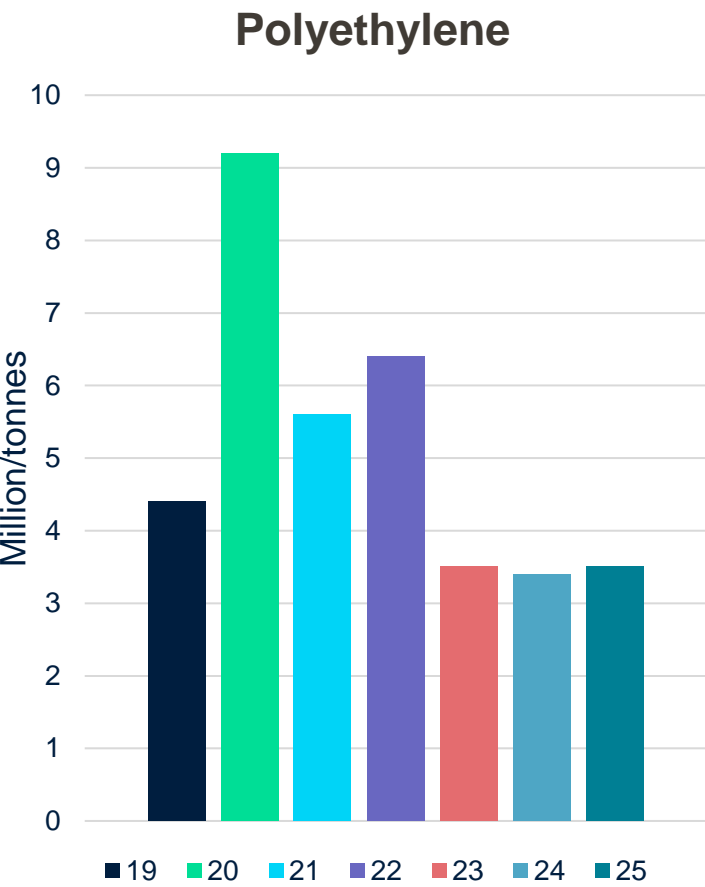


Europe R-PET End Markets



Source: APR, ACC, and NAPCOR

# Global polyolefin capacity expansions



Equals to the addition  
of

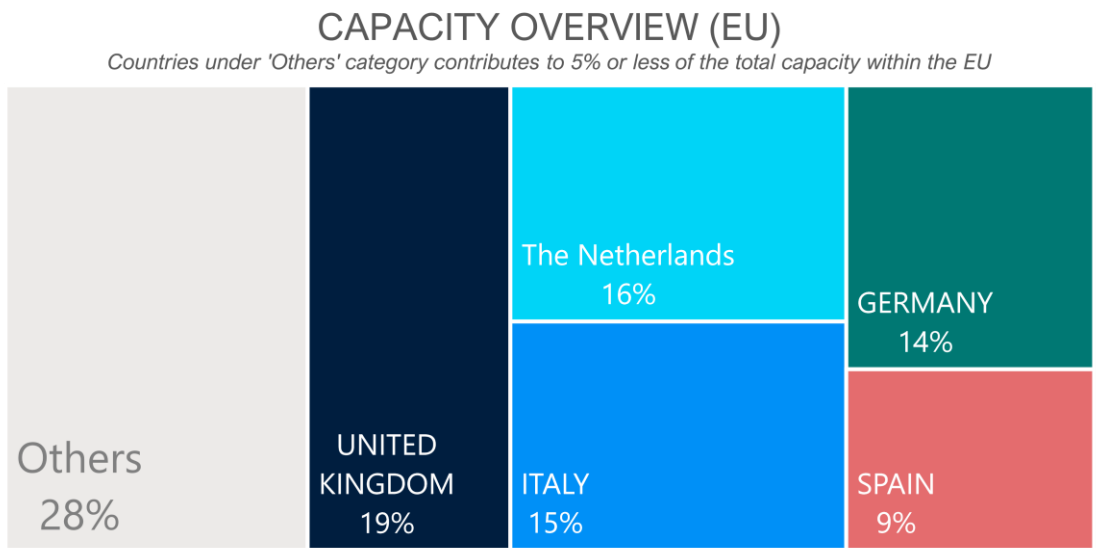
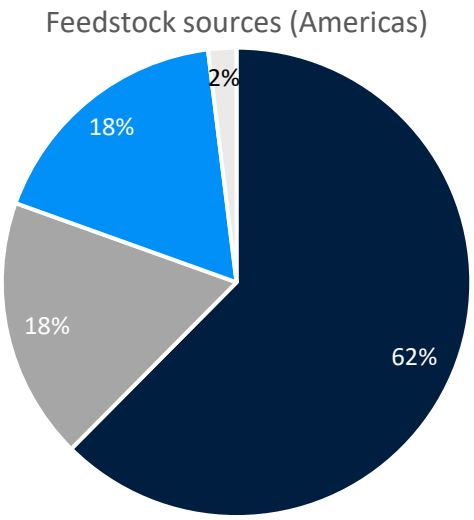
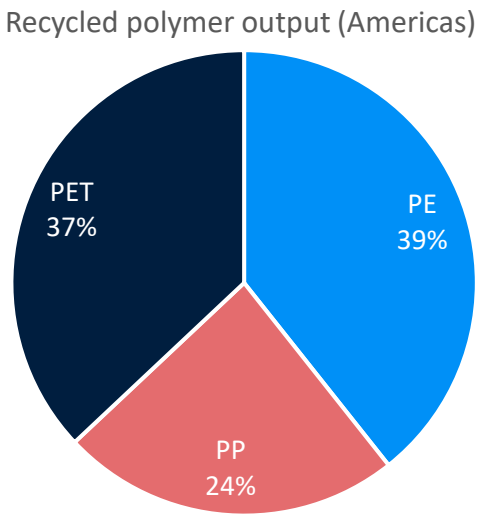
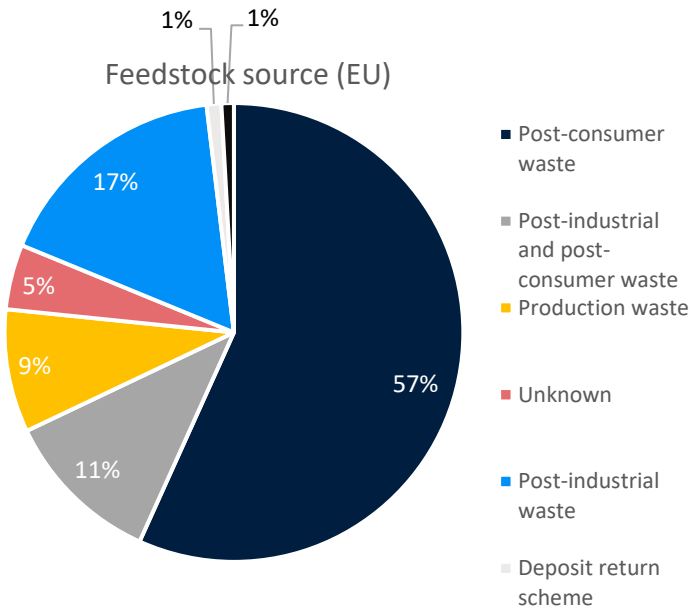
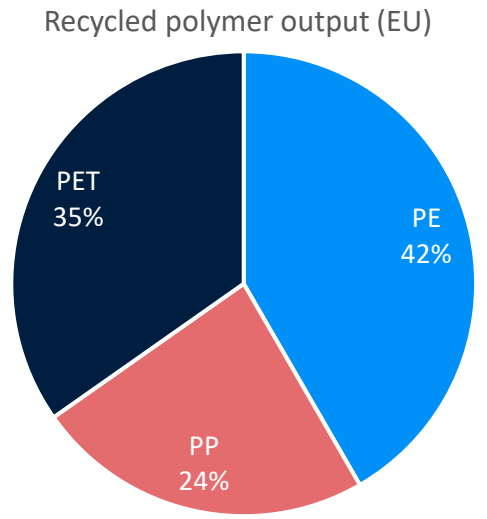
**2572**

recycling units

with output capacity of

**25**  
kty

# Global comparison



# ICIS Asia Recycled PET



## Recycled PET - Asia

By Hazel Goh  
[Hazel.Goh@icis.com](mailto:Hazel.Goh@icis.com)  
23-Feb-2021

Overview | Outlook | Prices | Analytics

### OVERVIEW

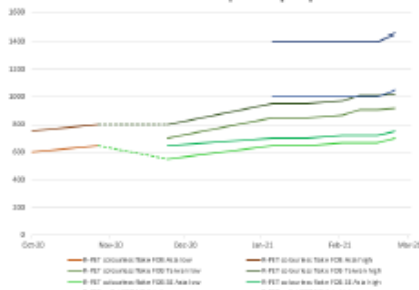
- PCB bale availability remains tight and buoys prices
- Bullish sentiment as some expect downstream substitutional demand returns for R-PET
- Some recyclers eye higher prices, discussions ongoing

Post-consumer polyethylene terephthalate (PET) bottle availability in Asia remains tight, supporting prices. Used and collected bottles are fewer than in previous years given the low season for consumption in the first quarter and continued suppression of tourism footfall and hence bottled beverage consumption to generate used bottles.

Sentiment was bullish, as some are expecting downstream end-users that have portions of substitutional volume between recycled and virgin PET to return for more recycled PET (R-PET) volumes, as virgin PET prices are on a steep increase.

Some recyclers are eyeing higher prices, while discussions are ongoing.

Asia R-PET flake and pellet spot prices



### OUTLOOK

- Virgin PET price surges expected to push higher demand for R-PET
- PCB bale supply limitation likely to remain near term
- Some players monitoring half-yearly Japan auction price for PCB bales in March

### PRICES

#### SPOT PRICES

		Price Range
Recycled PET Flakes, Hot-Washed, Colourless		
FOB Taiwan	USD/tonne	+10 920-1020 +10
FOB SE Asia	USD/tonne	+30 700-750 +30
Recycled PET Pellets		
FOB NE Asia	USD/tonne	+50 1050-1450 +50

R-PET flakes exist across a spectrum of specifications. The price range reflects common R-PET flake specifications, typically with polyvinyl chloride (PVC) contamination content of 0-300 parts per million (ppm).

Taiwanese R-PET tends to contain fewer contaminants and consists of colourless flakes with no coloured flake fraction. As a result, it typically commands a higher price than southeast Asian R-PET that has more contaminants and usually comes as colourless flakes with light blue flake content of up to 30%.

Sentiment was bullish from recyclers on the back of tight PCB bale availability, and expectations of better demand. Export spot discussions were ongoing, while some recyclers mentioned the price increases in offers may take time to translate into higher-priced deals, given that many of their customers are long-term regular customers.

#### Domestic prices

\$/tonne* (local currency/kg)	PET post-consumer bottles, colourless		Recycled PET flakes, hot- washed, colourless		Recycled PET pellets, colourless	
	23-Feb	16-Feb	23-Feb	16-Feb	23-Feb	16-Feb
Taiwan	358-394 (9-10)	357-393 (9-10)	895-1,021 (24-27.5)	892-1,017 (24-27.5)	1,182-1,469 (32-40)	1,178-1,463 (32-40)
Thailand	433-466 (13-14)	401-468 (12-14)	635-703 (20-22)	635-703 (19-21)	"	"
Indonesia	496-531 (7,000- 7,500)	503-539 (7,500- 7,500)	673-708 (9,500- 10,000)	683-719 (9,500- 10,000)	"	"

\*Converted to \$/tonne according to exchange rates

### ANALYTICS

With waste and sustainability targets in place for 2025, countries and brand owners are seeking to increase recycling capabilities. Chemical recycling is seen as one of the solutions, although the industry is still in its infancy in Asia, it is gaining traction in interest and investment.

Investments can be seen coming from across sectors – industry-funded by Alliance to End Plastic Waste (AEPW), government-funded in Singapore, and privately funded by companies in Australia, Japan and Korea via joint ventures.

AEPW launched a request for proposal (RFP) for projects related to chemical recycling technologies and business models, awarding up to \$20m to eligible projects. Agilyx Corporation (AGLX) and A.Eon Holdings evaluates the construction of a 50 tonne/day commercial scale plastics to energy facility; Kirin Holdings embarking on a joint technical analysis and feasibility study into recycling PET bottles with the broad aim of building a fully operational chemical recycling plant by 2027; in addition to Korea's SK Global Chemical and Brightmark 100,000 tonne/year plant. The National Environment Agency of Singapore is also studying the feasibility of chemically recycling plastic waste in Singapore.

Just this year, at least 6 feasibility studies and chemical recycling projects were announced in Asia. As chemical recycling technologies widens the range of what is technically feasible to recycle, waste-to-energy and landfill sectors can then focus on drawing in more of the plastic that leaks out of the system.

By Tan Jia Hui ([Jia.Hui.Tan@icis.com](mailto:Jia.Hui.Tan@icis.com))

For more information about analytical content, click [here](#).



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## Overview | Outlook | Prices | Analytics

Pricing Editor: Hazel Goh | Recycling Analyst: Tan Jia Hui

# Extending our benchmark prices R-PET methodology

## Frequency

Weekly

## Assessment closing time

1700 hours Tuesdays in Singapore

## Cargo timing

Cargoes loading 0-6 weeks forward from date of publication

## Payment term

LC at sight up to LC 60 days

## Specifications

### Flakes :

- Colourless (up to 30% light blue flakes)
- 0-300ppm PVC

### Pellets :

- IV around 0.65 dL/g or 0.8 dL/g
- Filament yarn or Food grade packaging application
- Without additives

## SPOT PRICES

### Recycled PET Flakes, Hot-Washed, Colourless

FOB Taiwan USD/tonne

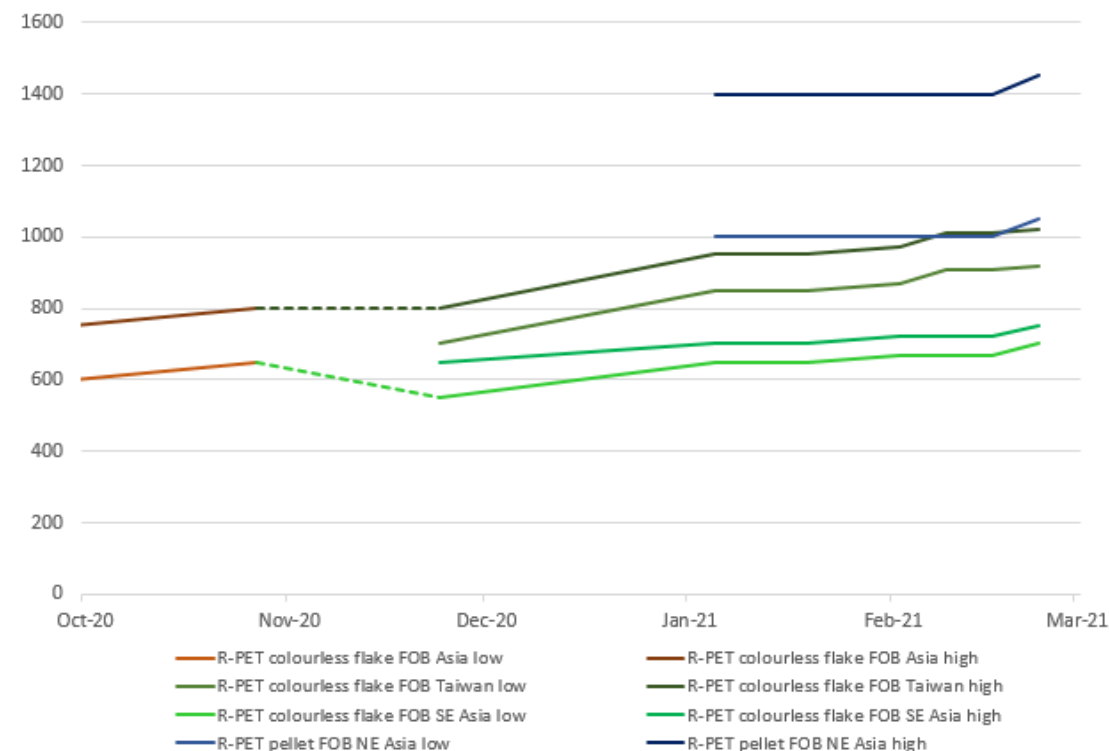
FOB SE Asia USD/tonne

### Recycled PET Pellets

FOB NE Asia USD/tonne



## Asia R-PET flakes and pellets spot prices



# Asia Recycling - Prospects For A Developing Market

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## Panel discussion

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*"The ICIS Recycling & Sustainability Conference is a prime example of how we can bring together key stakeholders from both industry and civil society to share both ideas and solutions being implemented on the ground"* - **VP, Projects - Alliance to End Plastic Waste**



# Full value chain representation from...



## ...to end users / brands owners





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