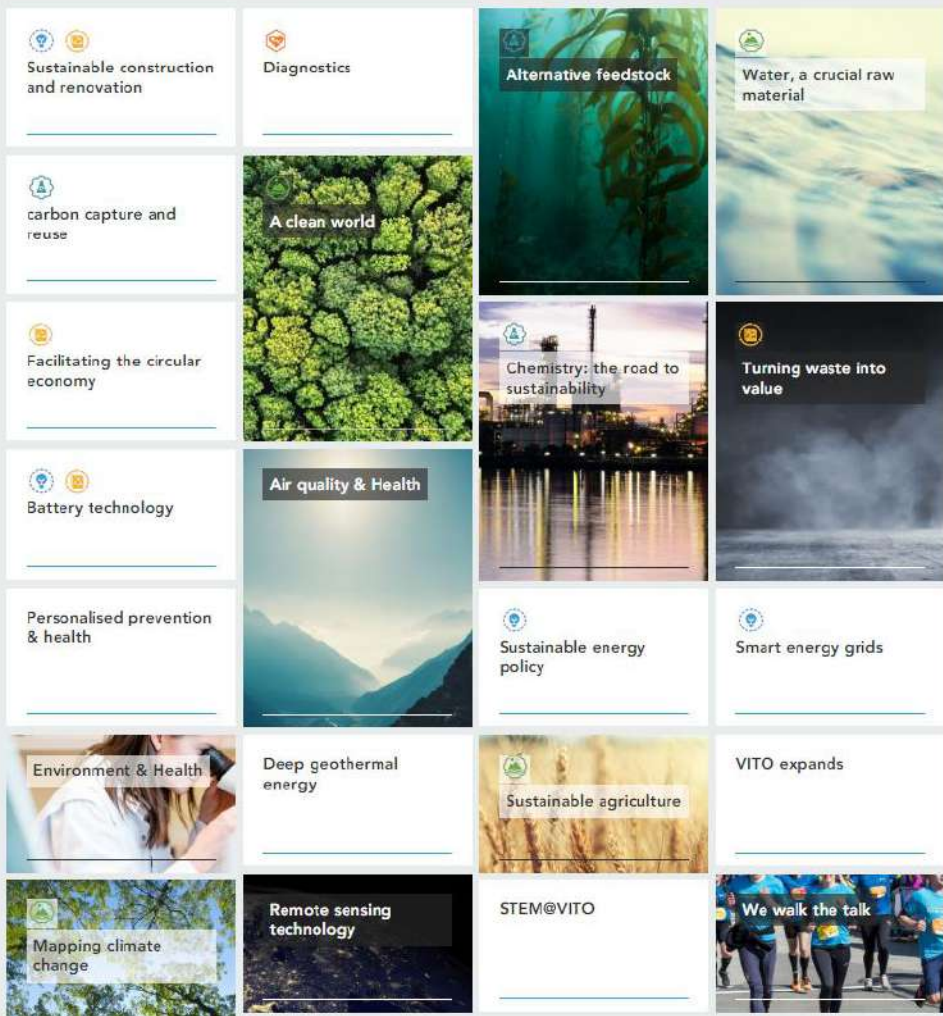


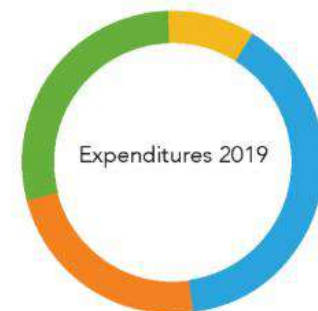
The background image shows a city skyline with several high-rise apartment buildings. In the foreground, there is a lush green park area with a small pond and a path. The sky is a clear, bright blue with some light clouds. The overall scene is bright and sunny, suggesting a clear day.

# NEW ROADS FOR PLASTICS – DEVELOPING A RENEWABLE CARBON VALUE CHAIN

Karl Vrancken – VITO & University of Antwerp  
PlasticWaste2Plastics Conference – 9 November 2020



Business Revenues	82 660
Activation R&D	59 600
Grants	51 035
Financing Reference Tasks	12 098
<b>Totaal</b>	<b>205 393</b>
	(kEUR)



Salaries	80 776
Depreciation R&D	59 600
Operating Means	47 531
Normal Depreciation	19 134
<b>Totaal</b>	<b>207 041</b>
	(kEUR)

# OIL PRICES CAUSE CRISIS

## PLASTICS RECYCLING UPDATE

A Resource Recycling, Inc. publication

rch | Eco-Business | @Language [EN] v

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ure Series / Covid-19

### Cheap virgin plastic is being sold as recycled plastic—it's time for better recycling certification

Driven by the Covid-induced oil price plunge, factories in China are mixing cheaper virgin plastic with recycled plastic and selling it as 100 per cent post-consumer content. Brands with sustainability commitments need to be sure they're buying genuinely recycled material. But how?

### Will recycled plastics survive tanking oil prices?

by **Elsa Wenzel** | May 22, 2020



PET plastic bottles in an assembly line



**Elsa Wenzel**  
Senior Editor  
GreenBiz Group  
@elsamary

GreenBiz

SDG Ambition: Scaling

### Low virgin plastics pricing pinches recycling market further

Posted on May 6, 2020

by **Colin Staub**



Analyst recently noted that low virgin resin pricing means challenges for ensuring use of recycled plastic. | *batuhan taskinkaya/Shutterstock*

dVO de VLAAMSE ONDERNEMER

NIEUWS | BEDRIJVEN | THEMA'S | NETWERK | AGENDA |

Energie en Milieu >



WOENSDAG 24 JUNI 2020

### Samenwerking meer dan ooit nodig in recyclage-industrie van plastics

Corona-crisis zet zaken extra op scherp

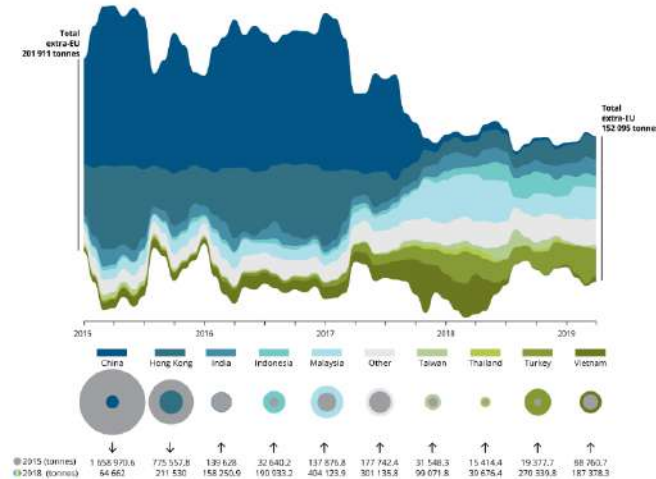
De crisis veroorzaakt door het corona-virus heeft de recyclage-industrie van plastics hard getroffen, een sector die al schade ondervonden had van het Chinese importverbod op afval. De daling

# RECYCLED PLASTICS ARE NOT ALWAYS RECYCLED



## The plastic waste trade in the circular economy

Figure 1. Extra-EU-28 plastic waste trade by receiving country



## Plastic waste



30 Million tonnes (Mt) of waste generated in EU (2015)

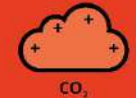
17 % is collected for reuse or recycling (5 Mt)

83 % is lost (25 Mt)

57 % loss through landfilling and energy recovery

### TYPES OF PLASTIC WASTE

- 16.3 Mt plastic packaging waste
- 1-1.5 Mt plastic waste from construction and demolition
- 1.2 Mt plastic waste from end-of-life vehicles
- 2.4 Mt plastic waste from e-waste
- Process losses in recycling



1 ton of plastics results in 2.5 tonnes of CO<sub>2</sub> emissions from production and 2.7 tonnes of CO<sub>2</sub> emissions if incinerated.



Many other adverse environmental consequences are associated to the loss of plastic materials, such as release of microplastics into the environment.

Source: EEA/ETC-WMSE

## GHG EMISSIONS OF PLASTICS

1 tonne of plastics generates  
5 tonnes of CO<sub>2</sub>

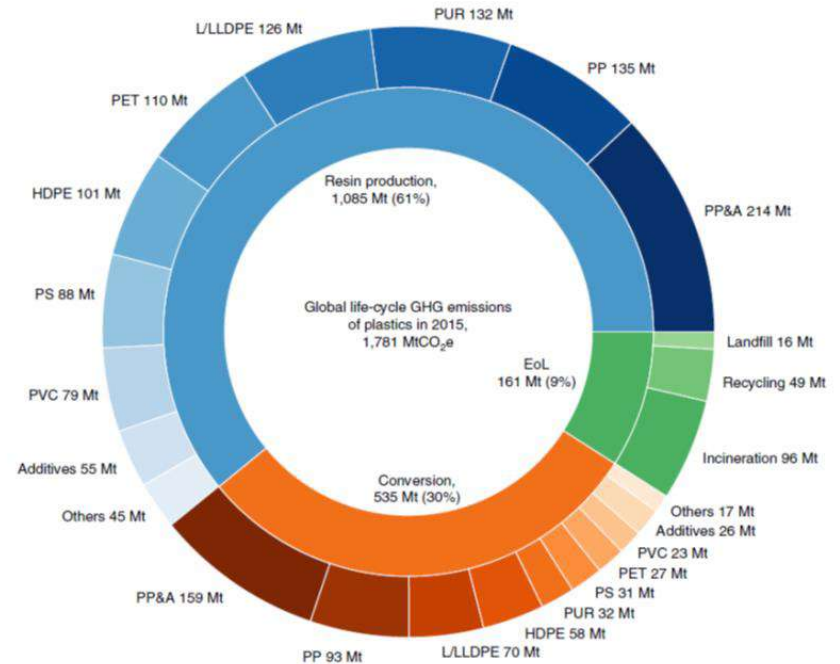
60% in production  
40% in conversion + EoL

Recycling reduces CO<sub>2</sub> at both sides,  
but is not the only solution

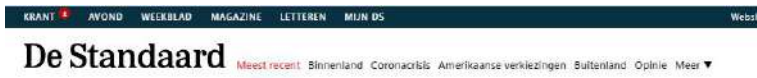
### Strategies to reduce the global carbon footprint of plastics

Jiajia Zheng and Sangwon Suh \*

Nature Climate Change | VOL 9 | MAY 374 2019 | 374–378 |



## A SYSTEMS PERSPECTIVE



RECYCLAGE

### 'Wegwerpplastic is niet het grootste milieuprobleem'

We moeten af van hardnekkige misverstanden over de milieu-impact van wegwerpplastic, zegt de Amerikaanse professor Shelie Miller. 'Als we ons daarop blindstaren, dreigen we het probleem gewoon te verschuiven.'

Toni Ysebaert  
Dinsdag 3 november 2020 om 3:25 uur



Plastic verpakkingen hoeven niet altijd het grootste kwaad te zijn. De geen bijvoorbeeld ook voedselbedrijf tegen. © Richard Broeken/hh

Mieke Schauvliege  
@miekeschau

We moeten meer in materialen en kringlopen gaan denken. Als we het hebben over wegwerpplastic, is het niet het "plastic" dat een probleem is, maar het "wegwerp". Ook wegwerphout of -papier is te mijden.  
[@KarlVrancken](#) #degoedekantop  
['standaard.be/cnt/dmf2020110...](#) via [@destandaard](#)

Translate Tweet



Karl Vrancken @KarlVrancken · Nov 5

Ik stel vast dat zowel [@essencia\\_NL](#), [@MeyremAlmaci](#), [@miekeschau](#) als [@INEOSStyroHR](#) dit statement 'liken', mogelijk hebben we een basis voor debat over systemische verandering? #circulaireconomie



2



1

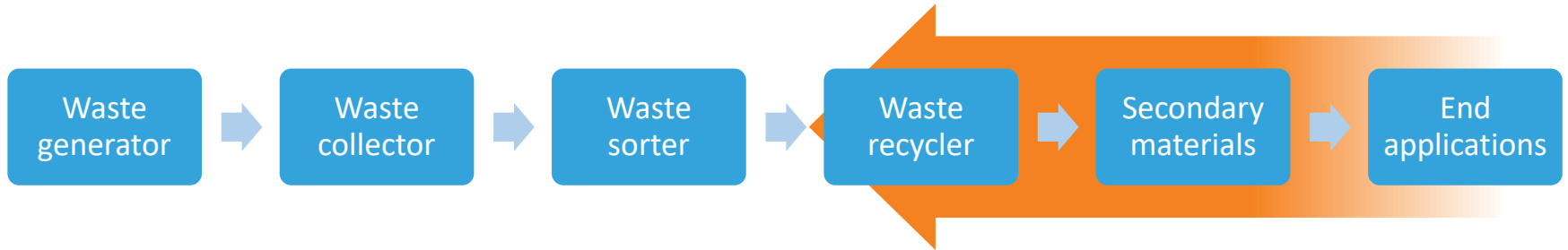


5



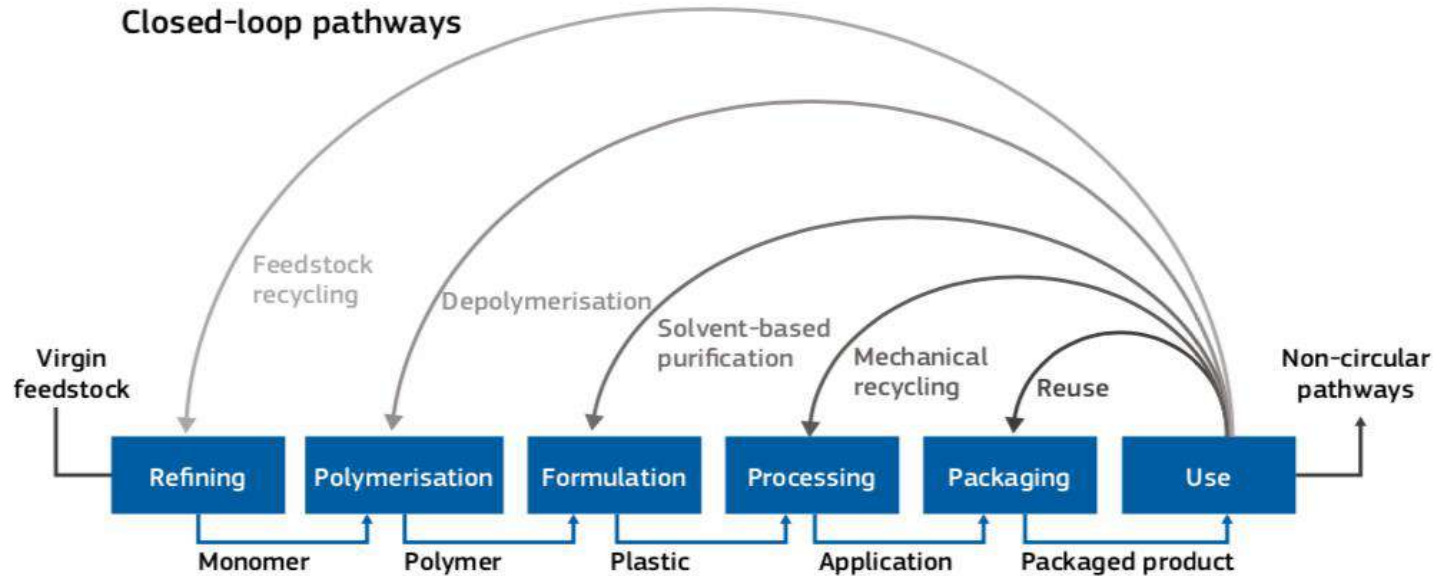
## PRODUCT PERSPECTIVE FOR WASTE PROCESSING

*Which collection and treatment system is needed to reach the material requirements for a certain product?*



- Evaluation of collection systems, material flow analysis
- (Chemical) recycling of plastics
- Product design

# MANY WAYS TOWARDS CLOSED CARBON LOOPS



Source: European Commission, 2019



## THE ROLE OF CHEMICAL RECYCLING

- Close the gap left by mechanical recycling
- Urban mining in transition to renewable carbon economy
- Allow local closure of material loops
- Enable resilience of European chemical industry

## OVAM PLASTICS ACTION PLAN

Action 23. By 2023 the recycling of packaging waste should be done **as much as possible in the EU** and **preferably in Belgium**



Action 26. We evaluate the necessity of fiscal instruments to stimulate the **market** for recycled plastic granulate



## FURTHER ACTIONS

- Action 29. We plead for a harmonised and affordable verification system for '**recycled content**' at European/worldwide level
- Action 37: We implement the ban on the use of **single use catering materials** for all Flemish administration and local government

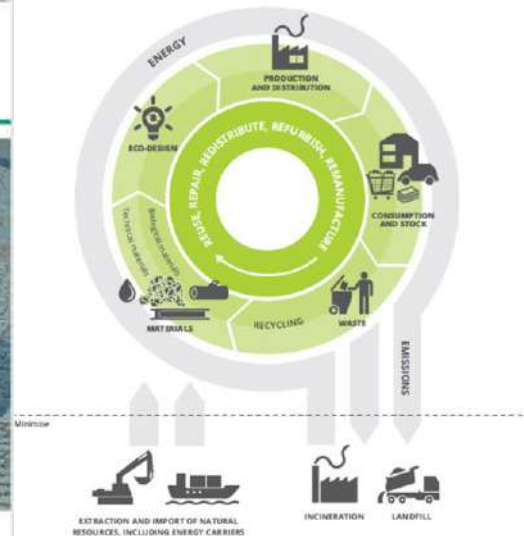


## EU CHEMICAL RECYCLING STRATEGIES

- > 1,5 Mtonnes exports outside EU by EU countries
  - Each technology and installation has strict input criteria
  - Current initiatives in 100 ktonnes/y range
- 
- Need to develop complementary recycling infrastructure
  - In BE-NL cooperation, based on common strategy and interaction
  - To develop a European renewable carbon economy

## CIRCULAR ECONOMY

- Plastics recycling is part of European Circular Economy strategy
- Maintain the functionality of products at the highest possible level, throughout the life cycle, while minimising waste
- Think ‘dematerialization’ of the consumption and production system





  **Karl Vrancken**  
@KarlVrancken

VITO RESEARCH COLLABORATION NEWS MEDIA FIELD EDUCATION KNOWLEDGE CENTRE

## CIRCULAR ECONOMY

To meet the challenges caused by an increased demand for sustainably sourced raw materials, limited natural resources and climate change, a shift towards the circular economy is becoming more crucial for us. Therefore VITO helps universities and companies switch to life-cycle thinking and develop circular business models.

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Research manager  
Sustainable Materials  
+31 14 22 28 10  
[CONTACT](#)

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