



WEBINAR:

Circular Plastics in Canada & the Netherlands

Exploring policy approaches and best practices

Wednesday, 5 April at 16:00 CEST / 10:00 EDT on Zoom



Ruben Dubelaar

Advisor International Strategy



MEET OUR SPEAKERS



Colin Isaacs
Executive Director

Canada Circular Hotspot



Arnoud Passenier
Strategic International
Advisor

Ministry of IenW, NL



Joe Hruska
Vice President
Environmental Affairs

Pathway Group (CA)



Dr. Esther van den
Beuken
Principal Consultant
Circular Plastics

TNO (NL)



Harmen Otten
Project Manager

Van Werven (NL)



PROGRAMME

1. Welcome Words

Marjan Lahuis, Consulate General of the Kingdom of the Netherlands in Toronto (CA)

2. Evolution of Post-Consumer Recycling of Plastics in Canada

Colin Isaacs, Canada Circular Hotspot (CA)

3. Circular Plastics Policies in EU and NL

Arnoud Passenier, International Department Ministry of Infrastructure & Water Management (NL)

4. Canada Policy Developments: Banning Single Use Plastics (SUP)

Joe Hruska, Pathway Group (CA)

5. New Technologies: Improved Plastics Reuse and Recycling

Dr. Esther van den Beuken, TNO (NL)

6. Accelerating Recycling of Bulky Rigid Plastics

Harmen Otten, Van Werven Recycling (NL)

7. Best Practices in Circular Approach: Plastics

Joe Hruska, Pathway Group (CA)

8. Q&A and Closing Remarks



Marjan Lahuis

Senior Advisor Economic Affairs,
Consulate of the Kingdom of the
Netherlands in Toronto, CAN



Government of the Netherlands



Colin Isaacs

Executive Director
Canada Circular Hotspot



Evolution of Post-Consumer Recycling of Plastics in Canada

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Email: colin@cialgroup.com
5th April, 2023



Canada

- 10 provinces & 3 territories
- Land: 9,093,507 sq km
- Water: 891,163 sq km
- Border: 8,893 km
(includes 2,477 km with Alaska)
- Coastline: 202,080 km
- Highest point: Mount Logan 5,959 m
- Arable land: 4.57%
- Second largest country after Russia
- Population: 39,000,000; population growth 0.89% per year
- 90% of the population is concentrated within
160 km of the US border



Timeline of Curbside Recycling

- 1969 – 1981 Environmental groups rally public support for recycling
- 1981 – 1986 A waste management company piloted Blue Box recycling in Kitchener, Ontario
- 1986 Public opinion demanded that Kitchener City Council make Blue Box recycling permanent
- 1986 – 1989 Ontario provincial government reluctantly rolled out Blue Box across entire Province
- 1987 – 1995 Curbside recycling expands to most Canadian cities. Some deposit-refund systems continue, mostly for beverage containers.





Canada Circular Economy

- The Federal Government of Canada is explicitly moving slowly towards adoption of a Circular Economy
- Three (out of 10) provinces have already adopted strategies which explicitly include Circular Economy. One, Ontario, already has a Circular Economy Act that addresses recycling of some post-consumer materials including plastic packaging
- Circular Economy is on its way to becoming entrenched in Canadian business and government thinking but there is still be lots of learning to do



Governance of Recycling in Canada

- The Federal Government has almost no role in household recycling but can play a persuasive role with provinces and municipalities.
- The Provinces now have legislation which provides a framework for household recycling. Recycling laws in each province are slightly different.
- Rules governing household recycling are the responsibility of municipalities. Each municipality has slightly different rules, for example on what materials must be collected in a municipal recycling program.
- Some municipalities run recycling collection and processing facilities themselves. Others contract these services to the private sector.
- The environmental performance of collection and processing facilities is regulated by the province in which the facility is located.
- Initially funding for recycling came from the province, the municipality, and industry. Now all funding is moving towards Extended Producer Responsibility (EPR).



Weaknesses in Canadian household recycling programs

- Collection has plateaued at about 40% of recyclable materials
- Only about 10% of end-of-life plastics are collected and recycled
- Canada has far fewer plastics recycling facilities than are required to process and make use of the available plastic materials
- There are very few industrial scale upcycling, closed loop recycling, or quality downcycling facilities for many resin types



Reasons for these recycling weaknesses

- Canada's population is thinly spread over very large distances.
- Recyclable materials are governed, and often considered, as “waste”.
- Cost of recycling is usually considered as an addition to waste management budgets without considering avoided landfill costs.
- Contamination of recycling streams is a significant problem (typically 4% or more) and is made worse by inadequate public education.
- Labelling of recyclable materials is confusing to the public.
- Investment in companies that recycle end of life materials and make use of the PCR material is not encouraged by government regulations and lack of demand for PCR material

Governments hope that EPR will resolve some of these issues.



Arnoud Passenier

Strategic International Advisor, NL Ministry
of Infrastructure and Water Management



Ministerie van Infrastructuur
en Waterstaat





CIRCULAR ECONOMY

Plastics Policy in the Netherlands

Arnoud Passenier
Strategic International advisor Circular Economy

Plastics and CE webinar Canada-NL

April 5th, 2023



PLASTICS

- Often most sustainable material...
- Low environmental footprint, except microplastics....
- We use it badly (wastage) and we have to get rid of our addiction to fossiles

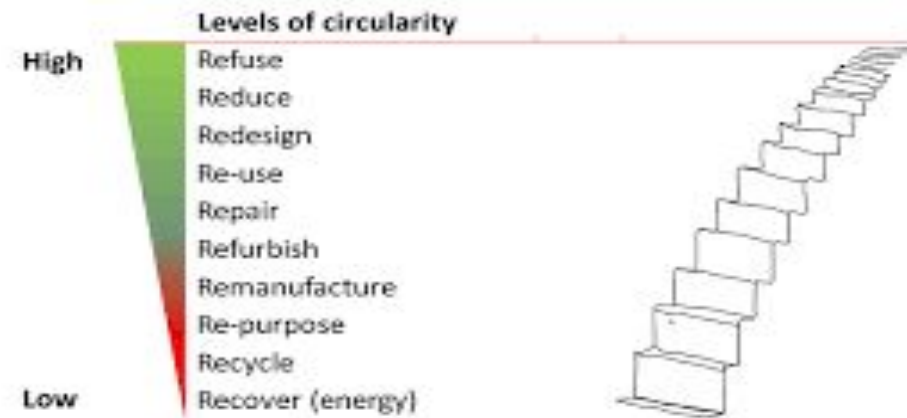




Circular Plastics Policy

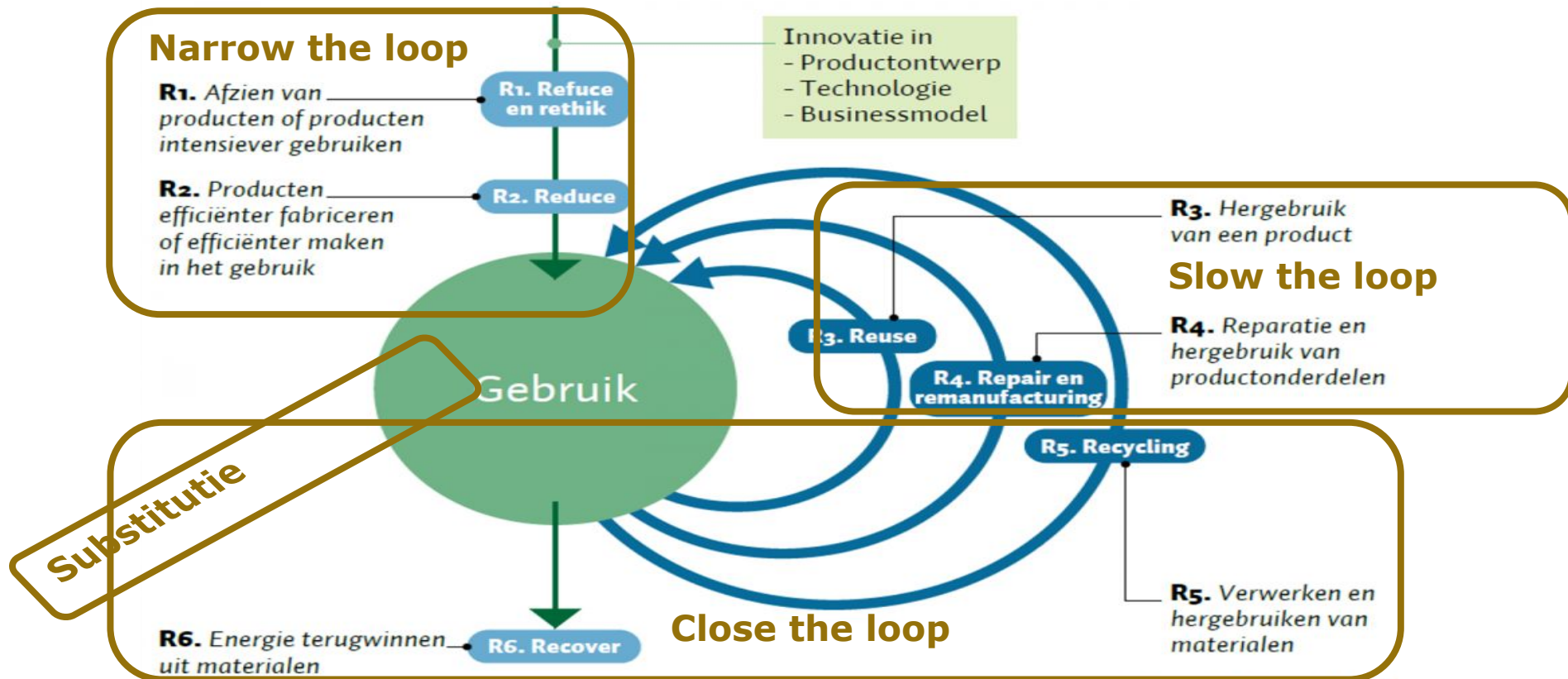
- Plastics policy is based on the 10 circular strategies:
- **Narrowing the loop:** less use of raw materials by reduce, sharing/reuse
- **Slowing the loop:** longer and more intensive use by repair, refurbish, repurpose
- **Closing the loop:** recycling, use of recycled content, substitution to use of biobased plastics

Ladder of circularity: Give priority to the options that are as high as possible on the ladder (10 R's)





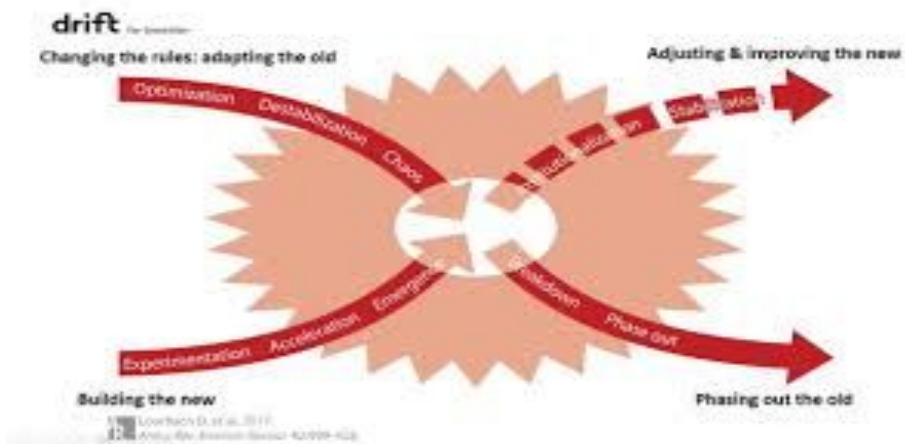
Strategies: Narrow – Slow - Close the loop



Bron: PBL (2019) | ESB



Interventions to accelerate



- **Regulate** by landfill ban recyclable materials + no free plastic bags (+ no free returns?)
- **Incentivize** the market: tax on CO₂-emissions/incineration/export + EPR (including eco-modulation) + Redesign products & services
- **Show** what you tell others: use circular procurement
- **Invest** in smart collection & sorting and **educate** (skills & awareness)
- **Innovate together** with industry (collaborative approach)

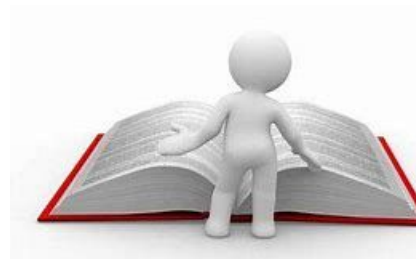
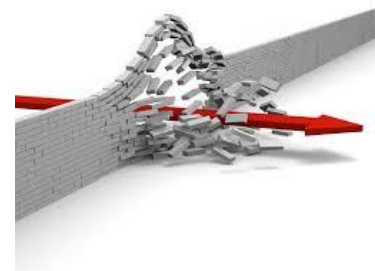




Roles of government

Sometimes we use all roles in one conversation.....:

- **Connect** the networks to collaborate along and between value chains
- **Challenge** the industry to raise the bar and proof impact
- **Support** to enable innovations getting to the market
- **Regulate** to create (ambitious) framework (& level playing field)





Circular Plastics: how?

1. Make it practical!

- Promote redesign by **CIRCO programme** to support industry to rethink products & services
- Create **guidelines** for industry on using less and mono- materials (design for disassembly, design for reuse, design for recycling)
- Develop **Roadmap on Reuse & Refill systems** with industry (and academia) to drive back single-use packaging; demand commitment to implement Roadmap by monitoring
- Invest in **test facilities** for sorting & recycling (NTCP)



Public-private collaboration

Focus on innovation & smart collaboration in supply chain:

- Create trust, be transparent
- Start small, inspire others
- Work together (big & small)
- Implementation & monitoring are key for success!
- Convince others to join: develop common vision and narrative with concrete deliverables

Examples:

- Plastics Pact NL
- European Plastics Pact





More information?

Contact me !



Arnoud Passenier

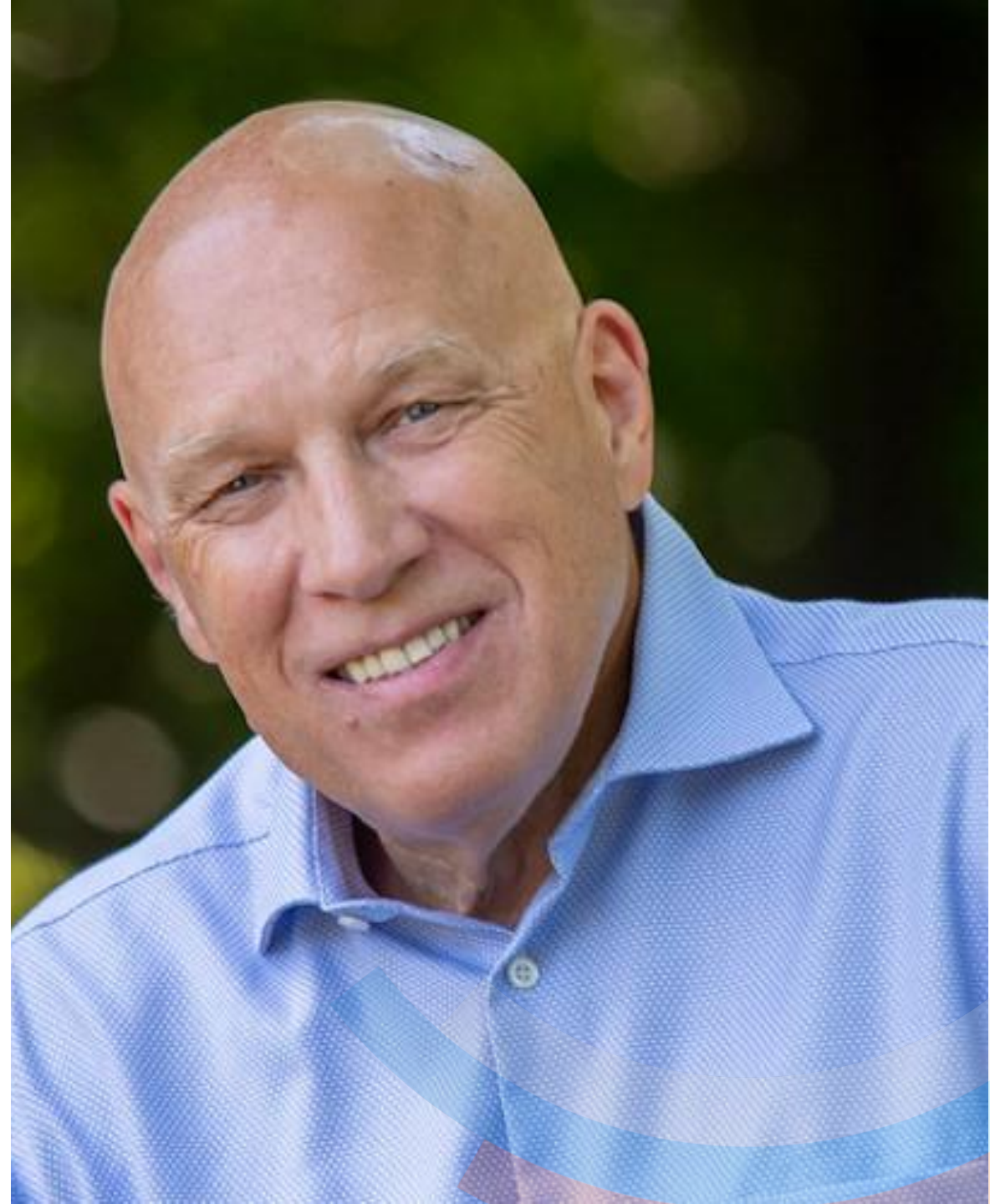
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Joe Hruska

Vice President Environmental Affairs





Pathway
Group

Canada Policy Developments: Banning of Single Use Plastics

Holland Circular Hotspot Webinar

Joe Hruska
Vice President Environmental Affairs

April 5, 2023



About Pathway Group



Government Relations and public affairs are the cornerstones of our business. Since 2002, Pathway Group has helped to build effective win-win relationships between our clients and government.



Overview

1. Economic Summary Plastic Resin & Products Industry Canada
2. Economic, Markets & Waste Study Canada
3. Plastics Management in Canada
4. Canada Plastics Regulations – Canadian Environmental Protection Act (CEPA) & Single Use Plastics (SUP) Bans
5. Circular Economy (CE) for Plastics Developing
6. Innovation, Technology & Design for Circular Economy
7. Circular Economy (CE) and Sustainable Material Management (SSM)
8. The Future – Making CE More Effective for Society



Economic, Markets & Waste Study Canada





Economic Summary Plastic Resin & Products Industry Canada

Total Sales: CA\$35 billion

- 5% of Canadian Sales Manufacturing
- Plastic resins CA\$10 billion
- Plastic manufacturing CA\$25 billion

Employment in Canada

- Direct Employment 93,000
- Indirect Employment est. 279,000
- Establishments 1,932 – 2,600

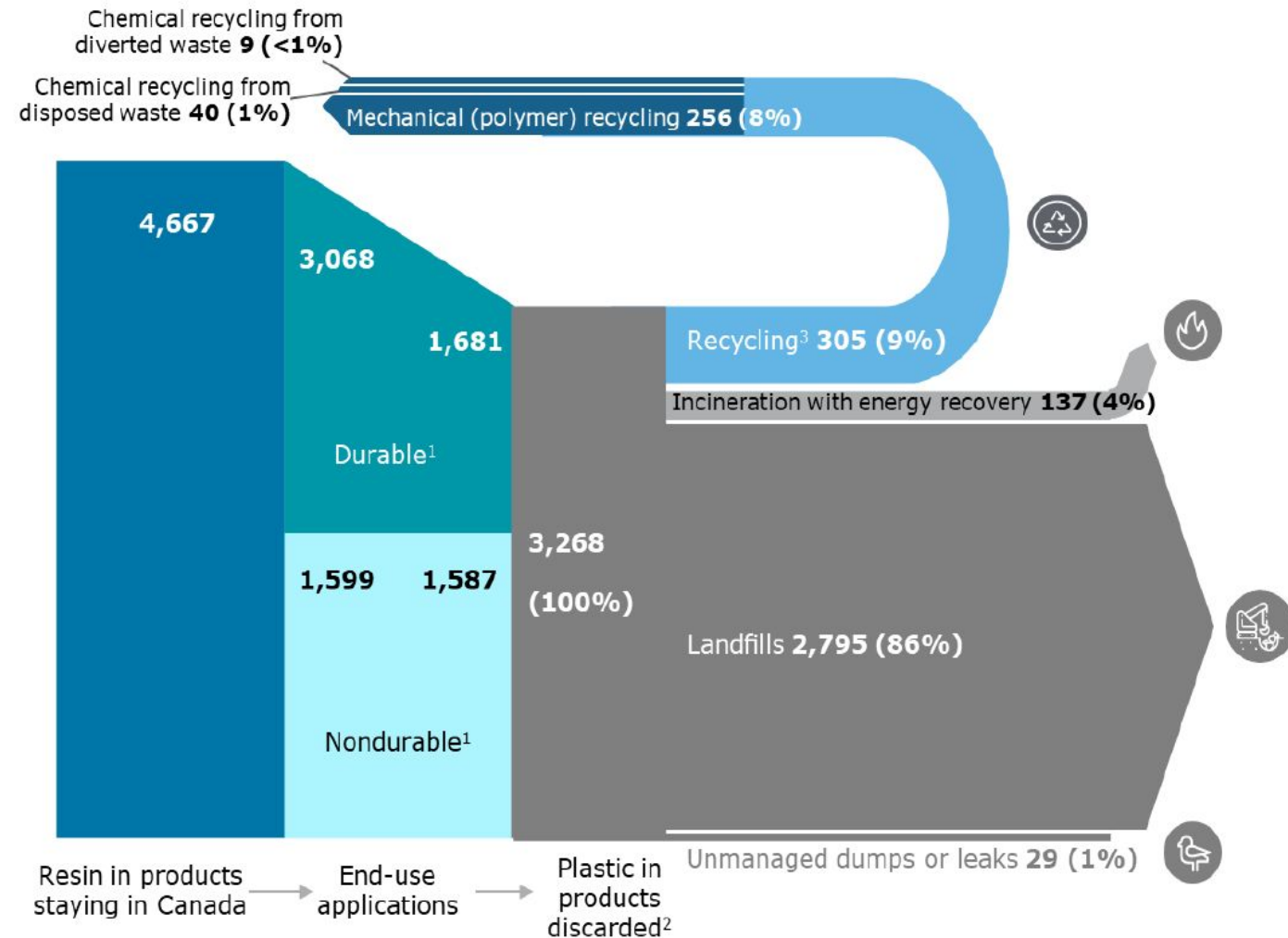
End Uses

- Packaging, construction and automotive account for 69 percent of plastic end-use
- Balance of uses white goods, textile, electrical and electronic equipment



Plastics Well Managed in Canada

Figure 1: Canadian resin flows in thousands of tonnes per annum, 2016



Need to shift to Circular Economy to retain plastics benefits

- 86% landfilled or “**Missed opportunity – belongs in the Circular Economy**”
- 9% recycled
- 4% energy recovery
- 0.6% leaked into environment through unmanaged landfills & leaks/litter

Canada Plastics Regulations – Environmental Protection Act (CEPA) & SUP Bans

- G7 Oceans Charter - Canada committed to Zero Plastics Waste
- June 2019 Canada announced SUP Bans by 2021 before Science Assessment started and released.





Canada Plastics Regulations – Environmental Protection Act (CEPA) & SUP Bans

- **May 2021, Canada designates “plastic manufactured items” TOXIC in CEPA**– ignoring provincial jurisdiction over waste & resources – Govts. own Science Assessment does not support designation.
 - Industry & provincial judicial enquiry challenge March 2023
- **June 2022 Canada bans SUP’s** – declared more to come

***SINGLE-USE PLASTICS PROHIBITION REGULATIONS-
ITEMS TO BE BANNED***

Checkout bags 	Cutlery 
Foodservice ware made from or containing polystyrene foam, polyvinyl chloride, carbon black or oxo-degradable plastic 	Ring carriers 
Stir sticks 	Straws 



Canada Plastics Regulations – Environmental Protection Act (CEPA) & SUP Bans

Coming into force dates:

Check-out bags, cutlery, foodservice ware, stir sticks, straws

- manufacture and import - December 20, 2022
- sale - December 20, 2023
- export - December 20, 2025

Ring carriers

- manufacture and import - June 20, 2023
- sale - June 20, 2024
- export - December 20, 2025

SUP flexible straws packaged together with a beverage container

- sale - June 20, 2024
- export - December 20, 2025



Canada Plastics – Other Policy Developments

- Canada-wide rules to strengthen recycling and composting of plastics through accurate labelling in development
- Recycled Content Regulations anticipated in 2023
- Recycled Plastic Content Products Standards Development by Bureau de normalisation du Quebec (BNQ) - D 3840-100-2 – expected to compliment recycled content regulations.



Canada Plastics Regulations – Environmental Protection Act (CEPA) & SUP Bans

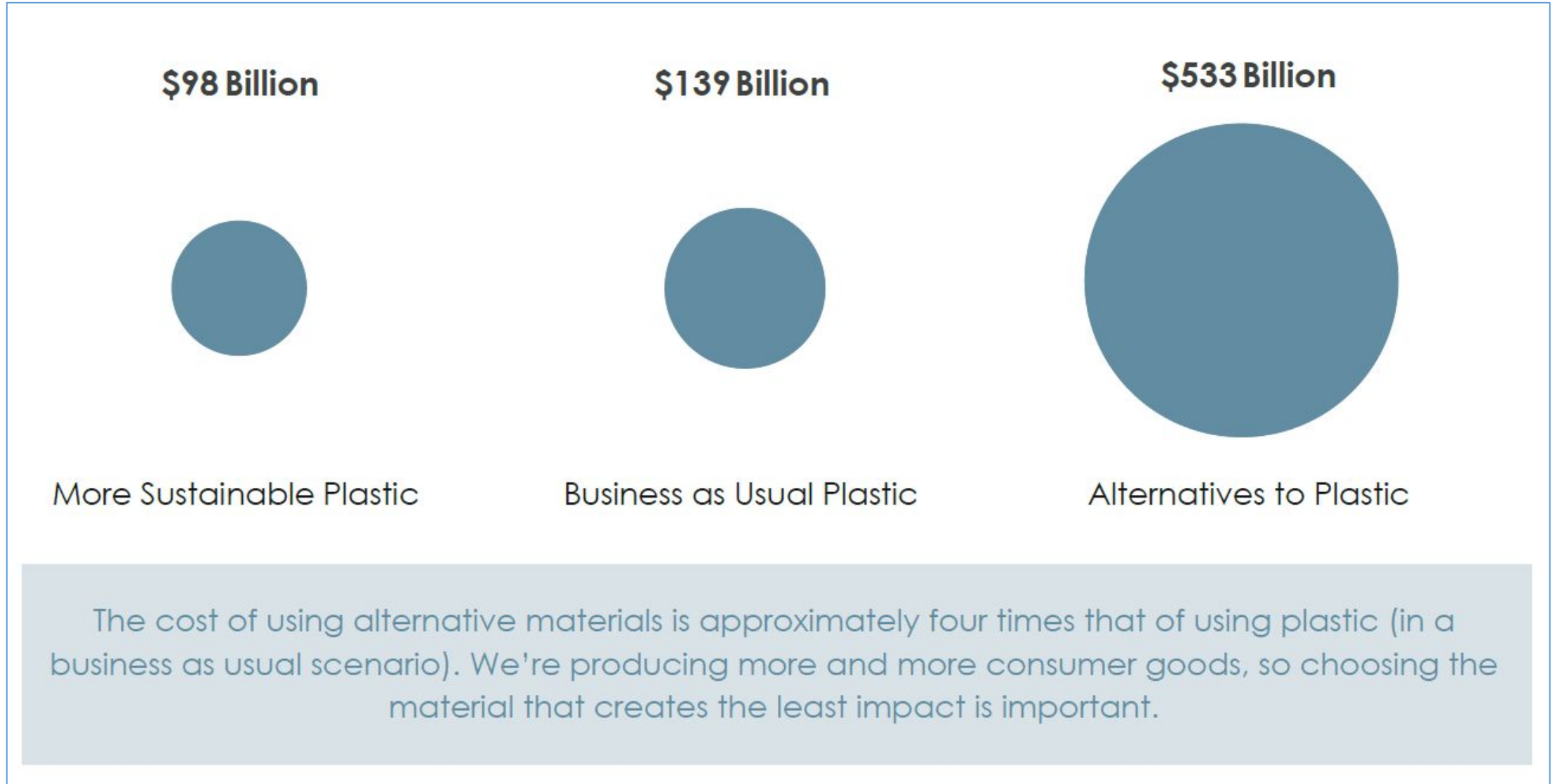
Bottomline – “You Cannot Ban Your Way to a Circular Economy”

Unintended negative consequences :

- Uncertainty for infrastructure & innovation investments; Circular Economy for plastics inhibited; less Circularity
- More waste, carbon, economic, environmental, social impacts and less conservation of resources
- Circular Economy - stakeholders need to recognize the impacts of their decisions & material choices



Trucost - Plastics and Sustainability: A Valuation of Environmental Benefits, Costs and Opportunities for Continuous Improvement



The cost of using alternative materials is approximately four times that of using plastic (in a business as usual scenario). We're producing more and more consumer goods, so choosing the material that creates the least impact is important.



Innovation, Technology & Design for CE

Innovations proposed by the plastics industry address environmental and economic concerns. Plastics carbon footprint 4 x's less than alternatives. Plastics aligned with climate change, 3 R's and CE goals with reduced energy use:

- **Plastic reusable retail bags designed to be reused 125 times**, will have up to 40% recycled content highly Circular Economy - 100% recyclable – current reusable bags not Circular - end up in landfill end-of-life
- **New certified compostable straw technology** designed from renewable resources is performs like plastic but is compostable on land and marine environments.
- **New chemical recycling technologies** making plastics a more Circular material through 21st Century advanced depolymerization technologies returning plastic molecules back into the economy.
- **All of these advancements support the Zero Waste goals and building the Circular Economy, with jobs and investment**



Circular Plastics Economy Development

- Plastics a relatively new 21st Century material vs alternatives
- **The “new kid on the block” is accelerating development** of mechanical & advanced recycling technologies coupled with expanding EPR collection, recycled content with sustainable design & technology focus.


NOVA Chemicals sets bold ESG aspirations to lead the plastics circular economy
 March 22, 2023

icals-sets-bold-esg-aspirations/

PACTIV EVERGREEN AND AMSTY LAUNCH CIRCULAR POLYSTYRENE FOOD PACKAGING PRODUCTS

Product and Business · Wednesday, 15 February 2023

LAKE FOREST, IL (February 15, 2023) – To help major food brands achieve important sustainability goals, Pactiv Evergreen, a leading in fresh food and beverage packaging in North America, is teaming up with AmSty, the leading manufacturer of polystyrene in North America, to launch a new line of circular polystyrene food packaging products. Pactiv Evergreen will soon offer customers innovative foam polystyrene packaging products with 100% post-consumer recycled content derived from advanced recycling technologies.



Transitioning to a Circular System for Plastics

Assessing Molecular Recycling Technologies in the United States and Canada

CLOSED LOOPpartners

EFS-PLASTICS HOME PRODUCTS TECHNOLOGY ABOUT CAREERS NEWS CONTACT

News Articles

Feb 28, 2023 - Reclaimer rolls out brand of post-consumer LDPE

Feb 23, 2023 - EFS-plastics introduces new product line

Mar 2, 2022 - Mixed bale processor adds facility in western Canada

Dow and Mura Technology announce largest commitment of its kind to scale advanced recycling of plastics

GREENMANTRA
TECHNOLOGIES

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REvital
POLYMERS

Home About Us Reclaiming Our Resources


REINTEGRATING
The Circular Economy

NOVA Chemicals and Merlin Plastics Join Forces to Use Curbside Recycling for Consumer Packaging

APR



Circular Economy (CE) & Sustainable Material Management (SSM) – Life Cycle Thinking

 AMERIPEN[®] **Circular Economy Defined**

A circular economy is one that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times

(Ellen MacArthur Foundation)

 AMERIPEN[®] **Sustainable Materials Management Defined**

SMM is an approach to promote sustainable materials use, integrating actions targeted at reducing negative environmental impacts and preserving natural capital throughout the life-cycle of materials.

(OECD)

Packaging should be evaluated against its role in protection

- A CE Model would focus on the package independent of its role in protection, therefore emphasis would be on which package offer most reuse or recovery.
- The SMM Model would include analysis of packaging's role in protection. Loss of food would be included in assessment of cumulative impact.



The Future – Making CE for Plastics More Effective for Society

- **The benefits of plastics:** lightweight, durable , reusable & recyclable, economical, saves lives, protects our health, extends and keeps food supplies healthy and more.
- **Often overlooked is the reduction benefits of plastics** in the use of resources & energy.
- **Innovations and technology require the financing and time** to support Circular Economy and Societal Goals.



**Pathway
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Dr. Esther van den Beuken

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TNO innovation
for life

› NEW TECHNOLOGIES:
IMPROVED PLASTICS REUSE AND RECYCLING

DR ESTHER VAN DEN BEUKEN

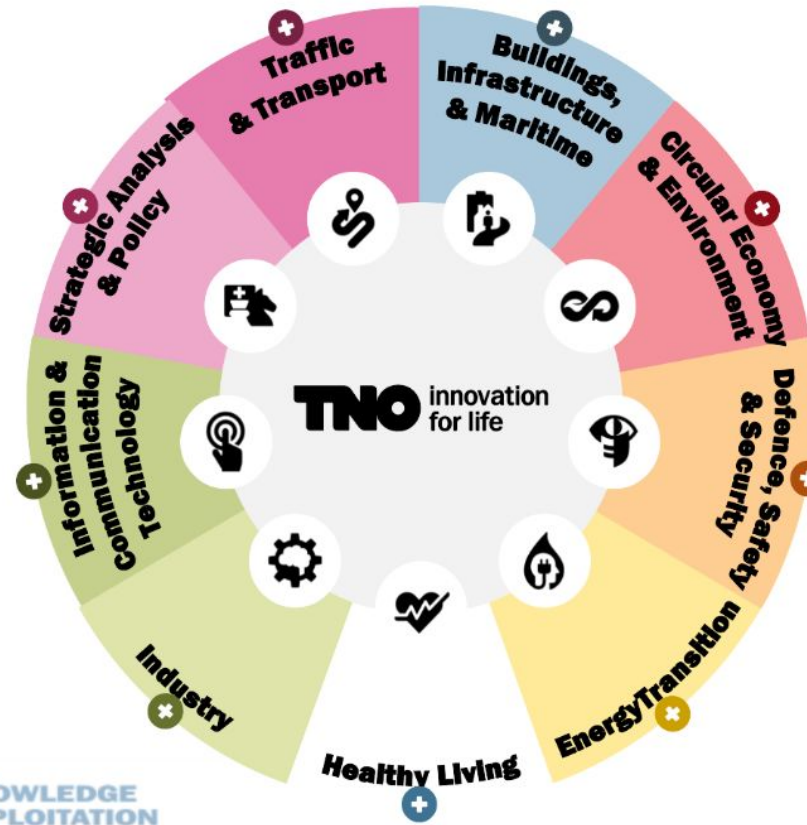
TNO innovation
for life



TNO: Dutch independent research organisation

TNO's MISSION

TNO connects people and knowledge to create innovations that boost the competitive strength of industry and the wellbeing of society in a sustainable way.



KEY DATA

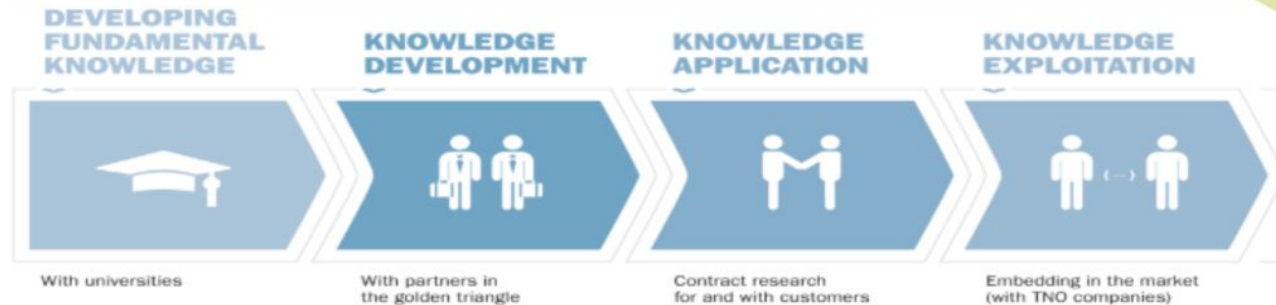
NUMBER OF EMPLOYEES

3,500
TOTAL WORKFORCE

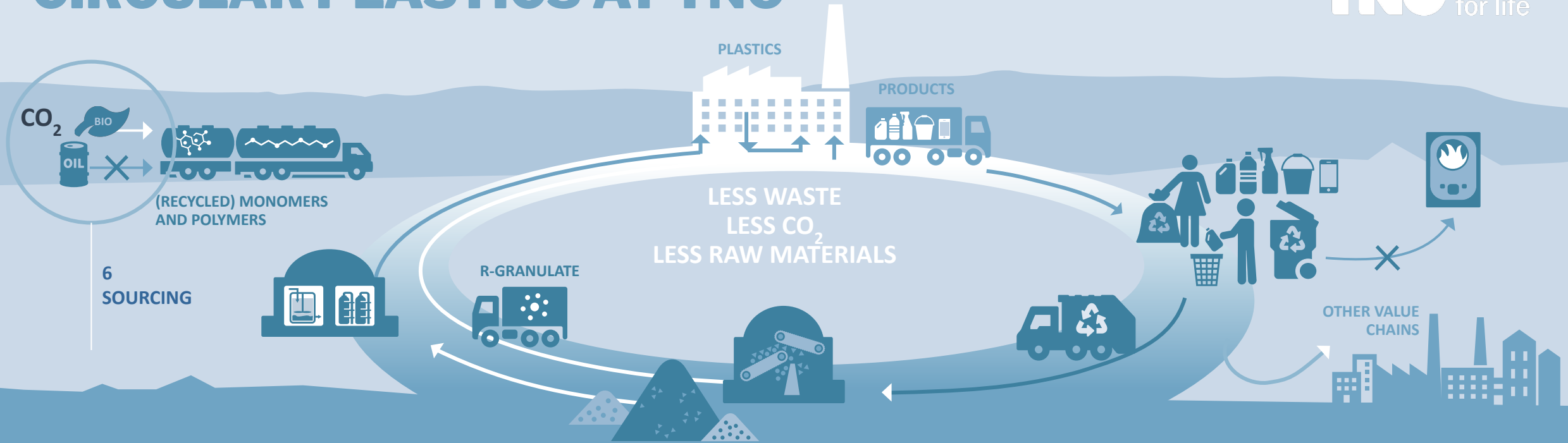
2,843 vs. 2016

47 professors
12 lecturers

856 patents
2188 publications



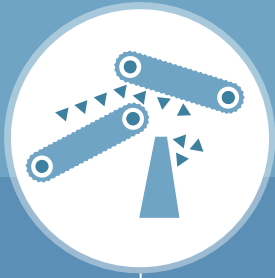
CIRCULAR PLASTICS AT TNO



1
SYSTEM INTEGRATION
VALUE CHAIN DESIGN AND
LIFE CYCLE ASSESSMENT



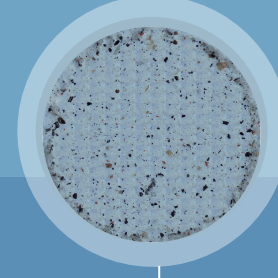
2
DESIGN
FOR / FROM
RECYCLING



3
PRETREATMENT



4
RECYCLING



5
MICROPLASTICS

PLASTICS RECYCLING SCENARIO MODEL (PRISM)

A techno-economic optimization model that supports decision making by stakeholders in plastic value chains by

- sketching the future plastic waste and recycling potentials (The Netherlands 2030/2050) and
- estimating the societal (environmental, economic) life cycle effects of policy measures in such future scenarios.

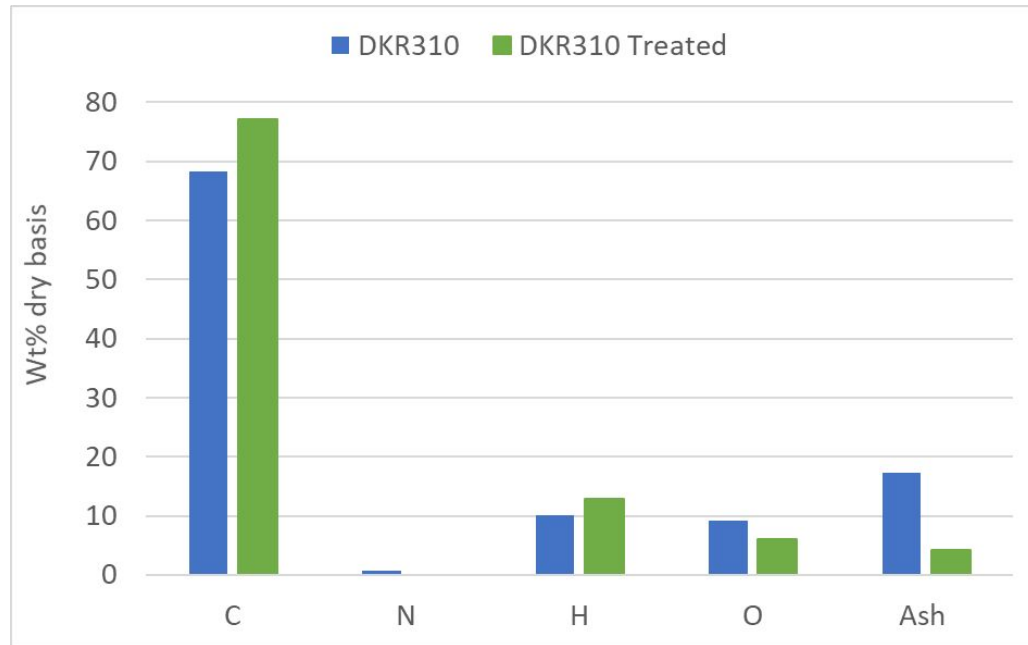


SCHWARZ ET AL., 2021

<https://authors.elsevier.com/sd/article/S0956053X20307091>

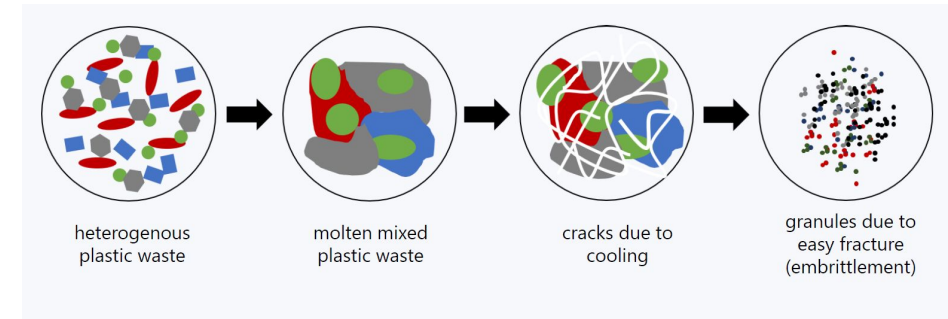
DECONTAMINATION TECHNOLOGY: UPWASH

TYPICAL RESULT

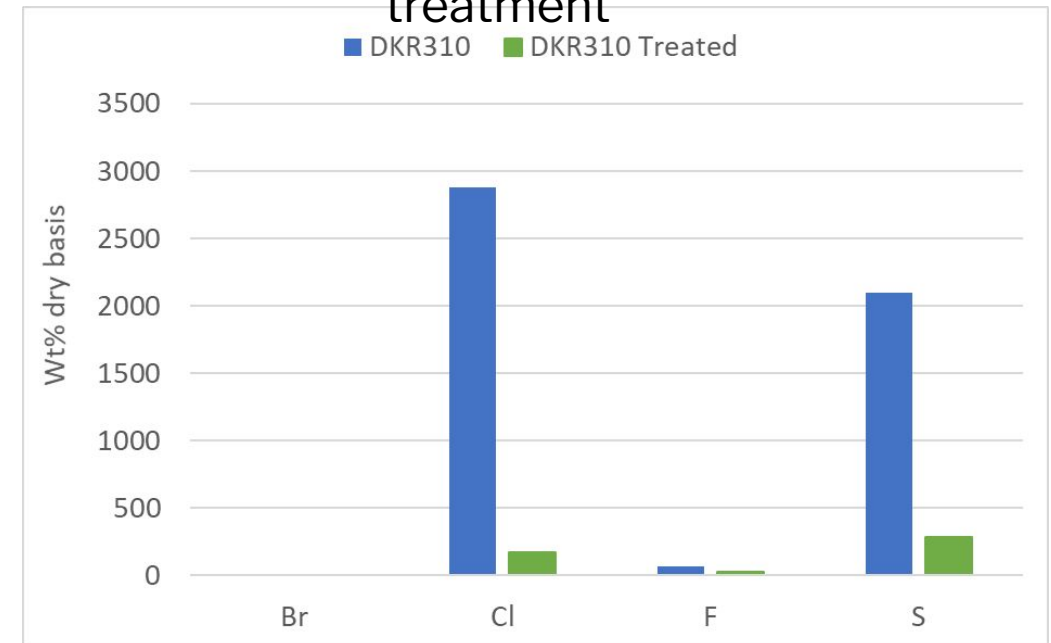


Strong reduction on ash composition upon treatment

Reduction of the organics fraction (O content)



Strong reduction of Cl and S upon treatment



STATE OF ART – SOLVENT-BASED RECYCLING/DISSOLUTION



- Vinyloop (soft PVC). Solvay pilot plant (2002) in Italy for 10 kt/a closed in 2017



- **PolyStyreneLoop in Terneuzen (NL), 3 kt/a (EPS)**
- Polystyvert, Montreal (Canada)
- Recycling Avenue: dissolution of ABS and HiPS from WEEE, 3 kta (NL Q4 2022)
- TNO Möbius: PLAST2bCLEANED dissolution of ABS, Br and SBO3 (NL/DE: pilot)



Polystyreneloop demoplant



- **Obbotec (Plant One): planned to recycle a mix of waste plastics into near virgin PE & PP materials**
- **TNO Möbius (Chemelot): PE/PP**
- CreaSolv pilot (Unilever) in Indonesia, 1 kt/a flexibles plastic to recover PE
- PureCycle Technologies with P&G to purify PP, (2022) USA
- APK Newcycling: multilayer packaging to produce LPDE/PA. 20 kt/a pilot plant Germany
- Sulayr: PE lining from PET packaging, 22 kta. Spain

STATE OF ART: CHEMICAL DEPOLYMERISATION

DEPOLYMERISATION:

Reverse polymerisation of polycondensation polymers with heat and catalysts, purification to recover pure monomers or oligomers in water, alcohol or amine solvents.

Possible polymers: **PET, PA, PC, PU, PLA, PHA, PEF**

PET, PACKAGING, BOTTLES

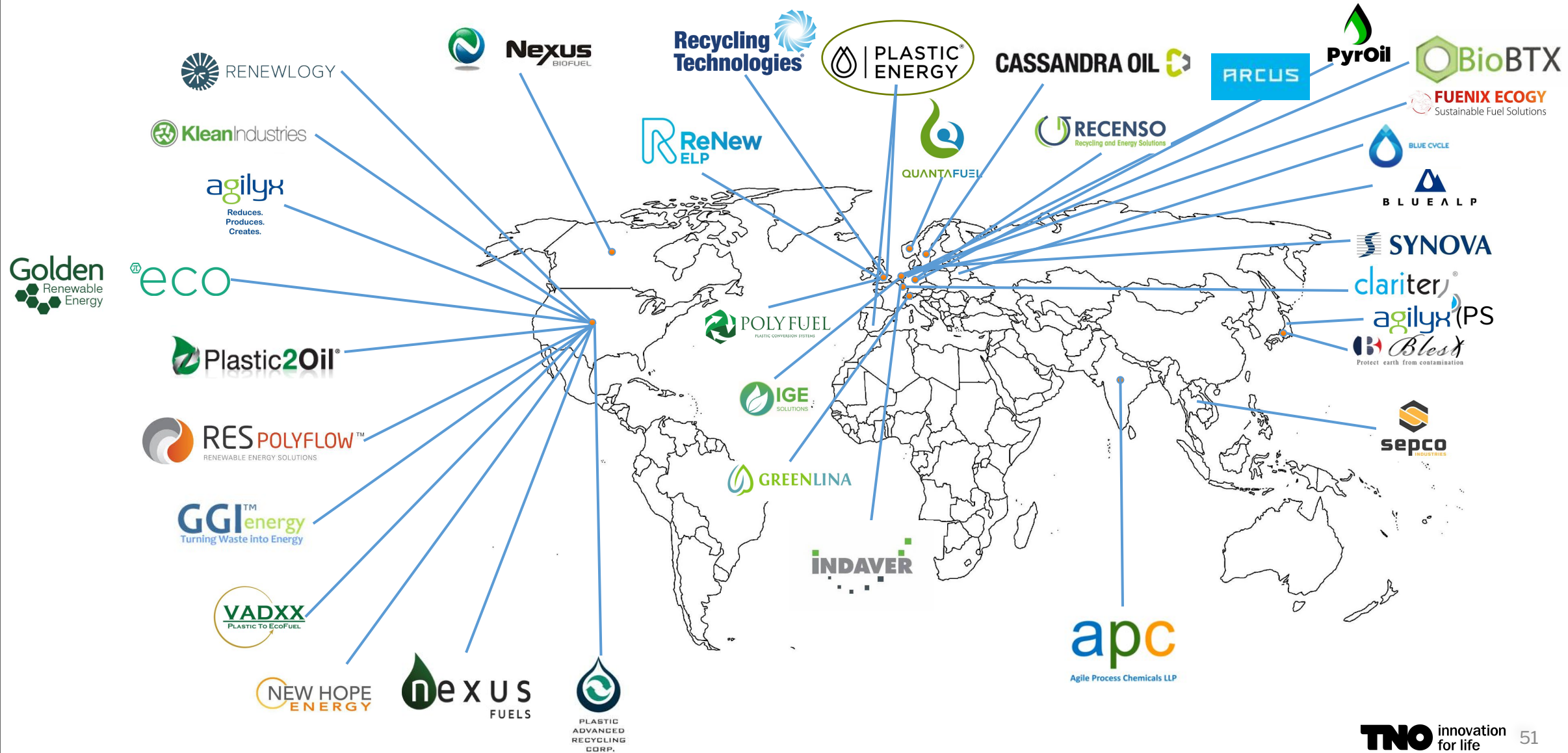
- o **CURE (Netherlands), 25 kt/a in Emmen (NL) in 2021**
- o **IONIQA (Coca Cola), 10 kt/a plant in Geleen (NL) in 2021**
- o Gr3n, microwave assisted process. Switzerland pilot plant since 2014
- o Carbios (FR), biodegradation of PET
- o Loop industries, L'Oreal, Coca Cola, Danone, Nestlé. 21 kt/a plant with Indorama in 2020
- o Garbo/ChemPET 35 kt/a plant in Cerano (Italy)
- o PerPETual, 2 million plastic bottles (India)
- o DuPont-Teijin

PA, POLYAMIDES, NYLON

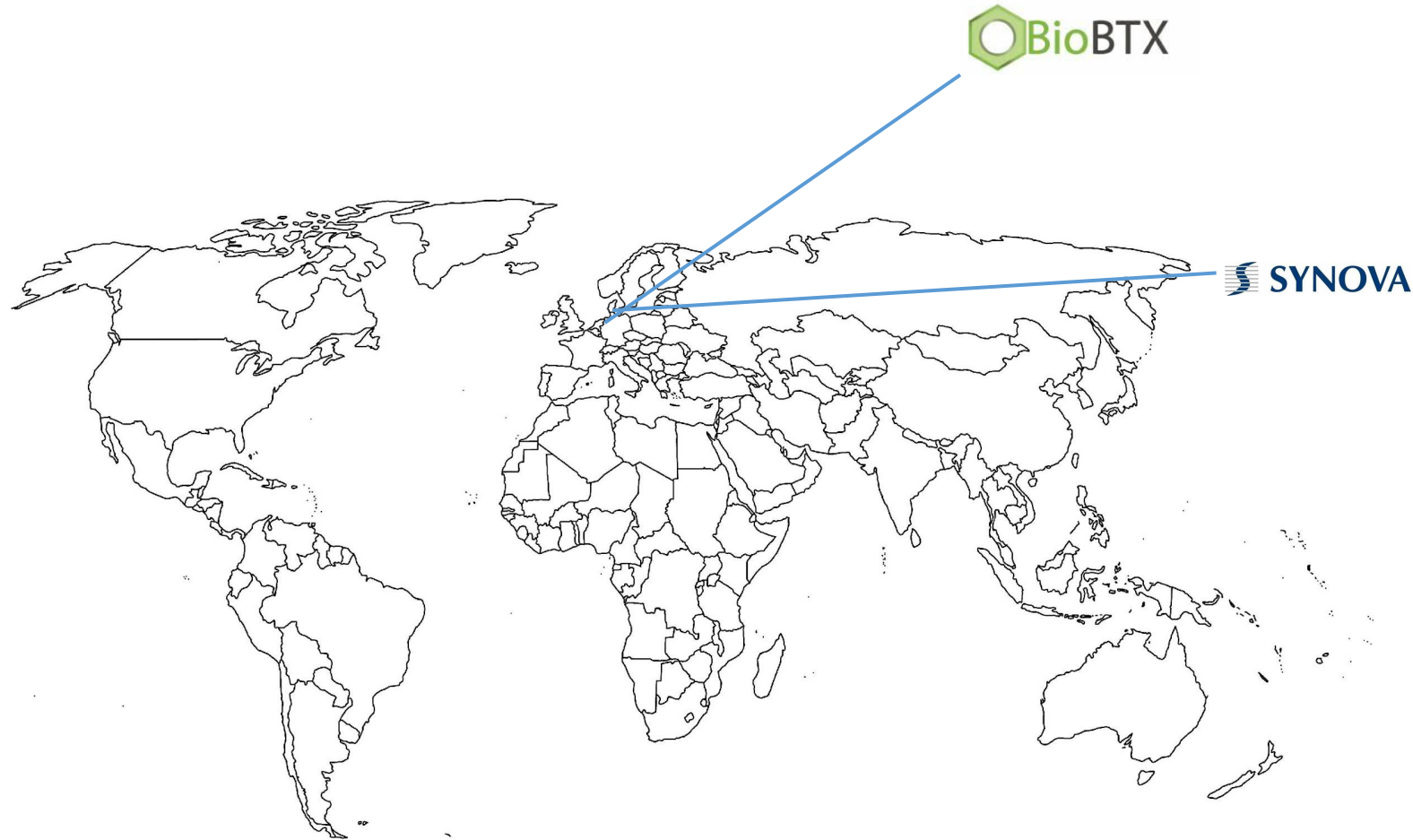
- o **Fibrant (Netherlands): used into new nylon yarn (fish nets, carpets)**
- o Aquafil (Italy), used into new nylon yarn (fish nets, carpets)



PYROLYSIS INITIATIVES ON INDUSTRIAL LEVEL



› PYROLYSIS INITIATIVES ON INDUSTRIAL LEVEL



Unique value proposition

- Focus on complex waste mixtures
 - Plastics
 - Biomass
 - Versatile in composition
- BioBTX: from waste to BTX
- Synova: in single step from waste to valuable chemicals
 - Olefins and aromatics
 - Replace pyrolysis and naphtha cracker operations
- 100% circular plastics enabled

CIRCULAR PLASTICS NL

Program Size

> 450 M€

(220 M€ NGF contribution)

Value chains

Food packaging

Textile

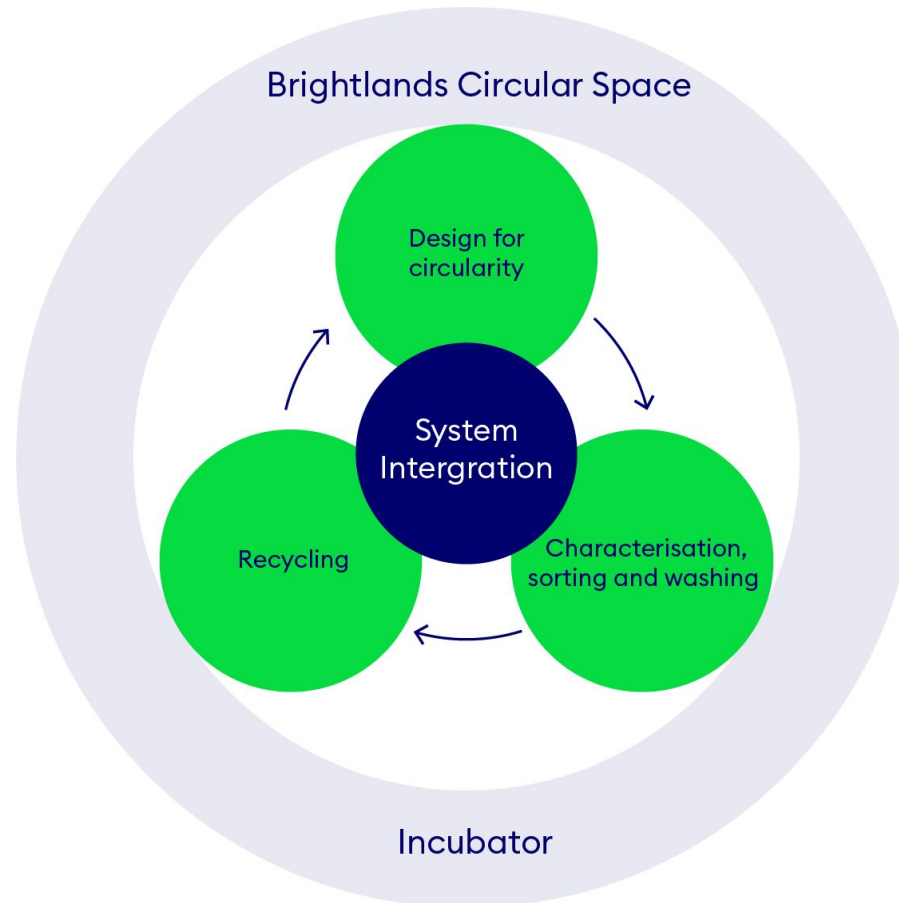
Carpets

Personal hygiene

Electronics

Mattresses

Car tires



Impact

Zero CO2 emissions

100% circular

Contributing parties

Plastic producers

Plastic converters

Brand owners

Public organizations

Waste collectors

Waste treatment

Recyclers

› MORE INFORMATION CIRCULAR PLASTICS TNO:

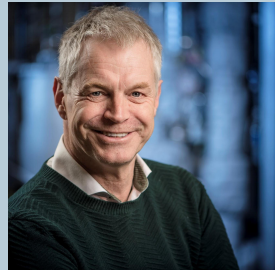


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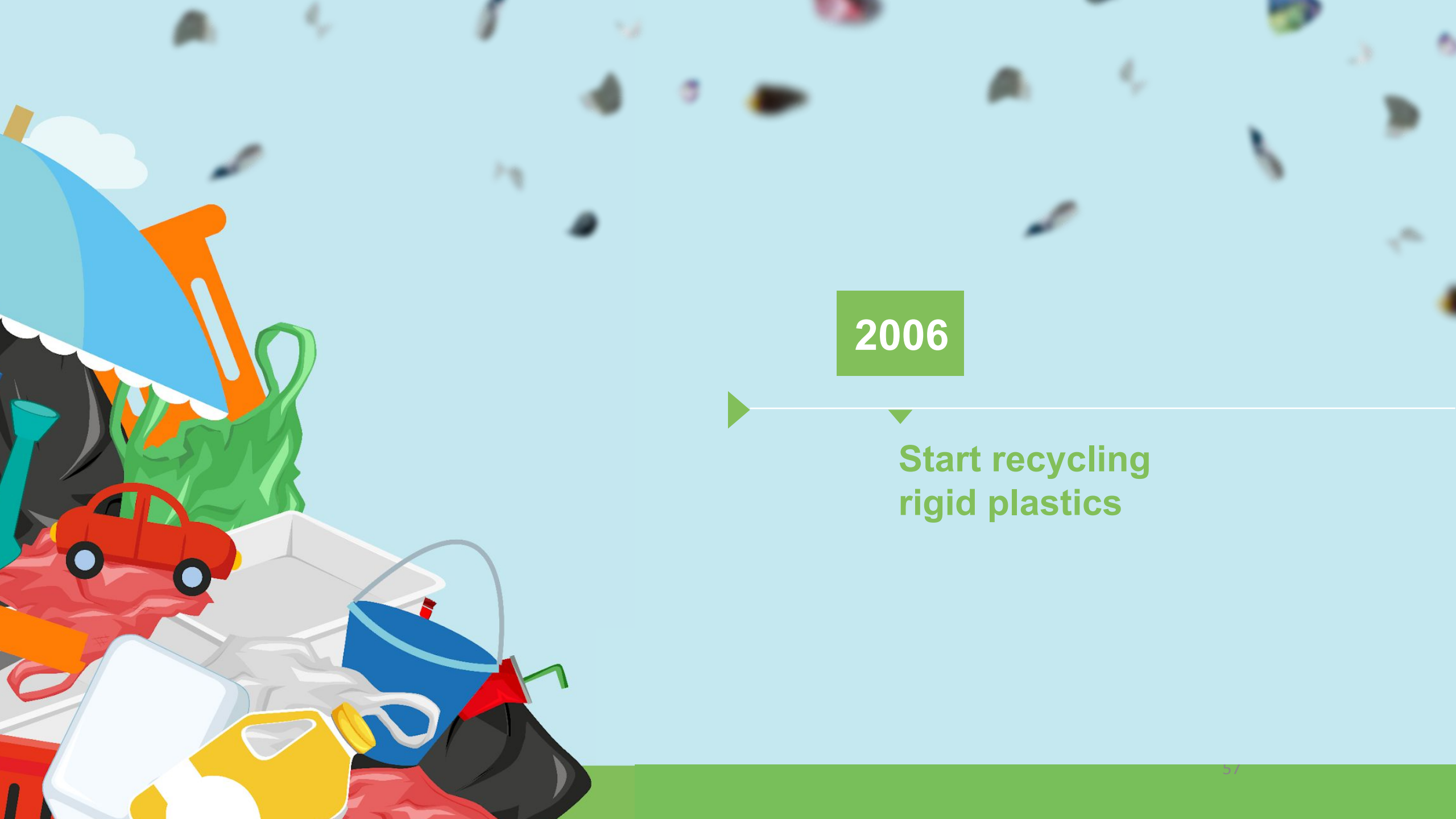




recycling plastics

It's our mission
to close the loop
by recycling
@Plastics.eu

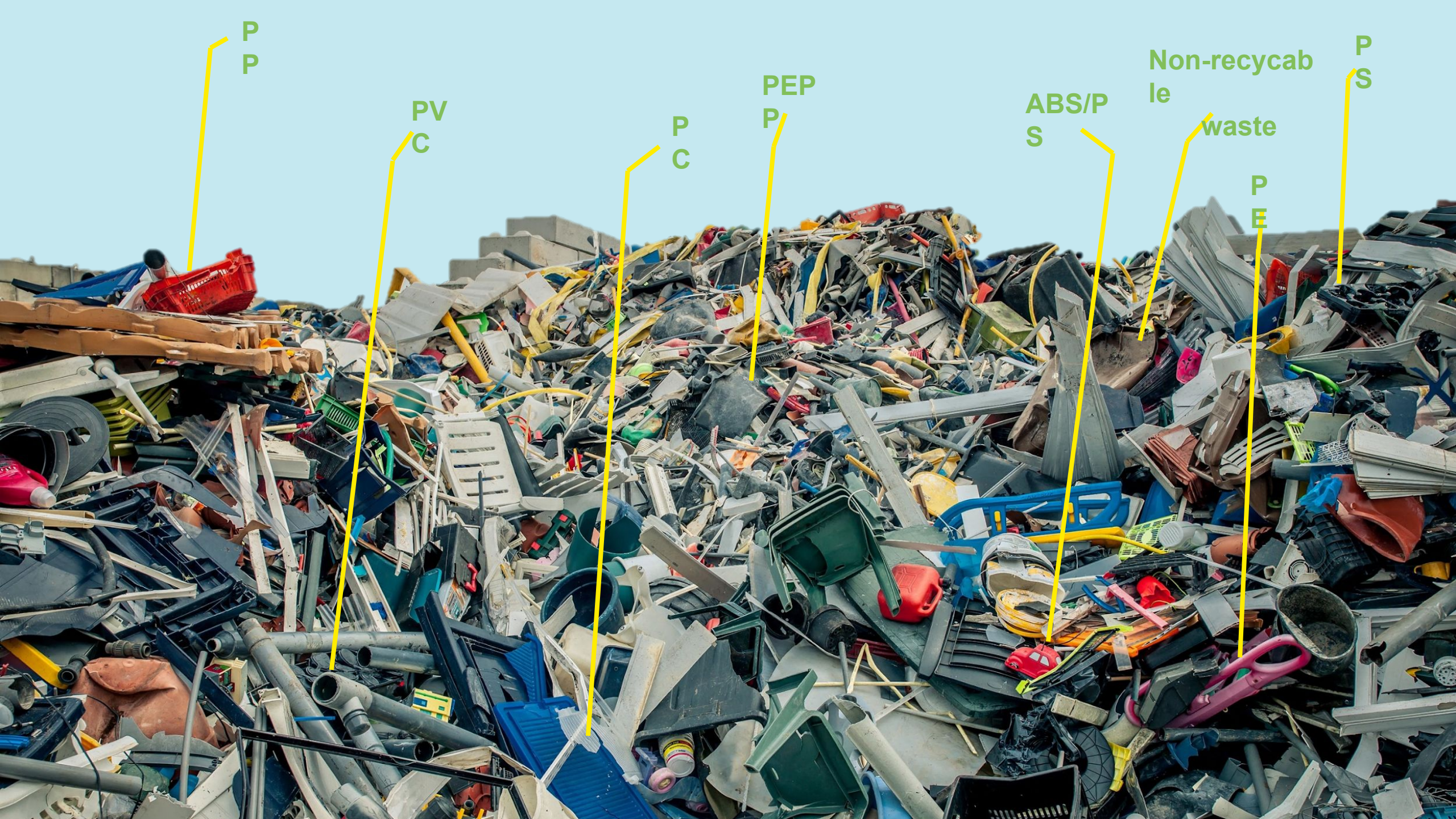




2006



Start recycling
rigid plastics



P
P

PV
C

P
C

PEP
P

ABS/P
S

Non-recycab
le

waste

P
E

P
S

High
MFI

Rubber
s

Off
white

Cross-lin
k

Already
recycled

Chal
k

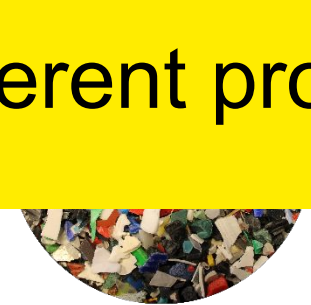
Additive
s

Low
MFI

Blac
k

Small
pieces



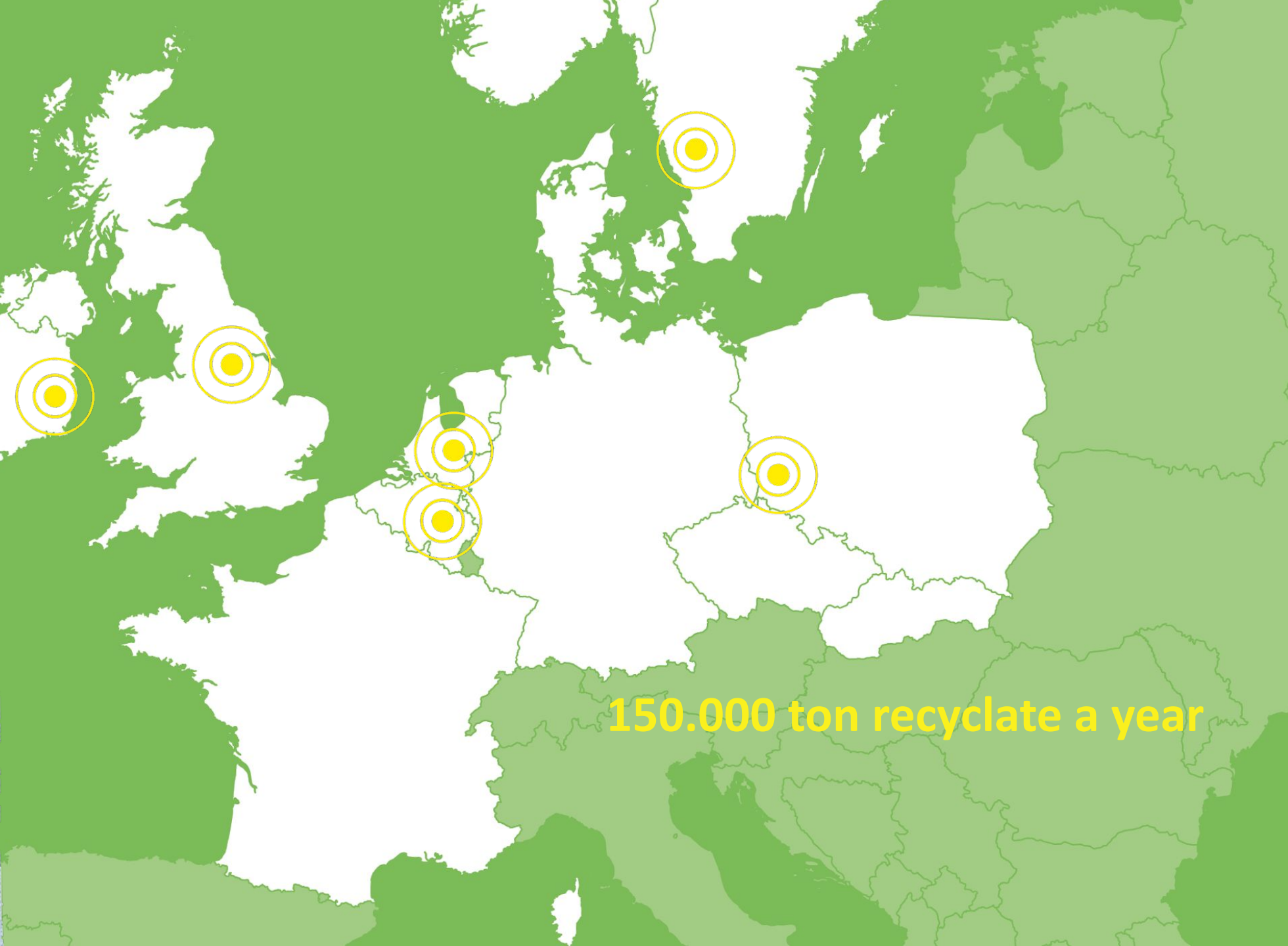


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Different products

Use of recyclate PP-PE-PVC-ABS-PC-P S

- Buildings
- Transport
- Furniture
- Automotive
- Household products

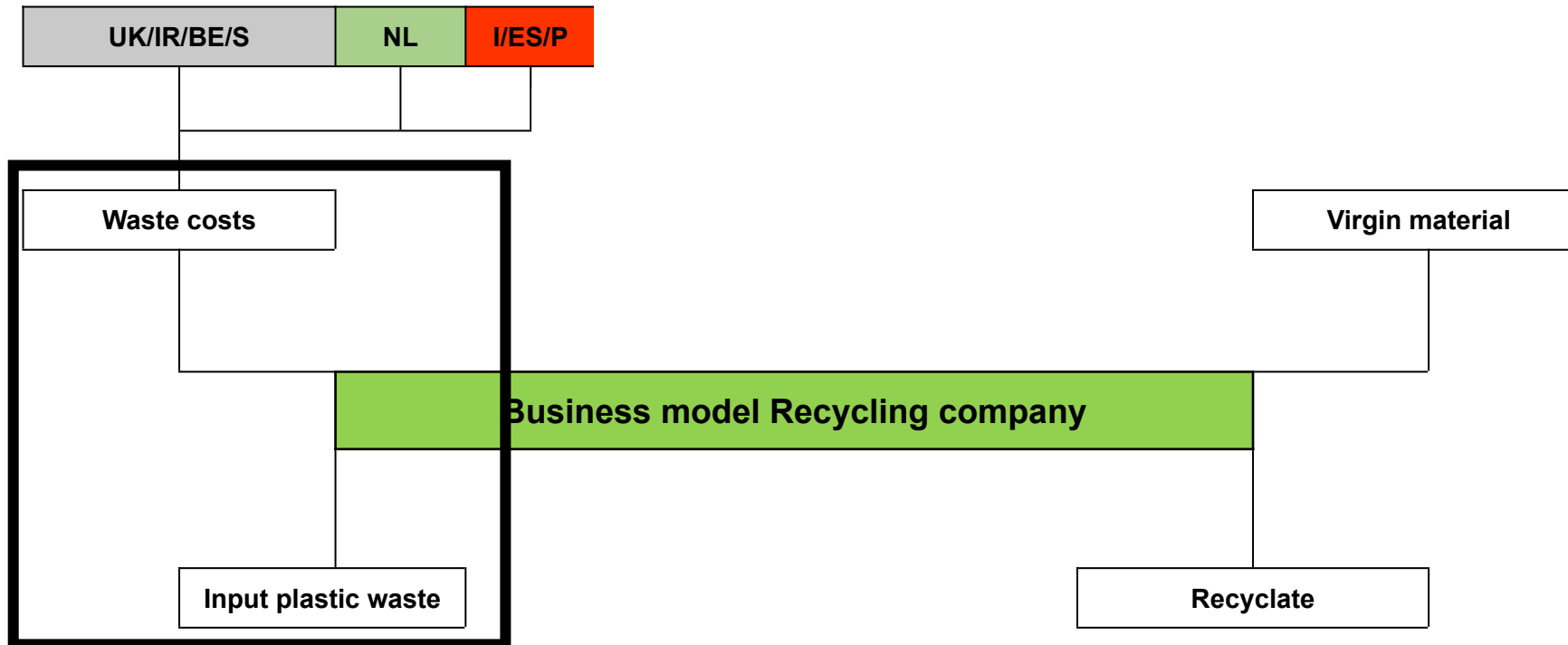




150.000 ton recycle a year

Business model

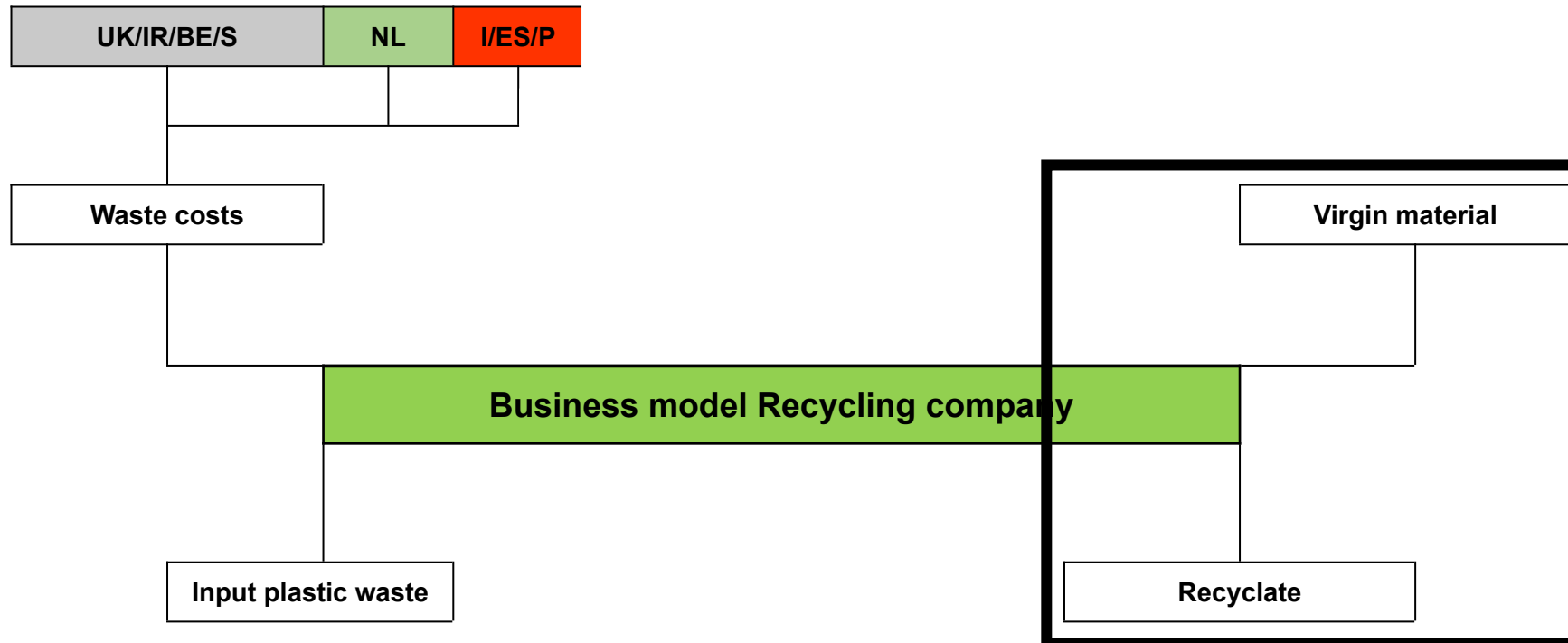
Achievability business model is depending on legislation.





Business model

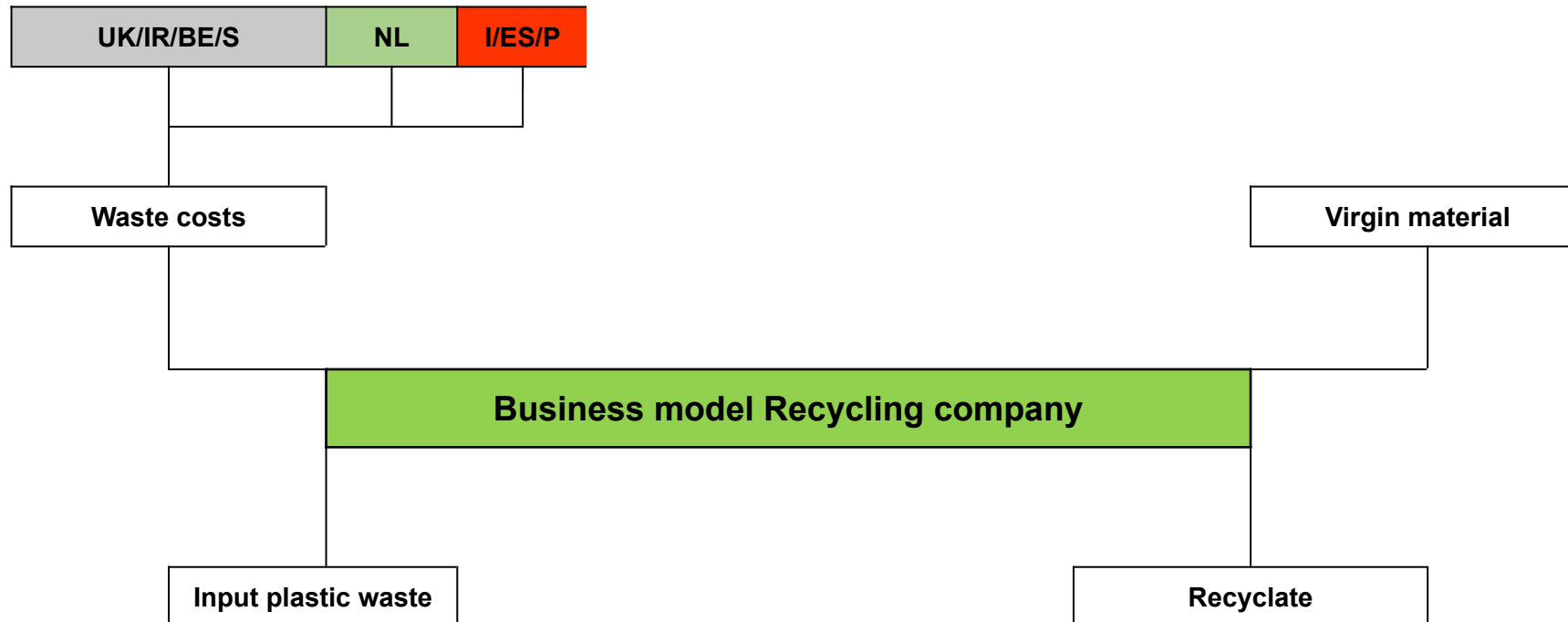
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Business model

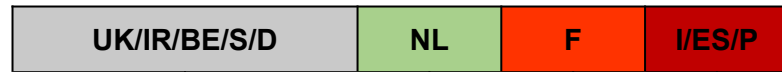
Achievability business model is depending on legislation.



Business model

Next steps in the transition

Incineration ban
recyclable waste



- Recycled content obligation
- Virgin taxes

~~Waste costs~~

~~Virgin material~~

Business model Recycling company

Input plastic waste

Recyclate

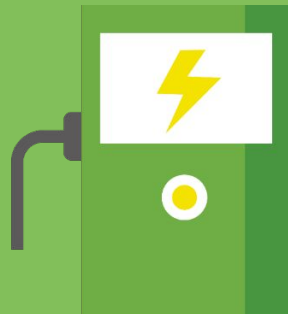
CO² advantages

1 ton plastic waste

brought to a mechanical recycling company

saves the same CO² emissions as

1 electrical car in a year!





MICHELIN



FESTINA
WATCHES

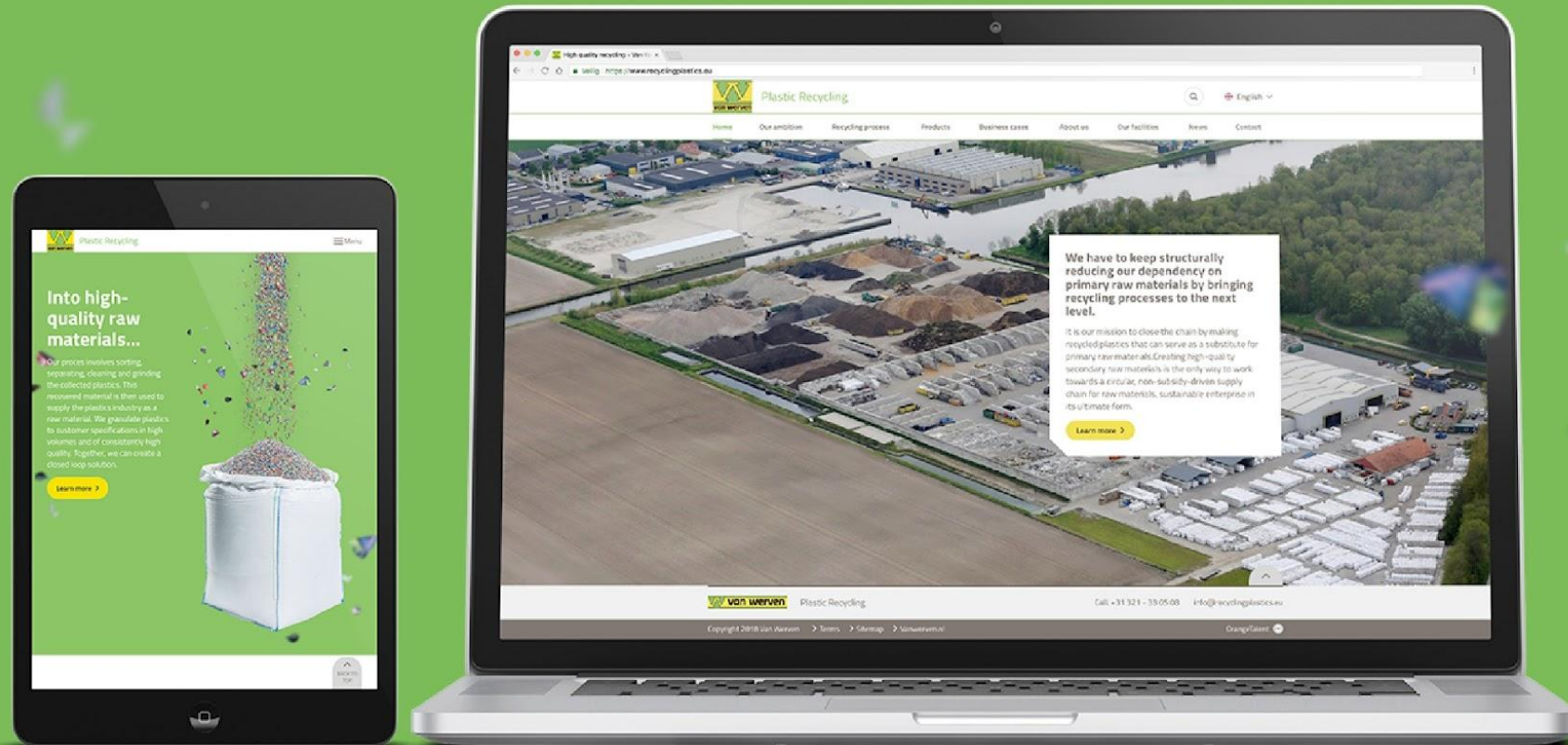


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www.derbiracin

recyclingplastics.eu



Joe Hruska

Vice President Environmental Affairs





Pathway
Group

Best Practices in Circular Approach Plastics

Holland Circular Hotspot Webinar

*Joe Hruska
Vice President Environmental Affairs*

April 5, 2023



About Pathway Group



Government Relations and public affairs are the cornerstones of our business. Since 2002, Pathway Group has helped to build effective win-win relationships between our clients and government.



Overview

1. Circular Economy Defined
2. Plastic Circularity by the Numbers
3. Best Practices – One Size Does Not Fit All
4. Best Practices Supporting a More Circular Plastics Economy



Circular Economy Defined – Many Definitions

- No one clear definition but many have a common key principle that nothing is wasted and waste resources are kept in the economy .
- The Goal is zero waste and zero pollution
- Dependence on virgin materials reduced

Government of Canada Circularity

“In a circular economy, nothing is waste. The circular economy retains and recovers as much value as possible from resources by reusing, repairing, refurbishing, remanufacturing, repurposing, or recycling products and materials.

It’s about using valuable resources wisely, thinking about waste as a resource instead of a cost, and finding innovative ways to better the environment and the economy.”

Source: [Circular Economy - Canada.ca](https://www.circular-economy.ca)



Circular Economy Defined

Ellen McArthur Foundation

The circular economy is based on three principles, driven by design.

“A systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. It is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature.

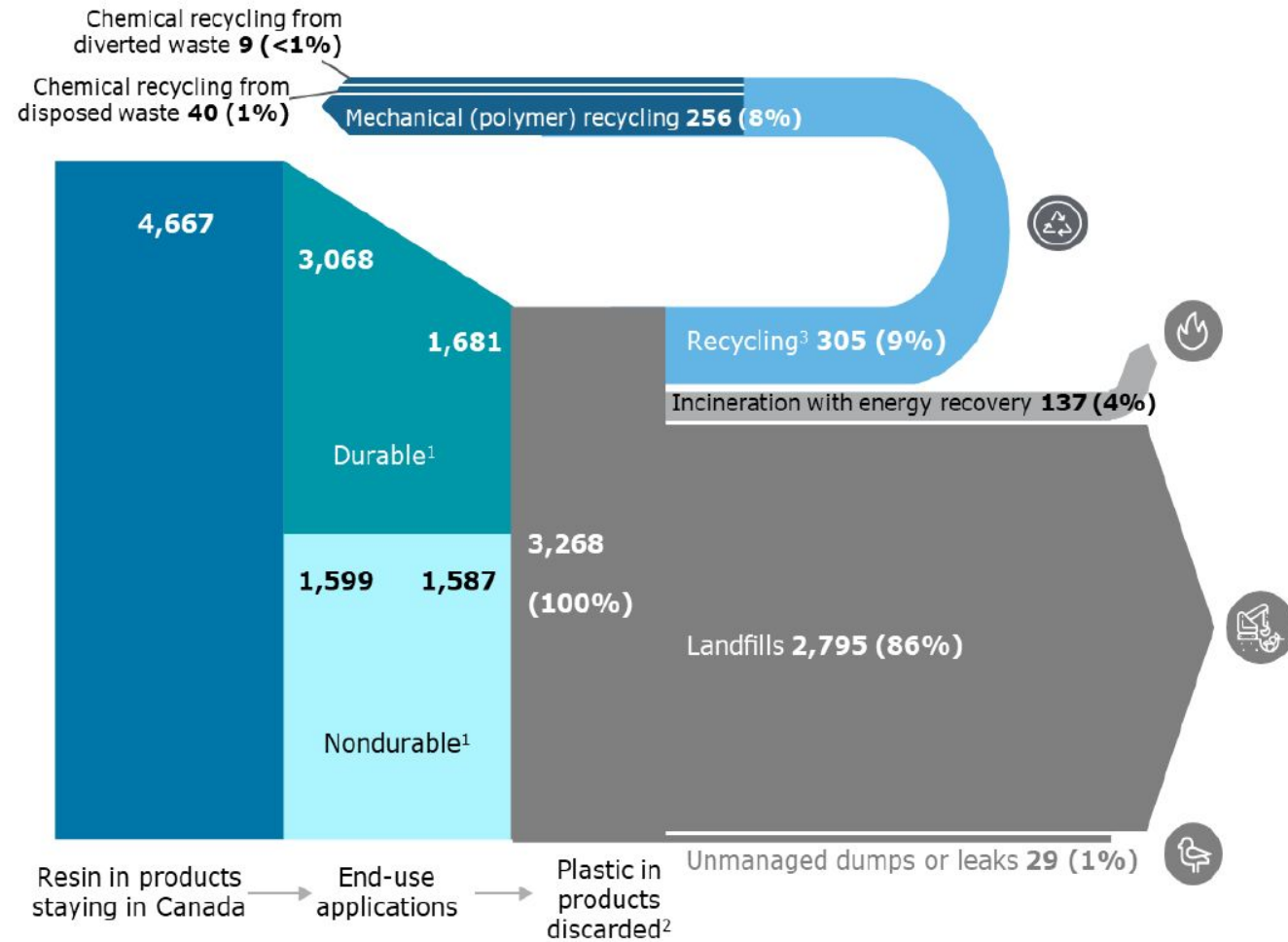
It is underpinned by a transition to renewable energy and materials. Transitioning to a circular economy entails decoupling economic activity from the consumption of finite resources. This represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits.”

Source: [Finding a common language — the circular economy glossary \(ellenmacarthurfoundation.org\)](https://ellenmacarthurfoundation.org/finding-a-common-language-the-circular-economy-glossary)



Plastic Circularity By The Numbers In Canada

Figure 1: Canadian resin flows in thousands of tonnes per annum, 2016



Only 9% of all the plastics in were repurposed in our economy.

Means 91% of plastics in manufacturing were produced from virgin resources & resource extraction.

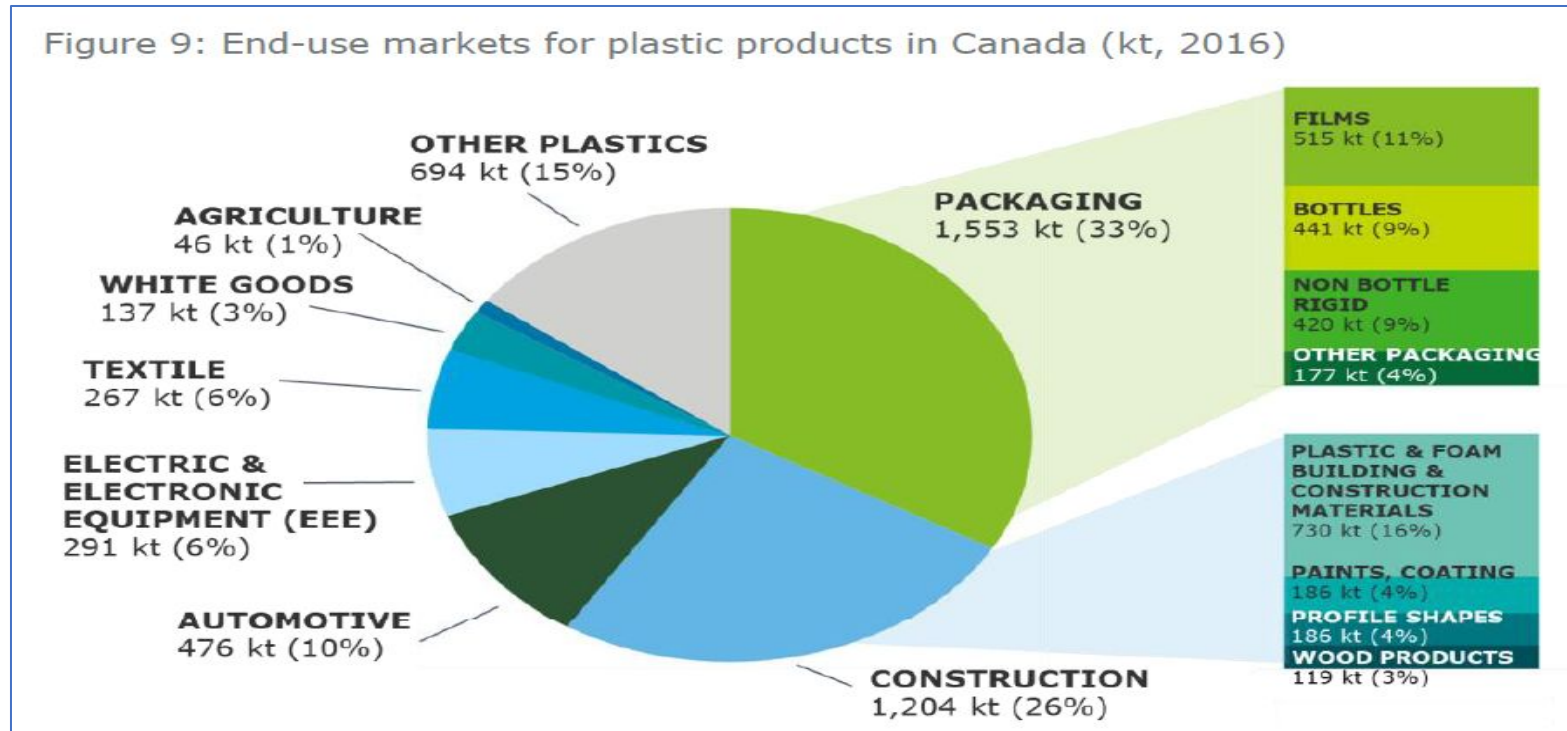
Closing the Circularity Gap and capturing the \$7.8 Billion plus in lost opportunity.

Global Circularity Gap 8.6%



Best Practices – One Size Does Not Fit All

- Every sector has specific needs and performance requirements.
- There are common principles and best practices, however sectors will prioritize their main needs and requirements.





Best Practice – Continuous Improvement

- Making small incremental changes on products, processes and systems should be a goal of organizations
- Can identify need for new innovations that further improves performance and bottom-line in the Circular Economy
- Resulting benefits can be reduced costs, improved products and services – more with less resources support Circular Economy goals



Best Practice – Design to minimize waste throughout the entire supply chain

- Design for durability – extend life of a product as much as possible then recycle
- Design for recycling – will produce higher value feedstocks for Circular Economy
- Design for reuse – intensifies the use of the product conserving resources and energy
- Design out material intensity
- Consider full life cycle impacts in the design of products, packaging and services – “Cannot rob Peter to pay Paul”
- Design with clear targets and goals



Best Practices – Collaboration Is Critical

- Building more efficient Circular Economy systems is a challenge for one organization to implement and execute.
- Through collaboration with partners, build a Circular Economy system that creates win-win opportunities throughout the whole supply chain
- Collaboration can help organizations access expertise otherwise not accessible to overcome barriers to creating Circular Economy systems such as technology and new innovations



Best Practices – Scaling Up

- Building scale to implement sustainable Circular Economy systems for sustainable systems.
- Scale provides efficiencies to finance new technologies and systems – access to capital
- Example - new advanced recycling systems where scale is required to be economically sustainable – organizations are collaborating to access consistent volumes of collected feedstocks and markets for the recycled product.



Best Practices – Government Policies That Are Supportive of Circularity for Plastics

- Policies that incentivize investment in R&D, new innovation, recycle content and technology.
- Reduce uncertainty means not creating investment barriers such as the threat of bans, that would reduce feedstocks for mechanical, advanced recycling systems and manufacturers requiring consistent feedstock supplies for Circular Economy systems.
- Greater collaboration with plastics industry, recyclers, retail, brand owners, manufacturers and supply chains to create a win-win for government and industry that is mutually supportive of Circular Economy systems.
- Tax credits and accelerated depreciation policies that support organizations investing in Circular Economy systems.



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**Thank you for
your attention!**

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