Webinar

“Plastic Feedstock for recycling in the Netherlands – KPMG Market Study”

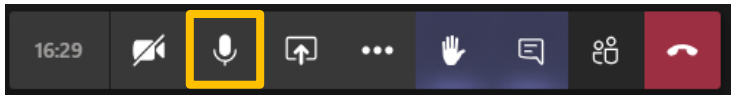
Versnellingstafel Chemische Recycling

14-12-2023

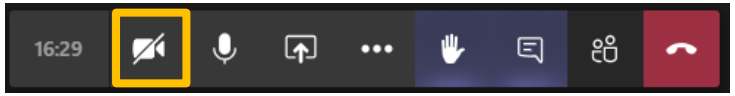
Welcome!

Before we start some tips:

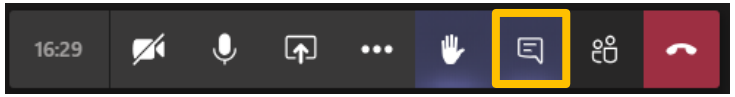
1. **Please put yourself on mute.**



2. **Please put your camera on when speaking for as much interaction as possible.**



3. **Please use the chat function if you have any questions.**



4. **The webinar will be recorded so that it can also be watched later.**

The Acceleration Table Chemical Recycling

- The **Acceleration Table Chemical Recycling of Plastics** (*Versnellingstafel Chemische Recycling van Kunststoffen – VTCR*) is a public-private partnership between 13 Dutch industrial companies and the Dutch government.

- The Acceleration Table started from the joint ambition of the Dutch government and VNO-NCW to improve the investment climate for chemical recycling.

- In August 2020, the VTCR presented the **Roadmap Chemical Recycling 2030**. This Roadmap identifies several concrete action points to accelerate chemical recycling, based on three pillars: A) **Ambition and potential**, B) **Feedstock**, and C) **Policy**.
  → **Link to the Roadmap**

- In June 2023, the VTCR presented its **Whitepaper** on Chemical Recycling. This paper offers insights into the position of chemical recycling within the recycling landscape and contains a series of concrete recommendations for the coming years, focused on what is needed to exploit this potential.
  → **Link to the Summary (EN)**
  → **Link to the full version (NL)**

Program

Your hosts:

Sanne Westra
VNO-NCW

Mark Intven
VNCI

	14.00 – 14.10	**Introduction**	Mark Intven, Sanne Westra
Part I	14.10 – 14.35	**Presentation key findings by KPMG**	Lawrence Bolte (KPMG)
	14.35 – 14.55	**Questions from audience**	Audience
Part II	14.55 – 15.05	**Introduction of our panel**	Mark Intven, Sanne Westra
	15.05 – 15.50	**Discussion: Sorting, Export/Import, Demand**	Freek Bakker (PreZero) Rick Winkelman (Shell) Ruben Dekker (Min. IenW)
	15.50 – 16.00	**Next steps and concluding remarks**	Mark Intven, Sanne Westra

Presentation key findings

KPMG

Lawrence Bolte

Associate Director
@ KPMG

Plastic feedstock for recycling in the Netherlands

Webinar

Lawrence Bolte

14-12-2023

This study is the result of extensive research with a contribution of the Dutch waste management and chemicals industries

Primary research – Interviews

Participating companies[a]

12 member firms from the Vereniging Afvalbedrijven

aeb amsterdam, AFVALZORG, attero energiek met milieu, AVR., eew Energy from Waste, gp groot, hvc., INDAVER, prezero, REMONDIS WORKING FOR THE FUTURE, renewi waste no more, Twence®, VEOLIA

5 member firms from the Vereniging van de Nederlandse Chemische Industrie

BASF We create chemistry, Dow, ExxonMobil, سابك sabic, Shell

14 other parties

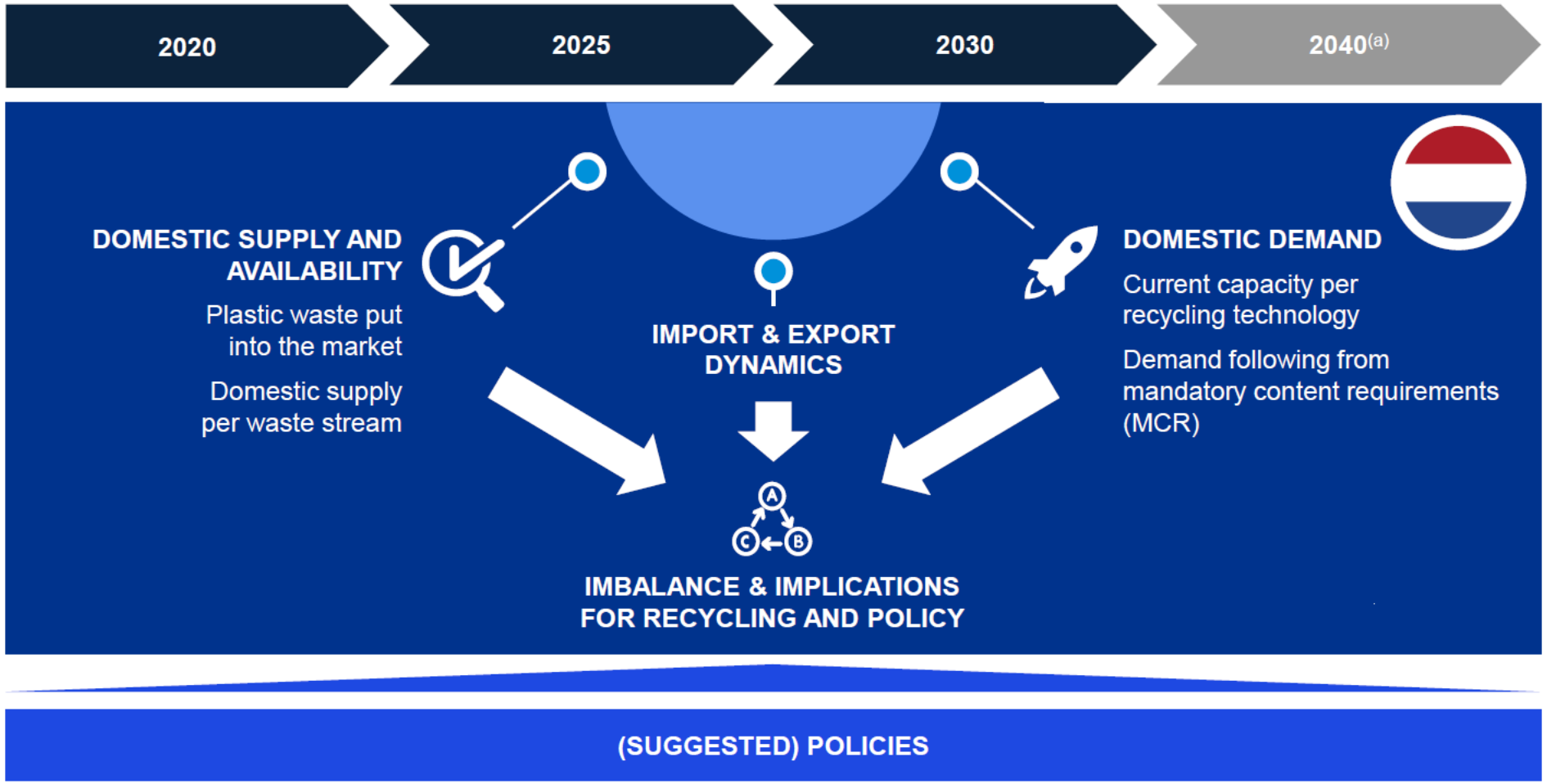
BioBTX, EuRIC, fortum, fuenix Let no plastic go to waste, nedvang b.v., NESTE, PAPREC, PLASTICS EUROPE, Pryme, TRANSMARE GROUP, TRINSEO Connecting ideas with solutions, urbaser making circularity real, van werven, XYCLE THE SUSTAINABLE SOLUTION

Participating companies

30+ industry insiders from EU expert organisations and otherwise…

Note: (a) The mentioned parties do not endorse all the report's comments and findings.

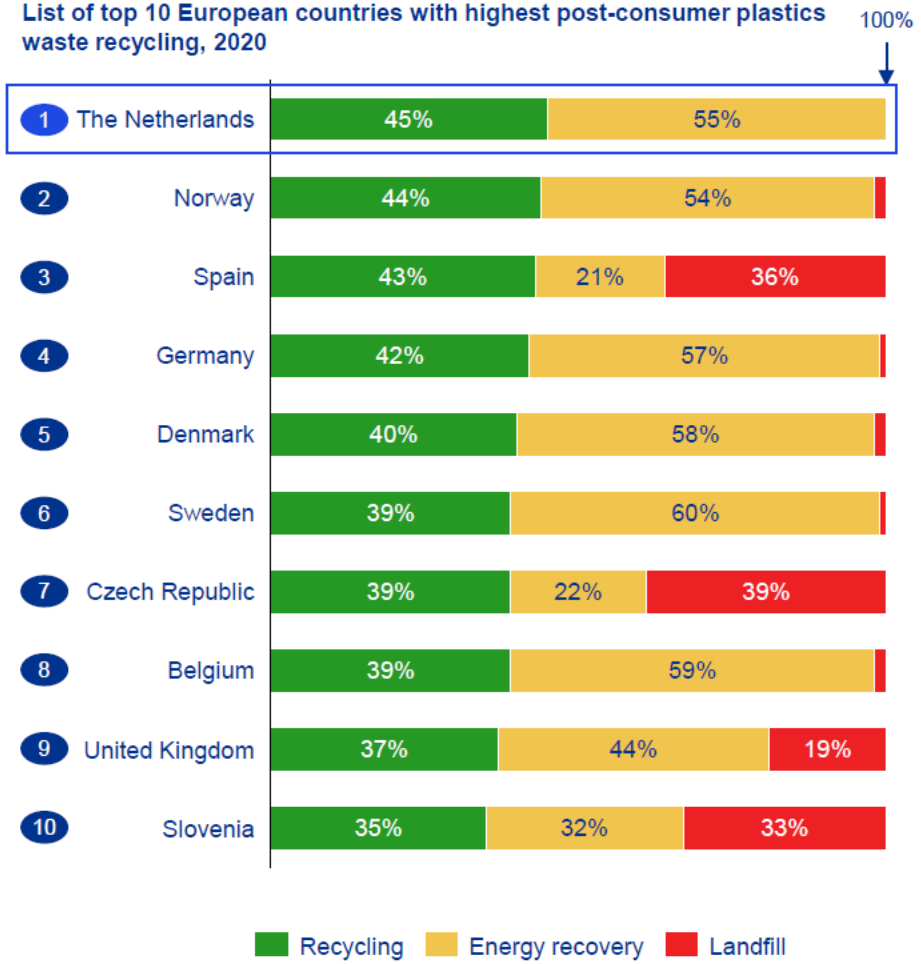
The goal of this study is to determine supply and demand for plastic waste as feedstock in the Netherlands and suggest policies to close imbalances



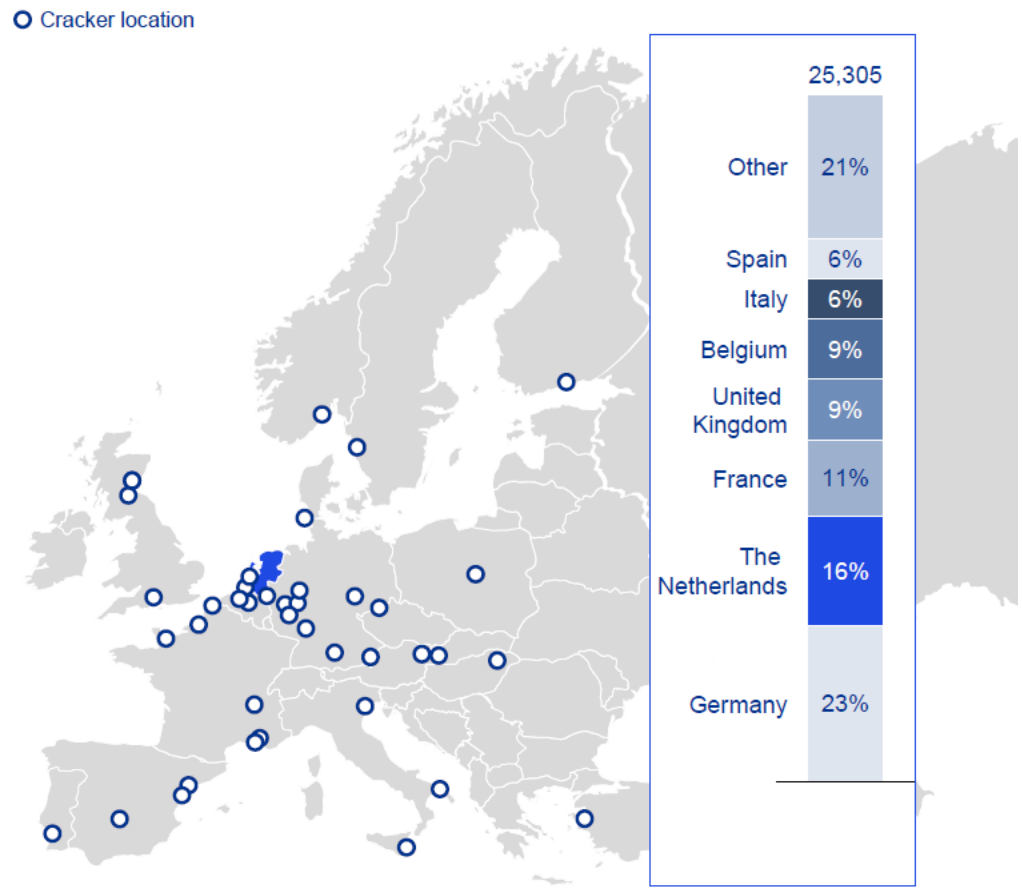
Note: (a) Only 2040 forecast is made for the demand based on mandatory content requirements.
Source: KPMG analysis.

The Netherlands is a powerhouse in recycling and chemicals production which can play a major role in Europe's circular ambitions

List of top 10 European countries with highest post-consumer plastics waste recycling, 2020



Share of European cracking capacity, Kt ethylene per year, 2021

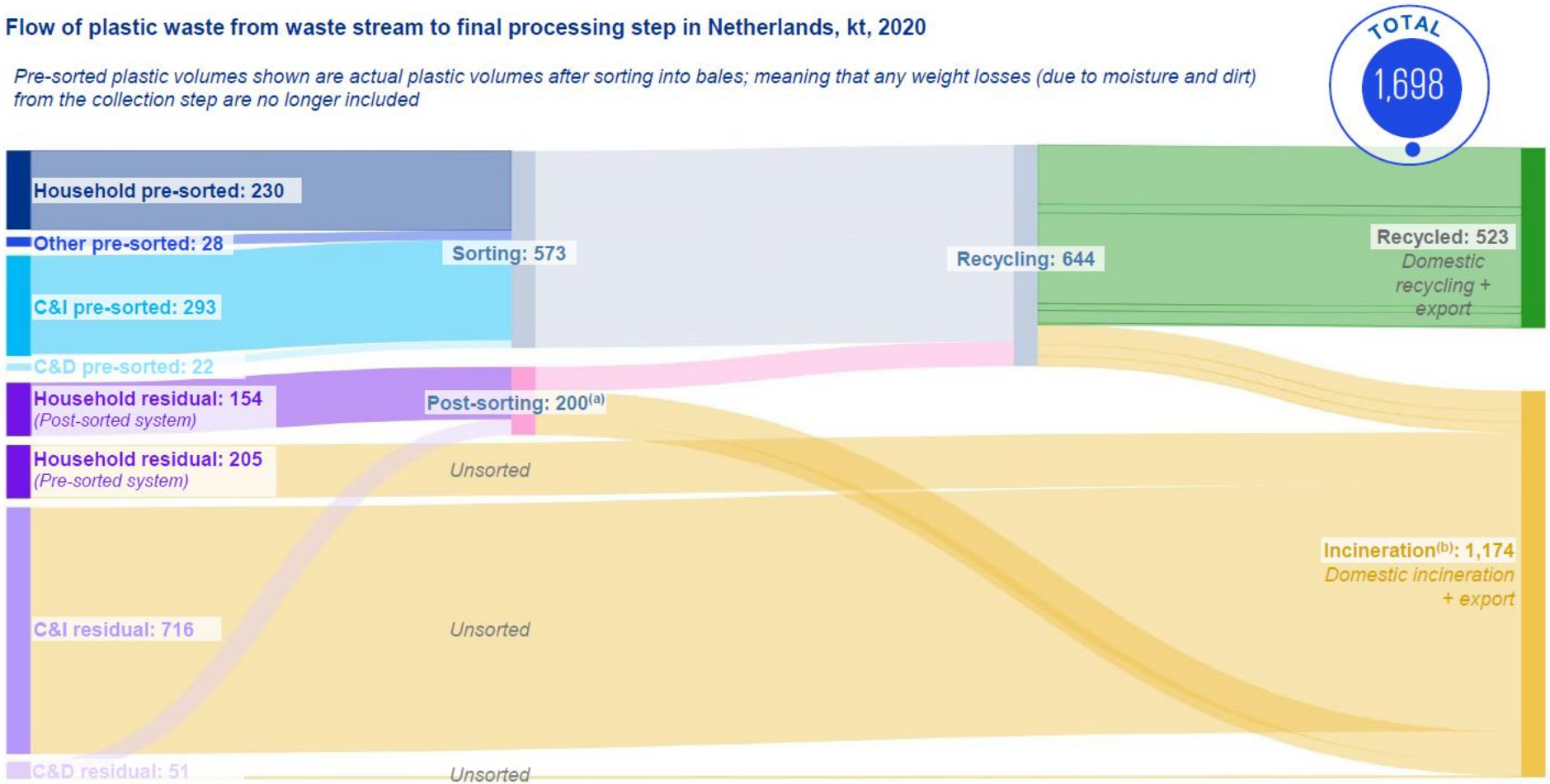


Source: EcoProg, Petrochemistry, KPMG analysis.

SUPPLY: Currently the largest share of Dutch plastic waste is incinerated or exported, which is a huge untapped potential

Flow of plastic waste from waste stream to final processing step in Netherlands, kt, 2020

Pre-sorted plastic volumes shown are actual plastic volumes after sorting into bales; meaning that any weight losses (due to moisture and dirt) from the collection step are no longer included

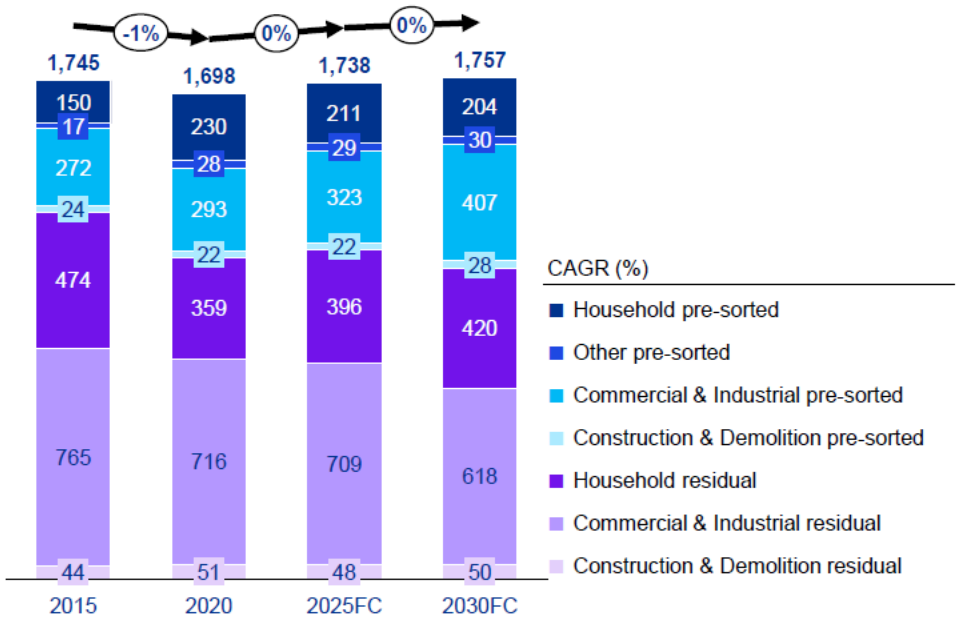


Note: (a) A large share of available plastics in residual waste streams that are sent to recycling, are ultimately not sorted out (due to sorting inefficiencies). The fraction residual waste fraction that is not sorted out is sent directly to mostly incineration
(b) Incineration is Energy-from-Waste and SRF/RDF

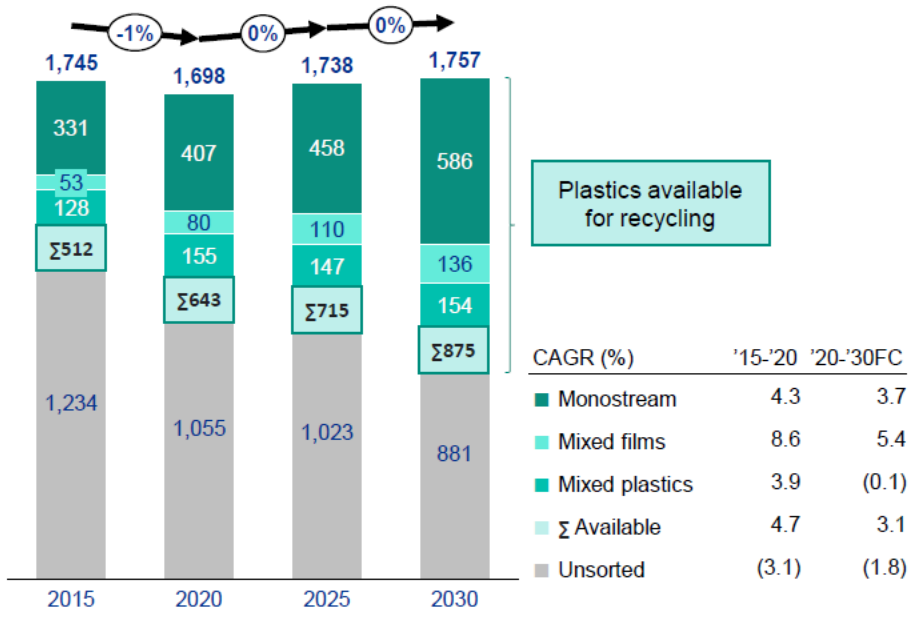
Sources: CBS; Eurostat; Interview programme; KPMG analysis

SUPPLY: In 2030 more plastic waste will be sent to recycling, however a large share will still be incinerated

Overview of total plastics per waste stream, kt, 2015-2030FC



Overview of sorting output available for recycling, kt, 2015-2030FC



CAGR (%)	'15-'20	'20-'30FC
Monostream	4.3	3.7
Mixed films	8.6	5.4
Mixed plastics	3.9	(0.1)
Σ Available	4.7	3.1
Unsorted	(3.1)	(1.8)

Shift from pre-sorting to post-sorting residual (households)

Shift from residual to pre-sorting (C&I)

Improving sorting efficiency (for pre-sorting), design for recycling, increasing value of plastic waste

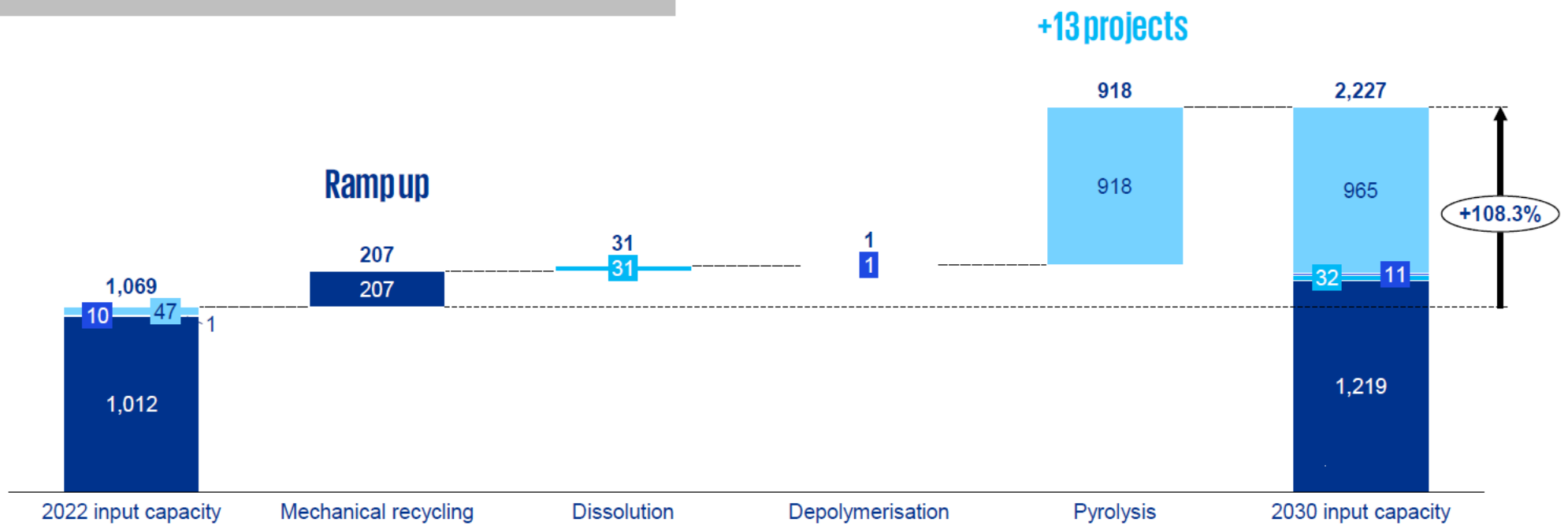
Increasing (post-)sorting leads to less unsorted plastics

Source: CBS; Eurostat; Interview programme; KPMG analysis.

DEMAND: The demand for plastic waste as feedstock is expected to double as a result of the (expected) European mandatory content requirement

Overview of expected development of mechanical and chemical recycling input capacity[a,b], 2022-2030FC, kt

Beyond 2030 no projects are officially announced in the Netherlands

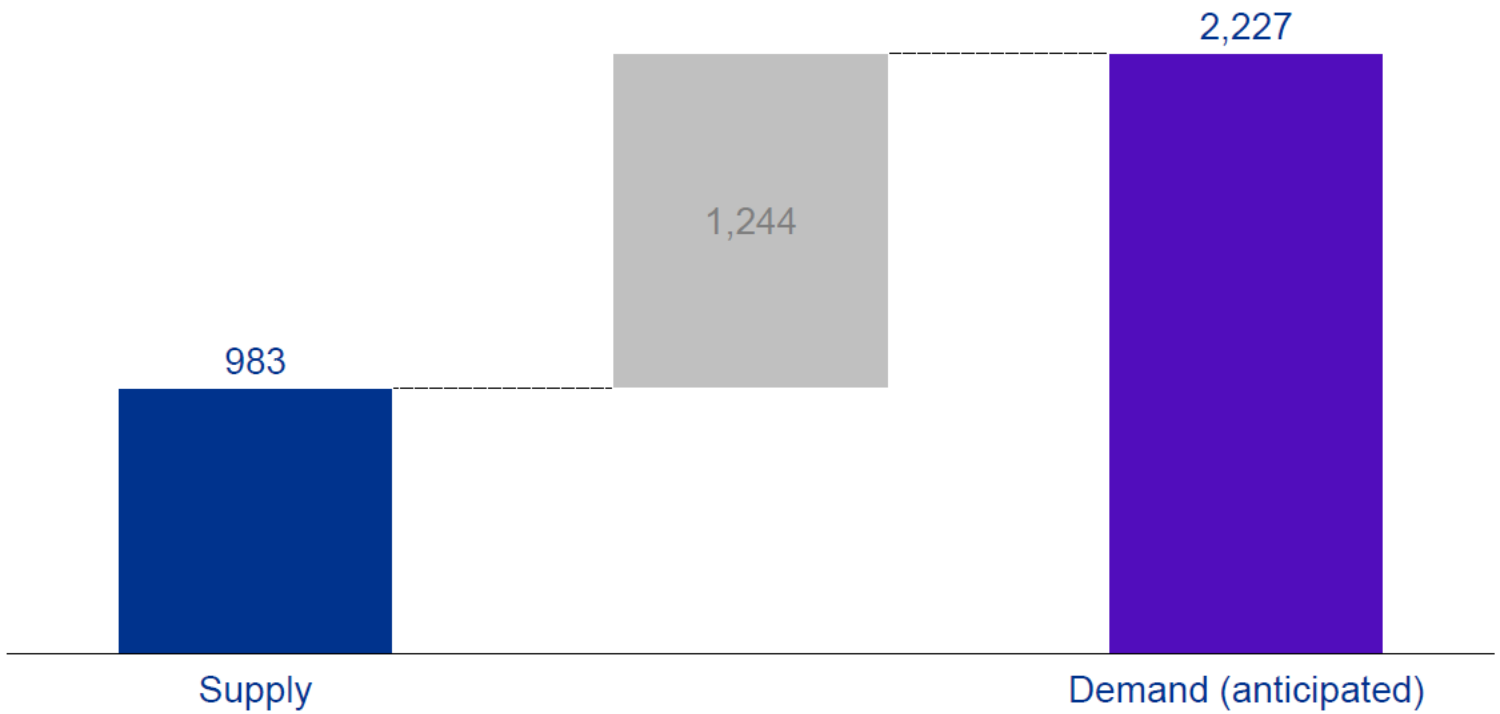


Note: (a) Based on a 95% capacity utilization for all recycling projects and 80% likelihood of construction for planned recycling projects;
(b) Realisation of recycling capacity is dependent on the acceptance of policies and legislation which would recognise the recycling methods as recycling and make the investments economically viable.

Source: Interview programme; KPMG analysis.

BALANCE: There will be a large imbalance between supply and demand, to bridge the gap supply will have to increase

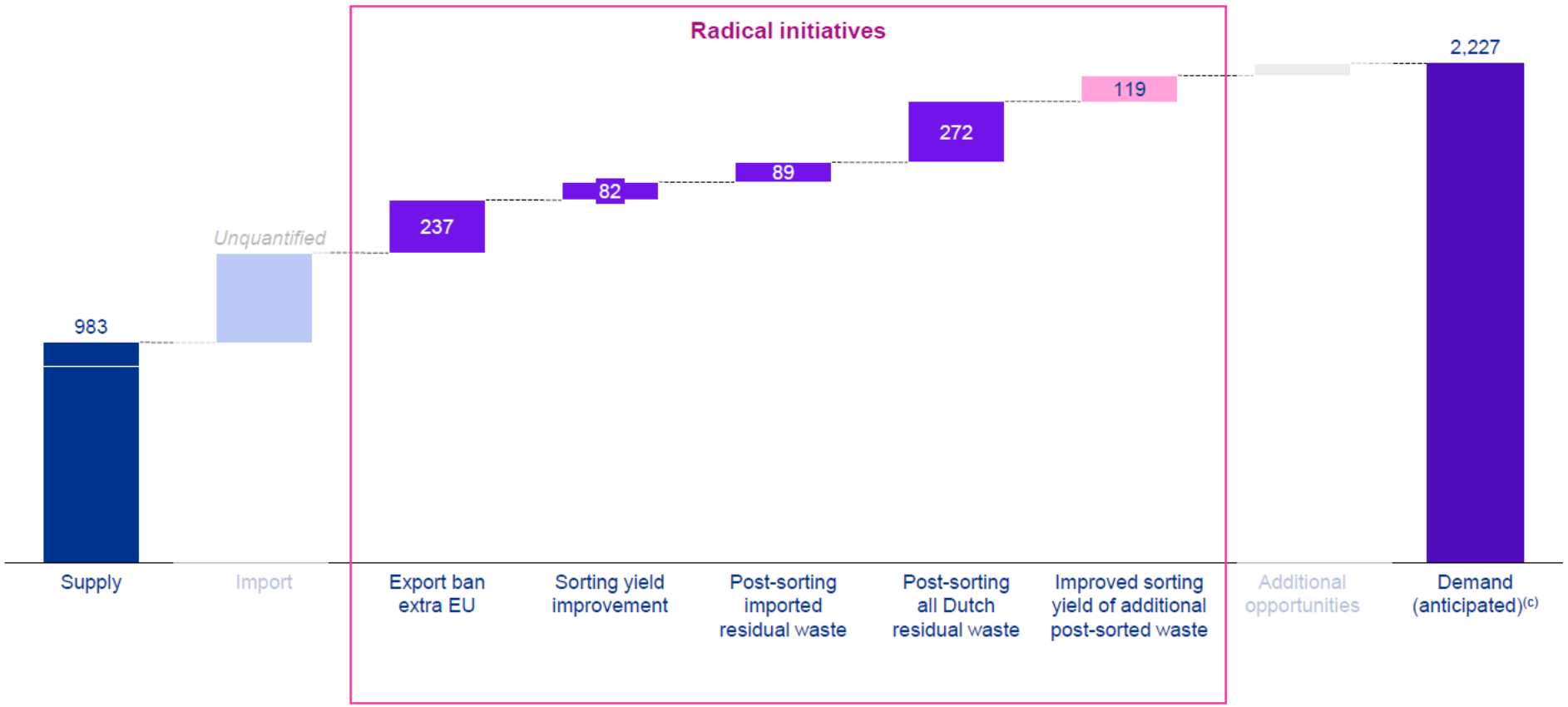
Total overview of opportunities to increase supply (mass balance)[(a)], 2030, kt



Note: (a) Shortage is an underestimated as recyclers specialise in certain types of plastics and qualities and the 'fulfilled' demand likely does not fully match with supply.
Source: Interview programme; KPMG analyses

Implementing radical initiatives will not fully bridge the gap...

Total overview of opportunities to increase supply (mass balance)[(a)], 2030, kt



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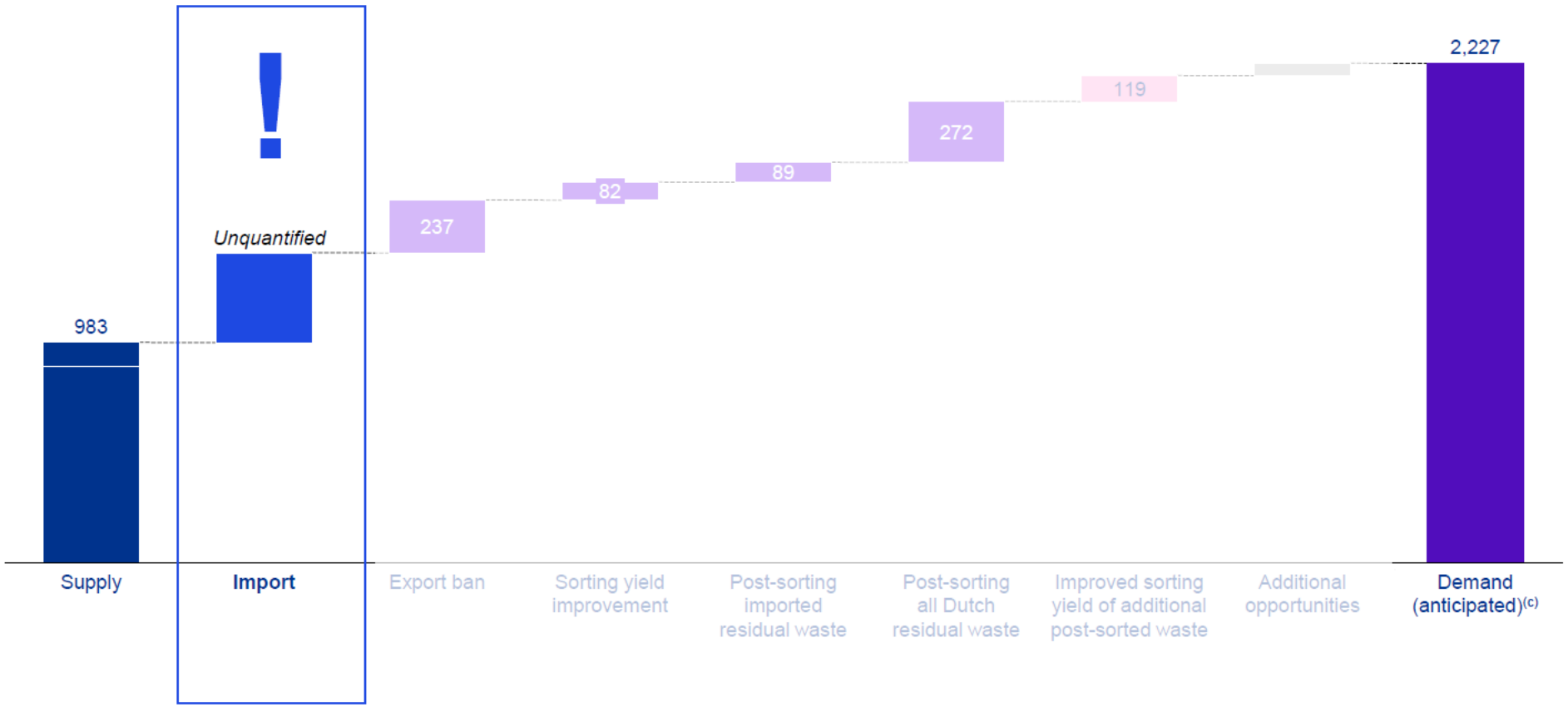
Source: Interview programme; KPMG analyses

...hence, importing plastic waste feedstock will be needed

Total overview of opportunities to increase supply (mass balance)[(a)], 2030, kt



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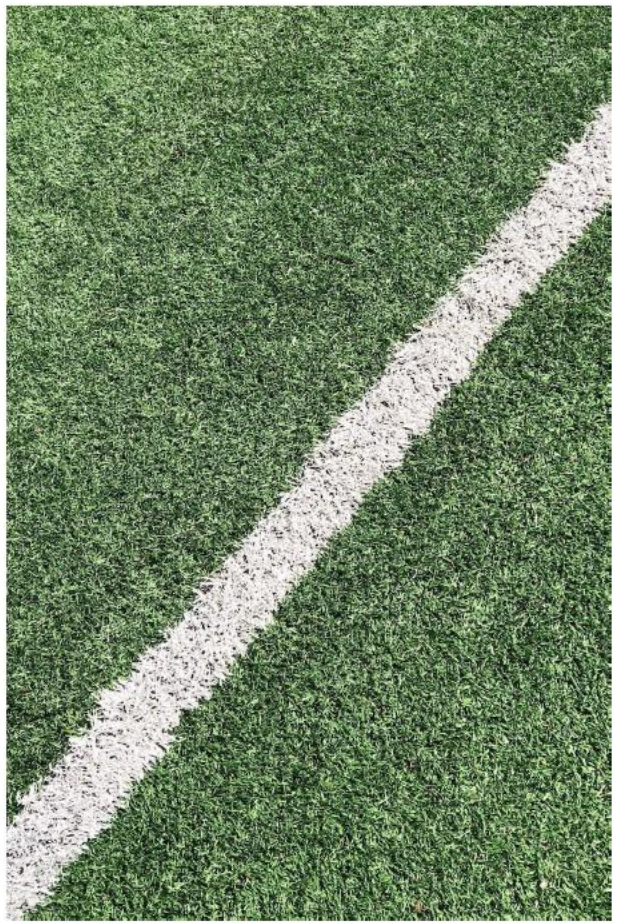
What is required at European level?

Clarity on policies and regulations

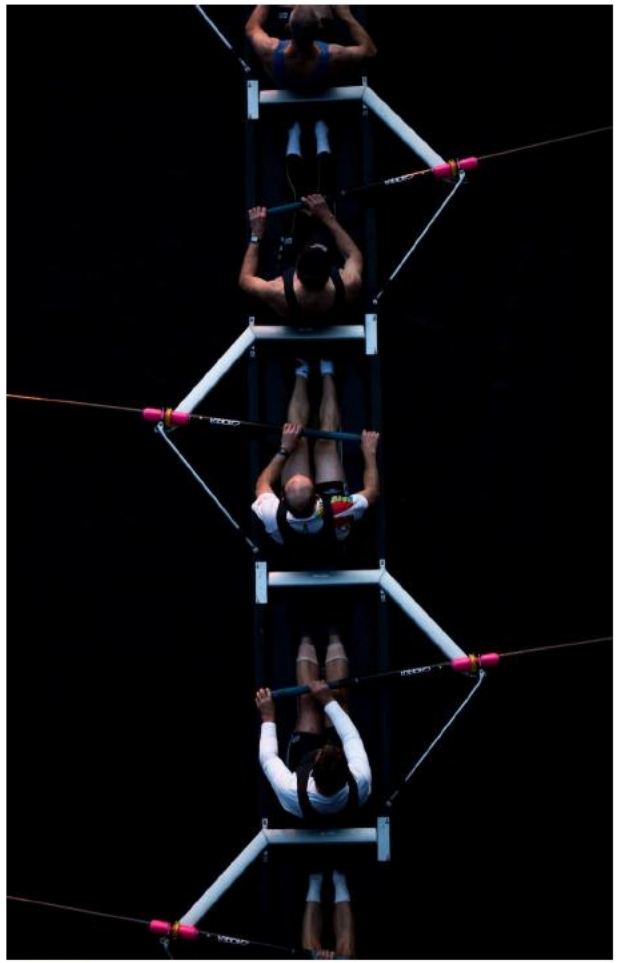
Extra-EU export ban

Level playing field in the EU

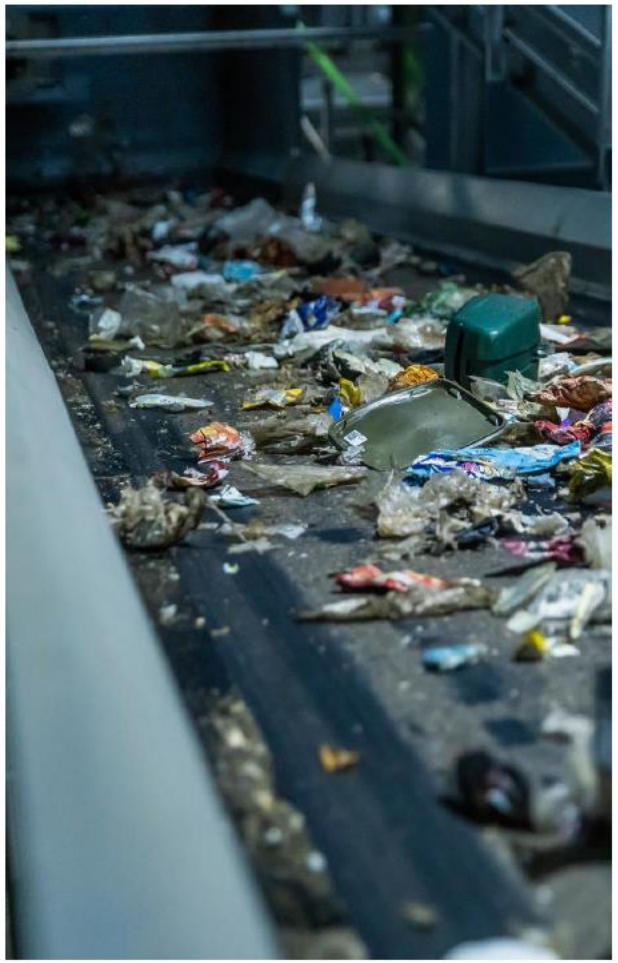


What is required at national level? (1)

Increase cooperation



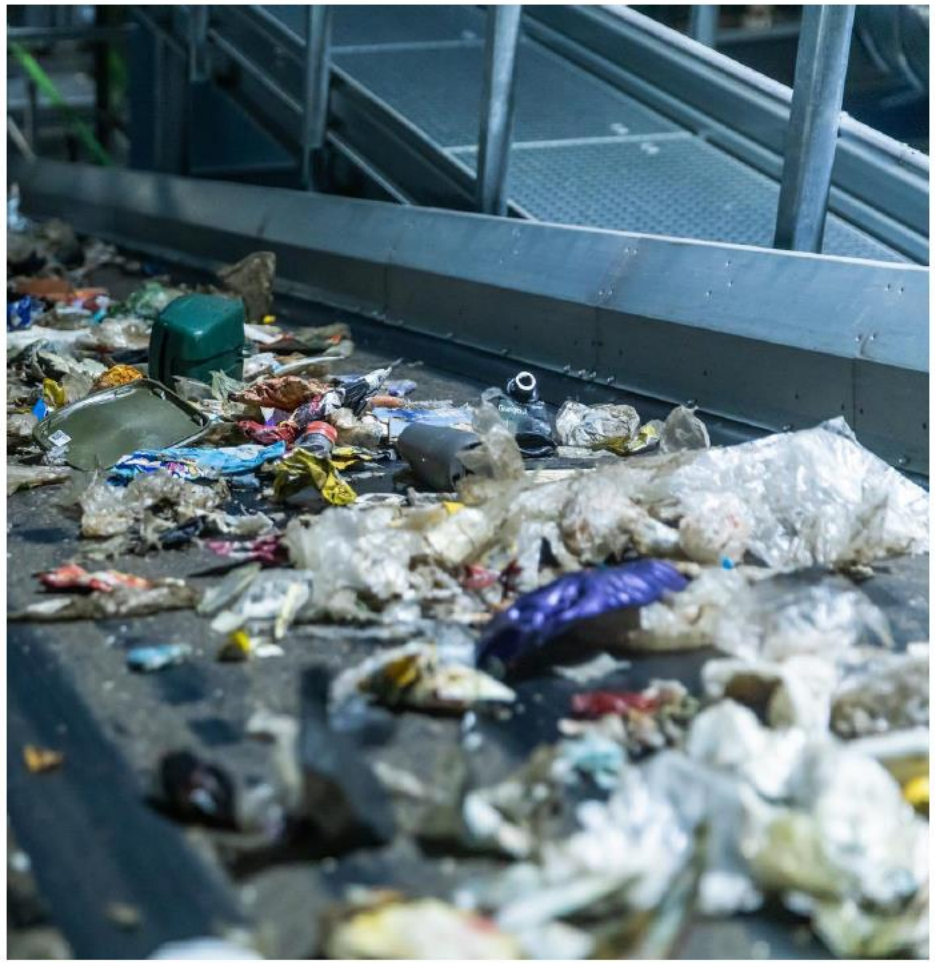
Improve sorting



Ease of permitting

What is required at national level? (2)

Ban on incineration of unsorted waste



Change CO2 calculation

Thanks for attention

Any questions?

Discussion

Panel discussion

Our panel for today:

Freek Bakker

Director Value Chain Plastics
@ PreZero Nederland

Rick Winkelman

Plastics Circular Economy Business Development Manager
@ Shell

Ruben Dekker

Team leader for sustainable product policy, waste collection and recycling
@ Ministry of Infrastructure and Water Management (IenW)

SUPPLY: In 2030 more plastic waste will be sent to recycling, however a large share will still be incinerated

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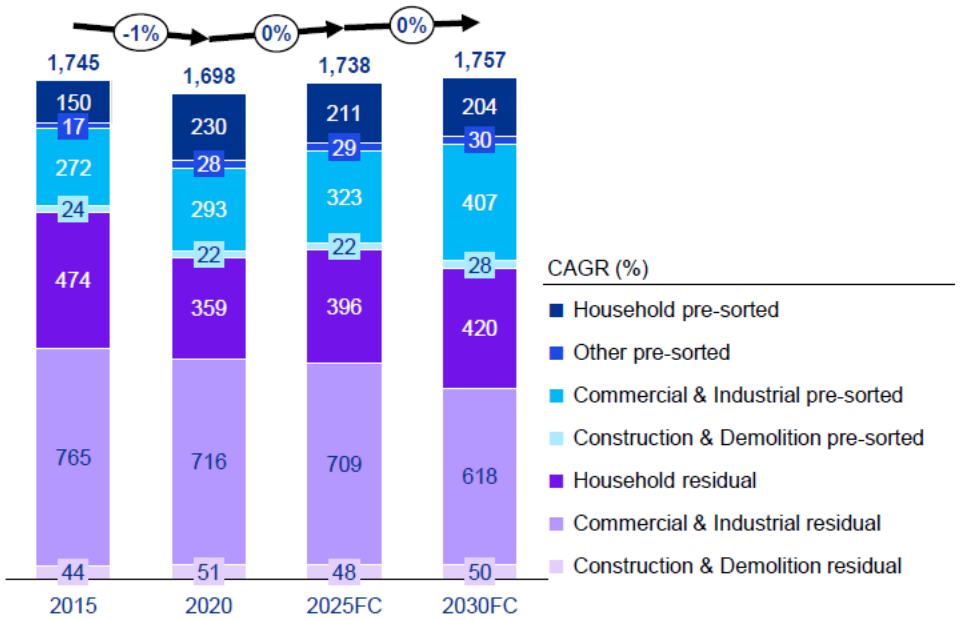

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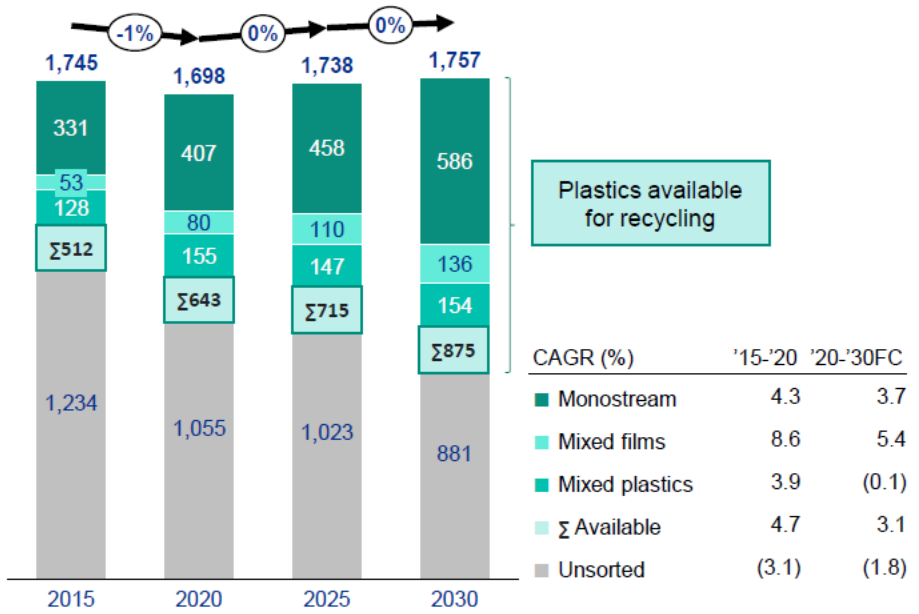

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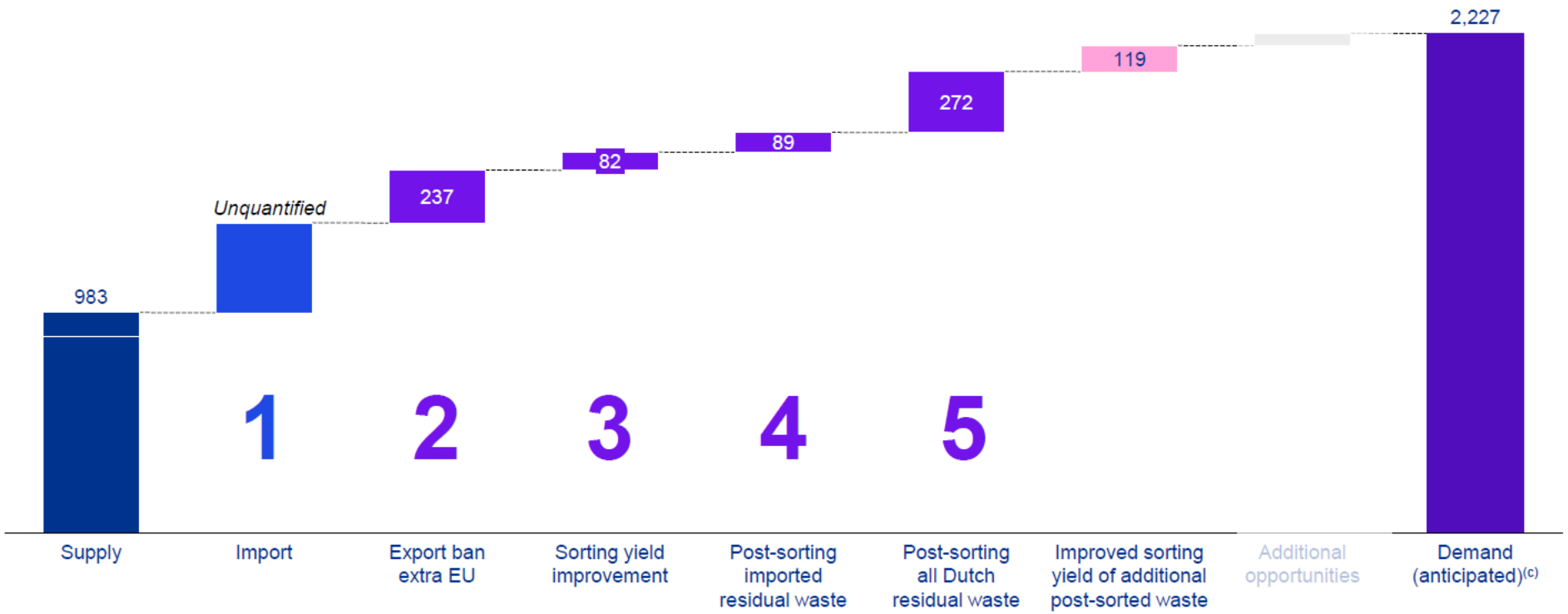
Source: CBS; Eurostat; Interview programme; KPMG analysis.

Five opportunities to brigde the gap

Total overview of opportunities to increase supply (mass balance)[(a)], 2030, kt



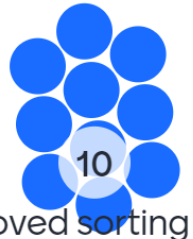
Note: (a) Shortage is an underestimated as recyclers specialise in certain types of plastics and qualities and the 'fulfilled' demand likely does not fully match with supply.
Source: Interview programme; KPMG analyses

Input from audience:

Mentimeter

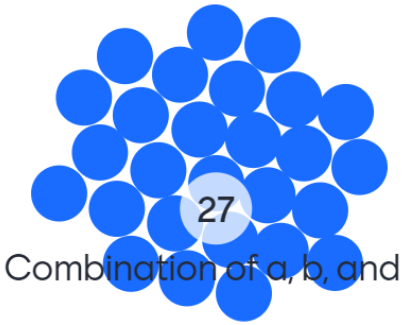
Which measure do you think is most important to increase sorting yield end achieve the desired scale-up in feedstock availability?

a) Ecodesign/design for recycling



b) Invest in improved sorting techniques and additional capacity

c) Post-sorting of all residual waste in the Netherlands



Combination of a, b, and c

Something else

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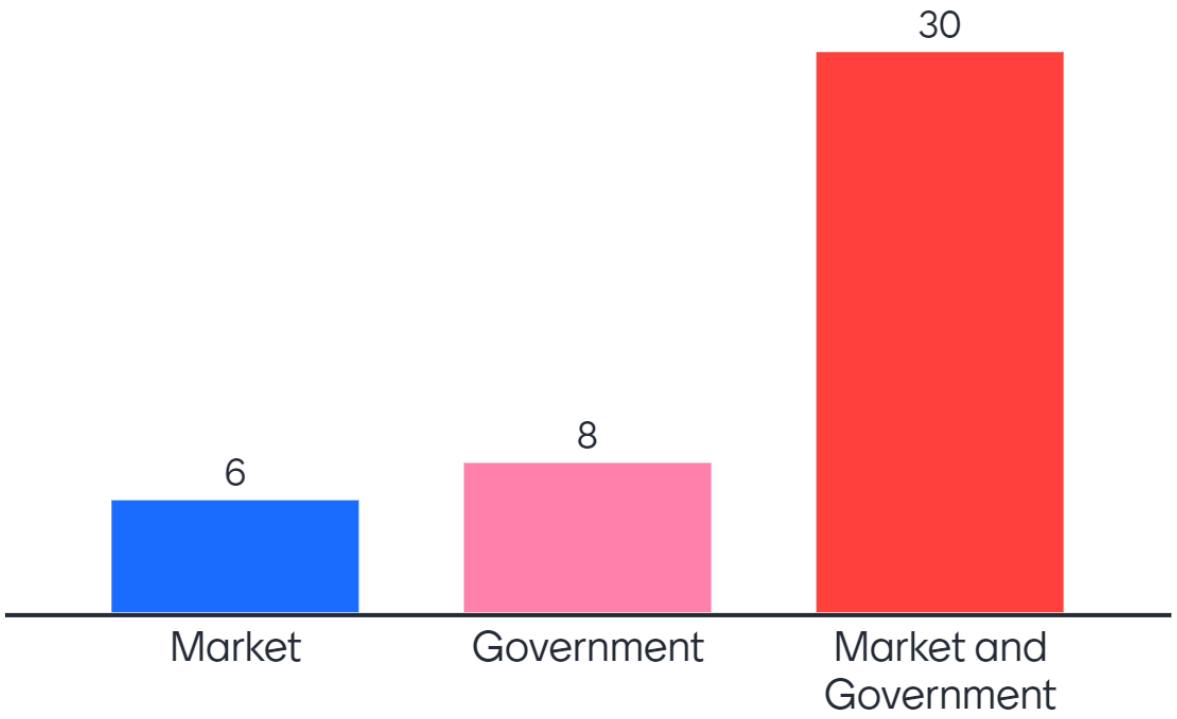
Input from audience:

Mentimeter

Who is primarily responsible for taking these measures?



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2.2

Making it easier to import feedstock should be the one of the core focus of the Dutch recycling value chain. This can be realised at European level by ensuring that there is a level playing field for internal traffic of plastic feedstock and that plastic waste can be easily transported across borders as feedstock (i.e. not as waste). At Dutch level import restrictions and duties should be suspended.

OPPORTUNITY 1: Importing feedstock

Ensure a level playing field within the European Union for the internal traffic of plastic feedstock – i.e. avoid in-country treatment requirements by EPRs and governments, as these undermine the common market.

Ensure easy cross border transport of plastic waste feedstock (and derivatives such as pyrolysis oil).

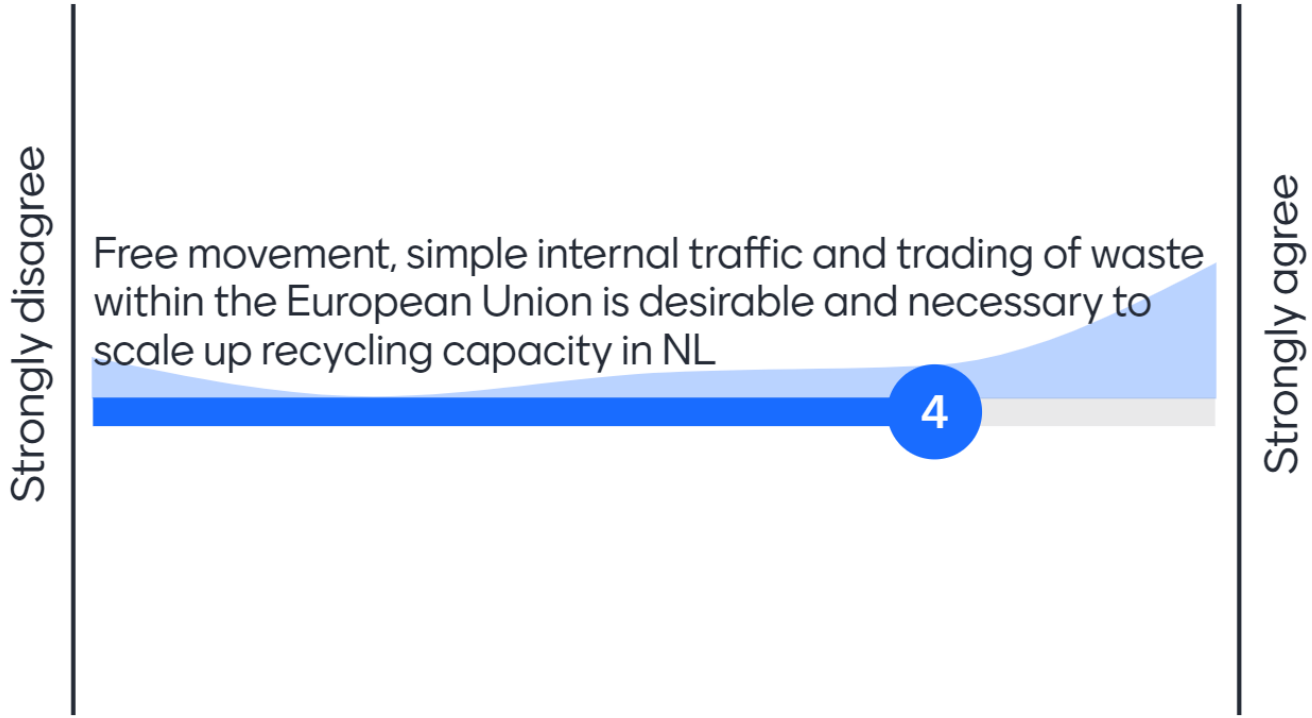
Standardisation of waste could help to better match supply and demand by making the market more liquid and import & export more easy.

Suspension of import tax for combustible waste which contains significant amounts of plastics in case this waste is post-sorted.

Input from audience:

Mentimeter

To what extent do you agree/disagree with the following statement:



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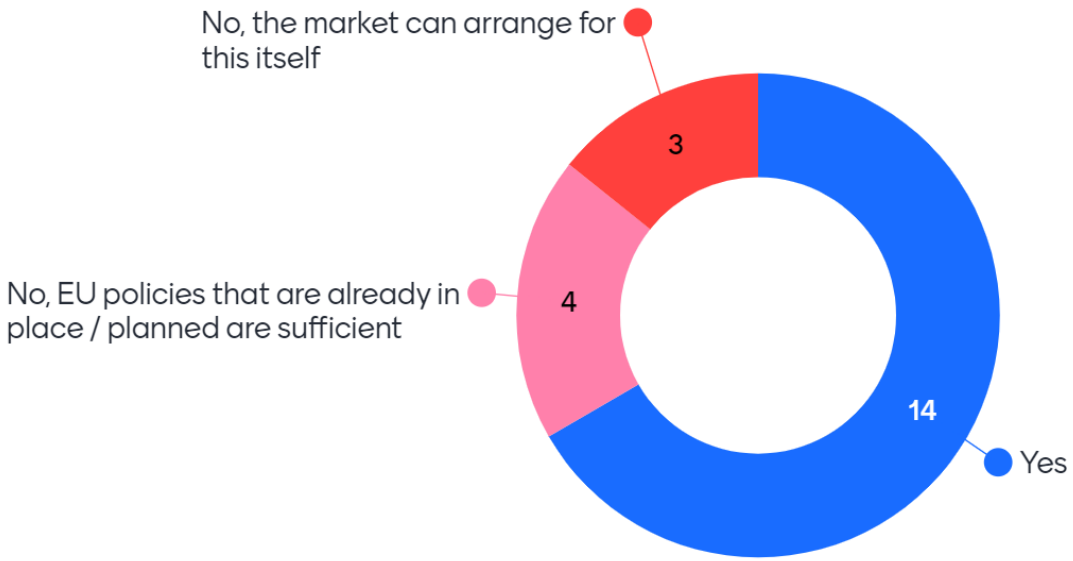
Input from audience:

Mentimeter

Additional national policies are needed to ensure the availability for the Netherlands



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6.2

European and Dutch policies are the single most important driver for feedstock demand where most policies are still under debate, making it hard to determine the exact impact these will have on demand. The minimum recycled content requirements for products is expected to have the largest impact on the entire plastic waste value chain.

DEMAND impact: Selection of regulations with highest impact on feedstock demand

Regulation		Description	Chemical recycling demand impact	Mechanical recycling demand impact
I	Ecodesign for Sustainable Products Regulation	Harmonized design requirements for plastic and polymers – *Proposed European regulation*	Increased in demand for (mostly very high quality or contact sensitive) recycled plastics, if a minimum recycled content is introduced, which (some not-all) chemical recycling can produce.	Ecodesign is expected to lead to more demand for single-material plastic products, which can more easily be made from mechanical recycling than multi-material products.
II	Minimum recycled content	Minimum share of recycled material quote of 10-35% – *Proposed European regulation*	Strong increased demand for (mostly very high quality or contact sensitive) recycled plastics, which (some not-all) chemical recycling can produce.	Strong increase in demand for recycled non-contact sensitive packaging and single-use beverage plastics bottles.
III	Levy for unrecycled plastic	Countries must contribute 800 EUR/t for unrecycled plastics – *Proposed European regulation*	Increase of recycling demand, if levy is charged to producers/ consumers, as virgin plastics become more expensive and thereby recycled material more competitive	Increase of recycling demand, if levy is charged to producers/ consumers, as virgin plastics become more expensive and thereby recycled material more competitive
V	ELV proposal for regulation	Recycled plastic content share in cars to be 25% (2030) – *Proposed European regulation*	Increased demand, for high quality or recycled plastics.	Strong increase as it will be easiest way to meet the recycling target.
XVI	Acceptance of chemical recycling	Acceptance of chemical recycling and calculation method – *Proposed European regulation*	When chemical recycling will count towards reaching recycling rates, the demand for chemically recycled plastics is expected to increase, of which the extent is depending on the chosen measuring point and improvement in yield.	No significant effect expected.
XVII	Minimum recycled content	All plastics to be comprised of 25%-30% reused/ bio material – *Proposed Dutch regulation*	Depending on how the regulations take shape, chemical recycling demand will be driven for use in high quality and contact sensitive products.	Although the exact scope of the regulations are still uncertain, it is expected that a significant share of the recycled material will be processed through low-grade/ easily recyclable plastic groups through mechanical recycling

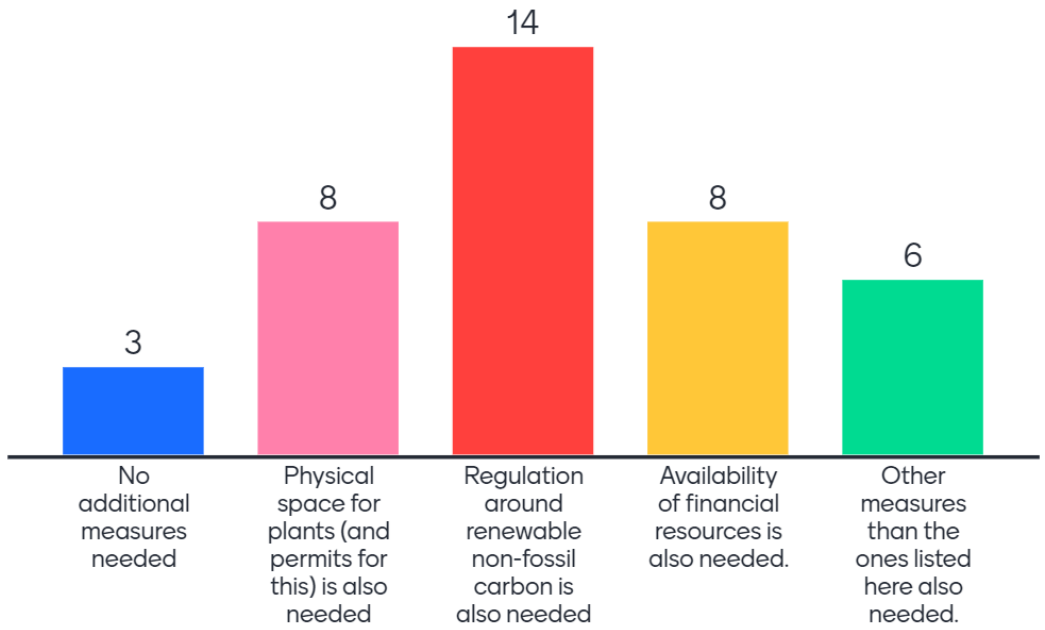
Key: Expected impact: ● Very positive; ● Slightly positive; ● Limited or no effect; ● Slightly negative; ● Negative.
Source: European Commission; Plastics Europe; KPMG analysis.

See chapter policy for all identified policies

Input from audience:

Mentimeter

Are the upcoming regulations sufficient to increase feedstock demand to such an extent (and thus scale up recycling capacity)?



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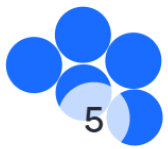
Input from audience:

Mentimeter

What is most crucial for accelerating the market: Sorting, Export/Import, or Demand?



Sorting

Export/Import

Demand

1

23

Thank you for your attention!