



# WG Depolymerization

Feb 1st, 2023



# Prohibited Discussion Topics

## PRICES

- agreements on prices, costs, discounts...
- discussion on industry prices, price changes
- exchange information on price trends

## PRODUCTION

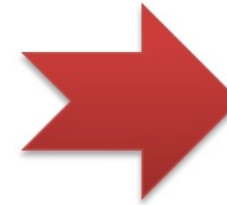
- information on production capacity
- fixing of production quotas

## MARKET SHARES

- agreements on market shares
- boycott suppliers
- division of the market
- allocation of sales territories, distribution or marketing

## CUSTOMERS

- blacklist customers
- agree to classify or select potential customers



- **PROTEST**
- **STOP THE DISCUSSION**
- **DISASSOCIATE YOURSELF**

*Petcore Europe staff can and will stop the meeting when "forbidden" items are being discussed!*



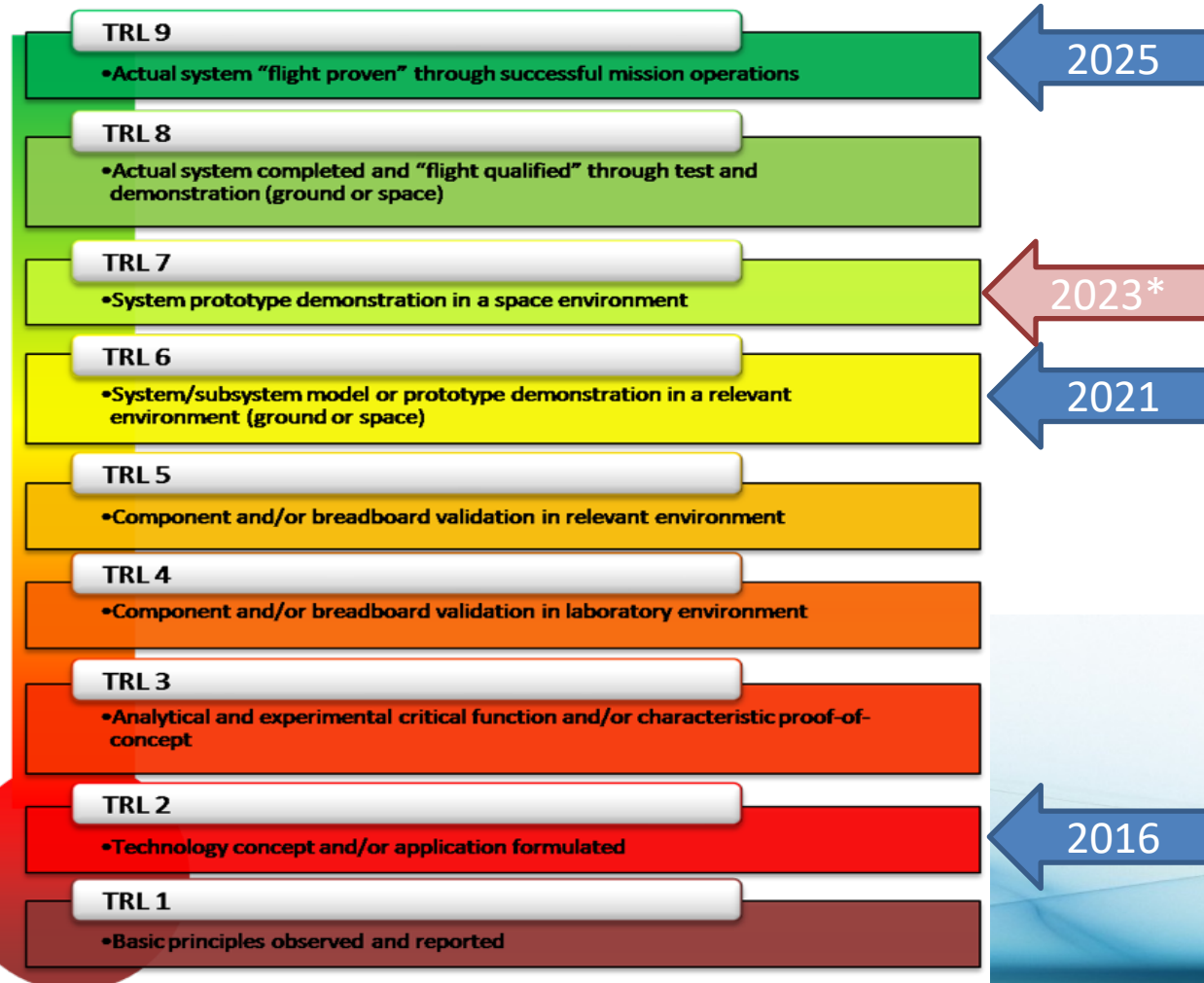
# Agenda

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- Introduction
- Status update and announcements of investments (Bruno)
- Legislation summary update and WG activities (Marco)
- Novel technology status
- Forum discussion with
  - Jeroen Bulk - Ionika
  - Koen Stevens – CCEP
  - Marco Brons – Cure Technologies

# Technology Readiness Level of the sector

Industry supports EU driving circularity



- The industry is evolving quickly
  - 4 major industrial developments in EU and additional projects in USA and Asia
- Commercial scale will support PPWR (November 2022) broadening material to recycle and increase recycled content
- Sector targets to be dimensioned to supply enough material to the market

\*aggregated number

# European Industrial unit announcements

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- Eastman: **160 kta unit**. *"Eastman [has] the capability to take hard-to-recycle polyester waste and sort, depolymerise and produce recycled PET at a single location"*. Public concertation completed in November
- Loop Industries: **70 kta unit**. *" Loop Industries owns patented and proprietary technology that depolymerises no and low-value waste PET plastic and polyester fibre, including plastic bottles and packaging, carpets and textiles of any color, transparency or condition" [...] to its base building blocks (monomers)"*: Location under review
- Carbios: **50 kta unit**. *"The goal is to build and operate in France the world's first industrial-scale enzymatic [depolymerisation] PET bio-recycling plant"*. Permit deposit completed in December
- Axens: **80 kta unit**. *"Rewind® PET process [...] involves an optimized - glycolysis based - PET depolymerisation combined with specific purification steps aiming at removing all organic and inorganic compounds present in waste PET, including colorants and pigments. The product is a purified BHET (BHET: Bis(2-HydroxyEthyl) Terephthalate) monomer.*



# Depolymerization and Mass Balance

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Depolymerization allows a full segregation of depolymerized PET

- Mass balance is a chain of custody method that is used commonly in the depolymerization industry. A 'flat reallocation' is generally used through production batches. And guarantees trust because of easy tracing.
- Debate is around **reallocation** and **book and claim**
- Reallocation could be seen as means to reward the efforts of one specific industry sector (for example, a bottle manufacturer supplying X tons of feedstock, willing to recover X tons of repolymerized PET at 100%).
- Mass balance with book and claim, is more difficult to build in a trustful manner as it implies to be able to 'mass balance' several sites and downstream users.



# Legislation

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In respect to legislation the group can be divided in three subgroups:

1. Technologies producing listed monomers (EC/10/2011)
2. Technologies producing BHET
3. Technologies producing PET (Flake injection)



## Relevant legislation

- Recycling – EC 2022/1616
- SUP – EC 2019/904
- Plastics - EC 10/2011
- Packaging & Packaging Waste Regulation – EC 94/62





# EC2022/1616 (Plastics Recycling)

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## Recycling legislation – EC 2022/1616

- Replacement of the EC 2008/282
- Including chemical recycling

## Actions from WG:

### Formation subgroups:

- 1. Monomers: no action required as not concerned by this legislation
- 2. BHET: apply for Novel Technology
- 3. PET, Flake injection: apply for Novel Technology (facilitated by PET Europe)



## EC 10/2011 (Plastics)

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EC 10/2011 17th Amendment scheduled in Q2 2023

Topics:

- recycled monomers are considered EC 10/2011 compliant
- Attempt to get BHET listed under EC 10/2011 to minimize administrative and monitoring burden for recycling technologies producing BHET



## EC 2019/904 (SUP)

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SUP, EC2019/904, article 6,5(a) 25% recycled content obligation for PET bottles in 2025.

- How should this be monitored? Discussion with DG Envi & DG Santé.  
Proposal from DG Envi:  
Use the Declaration of Compliance obligation in the 2022/1616 to have an authorized monitoring system (1<sup>st</sup> implementing act)
  - Advantage: no additional authorized monitoring administration system
  - Disadvantage: (1) Technologies producing listed monomers are for the moment excluded (under review 2<sup>nd</sup> implementing act to address monitoring)

Determine LCA footprint (icw WG LCA) ??



## EC 94/62 (P&PW)

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P&PWR

PET:

Design for recycling / recyclability

50% recycling rate of plastics in 2025

SUP

25 % recycled content by 2025, >30% by 2035 and >65% by 2040



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Communications Campaign Website: <https://www.recycletheone.com/en>

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