## ISCC Technical Stakeholder Meeting



Cefic's view on Mass Balance and Allocation method: Fuel Use Exempt (Energy excluded) model

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The European Chemical Industry Council, AISBL - Belliard, 40 - 1040 Brussels - Belgium

## Cefic is the voice of the chemical industry in Europe

- Based in Brussels since 1972, Cefic has grown to become one of the largest trade organisations in Europe and in the world
- Representing large, medium and small chemical companies in Europe – 1.1 million jobs & 15% of world chemicals production
- One of the most active networks of the business community: companies + industry (sector) associations + national federations
- We interact every day on behalf of our members with international and EU institutions, nongovernmental organisations, the international media and other stakeholders

# Europe is the second largest chemicals producer in the world

World chemical sales (2020, €3,471 billion)





# Steering towards the ambitions of the Green Deal All technologies required to move to a circular economy

The Green Deal

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# Need for a mass balance chain of custody to calculate chemically recycled content in plastics and chemicals

A chain of custody is the chronological documentation or paper trail that records the sequence of custody, control, transfer, analysis, and disposition of materials, including physical or electronic evidence. Different models and options exist, as per the ISO 22095 standard.

Mass balance, a widely employed "chain of custody" model, ensures confidence in the input and output of a process, and it has proven successful in various sectors like biofuels, cocoa, and coffee.

### Why do we need this for chemical recycling?

- Purposing existing industrial installations for the circular economy
- These continuous, large scale production processes have multiple outputs
- Leveraging recycled feedstock together with virgin fossil feedstock in existing assets





## Mass balance with a Fuel Use Exempt model



"Fuel Use Exempt" Model

Deduction of process losses + auto-consumed energy + fuels

#### **Recycling Definition**

'recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material **but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations**;

Reference: EU Waste Framework Directive



+ third-party certification: credible and transparent claims



#### **POSITION PAPER**

Chemical Recycling: Delivering recycled content to meet the EU's circular economy ambitions – the Single Use Plastics Directive Implementing Act and the Packaging and Packaging Waste Directive revision

The chemical industry is committed to boosting the circular economy by delivering recycled content which is urgently needed to strengthen the EU's strategic autonomy in raw materials and meet climate targets. This requires a clear and enabling EU legislative framework which increases the recycled content of materials in a cost-efficient and transparent manner with limited environmental impacts<sup>1</sup>, while taking into account the complexity of chemical processes. **The use of a third-party certified mass balance chain of custody method, with a fuel-use exempt model, is seen as indispensable** to meeting the EU's climate and circularity targets in time by leveraging Europe's existing industrial infrastructure. The framework should ensure a harmonised and predictable approach across the many pieces of EU legislation that address recycled content.

Background: rapid scale-up of chemical and mechanical recycling capacity is needed to deliver on the EU's circular economy

While 53.9 million tonnes of plastic is produced yearly in Europe, approximately 84% of which does not currently find its way back into new products<sup>2</sup>. Instead, substantial amounts of plastic remain being landfilled, incinerated, or exported. The European ambition to transition from a linear economy towards a sustainable circular economy calls for an array of complementary recycling options and business models. Chemical recycling can play its part in valorising end-of-life plastic waste streams, enabling the production of new chemicals including plastics. It will be very difficult to meet ambitious recycling targets without significant and rapid scale-up of both mechanical and chemical recycling technologies<sup>3</sup>.

Recycled content requirements for plastic products already exist in EU policy and proposals under the

#### Position paper published in December 2022

Calls for a Mass Balance Chain of Custody, with a Fuel Use Exempt model

**33** European Industry Associations Urge the EU to Adopt Rules to Calculate Chemically Recycled Content in Plastics



The European Chemical Industry Council (Cefic) together with 30 other industry associations representing major market sectors along the European plastics value chain have issued a joint letter to the European Commission, urging the adoption in 2023 of an EU-harmonized rule for calculating chemically recycled content through mass balance.

Urgent legal certainty on mass balance chain of custody is indispensable to unleash the investments in chemical recycling infrastructure required for the European plastics system to meet the EU's 2050 climate and circularity targets. Therefore, we call on the European Commission to use the Single Use Plastics Directive (SUPD) Implementing Act as a legal basis to adopt, in 2023, EU rules enabling the use of a mass balance credit method with a fuel-use exempt model to calculate the chemically recycled content in plastics.

"As we move from a linear to a circular economy, there is an urgent need to rapidly expand complementary recycling solutions such as mechanical and chemical recycling. Through this joint letter, we are making a strong and collective plea."

# JRC technical report "Environmental and economic assessment of plastic waste recycling" (Feb 2023)

#### **Climate Change:**

The preferred waste management option from a life cycle perspective is the one maximising material recovery while minimising impacts from waste processing (primarily energy consumption).

### Recycling (mechanical, physical or chemical) is preferable to energy recovery in all pathways analysed.

Notably for mixed polyolefin waste currently not mechanically recycled, because the environmental savings from energy recovery are not sufficient to compensate for the environmental impacts from waste incineration and the related CO2 emissions.



JRC TECHNICAL REPORT

### Environmental and economic assessment of plastic waste recycling

A comparison of mechanical physical, chemical recycling and energy recovery of plastic waste

> a, S., Tonini, D., Tosches, D., Ardente, F., ryn, H.



New European Commission Study Confirms Chemical Recycling Is Better Than Incineration Of Plastic Waste



In Europe, about 30 million tonnes of plastic waste is collected every year. Still, 84% of that does not find its way back into new products, as most of it is incinerated, exported or sent to landfill. A mix of various technologies, including mechanical and chemical recycling, is urgently needed for the EU to change the status-quo and turbocharge plastic recycling rates.

A new report published by the European Commission's Joint Research Centre "Environmental and economic assessment of plastic waste – A comparison of mechanical, physical, chemical recycling and energy recovery of plastic waste" did a comparative environmental and economic assessment of plastic waste recycling and energy recovery technologies.

The study came to a clear recommendation: from a climate change perspective and based on – Life Cycle Assessments (LCA), the preferred management option for plastic waste is recycling (mechanical, physical or chemical). Recycling (mechanical, physical or chemical) is preferable to energy recovery (incineration) in all analysed pathways. As the European energy mix will get cleaner, the gap between recycling and energy recovery will further increase in favour of recycling, the study concludes.

## Chemical recycling potential needs to be recognized in a range of initiatives



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\* EPDs: An Environmental Product Declaration (EPD) is defined by International Organization for Standardization (ISO) 14025 as a Type III declaration that "quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function."<sup>11</sup> The EPD methodology is based on the Life Cycle Assessment (LCA)<sup>121</sup> tool that follows ISO series 14040.<sup>[11]</sup> a verified EPD can earn your products credits for LEED v4 and other green building rating systems.

### Chemical Recycling: A perfect match in the mix



- Shift from a "waste orientation" to a "resource orientation" & Create a single market for secondary raw materials
- Investments are happening right now
- Critical to have a mass balance chain of custody with a fuel use exempt model incorporated in EU policies in 2023.



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# Thank you!

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