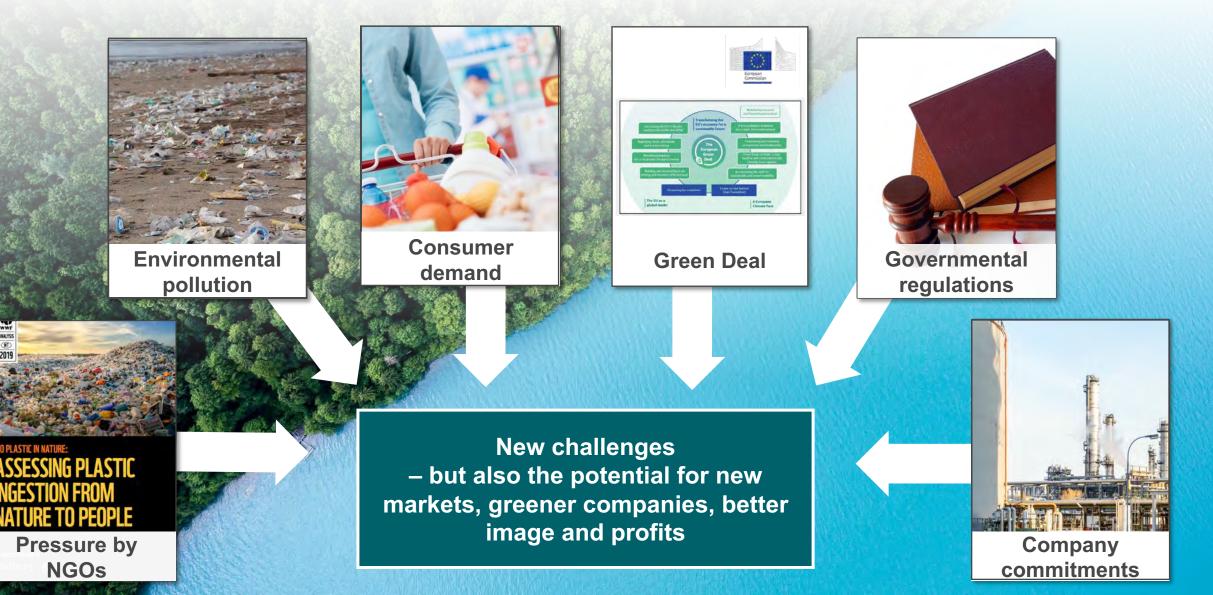


### ISCC PLUS for the Circular Economy and Bioeconomy



ISCC System GmbH

### Several drivers push the growth of the circular economy and bioeconomy. This poses challenges, but also opens up new potentials



### We urgently need **better solutions**



Recycling plastics helps to solve the plastic waste problem



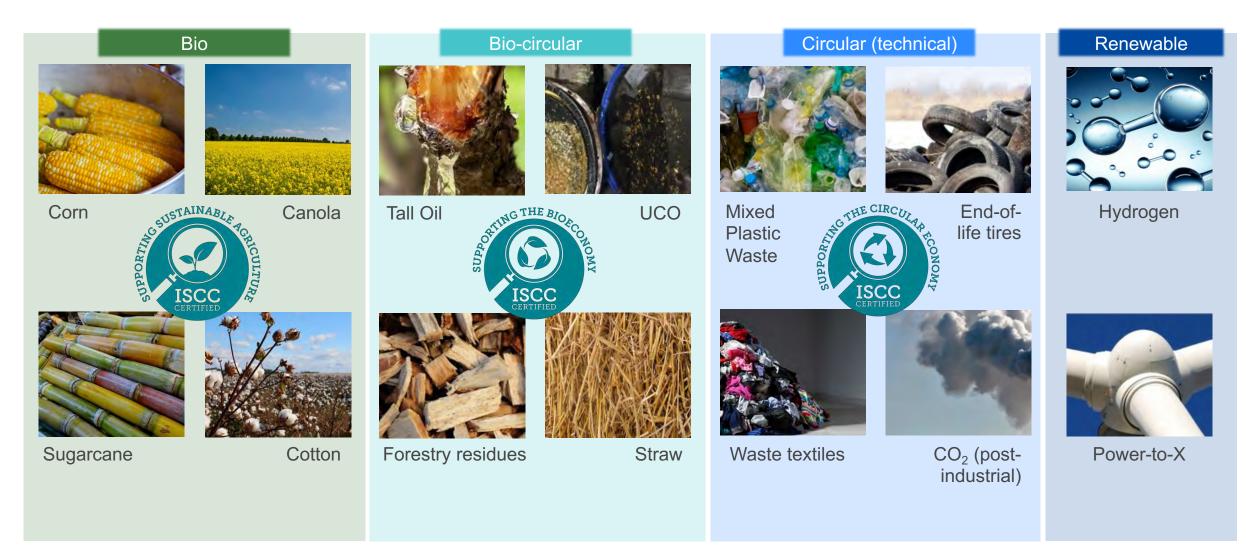
Bio-based plastics reduce the dependency on fossil fuels



Recycled and bio-based plastics support the transition to a circular economy and bioeconomy

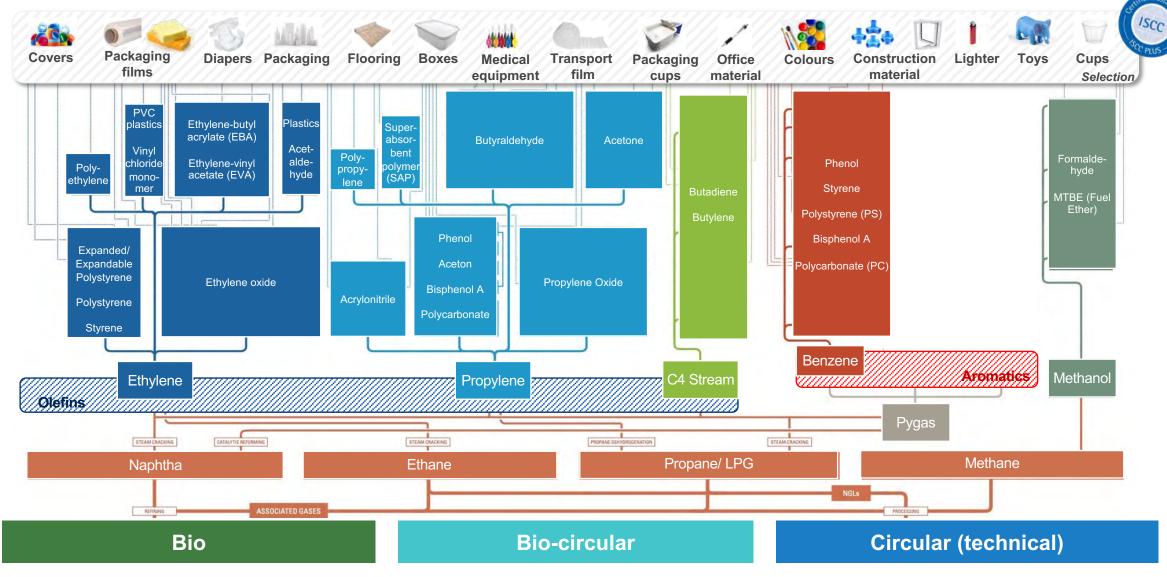


#### ISCC certifies all kinds of raw materials



ISCC International Sustainability & Carbon Certification

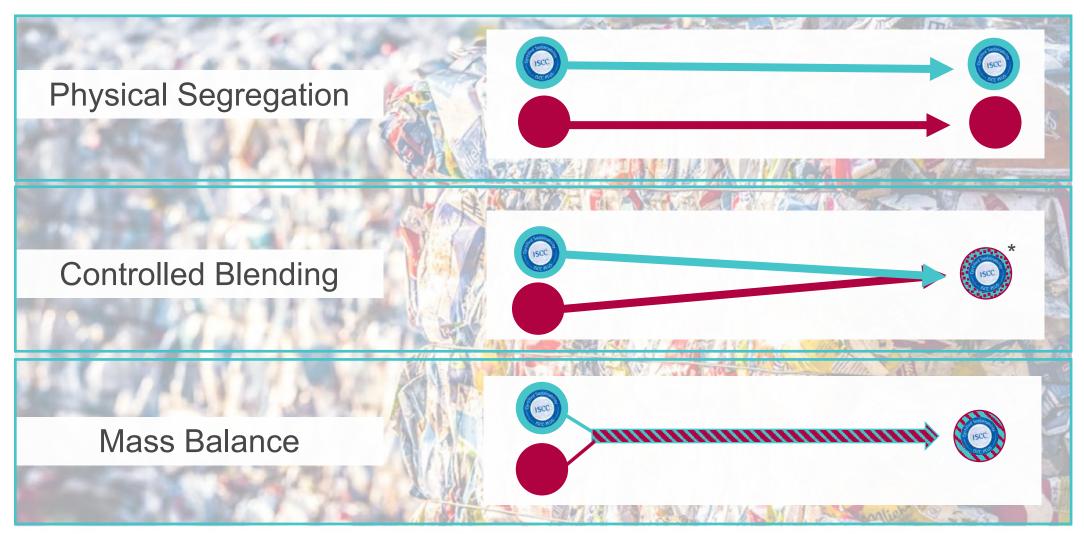
#### Many derivates and final products are already covered under ISCC PLUS





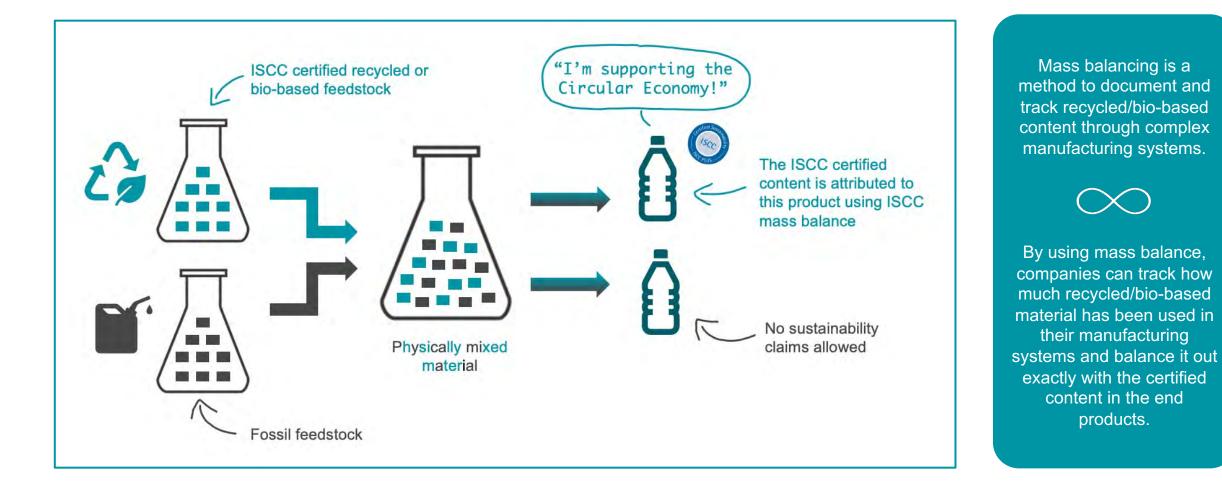
Source: Meo Carbon Solutions based on ISCC (2020), Petrochemical Europe, petrochemistry.eu

ISCC certifies different chain-of-custody approaches and creates transparency on the approach chosen



SCC

#### ISCC supports mass balance accounting





#### ISCC mass balancing options

Option	Approach	Principle	EMA- White paper
1 Mass Determination	Attribution Annroach	Free attribution to one or several outputs	Mass allocation
2 Energetic Determination	Attribution Approach		LHV
3 Trace-the-Atom	Molecular Approach	Determination based on chemical reaction	Carbon counting
4 <sup>12</sup> C/ <sup>14</sup> C Analysis	Measurement	Measurement of sustainable share	



#### ISCC PLUS requirements are in line with important initiatives

**American Chemistry Council Mass Balance Certification** Ellen McArthur Foundation White **Plastics Europe Industry Position Paper cefic (2020)** Paper (2019) View Paper (2020) **Principles for Advanced Recycling** (2020) **POSITION PAPER Plastics**Europe American Cefic Chamistry March 202 ENABLING A MASS BALANCE APPROACH TO ACCELERATE **CIRCULAR ECONOMY** THE USE OF RENEWABLE FEEDSTOCKS IN Introducing chemical recycling: Plastic waste becoming a resource American Chemistry Council's Mass Balance Certification Principles for FOR CHEMICALS WITH CHEMICAL PROCESSES "Every year, Europeans generate 25 million tonnes of plostic waste, but less than Advanced Recycling 30% is collected for recycling" states the 2018 European Plastics Strategy. THE MASS BALANCE **Core Principles** Climate protection, reduction of greenhouse gas emissions and saving of APPROACH L. Standard utilizes a mass balance approach and chain of custody traceability for credit fossil resources are key elements for a more sustainable future. The use of The Green Beal is at the heart of the EU's ambitions of becoming climate neutral. To A WHITE PAPER FROM CO.PROJECT MASS BALANCE renewable feedstocks in historically solely fossil based chemical processes accounting and product claims. meet the ambitious European objectives, much more waste plastic needs to be recycled can contribute to meet these challenges. This view paper aims to introduce 5 Standard accommodates the attribution of claimable credits to one or more end and a broader range of markets need to be served with plastic products containing key criteria when applying mass balance and to ensure a verifiable and products within both integrated processing facilities and globally integrated value chains recycled content. In this respect Cefic highlights the potential of chemical recycling of certified approach is applied for companies willing to accelerate the use of renewable feedstocks along the value chain. Standards owners should 1 Standard utilizes a certification process with third party audits to produce venfiable plastic waste. Transitioning from a linear economy to a sustainable circular economy show the application of these key criteria in their standards. claims that will be credible to stakeholder using innovative technologies is a key opportunity for Europe and its industries. In those so-called mass balance approaches, renewable feedstocks are used instead of fossil feedstocks in existing efficient, complex and Other Enabling Principles Background interlinked multi-step chemical production systems and supply chains Broad global adoption of a small number of harmonized standards preferred The recycling! rate for glass, paper and metal today in the EU is well over 70%. Combinations of different thereby contributing to the bio-economy, the renewable segment of the recycling processes, techniques and solutions are in place to achieve these recycling rates. Similarly, in the circular economy Certification process and standards are compatible with applicable regulatory and development of a circular economy for plastics a combination of complementary options will be required compliance requirements ubitzing clear global definitions to achieve high recycling rates for plastics. This view paper focuses on mass balance approaches for renewable Transparent public pertification standard and certification methodology feedstocks. Chemical recycling can fill a void in the plastics recycling loop, conserve valuable resources, and contribute Standard developers who are independent from certifying dramizations prefetred to the creation of low carbon circular economy. Chemical recycling complements other plastic recycling options like mechanical and dissolution recycling. It is capable of processing contaminated and/or mixed Inclusive approach to standard development; balance engagement of stakeholders and Background plastic waste which would otherwise end up in incineration (with or without energy recovery) or landfill. internal standard consistency for standards organization Chemical recycling technologies allow use of plastic waste as feedstock to produce new chemicals and Mass balance is one of several well-known Chain of Custody approaches which can be used to Standard can be linked to other certification elements that are venfiable if claimed trace the flow of materials through the value chain resulting in associated claims. Other chain of custody models include. Identity preserved, segregation and book and claim with certificate plastics. The quality of the latter is equivalent to those produced from virgin resources, allowing use in highincluding: GHG emissions, sustainable supply chain, LCA, labor, and human rights quality applications such as food contact and food packaging. An added benefit is the potential of chemical trading within open markets. These different Chains of Custody vary in terms of detailed recycling to capture and separate the so-called legacy chemicals and substances of very high concern 3 Standard does not accommodate the creation of a separate market for the sale and knowledge of the source of the product, the complexity of implementation, and the renewable content in the end-product, which will in turn affect the allowed claims. transfer of credit certificates outside of their direct use within product value chains (SVHC) that can be present in end-of-life plastic. Chemical recycling is not yet a widely deployed option for the recycling of plastic waste. Scale-up requires Flexibility to adopt future technology innovations in standard. For the use of renewable feedstacks, specific production technologies may be developed and innovation, harmonised policies, recycling-chains and clear pathways to "valorise" plastic waste that is applied, which transform a renewable feedstock like e.g. sugar, vegetable oils, wood waste in currently incinerated, landfilled or wasted. The involvement of the entire value chain in combination with segregated production plants into a bio-based chemical being used in various applications. The Chain of Custody linked to those approaches is identify preserved or segregation. Those approaches are not part of this view paper because they are covered by the CEN/TC 411 fbio a transnational policy framework are key in this respect. based products" standard. To ensure the scale up and full deployment of chemical recycling, the industry is operating under the following guiding principles: Increase collaboration and work in partnerships to boost innovation and investments 12 Innovation and Research & Development (R&D) across innovation ecosystems and along amount of the state THE REAL PROPERTY AND ADDRESS OF THE PARTY OF the value chains creates the opportunity to address, amongst others operability, impurities a set and distant of tax



### ISCC has strong principles for bio-based feedstocks (on agricultural level)



**Principle 1:** Protection of biodiverse and carbon rich areas



Principle 2: Good Agricultural Practice



Principle 3: Safe Working Conditions



**Principle 4:** Compliance with Human, Labour and Land rights



**Principle 5:** Compliance with Laws and International Treaties



**Principle 6:** Good Management Practices and Continous Improvement



#### ISCC puts major emphasis on a regular and regional stakeholder dialogue

Global Events Since 2011

> Technical Committee on Solid Biomass Since 2011

Regional Stakeholder Committee North America Since 2012

> Regional Stakeholder Committee Latin America Since 2010

Regional Stakeholder Committee Europe Since 2010

Technical Stakeholder Committee "Sustainable Aviation Fuels"

Since 2021

Technical Stakeholder Committee "Circular Economy & Bioeconomy" Since 2020

> Regional Stakeholder Committee Southeast Asia Since 2013

Technical Committee on Waste, Residues and Advanced Low Carbon Fuels Since 2018



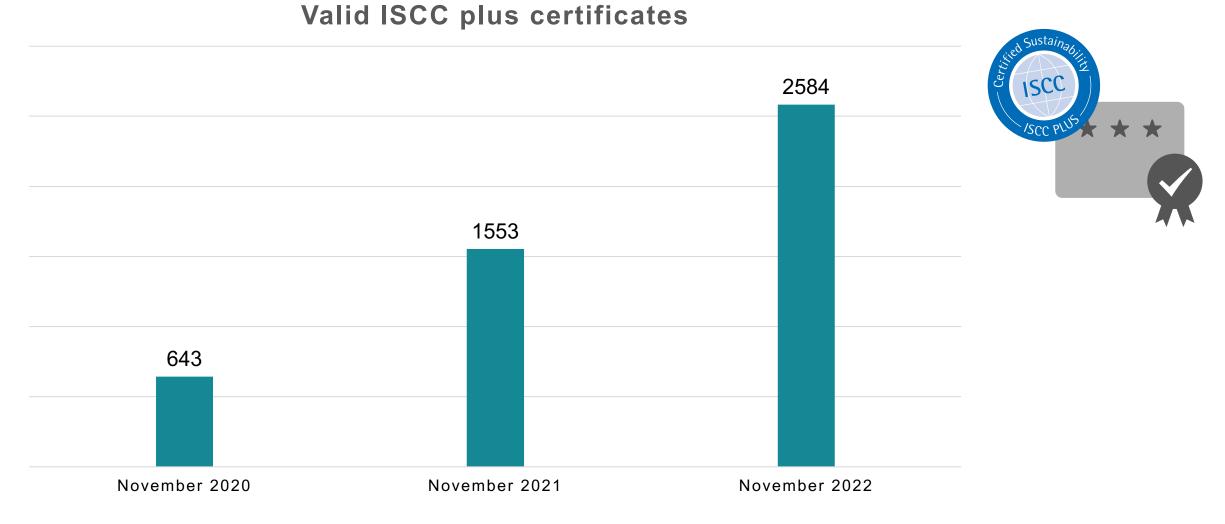
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# Many companies in the chemical industry, as well as brand owners rely on the credibility of the ISCC PLUS certification system



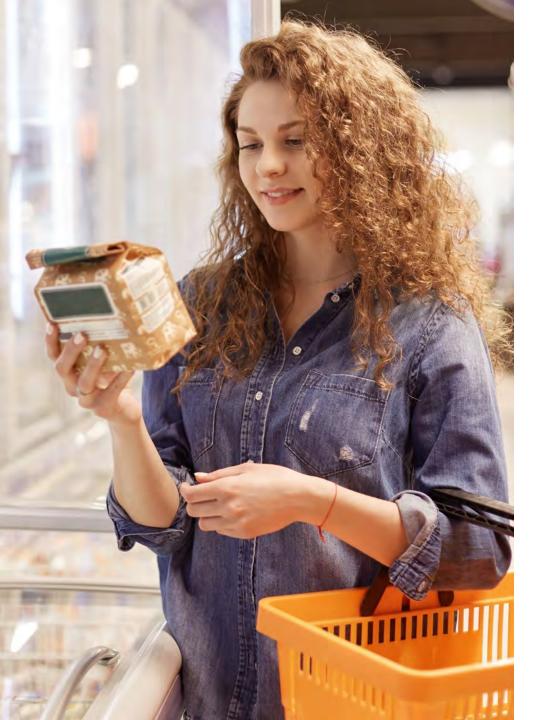


#### The number of ISCC PLUS certificates increases steadily





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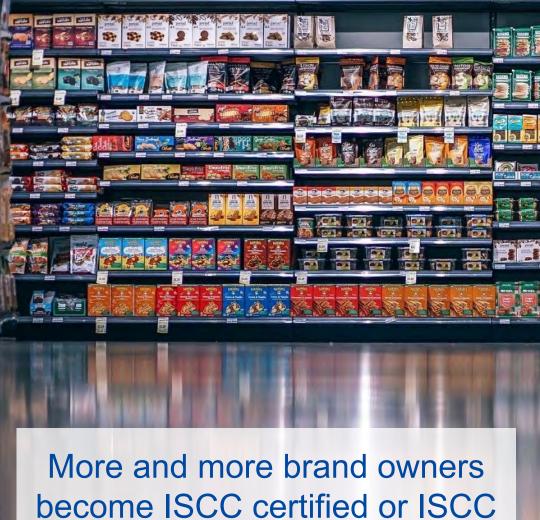
### An ISCC PLUS certification adds value for consumers

Third-party certification is an effective and proven way for brands to **increase consumer trust** 

→ A study from 2018 showed that third-party certification
labels as signaling instruments effectively reduce the risk of
poorer performance and positively affect consumers'
purchase intentions for sustainable products if the label
is viewed as credible.<sup>1</sup>

Greenwashing allegations can be avoided - Claims are credible and trustworthy with ISCC PLUS certification

<sup>1</sup> Brach, S., Walsh, G. and Shaw, D. (2018). Sustainable consumption and third-party certification labels: Consumers' perceptions and reactions. *European Management Journal* 36, 254 - 265



licensed.



#### With the licensing scheme, brand owners can apply the new logos more easily





#### More and more brand owners are are using the ISCC logo on products



ISCCC International Sustainability & Carbon Certification

## **NUK for Nature** uses ISCC certified bio-attributed material for their latex soothers







NUK

### **Mattel's** Matchbox Action Drivers are produced with ISCC certified bio-attributed plastic





**Nestle's** Nesquik packaging for the French market made with 50% recycled plastic certified by ISCC mass-balance approach





## **Aino** icecream package is produced with with ISCC certified bio-attributed plastic





### **NIP** pacificers are both made from and protected by ISCC certified raw materials









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# **Pigeon** nursing bottles have their caps made from 100% bio-based plastic certified by ISCC







The cap and hood of this bottle is made with 100% bio-based plastic. The plastic can be traced back to biological waste material which is attributed to this bottle via the ISCC mass balance approach.







## **Clemente** olive oil is made from 100% sustainably farmed olives, as certified by ISCC







### ISCC PLUS Certification stands for

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Traceability throughout the supply chain Transparent rules for mass balancing and physical segregation



Clear attribution of certified materials through mass balancing



Feedstock identity





Well-defined and thirdparty verified claims

No deforestation



Protection of biodiversity and high carbon stock areas



# Join us in our journey today and be part of the change!

ISCC System GmbH