




ISCC Solutions for a Sustainable Circular Economy and Bioeconomy

ISCC System GmbH



Climate change and environmental
concerns pose the number one risk for
companies' growth!

2019 Global CEO Outlook (KPMG)

Solutions to tackle plastic waste are urgently needed

Almost 350 million tons of plastic were produced in 2017

More than 90% of plastic is not recycled

Each year 9 million tons of plastic waste end up in the ocean

More than a third of plastic is used for packaging

Packaging waste accounts for half of the plastic waste

Roughly 5 grams of plastic every week find their way into the human organism

Regulators, governments and consumers demand measures for a drastic reduction of plastic waste


California proposes phaseout of single-use plastics by 2030

PUBLISHED SAT, FEB 23 2019 - 11:16 AM EST | UPDATED SAT, FEB 23 2019 - 12:07 PM EST

Julia Davis
KUTV NEWS 2


KEY POINTS

- California lawmakers introduced legislation this week to phase out single-use plastic food containers and other packaging that can't demonstrate it's recyclable or compostable.
- Proponents of the legislation say it could help reduce the problem of plastic littering beaches and oceans.
- Last year the Golden State became the first in the nation to restrict the use of plastic straws in restaurants.



China's recycling ban has sent America's plastic to Malaysia. Now they don't want it -- so what next?

By Ivan Watson, Jo Shelley, Sugam Pokharel and Umar Dastan, CNN
Updated 05:22 GMT (3:02 HKT) April 27, 2019



News & buzz

- A North Carolina father of 6 died after being struck by a van.
- Chandrayaan-2 India successfully launches moon mission.

NACHHALTIGES LEBEN 2020

Marken und Medien in der Pflicht

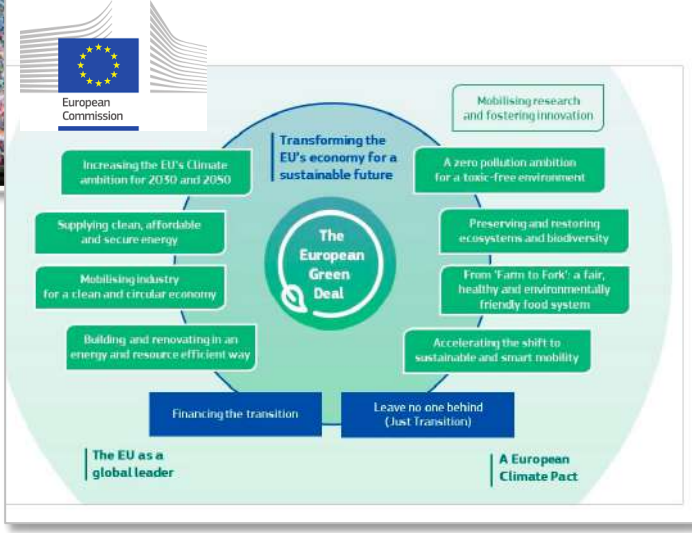
„Climate change and environmental concerns pose the number one risk for companies' growth!“

KPMG

Agile or irrelevant


Redefining resilience

2019 Global CEO Outlook



Canada to ban single-use plastics as early as 2021

10 June 2019



Canada will ban "harmful" single-use plastics as early as 2021 in a bid to reduce ocean waste, Prime Minister Justin Trudeau has announced.

„8 out of 10 consumers aim to make more sustainable consumption decisions!“

SPiegel Media

AdAlliance

Sources: BBC (2019), CNBC (2019), CNN (2019), European Parliament (2018), The Guardian (2019), European Commission (2019), KPMG (2019)





At the same time, global brand owners communicate their efforts to contribute to the circular economy and bioeconomy

Selection


 *"To increase the amount of recycled content in plastic bottles from "a paltry 7%" to 50% by 2030."*

*"2030 goal: **Ensure 90% of product packaging is recyclable.**"*



 *"Unilever has committed to ensure all of its plastic packaging is **designed to be reusable, recyclable or compostable by 2025**"*

*"We recently unveiled a new target to **reduce 35% of virgin plastics content** across our beverage brands by 2025, driven by **increased use of recycled content** and **alternative packaging materials.**"*

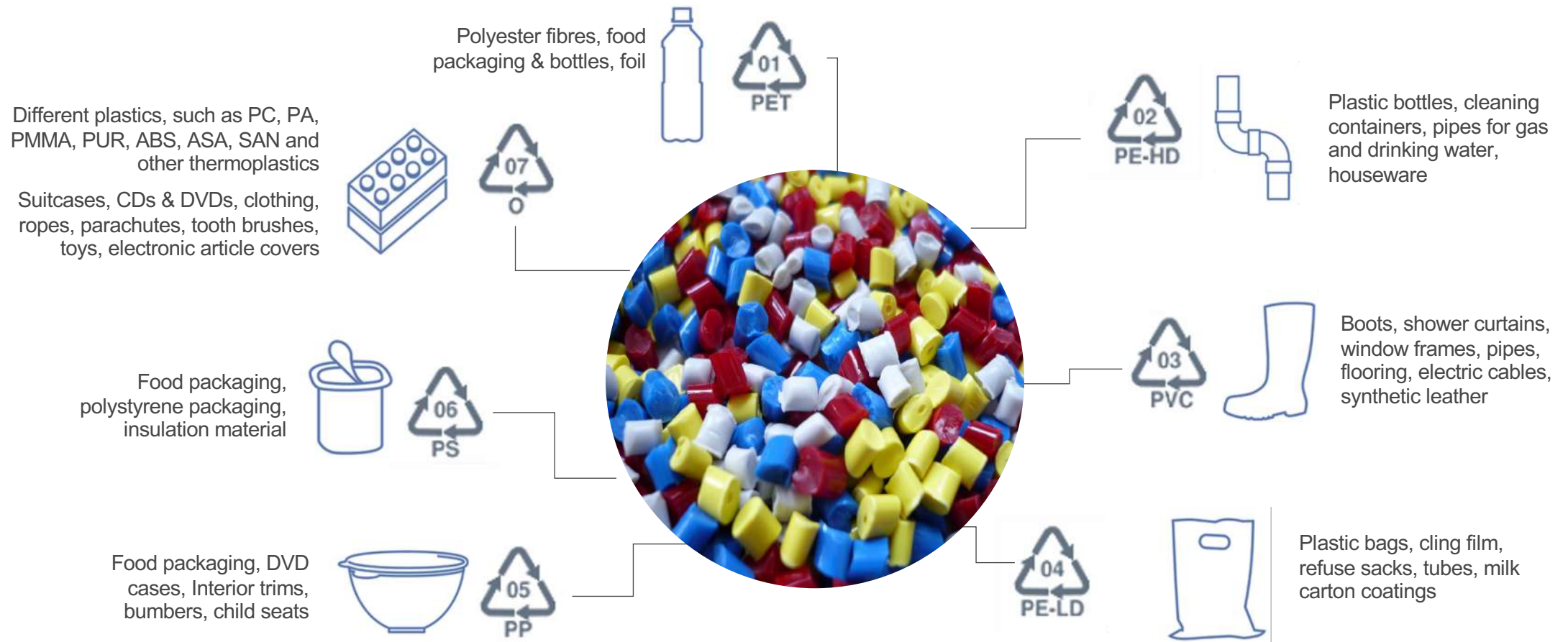
 **PEPSICO**

*"Nestlé has pledged to **phase out all plastics that are not recyclable** or are hard to recycle for all its products worldwide between 2020 and 2025."*



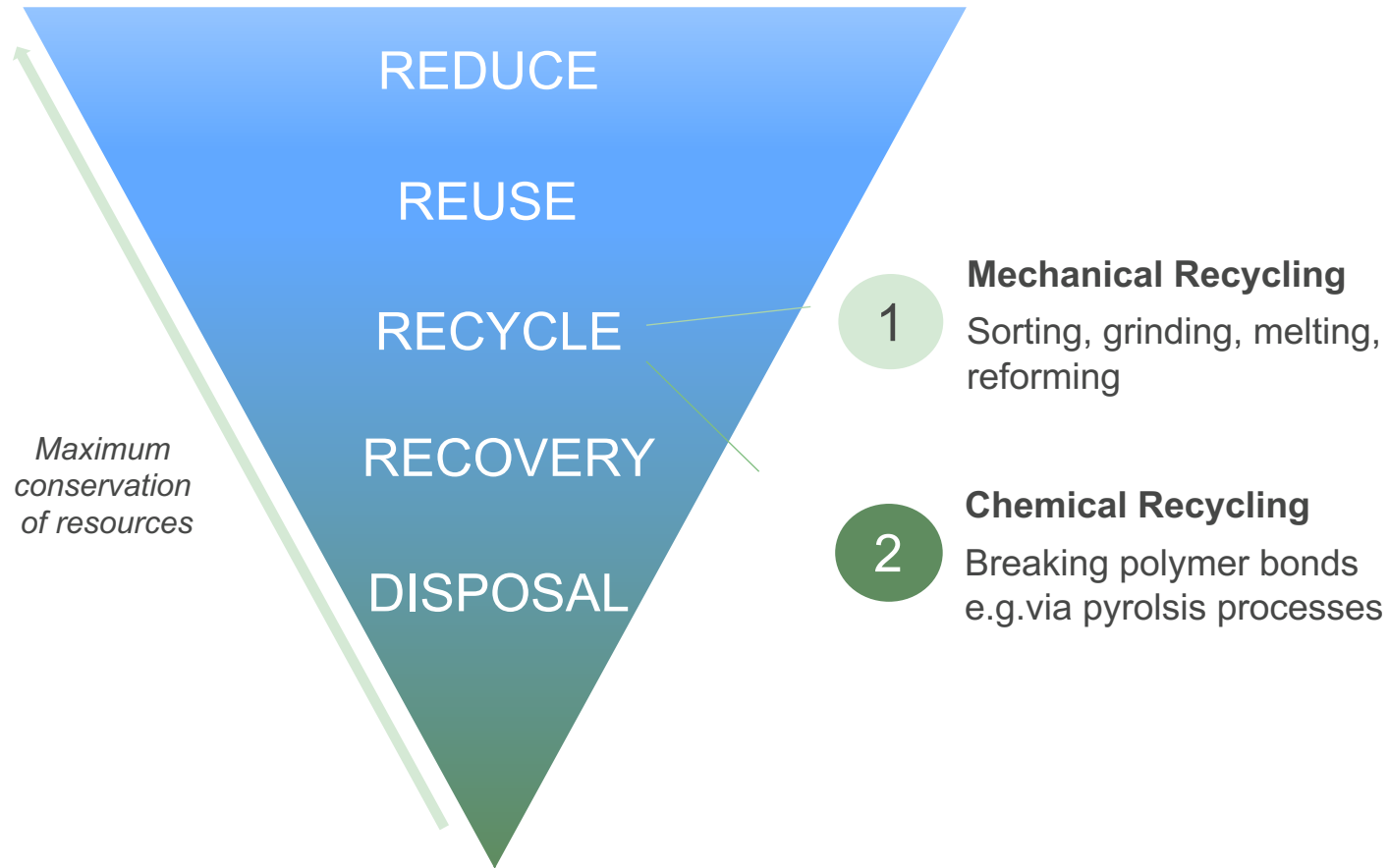
 *"Evian pledged to **make all of its plastic bottles from only recycled plastic by 2025.**"*

Different types of plastic form the basis for many everyday items

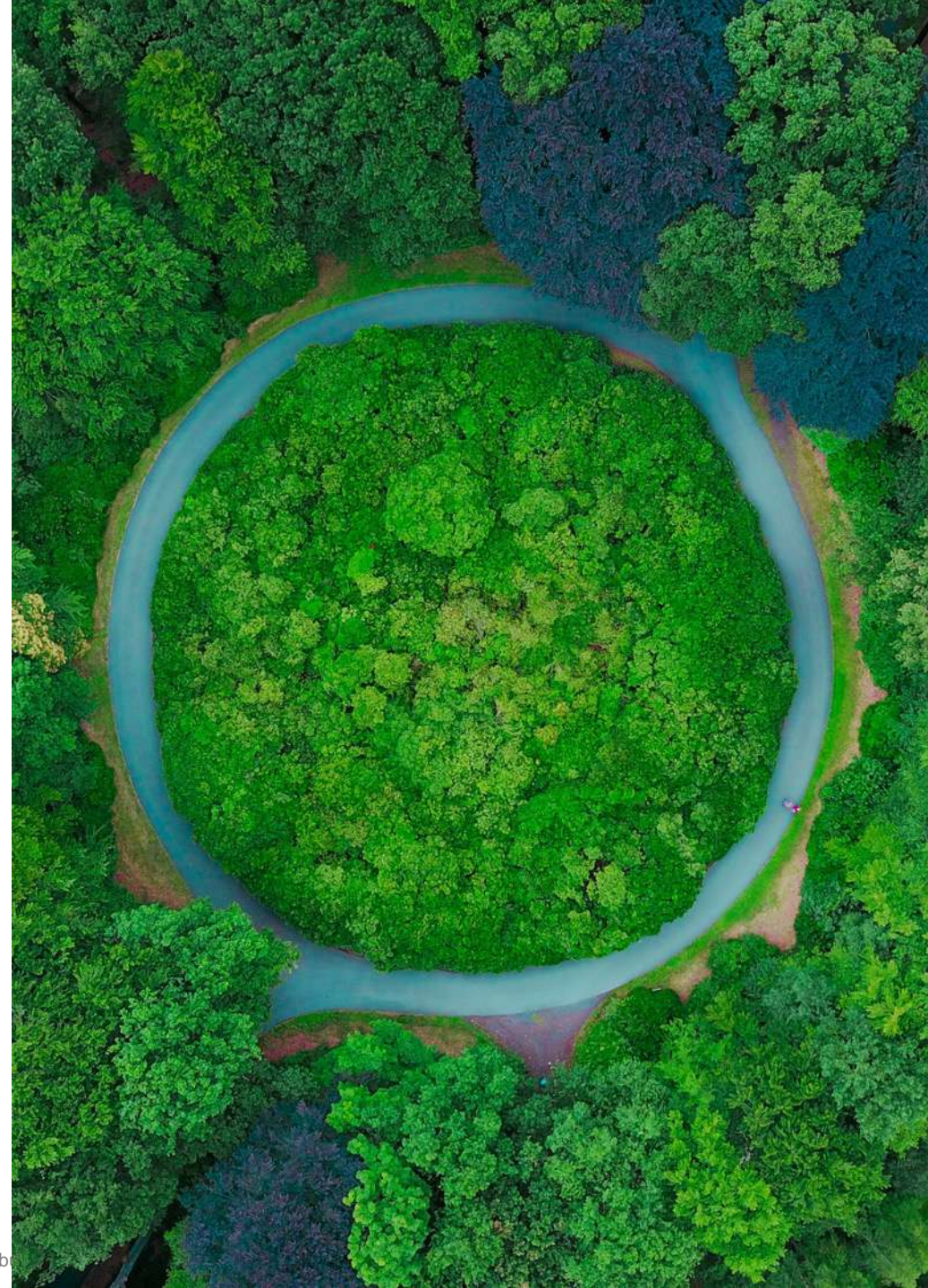


Source: Umweltbundesamt (2019)

Diverse materials respectively allow for different reuse and recycling options



Source: Own depiction referring to waste hierarchy according to Article 4 Waste Framework Directive



Many companies rely on the credibility of the ISCC certification system

SELECTION



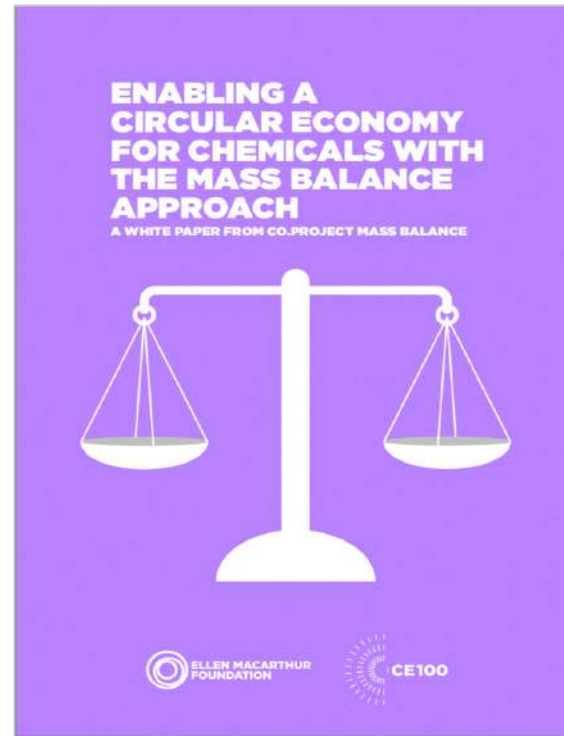
ISCC certification stands for:

- Sustainability
- Segregation or mass balance
- Clear attribution rules
- Traceability
- Feedstock identity
- Conversion factors/ volumes
- Logos and claims
- Add-ons like LCA

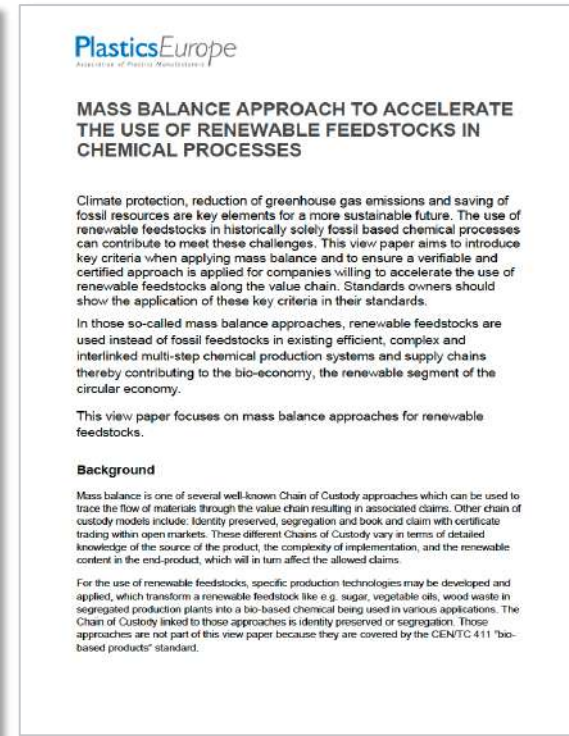
ISCC PLUS requirements are in line with important initiatives

- Feedstock identity
- Defined system boundaries
- Clear allocation rules
- Credible claims
- Transparent documentation
- Third-party verification

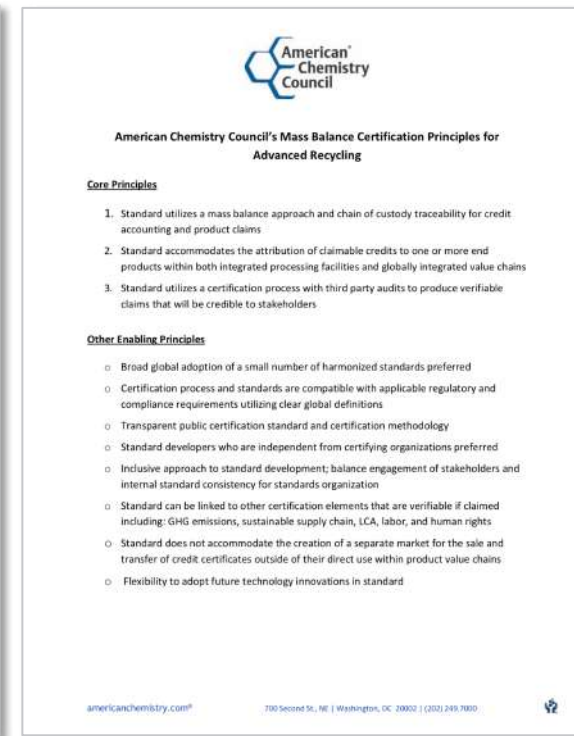
Ellen McArthur Foundation White Paper (2019)



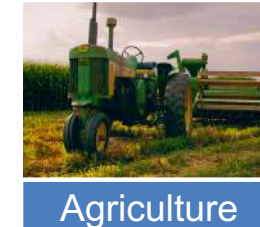
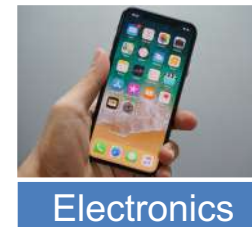
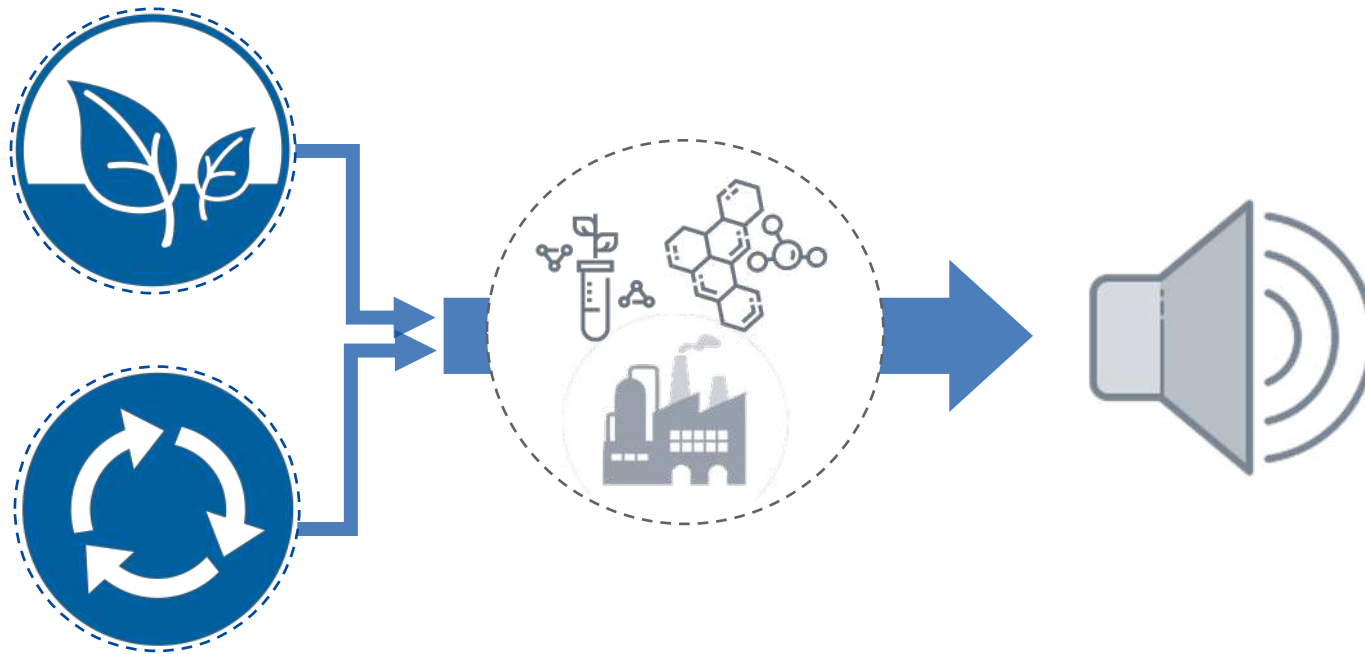
Plastics Europe Industry View Paper (2020)



American Chemistry Council Mass Balance Certification Principles for Advanced Recycling (2020)



ISCC PLUS offers solutions for the **circular** economy and **bioeconomy**



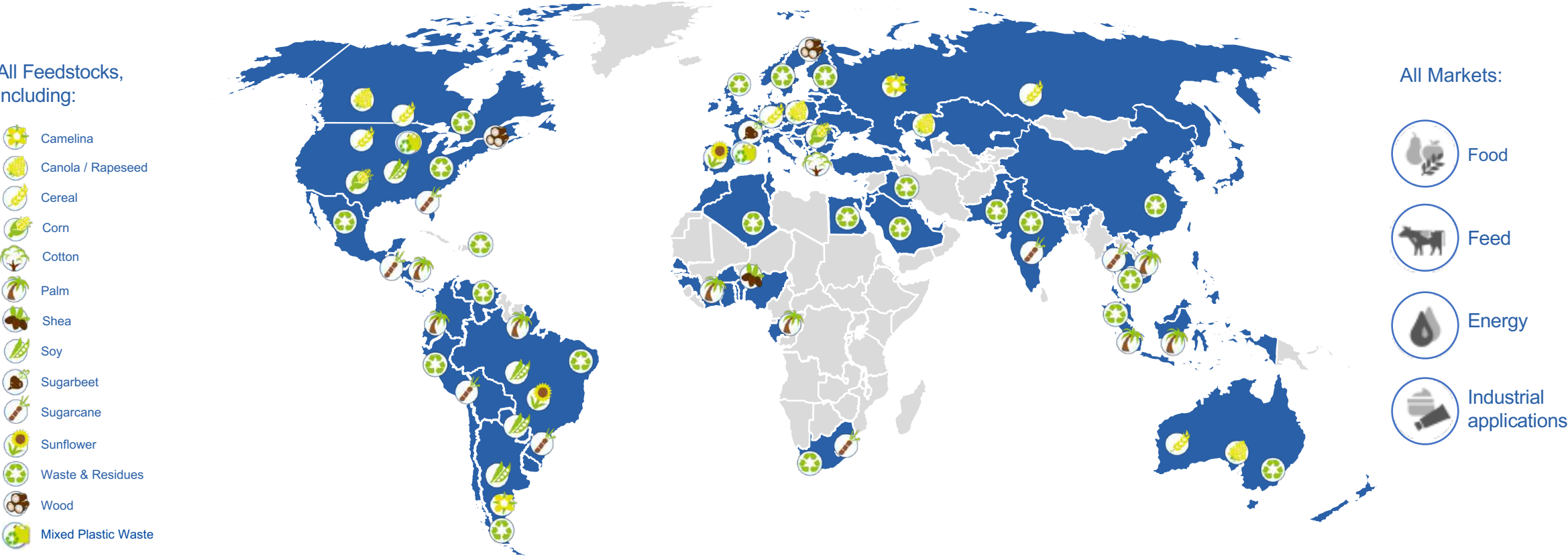
Feedstock

Intermediates,
products

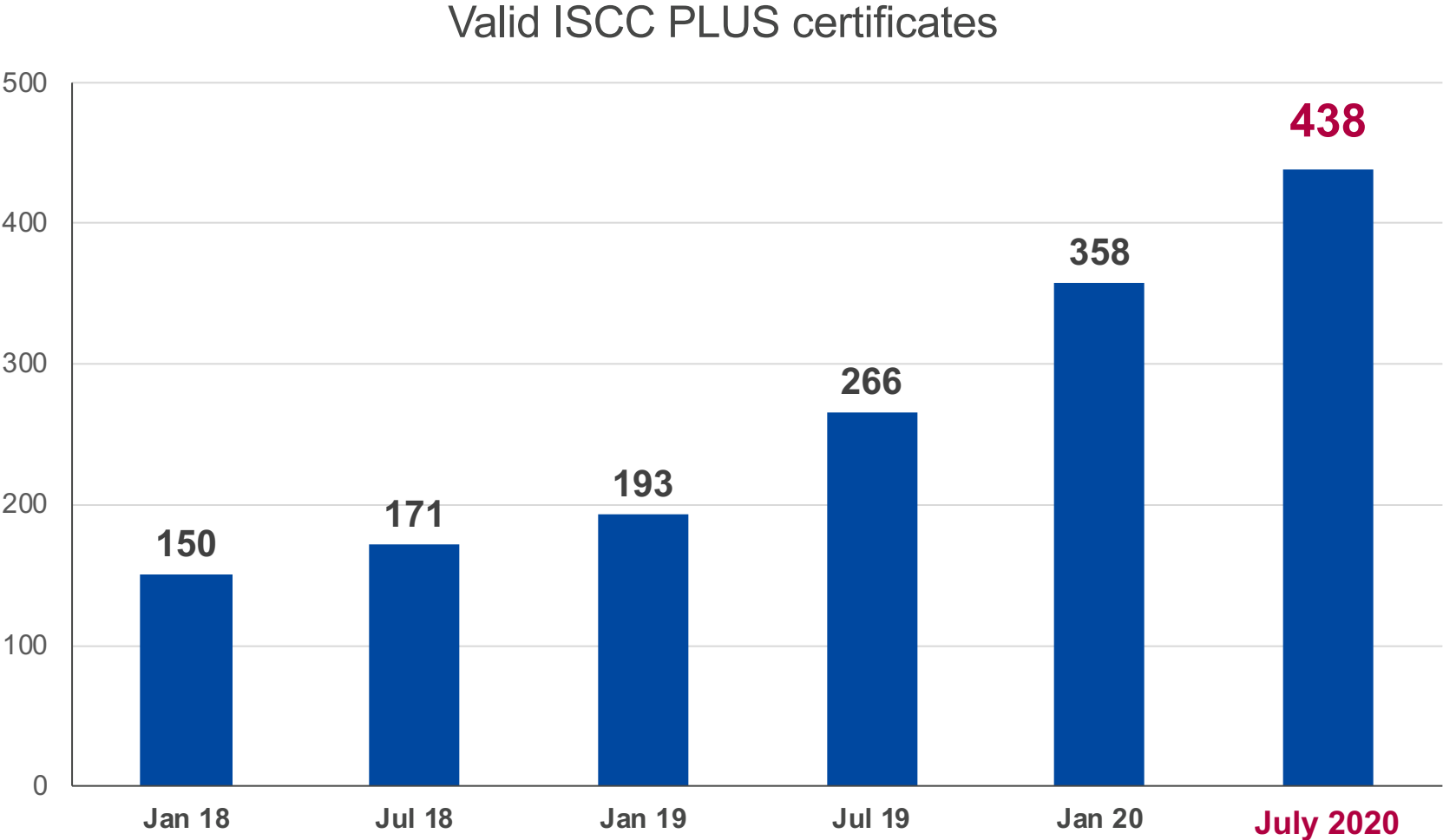
Brand owner,
producer

Markets/ Applications

Over 4,000 ISCC certificates in more than 100 countries are currently valid – 50% in the waste and residues sector



The number of ISCC PLUS certificates increases steadily



ISCC certifies all kinds of agricultural and forestry feedstocks for industrial applications

Examples



Soy



Canola



Palm



Sunflower



Cereals



Corn



Sugarcane



Sugarbeet



Wood



Cotton



Shea Nuts



Camelina

In addition, ISCC is the leading system for the certification of waste and residue-based supply chains

Examples

Waste and processing residues



UCO



Landfill gas



Tall oil



End-of-life tires



Municipal solid waste / mixed plastic waste



Crude glycerine

Renewable non-bio feedstocks



Power-to-Gas Power-to-Liquid



CO2

Forestry / agricultural crop residue



Forestry residue

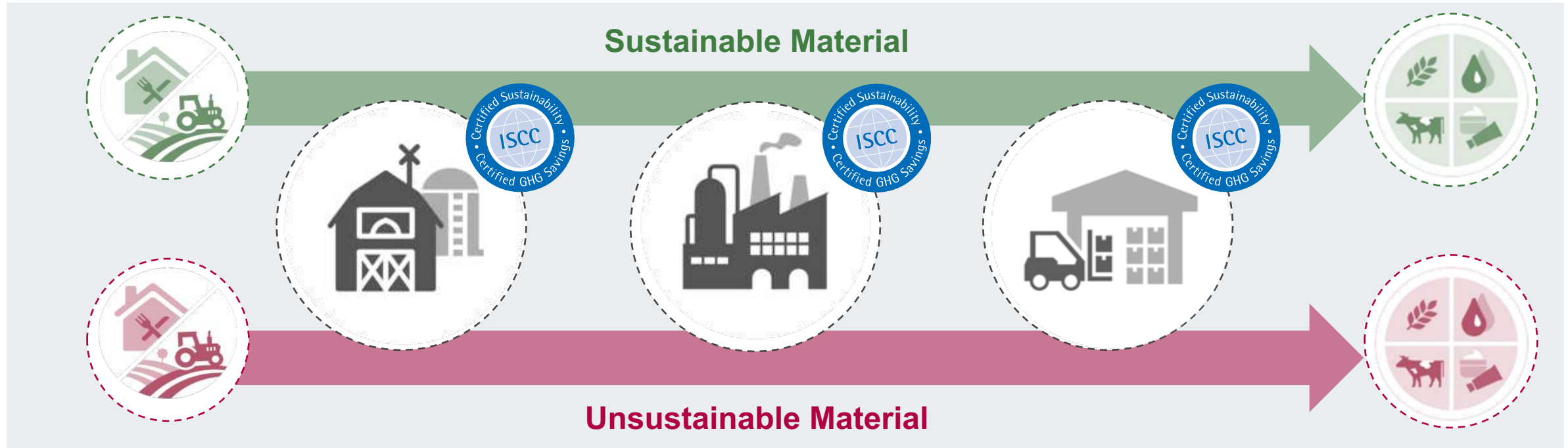


Husks



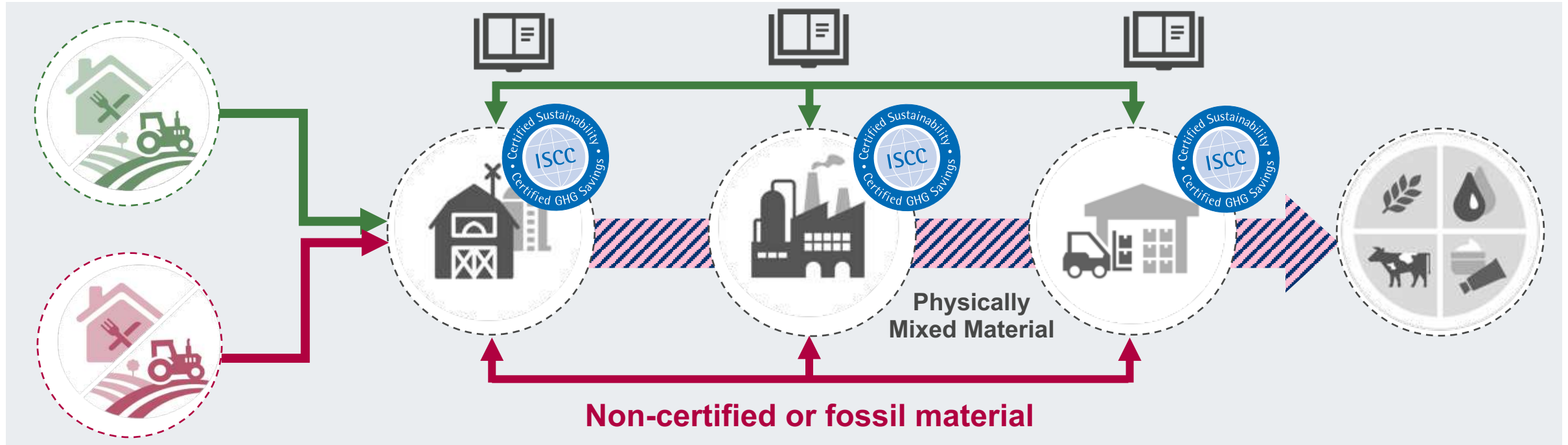
Straw

ISCC promotes physical segregation in the supply chain if this is requested by customers




- **Physical segregation** of sustainable certified and non-certified bio-based or fossil material
- Deliveries **physically contain** 100% certified material
- **Possible claim:** 100% based on certified sustainable sources

Mass balance approach is mainly applied to support the circular economy and bioeconomy



- Sustainable, unsustainable or fossil material mixed, **segregated in bookkeeping**
- No entity sells more certified products than sourced (**conversion factors applied**)
- **Possible claim:** e.g. “linked to 100% recycled sources/ biogenic sources”

ISCC mass balancing options

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

ISCC PLUS has been updated to cover the bio and circular economy



ISCC PLUS

- System Document, v. 3.2
- Material List
- Self-declarations
- Sustainability Declaration
- Procedures
- Logo and Claims guidelines
- New Website

Different logos and claims, depending on the chain of custody option can be applied

Bioeconomy



Circular Economy



Physical Segregation

ISCC

www.iscc-system.org
CERTIFIED
sustainable material



ISCC

www.iscc-system.org
CERTIFIED
recycled material



Mass Balance

ISCC

www.iscc-system.org
MIX supporting
certified sustainable material



ISCC

www.iscc-system.org
MIX supporting
certified recycled material



Borealis produces ISCC PLUS certified polypropylene (mass balance basis) from Neste's renewable attributed feedstock

10 March 2020

Borealis producing certified renewable polypropylene from Neste's renewable propane at own facilities in Belgium

Published in Releases and news under Circular economy, Sustainability
Henkel, Renewable, Borealis, polypropylene

Neste Corporation, Press Release, 10 March, 2020 at 1:15 p.m. (EET)



Caption: Borealis has started to produce polypropylene (PP) based on Neste-produced renewable feedstock in its production facilities in Kallo and Beringen, Belgium. Aerial view of the Borealis site in Kallo, Belgium. Photos: © Borealis

Borealis has started to produce polypropylene (PP) based on Neste-produced renewable feedstock in its production facilities in Kallo and Beringen, Belgium. This marks the first time that Borealis has replaced fossil fuel-based feedstock in its large-scale commercial production of PP. The Belgian plants were recently awarded by the International Sustainability and Carbon Certification (ISCC) organization with ISCC Plus certification for its renewable PP. Taking its commitment to the next level for advancing the circular economy, Borealis once again furthers its EverMinds™ ambitions. This path breaking venture in sustainable production is being driven in close collaboration with upstream and downstream value chain partners such as Neste and Henkel. It also aligns with the Borealis' aim to ensure that 100% of its consumer products are recyclable, reusable, or produced from renewable sources by 2025.



Aptar has created the world's first circular beauty packaging that is certified to the ISCC PLUS standard (on a mass balance basis)

Aptar

The Villingen site received the ISCC PLUS certification, which guarantees the traceability of the raw material used for packaging injection. It certifies that the material has been used in compliance with ISCC PLUS standards, which ensures a reduction of virgin material use.

incineration or landfill, into virgin plastic, which has been audited and approved by the ISCC according to a mass balance approach.



Vynova has launched a new range of bio-attributed PVC using renewable ethylene referring to second-generation biomass



CERTIFIED MASS BALANCE APPROACH

We partnered with sustainability consultancy group [Meo Carbon Solutions](#) and selected the [ISCC PLUS](#) framework to certify our bio-attributed PVC grades according to a mass balance approach.

[ISCC](#) is a globally applicable sustainability certification system that covers all sustainable feedstocks, including agricultural and forestry biomass, circular materials and renewables. The ISCC certification scheme requires strict traceability with a chain of custody based on a mass balance attribution and is verified by independent third-party auditors.



SABIC announced in 2019 the introduction of ISCC certified circular polymers in Davos



Tupperware®

walki



سابك
sabic



Source: <https://www.sabic.com/en/news/17390-sabic-pioneers-first-production-of-certified-circular-polymers>
<https://www.sabic.com/en/news/21664-sabic-demonstrates-leadership-in-sustainable-packaging-solutions-at-k-2019>



PRESS RELEASE

Sittard, The Netherlands, 1st February 2019

SABIC PIONEERS FIRST PRODUCTION OF CERTIFIED CIRCULAR POLYMERS

SABIC, a global leader in the chemical industry, has announced another major milestone in its ground-breaking project to pioneer the production of certified circular polymers using a feedstock from mixed plastic waste.

The latest achievement – the production of the first certified circular polymers – is part of what is known as a ‘market foundation stage’. Launched in January, this stage is an important step towards creating a new circular value chain for plastics, during which, initial volumes of pyrolysis oil from plastic waste are introduced as feedstock at SABIC’s Geleen production site in The Netherlands. The patented pyrolysis oil, known as TACOIL, has been produced by UK-based PLASTICENERGY Ltd at their plant in Spain from the recycling of low quality, mixed plastic waste otherwise destined for incineration or landfill.

As part of the market foundation stage, SABIC has begun to produce and commercialize the first monthly volumes of certified circular polymers – polyethylene (PE) and polypropylene (PP) –, prior to the projected start-up in 2021 of the commercial plants planned by SABIC and PLASTIC ENERGY in the Netherlands to manufacture and process the alternative feedstock.

“Certified circular polymers are a disruptive innovation and SABIC’s market foundation stage is a critical phase in their development”, said Frank Kuijpers, General Manager Corporate Sustainability at SABIC. “It will act as a bridge moving from a linear economy to a circular one and will enable the value chain to become familiar with the products and consider how they can best be implemented in their own markets. It will allow confidence in this pioneering product to grow before SABIC goes into full scale production.”

The polymers are certified through the International Sustainability and Carbon Certification plus (ISCC+) scheme that certifies circular content and standards across the value chain from source to end product. The ISCC+ certification works on what is known as a “mass balance system”, meaning that for each tonne of circular feedstock fed into the cracker and substituting fossil-based feedstock, a tonne of the output can be classified as circular.

Certified circular polymers will help SABIC’s customers to meet consumer demand for more sustainable products and will contribute to closing the loop on reutilizing plastic waste.

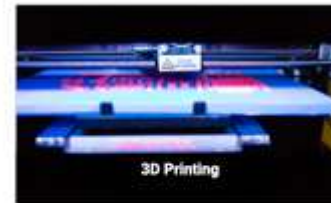
NatureWorks certified its Ingeo PLA-based polymers which are used in many products for daily use

NatureWorks Announces 100 Percent Third-Party Certified Sustainable Feedstock by 2020

AGRICULTURAL FEEDSTOCKS FOR INGENO BIOPOLYMER WILL BE CERTIFIED AS ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE BY THE INTERNATIONAL SUSTAINABILITY & CARBON CERTIFICATION SYSTEM.

MINNETONKA, Minn., February 14, 2019 — A new initiative at NatureWorks will ensure that by 2020 100 percent of the agricultural feedstock for Ingeo™ biopolymers and Vercet™ performance chemicals will be certified by the International Sustainability & Carbon Certification System (ISCC) to the ISCC PLUS standard of best practices in agricultural production.

NatureWorks was the first biopolymers manufacturer to become certified to the new ISCC PLUS standard in 2012, and currently has more than 40 percent of its agricultural feedstock certified. At full capacity, more than 90 farms will be involved in the program by 2020.



3D Printing



Beauty and Household



Building & Construction



Cards, Cartons, & Non-Food Packaging



Electronics and Appliances



Food & Beverage Packaging



Food Serviceware



Landscape and Agriculture



Medical and Hygiene

Example of on-product label for final products: Hammarplast uses the ISCC logo on its medical devices.



Elopak uses ISCC PLUS certified PE aiming to reduce the use of fossil-based materials and to minimise CO₂ emissions



ELOPAK

Together we make packaging work



ISCC certified System Users increasingly communicate their efforts to external stakeholders via CSR reports, press releases and websites



Plastics is launching bio-based grades of its Arnitel® and...
mass-balancing approach of bio-based feeds...
with the globally recognized sustainability ce...
midates at DSM Engineering Plastics said: "Our



This process a...
sequestration, compared to standard fossil derived PE resins^[1], and the plastics produced
can help brand owners meet their sustainability packaging goals. The entire supply chain
is International Sustainability & Carbon Certification (ISCC) certified, based on mass
balance approach, meaning all steps meet traceability criteria and reduce negative
environmental impacts.^[2]

8 good reasons why you should choose ISCC

1 We are recognized by global initiatives and brand owners

2 We perform outstandingly well in benchmarks

3 We provide solutions for individual customer demands

4 We do not accept compensation for deforestation

5 We cover bio-based and recycled feedstocks

6 We use innovative tools for credible and efficient audits

7 We “never stop looking and watching” in the ISCC Integrity Programme

8 We are a living multi stakeholder initiative

1 ISCC is recognised by important voluntary initiatives of brand owners and associations for industrial applications

Selection



Der Blaue Engel

ISCC has been accepted by the German ecolabel „Der Blaue Engel“ for bioplastic granulate for writing utensils and stamps.



**Textile Exchange's
“2025 Sustainable Cotton Challenge”**

ISCC is recognised as a sustainable initiative encouraging brands to commit to source 100% of their cotton from the most sustainable sources.



INRO

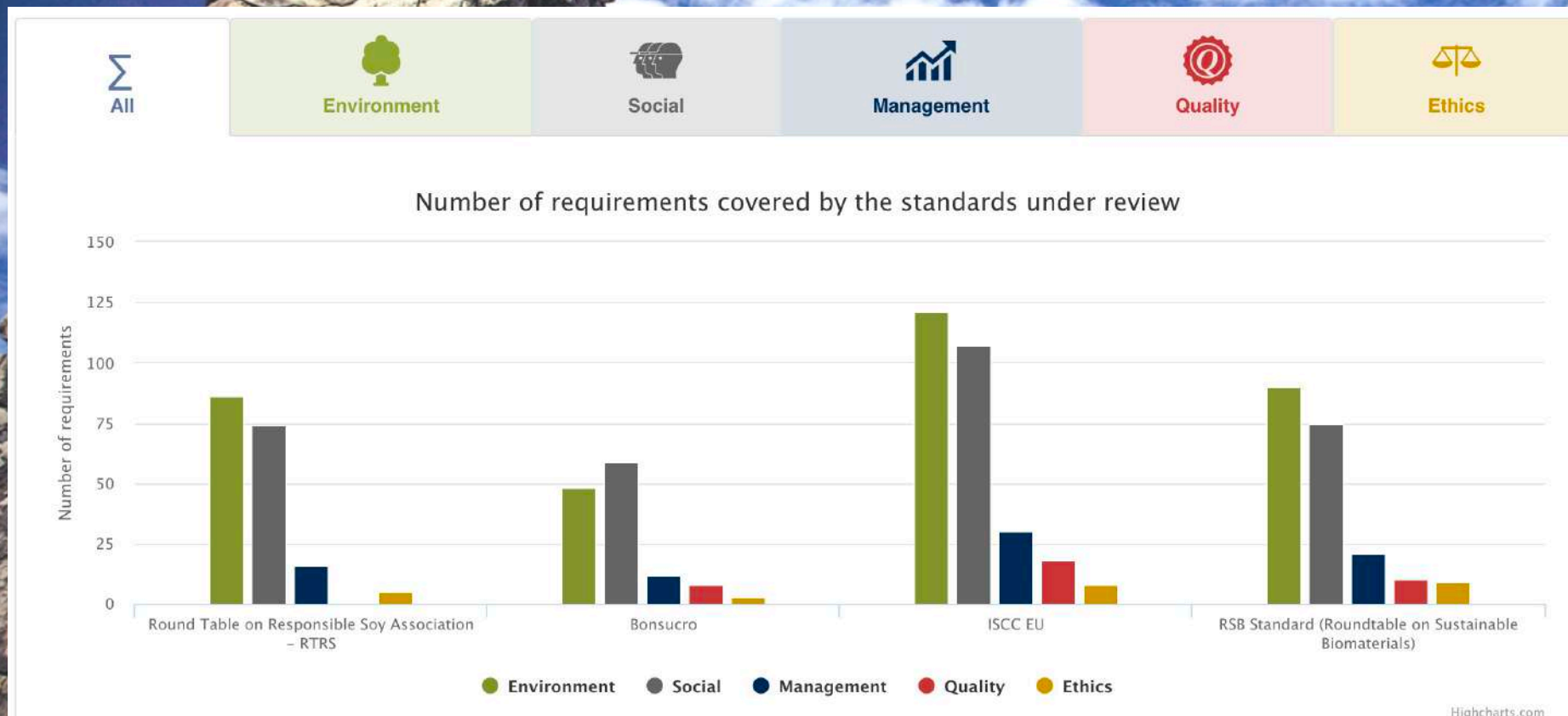
ISCC is recognised by the German initiative for sustainable supply of raw materials for the industrial use of biomass.



Green Deal

ISCC is recognised by the Dutch Green Deal “green certificates” for sustainable biomass in chemicals and plastics.

2 We perform outstandingly well in benchmarks



The International Trade Centre (ITC), a joint agency of the United Nations (UN) and the World Trade Organization, has developed the Sustainability Map, an online platform to enable any interested party to explore and compare voluntary sustainability standards.

Source: ITC Sustainability Map (as of June 2018)

3 Our system can be adopted to specific customer requirements by using voluntary ISCC add-ons



Environmental Management and Biodiversity



Classified Chemicals



Consumables



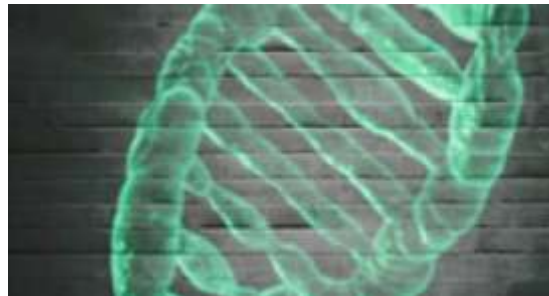
SAI Gold



GHG Emissions



Non GMO Food Feed



Non GMO Technical Markets



Electricity and Heat from Biogas Plants

4 We do not accept compensation for deforestation

With ISCC **deforestation** and the **conversion of biodiverse grasslands** after the cut off date January 2008 **is not allowed!**

ISCC Principle 1 does not allow compensation for deforestation.

5 ISCC provides certification solutions for a credible sustainable bio economy and circular economy

Examples

Bio
economy



NatureWorks

bp

TOTAL



ELOPAK
Together we make packaging work

UPM

Circular
economy



سابك
sabic



VINVENTIONS

EASTMAN

DOW

Tupperware



PLASTICTM
ENERGY


6 We develop and use innovative tools such as GRAS, a remote sensing tool to support identification of deforestation

With GRAS (www.gras-system.org) we can analyze deforestation and grassland conversion and ensure a more credible, effective and less costly certification!



Land Use Change map and sourcing area of an oil mill in Sumatra

7 We „watch the watchmen“ – ISCC Integrity Program



We monitor with our own independent auditors the compliance of our certification bodies and system users based on random and risk-based selection.

This ensures consistent, objective and reliable audits and preserves the high credibility and quality of our system.

8 We are a living multi-stakeholder initiative organised in an association with 144 members



As of 04 June 2020

ISCC puts major emphasis on a regular and regional stakeholder dialogue





ISCC supports the UN Sustainable Development Goals and Paris COP21



Governments agreed:

ISCC PRINCIPLE 1 & 2: Protection of land with high biodiversity value or high carbon stock. Production in an environmentally responsible way including the protection of soil, water and air:

- SDG7 Affordable and clean energy
- SDG13 Climate Action
- SDG14 Life below water
- SDG15 Life on land

ISCC PRINCIPLE 3: Safe working conditions:

- SDG3 Good health and well-being
- SDG6 Clean water and sanitation

ISCC PRINCIPLE 4: Human rights, labour rights and land rights:

- SDG1 No poverty
- SDG2 Zero hunger
- SDG4 Quality Education
- SDG5 Gender equality

- A long-term goal of keeping the increase in global average temperature to **well below 2°C** above pre-industrial levels
- To aim to limit the increase to **1.5°C**, since this would significantly reduce risks and the impacts of climate change
- On the need for **global emissions to peak as soon as possible**, recognising that this will take longer for developing countries
- To undertake **rapid reductions thereafter** in accordance with the best available science
- GHG requirements are already implemented in ISCC. Detailed methodology for international supply chains in place



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

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