NEW PLASTICS ECONOMY GLOBAL COMMITMENT

CONTEXT

Plastic waste and pollution have captured the attention of the public, governments, and businesses around the world. The search for solutions has started, and there is growing recognition that addressing the symptoms through clean-ups is not enough. A systemic shift tackling the root causes is required: a transition towards a circular economy for plastic, in which plastic never becomes waste.

Over the past four years, the Ellen MacArthur Foundation ('the Foundation') has been rallying businesses and governments behind this positive vision of a circular economy for plastic. Its 2016 and 2017 New Plastics Economy reports captured worldwide headlines and became a global reference. The Foundation's New Plastics Economy initiative is driving action with businesses and governments. In January 2018, it brought together 11 leading companies committed to work towards 100% reusable, recyclable, or compostable plastic packaging by 2025. It has also created the Plastics Pact, a network of national New Plastics Economy implementation initiatives aligned around a common vision and set of ambitious targets. The first Plastics Pact has been launched in the UK, implemented by the UK charity WRAP, and others will follow soon.

UN Environment provides leadership and encourages partnerships in tackling marine pollution by inspiring, informing, and enabling governments, the public, civil society, and the private sector. Its Global Partnership on Marine Litter was launched in 2012 and its #CleanSeas campaign in February 2017 with the aim of engaging these groups in the fight against marine plastic litter.

By launching the New Plastics Economy Global Commitment ('Global Commitment'), the Foundation and UN Environment have taken this momentum to the next level.

INTRODUCING THE NEW PLASTICS ECONOMY GLOBAL COMMITMENT

The Global Commitment draws a line in the sand in the fight against plastic waste and pollution. It unites over 250 businesses, governments, NGO, universities, and other organisations from around the world behind a common vision that addresses the issue at its root cause.

To help make this vision a reality, businesses and governments commit to a set of ambitious 2025 targets. They will work to **eliminate** the plastic items we don't need; **innovate** so all plastics we do need are designed to be safely reused, recycled, or composted; and **circulate** everything we use to keep it in the economy and out of the environment.

Credibility and transparency will be ensured by setting a clear minimum level of ambition for signatories, common definitions underpinning all commitments, and annual reporting on progress. The minimum ambition level will be reviewed every 18 months, and become increasingly ambitious over the coming years to ensure the Global Commitment continues to represent true leadership.

The Global Commitment will build on, and reinforce, amongst others, the G7 Plastics Charter, the EU strategy for plastics in a circular economy, the Commonwealth Blue Charter, and the Community of Ocean Action established by the UN. It will aim to contribute to the implementation of the UN Environment Assembly resolutions on marine litter and microplastics, and several Sustainable Development Goals (SDGs) including SDG 12 and 14. The Global Commitment does not aim to replace any potentially binding multilateral treaty process, but equally recognises that we cannot wait to act until such a process concludes.

The Ellen MacArthur Foundation and UN Environment call on all businesses and governments across the world to sign the Global Commitment and embark on a race to the top in the creation of a circular economy for plastic.

THE COMMITMENTS

For businesses signatories

1. Endorse the Global Commitment's common vision (see **Appendix I**)
2. Make the following individual commitments:
    a. **Packaged goods companies, retailers,[1] hospitality and food service companies,[1] packaging producers**
        i. Take action to eliminate problematic or unnecessary plastic packaging by 2025
        ii. Take action to move from single-use towards reuse models where relevant by 2025
        iii. 100% of plastic packaging to be reusable, recyclable, or compostable by 2025
        iv. Set an ambitious 2025 recycled content[2] target across all plastic packaging used
    b. **Raw material producers:** Set an ambitious 2025 target to increase the use of recycled[2] plastic[3], or (only for producers of compostable plastic) Set a 2025 target to increase the share of renewable content to at least 75%, all of it from responsibly managed sources
    c. **Collection, sorting, and recycling industry:** Set an ambitious 2025 target to grow the volume and quality of recycled/composted[4] plastic, and accordingly increase the ratio of recycled and composted over landfilled and incinerated plastic volumes
    d. **Durable goods producers:** Set an ambitious 2025 recycled content[2] target across all plastic used in products or components
    e. Suppliers to the plastics industry: Make an ambitious set of commitments that support the businesses in the plastics industry to achieve their commitments
    f. **Investors:** Invest a meaningful amount by 2025 in businesses, technologies, or other assets that work to realise the vision of a circular economy for plastic
3. Commit to collaborate towards increasing reuse/recycling/composting rates for plastic
4. Report annually and publicly on progress towards meeting these commitments

For government signatories (national, regional or local)

1. Endorse the Global Commitment's common vision (see **Appendix I**)
2. Commit to have ambitious policies and (where relevant) measurable targets in place well ahead of 2025 in order to realise and report tangible progress by 2025, in each of the following five areas:
    a. Stimulating the elimination of problematic or unnecessary plastic packaging and/or products
    b. Encouraging reuse models where relevant, to reduce the need for single-use plastic packaging and/or products
    c. Incentivising the use of reusable, recyclable, or compostable plastic packaging
    d. Increasing collection, sorting, reuse, and recycling rates, and facilitating the establishment of the necessary infrastructure and related funding mechanisms
    e. Stimulating the demand for recycled plastic
3. Commit to collaborate with the private sector and NGOs towards achieving the Global Commitment's common vision (e.g. through Plastics Pacts)
4. Report annually and publicly on the implementation of these commitments and progress made

For endorsers (e.g. NGOs, associations, academics, financial institutions, others)

1. Endorse the Global Commitment's common vision (see **Appendix I)**
2. Encourage others to join the Global Commitment (optional)
3. Make ambitious commitments in line with the vision (optional)

---

[1] For retailers and hospitality and food service companies the commitments cover own-branded products only

[2] Post-consumer recycled content (as defined in Appendix II)

[3] A 2025 target on average share (%) of recycled content across all resins sold (preferred) or a commitment to a meaningful investment between 2018 and 2025 in recycling technologies or activities

[4] Target on volume of plastic collected for recycling (collector), sorted for recycling (sorter), or recycled/composted (recycler/composter)

Additional context
None of the commitments above will, on its own, be sufficient to realise a circular economy for plastic. However, all of them contribute towards that vision, and, collectively, they are an important and necessary step forward.

These commitments are considered a 'minimum bar' to sign up to the Global Commitment. All signatories are encouraged to:

1. Make more ambitious commitments
2. Make additional commitments that contribute to achieving the vision
3. Make commitments beyond plastic packaging that extend to all packaging, and to all plastic items put on the market
4. Submit targets to reduce the quantity of virgin plastic used as a result of the commitments above on elimination, reuse, and recycled content

Every 18 to 24 months, the 'minimum bar' of commitments will be reviewed and, where relevant and after consultation with signatories, raised to ensure the Global Commitment continues to represent true leadership.

WHO HAS SIGNED (latest update - 25/10/2018)

This section provides an overview of all 285 Global Commitment signatories by category (e.g. packaged goods companies, raw material producers, recyclers, governments, ect.). “The Commitments”- section above provided information on the minimum required commitments for each signatory category.

The full details on each of the individual business or government commitments (e.g. percentage recycled content by company, etc.) will be provided on our website soon. In addition, each year, progress towards realising the commitments will be published.

BUSINESSES

a. Packaged goods companies, retailers, hospitality and food service companies, packaging producers

Ahold Delhaize
ALBEA
Algramo
ALPLA Werke Alwin Lehner GmbH & Co KG
Amcor
Arca Continental
BioPak Pty Ltd
Burberry Group Plc
Carrefour
Coca-Cola FEMSA
Colgate-Palmolive Company
Constantia Flexibles
CupClub Limited
Danone SA
Delphis Eco
Diageo
Dynapack Asia
Earthwise
Ecopod
ecostore
Essity AB
EXCELRISE
gDiapers
Greiner AG
H & M Hennes & Mauritz AB
Henkel AG & Co. KGaA
Inditex
innocent drinks
Internet Fusion Group
JAMES CROPPER PLC
Johnson and Johnson Consumer Inc.
Kellogg Company
Kesko Corporation
Logoplaste
LOLIWARE
L'Oréal
Marks and Spencer plc
Mars, Incorporated
Matrix APA (UK) Ltd.
METRO AG
MIWA (MInimum WAste)
Mondi
NATURA COSMETICS
Nestlé
Paccor packaging solutions
PepsiCo
Pernod Ricard
POSITIV.A
PT Evogaia Karya Indonesia
RB
RePack
Replenish Bottling LLC
rPlanet Earth
SC Johnson
Schwarz Group
Sealed Air corporation
Selfridges
Skipping Rocks Lab
SPB
Spinlock
Splosh Ltd.
Stella McCartney
Swire Beverages Ltd
Target Corporation
The Better Packaging Co.
The Bio-D Company Ltd
The Coca-Cola Company
The New Zealand King Salmon Company Ltd
Unilever
Walmart U.S., Walmart Canada, Walmart Mexico, and Sam's Club
Werner & Mertz GmbH
Woolworths Holdings Limited

b. Raw material producers

Aquapak Polymers Limited
Borealis AG
Ecovative
Full Cycle Bioplastics
Indorama Ventures Public Company LImited
mobius
NatureWorks
Novamont SpA
Origin Materials

c. Collection, sorting and recycling industry

APK AG
Boomera
Cedo
CSSA (Canadian Stewardship Services Alliance Inc.)
Ecoiberia Reciclados Ibericos SA
EGF - Environment Global Facilities
Encorp Pacific (Canada)
Hera Group
INCOM RECYCLE Co. Ltd. Beijing
Industria Mexicana de Reciclaje S.A. de C.V.
JAMES CROPPER PLC
LIPOR - Intermunicipal Waste Management of Greater Porto, Portugal
Loop Industries
Mr. Green Africa
PetStar
Plastic Bank
PLASTIC ENERGY
Recycling Technologies
Re-Poly, Evertrak, QRS
Rubicon Global
SUEZ
TerraCycle
TOMRA Systems ASA
TriCiclos
Veolia
Waste Ventures India Pvt. Ltd.
Waste4Change
Worn Again Technologies

d. Durable goods producers

Ernesto São Simão Lda.
Mobike
HP Inc
Philips
Preserve
Riversimple Movement Ltd
Schneider Electric
Stanley Black & Decker

e. Investors

Althelia Sustainable Ocean Fund
Closed Loop Partners
Creolus
Fifth Season Ventures
FORWARD.one Venture Capital for Hardware

f. Supplier to the packaging industry

UPM Raflatac
Verstraete in mould labels

GOVERNMENTS AND CITIES

City of Austin, TX, US
Government of Chile
Government of France
Government of Grenada
Ministry of Environment New Zealand
Ministry of Environment Peru
Ministry of Environment and Energy Transition of Portugal
Scottish Government
Environment Department, Ministry of Environment, Energy and Climate Change, Republic of Seychelles
Government of the United Kingdom
The Walloon Government

ENDORSERS

actiam

Adrian Dominican Sisters, Portfolio Advisory Board

Afeka Institute of Circular Engineering and Economy

AGMPM (Association of the Greek Manufacturers of Packaging & Materials)

ANIPAC

APLM - Portuguese Marine Litter Association

Arup

Asia Pacific Waste Consultants (APWC)

Atalay Atasu, Ph.D, Professor

Avespa

Bangor University

Berkeley Center for Green Chemistry

bioMASON, Inc.

Bioproducts Discovery and Development Centre (BDDC), University of Guelph, Ontario, Canada

BMO Global Asset Management (EMEA)

BNP Paribas Asset Management

Boston Common Asset Management

Brunel Pension Partnership Ltd

Burberry Material Futures Research Group from the Royal College of Art

Business in the Community

C40 Cities Climate Leadership Group

Californians Against Waste

CAPTURE

CBPAK Tecnologia S/A

CEFLEX

China Plastics Reuse and Recycling Association

Circular Economy Initiative at KTH Royal Institute of Technology (CE@KTH)

Circular Economy Innovation Centre - USP

Circular Economy Leadership Coalition

Circular Sweden

Circularity Capital LLP

Circulate Capital

Clarmondial

College of Design and Innovation, Tongji University

Congregation of St. Joseph

Daughters of Charity, Province of St. Louise

Department of Economics and Management - Dipartimento di Scienze Economiche e Aziendali, University of Pavia

Dignity Health

Dr. Girma Zawdie

Dr. Alysia Garmulewicz, Professor, Universidad de Santiago de Chile

Dr. Carson Meredith

Dragon Rouge Limited

Earthwatch Institute

ECOCE

ECOGESTUS, Waste Management Ltd

Elemental Impact

ELISAVA Barcelona School of Design and Engineering

EPRO European Plastics Recycling and Recovery Organisation

ESG Portfolio Management

European Investment Bank

Excess Materials Exchange

Faculty of Management, Law and Social Sciences, University of Bradford

Flexible Packaging Europe

FoodDrinkEurope

GES International AB

Granta Design

GreenBiz Group Inc.

GreenBlue and the Sustainable Packaging Coalition (SPC)

GRID-Arendal

Hermes EOS

High Speed Sustainable Manufacturing Institute (HSSMI)

Indonesian Waste Platform

ING

Insper Instituto de Ensino e Pesquisa

Institut für Kunststofftechnik

Institute for Integrated Quality Design (IQD), Johannes Kepler University Linz (JKU)

Institute of Development Studies, University of Sussex

Institute of Technology Tralee

Instituto Italiano di Tecnologia

International Solid Waste Association - ISWA

International Union for Conservation of Nature (IUCN)

iWrc

Jan Ravenstijn Biomaterials Consulting

Jane Penty

Kagad Kach Patra Kashtakari Panchayat

KEEP SWEDEN TIDY

Kempen Capital Management

Kiara S. Winans

Legal & General Investment Management

London Waste and Recycling Board

Loop Circular Economy Platform Ltd

Man Group

MARE - Marine and Environmental Sciences Centre [PORTUGAL]

Material BA-Z, Fine Arts Center University of Sao Paulo

Material Economics

McDonough Innovation

Mercy Investment Services, Inc.

Michigan State University

Monterey Bay Aquarium

National Recycling Coalition

Netherlands Institute for Sustainable Packaging

Noble Environmental Technologies Europe BV

NorthEdge Capital

Ocean Plastic Solutions Network at Imperial College London

Oceanographic Institute, Prince Albert I of Monaco Foundation

Okena Serviços Ambientais

Oliver Wyman

Openbare Vlaamse Afvalmaatschappij (OVAM)

Open Systems Labs

PA Consulting

Plant Chicago

Plastic Odyssey

Plastics Recyclers Europe

Prince Albert II of Monaco Foundation

Prof. Claudio Zara, Department of Finance, Bocconi University

Prof. Richard C. Thompson OBE

Professor Ioannis Ioannou

Provenance

Quantis

Ramani Narayan, MSU University Distinguished Professor Michigan State University

Rathbone Greenbank Investments

Ravensbourne University London - Fashion Department

Robert Lochhead, Professor and Director Emeritus of Polymer Science

Royal Society of Chemistry

School of Management - Politecnico di Milano

Searious Business

Shanghai Rendu Ocean NPO Development Center

Sistema B International

Sky Group

Skyroom London Ltd

Smart Waste Portugal - Business Development Network

Solid Waste Association of North America

Sustainable Business Network

Svensk Plastindustriförening, SPIF (The Swedish Plastic Industry Association)

SYSTEMIQ

The Association for Sustainable Manufacturing

The Association of Plastic Recyclers

The Consumer Goods Forum

The Faculty of Entrepreneurship & Innovation - VIA University College

The Finnish Innovation Fund SITRA

The Global Environment Facility

The Grameen Creative Lab

The Green Earth

The Institute for the Study of Science and Technology, National University of Quilmes (IESCT-UNQ) of Argentina

The Ocean Race

The Renewal Workshop

The RSA

Think Beyond Plastic

Topolytics

Trillium Asset Management

Trilogy Global Advisors, LP

UCL

Universidade de Trás-os-Montes e Alto Douro

Universiteit Gent

University of Edinburgh

University of Portsmouth

Warner Babcock Institute for Green Chemistry

World Economic Forum

WRAP

World Wide Fund for Nature (WWF)

ZigZag Global

APPENDIX I – COMMON VISION

The New Plastics Economy is a vision of a circular economy for plastic, where plastic never becomes waste. It offers a root cause solution to plastic pollution with profound economic, environmental, and societal benefits.

For plastic packaging, specifically, we recognise a circular economy is defined by six characteristics:

1. **Elimination of problematic or unnecessary plastic packaging through redesign, innovation, and new delivery models is a priority**
    a. Plastic brings many benefits. At the same time, there are some problematic items on the market that need to be eliminated to achieve a circular economy, and sometimes, plastic packaging can be avoided altogether while maintaining utility.
2. **Reuse models are applied where relevant, reducing the need for single-use packaging**
    a. While improving recycling is crucial, we cannot recycle our way out of the plastics issues we currently face.
    b. Wherever relevant, reuse business models should be explored as a preferred 'inner loop', reducing the need for single-use plastic packaging.
3. **All plastic packaging is 100% reusable, recyclable, or compostable**
    a. This requires a combination of redesign and innovation in business models, materials, packaging design, and reprocessing technologies.
    b. Compostable plastic packaging is not a blanket solution, but rather one for specific, targeted applications.
4. **All plastic packaging is reused, recycled, or composted in practice**
    a. No plastic should end up in the environment. Landfill, incineration, and waste-to-energy are not part of the circular economy target state.
    b. Businesses producing and/or selling packaging have a responsibility beyond the design and use of their packaging, which includes contributing towards it being collected and reused, recycled, or composted in practice.
    c. Governments are essential in setting up effective collection infrastructure, facilitating the establishment of related self-sustaining funding mechanisms, and providing an enabling regulatory and policy landscape.
5. **The use of plastic is fully decoupled from the consumption of finite resources**
    a. This decoupling should happen first and foremost through reducing the use of virgin plastic (by way of dematerialisation, reuse, and recycling).
    b. Using recycled content is essential (where legally and technically possible) both to decouple from finite feedstocks and to stimulate demand for collection and recycling.
    c. Over time, remaining virgin inputs (if any) should switch to renewable feedstocks where proven to be environmentally beneficial and to come from responsibly managed sources.
    d. Over time, the production and recycling of plastic should be powered entirely by renewable energy.
6. **All plastic packaging is free of hazardous chemicals, and the health, safety, and rights of all people involved are respected**
    a. The use of hazardous chemicals in packaging and its manufacturing and recycling processes should be eliminated (if not done yet) .
    b. It is essential to respect the health, safety, and rights of all people involved in all parts of the plastics system, and particularly to improve worker conditions in informal (waste picker) sectors.

This vision is the target state we seek over time, acknowledging that realising it will require significant effort and investment; recognising the importance of taking a full life-cycle and systems perspective, aiming for better economic and environmental outcomes overall; and above all, recognising the time to act is now.

APPENDIX II - COMMON DEFINITIONS FOR THE NEW PLASTICS ECONOMY GLOBAL COMMITMENT

Table of contents

1. Introduction

The New Plastics Economy Global Commitment ('the Global Commitment') contains terms such as 'reusable', 'recyclable', 'compostable', 'renewable' and 'recycled content'. This appendix provides common definitions to underpin the Global Commitment, aiming to provide transparency and consistency. Signatories of the Global Commitment agree to use and refer to this terminology as a basis for their commitments and related reporting on progress.

Definitions are shown in boxes and often include footnotes with clarification. Additional notes below the definitions provide more context and/or examples.

This appendix is built on an extensive review of existing definitions, detailed discussions with dozens of experts, and a broad stakeholder review process involving over 100 organisations and experts across businesses, governments, NGOs, academics and standard-setting organisations. This appendix builds on ISO definitions where possible and relevant.[5]

Many of the definitions here could also be applicable outside the context of the Global Commitment, although some (e.g. 'recyclable') do remain inherently context dependent. Although most principles and some terms defined in this appendix could apply to all plastics and/or all packaging, this appendix focuses on common definitions for plastic packaging.

2. Take action to eliminate problematic or unnecessary plastic packaging

In order to achieve a circular economy for plastics, it is important to carefully consider what is put on the market in the first place. This commitment recognises that principle, and signals the intent of companies to actively identify problematic and unnecessary plastic packaging in their portfolio and to take action to eliminate those through redesign, innovation, and new (reuse) delivery models.

The importance of eliminating problematic and unnecessary items is already widely recognised in multiple businesses' packaging strategies, in the European Commission's minimum requirements for packaging and in its '*Strategy for plastics in a circular economy*', in the G7 Ocean Plastics Charter, and in the UK Plastics Pact, which includes this commitment and has been signed by over 90 organisations.

The following list of criteria is provided to help identify problematic or unnecessary plastic packaging or plastic packaging components:

1. It is not reusable, recyclable or compostable (as per the definitions below).
2. It contains, or its manufacturing requires, hazardous chemicals[6] that pose a significant risk to human health or the environment (applying the precautionary principle).
3. It can be avoided (or replaced by a reuse model) while maintaining utility.
4. It hinders or disrupts the recyclability or compostability of other items.
5. It has a high likelihood of being littered or ending up in the natural environment.

The elimination and/or replacement by alternatives should happen with a system's perspective, taking into account impacts on the entire (packaging and packaged goods) system and avoiding unintended consequences.

---

[5] Permission to reproduce extracts from British Standards is granted by BSI Standards Limited (BSI). No other use of this material is permitted. British Standards can be obtained in PDF or hard copy formats from the BSI online shop: www.bsigroup.com/Shop

[6] Hazardous chemicals are those that show intrinsically hazardous properties: persistent, bio-accumulative and toxic (PBT); very persistent and very bio-accumulative (vPvB); carcinogenic, mutagenic, and toxic for reproduction (CMR); endocrine disruptors (ED); or equivalent concern, not just those that have been regulated or restricted in other regions (Source: Roadmap to Zero, definition based on EU REACH regulation - http://www.roadmaptozero.com/).

Businesses are encouraged to extend this commitment beyond plastic packaging to all packaging and plastic items they put on the market.

3. Take action to move from single-use towards reuse models
Reuse models are the preferred 'inner loop' wherever relevant, and beneficial, since it retains the most value in the system. New (information) technologies, innovative business models, and evolving use patterns are unlocking and facilitating new reuse opportunities. This has the potential to significantly reduce the need for single-use packaging. See the definition of reusable packaging in Section 4.1.

Businesses are encouraged to extend this commitment beyond plastic packaging to all packaging and plastic items they put on the market.

4. 100% of plastic packaging to be reusable, recyclable, or compostable
In a circular economy, waste and pollution are designed out, products and materials are kept in use, and natural systems are regenerated. Each system, service, product or packaging item needs to be designed to fit such an economy. This means that each piece of (plastic) packaging is either recyclable or compostable[7,8], ideally after several reuse cycles:

a) Reuse is the preferred 'inner loop' wherever relevant and beneficial.
b) All packaging should be designed to be recycled (mechanically or chemically) or (where relevant for specific, targeted applications, not as a blanket solution) composted to keep the materials in the economy or return them safely to the biosphere, preferably after going through a number of reuse cycles.

100% reusable, recyclable, or compostable plastic packaging commitments are important, as the circularity of a packaging item starts with its design. In some cases, existing solutions are available and proven to be viable; in others, further innovation in business models, packaging designs, collection, sorting, and recycling technologies will be required to achieve this commitment in a viable way that avoids unintended consequences.

[7] Organic recycling includes composting and anaerobic digestion. Along with composting, anaerobic digestion can also be considered as a circular after-use pathway for plastics packaging, in line with ISO 18606. However, as the Foundation believes the use of anaerobic digestion is currently limited for plastic packaging as at the date of publication, this appendix focuses on composting. For some very specific applications, biodegradation or dissolving of packaging (e.g. edible packaging, dishwasher tablet packaging) can also be considered part of a circular system for plastic packaging, and counted towards achieving this commitment, if proven that the entire biodegradation process takes places within a reasonable timeframe in all environmental conditions where it is likely to end up.
[8] Or both recyclable and compostable. While the Foundation believes (based on research conducted to date) that no compostable plastic packaging is currently recycled at sufficient scale to be also 'recyclable' according to the definitions in this appendix, certain plastic packaging that is compostable and could technically be recycled has been developed, such as packaging made with PLA, PBS or PHA. It is important for packaging aimed to be recycled and packaging aimed to be composted to be separated, so the material streams do not contaminate each other.

4.1 Reusable packaging

Reuse

Definition: Reuse of packaging
Operation by which packaging is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products (1) present on the market, enabling the packaging to be refilled.

Source: ISO 18603:2013, *Packaging and the environment - Reuse*, modified (clarification in note 1 below).

Note

1. An auxiliary product is a product used to support the refilling/loading of reusable packaging. (...) An example of an auxiliary product is a detergent pouch used to refill a reusable container at home (ISO 18603). As per ISO 18603, auxiliary products that are one-way products (i.e. designed to be used once) are not considered reusable packaging.

Further explanatory notes

- **a.** Attention should be paid to the intended use and function of the packaging, in order to verify whether it is being reused for the same purpose or a secondary use. In the latter case the packaging is not considered as reusable packaging (ISO 18603, '*Packaging used for the same purpose*'), e.g. the use of a package as a pen-holder or as decoration cannot be qualified as reuse.
- **b.** A package is considered reusable if the design of the packaging enables the principal components to accomplish a number of trips or rotations in normally predictable conditions of use (ISO 18603). According to ISO 18601, a packaging component is a part of packaging that can be separated by hand or by using simple physical means (e.g. a cap, a lid, a (non in-mould) label).

Examples

Packaging can be reused in different ways:

- Business-to-business applications: packaging is reused through a redistribution system between one or more companies[9] (e.g. pallets loaded with the same or different product,[10] crates, pallet wraps)
- Business-to-consumer applications: packaging returned to the supplier to be reused (e.g. refilled) for the distribution and sale of an identical or similar product (e.g. a container that is part of a deposit return or refund system for reuse, a returnable transportation packaging item, a reusable container in the food service industry) or packaging not returned to the supplier, but instead reused by the user as a container or as a dispenser for the same product supplied by the manufacturer for the same purpose (such as a refill, including in a concentrated form).

[9] ISO 18603:2013, *'Closed-loop system'/'Open-loop system'* definitions: Reuse can take place within a company or a cooperating group of companies (closed-loop) or amongst unspecified companies (open-loop).
[10] ISO 18603:2013, '*Packaging used for the same purpose*' definition: Reuse of pallets, loaded originally with dairy products and now loaded with house bricks is reuse for the same purpose.

Reusable packaging

Definition: Reusable packaging
Packaging which has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations (1,2) in a system for reuse (3,4).

Source: ISO 18603:2013 - *Packaging and the environment - Reuse,* modified (packaging component mentioned in notes)

Notes

1. A trip is defined as transfer of packaging, from filling/loading to emptying/unloading. A rotation is defined as a cycle undergone by reusable packaging from filling/loading to filling/loading (ISO 18603).
2. The minimum number of trips or rotations refers to the fact that the 'system for reuse' in place should be proven to work in practice, i.e. that a significant share of the package is actually reused (measured e.g. by an average reuse rate or an average number of use-cycles per package).
3. A system for reuse is defined as established arrangements (organisational, technical or financial) which ensure the possibility of reuse, in closed-loop, open-loop or in a hybrid system (ISO 18603).
4. See above for the definition of reuse, which stresses amongst other things the need for the packaging to be refilled or used again for the same purpose for which it was conceived.

Further explanatory notes

- **a.** For a container to qualify as reusable, there needs to be a 'system for reuse' in place that enables the user of the package to ensure it is reused *in practice* where the item is placed on the market. Such a system for reuse should be able to prove a significant actual reuse rate, or average number of use-cycles of a package, in normal conditions of use.
- **b.** A package is considered reusable if the design of the packaging enables the principal components to accomplish a number of trips or rotations in normally predictable conditions of use (ISO 18603:2013). According to ISO 18601, a packaging component is a part of packaging that can be separated by hand or by using simple physical means[11] (e.g. a cap, a lid, a (non in-mould) label).
- **c.** Single-use packaging (i.e. designed to be used once) aimed at delivering a refill for a reusable package is not considered reusable packaging.
- **d.** A reusable item can undergo reconditioning, that is operations necessary to restore a reusable packaging to a functional state for further reuse (ISO 18603:2013).
- **e.** Reusable packaging should be designed to be recyclable, as it will inevitably reach the maximum number of reuse cycles at some point, after which recycling ensures the material is kept in the economy.

[11] ISO 18601:2013, Packaging component definition.

4.2 Recyclable packaging

Recycling

References to 'recycling' in this appendix always refer to 'material recycling'.

> Definition: Material recycling
> Reprocessing, by means of a manufacturing process, of a used packaging material into a product, a component incorporated into a product, or a secondary (recycled) raw material; excluding energy recovery and the use of the product as a fuel.
>
> Source: ISO 18604:2013 - *Packaging and the environment — Material recycling,* modified (note to entry not applicable).

Further explanatory notes

- **a.** This includes both mechanical (maintaining polymer structure) and chemical (breaking down polymer structure into more basic building blocks, e.g. via chemical or enzymatic processes) recycling processes.
- **b.** It explicitly excludes technologies that do not reprocess materials back into materials but instead into fuels or energy.
  Chemical recycling can be considered in line with a circular economy if the technology is used to create feedstock that is then used to produce new materials. However, if these same processes are used for plastics-to-energy or plastics-to-fuel applications, these activities cannot be considered as recycling (according to ISO), nor as part of a circular economy. For a chemical recycling process, just like for the production of virgin plastics, no hazardous chemicals[12] should be used that pose a significant risk to human health or the environment, applying the precautionary principle.
- **c.** A high quality of recycling and of recycled materials is essential in a circular economy, where one aim is to keep materials at their highest utility at all times. This maximises the value retained in the economy, the range of possible applications for which the material can be used, and the number of possible future life-cycles. It therefore minimises material losses and the need for virgin material input.
  - Maximising the quality and value of materials during recycling is made possible through a combination of packaging design and high-quality collection, sorting, cleaning, and recycling technologies and systems.
  - On the design side, organisations such as APR, PRE, EPBP, RECOUP and others have design-for-recyclability guidelines for plastic packaging that, as well as recyclability, often indicate the quality of the recycled output (e.g. through traffic light systems or classifications such as 'preferred for recycling' versus 'detrimental for recycling').

Recyclable packaging

Recyclability is perhaps the most ambiguous term amongst all packaging circularity terminology. 'Recyclable' means different things to different people in different contexts.

In the context of the Global Commitment, where the term 'recyclable' is used for global commitments by businesses that put packaging on the market (e.g. packaging producers, fast-moving consumer goods companies, retailers, hospitality and food service companies), 'technically recyclable'[13] is clearly not enough: recycling does not just need to work in a lab. Instead it should be proven that packaging can be recycled in practice and at scale.

[12] As defined in Section 2.
[13] Technical recyclability considers the technical possibility to recycle a package, but does not take into account if the collection, sorting, and recycling of the package happens in practice, at scale, and with reasonable economics (e.g. it could work in a lab or in one (pilot) facility but not be economically viable to replicate at scale). Therefore, such a definition does not directly correlate to what is actually recycled in practice, and it would result in almost all packaging being considered 'recyclable'.

'In practice and at scale' means that there is an existing (collection, sorting and recycling) system in place that *actually* recycles the packaging (it is not just a theoretical possibility) and that covers significant and relevant geographical areas as measured by population size.

It is important to assess the recyclability of each package separately, taking into account its material composition, format design, manufacturing processes, and the most likely way of using, disposing, and collecting it (for more details and examples see note on p. 8 and 9). For example, the fact that PET *bottles* are proven to be recycled in practice and at scale does not necessarily imply that *all* PET packaging formats can be considered recyclable, nor that every single PET bottle is (depending on e.g. labels, glues, inks). Similarly, a large PE film and a small-format PE wrapper might currently have a very different likelihood of being collected and recycled in practice.

Moving towards only using 'recyclable' packaging as described above is a necessary first step, but is one that should happen in conjunction with other efforts to ensure all packaging is actually recycled in practice in every market where it is used.

Definition: Recyclable packaging

A packaging (1) or packaging component (2,3) is recyclable if its successful post-consumer (4) collection, sorting, and recycling (5) is proven to work in practice and at scale.

Notes

1. In the context of a 2025 timeframe and the Global Commitment, a package can be considered recyclable if its main packaging components, together representing >95% of the entire packaging weight, are recyclable according to the above definition, and if the remaining minor components are compatible with the recycling process and do not hinder the recyclability of the main components. Otherwise, only the recyclable components of a package (or the recyclable parts of components - see footnote 3) can be counted towards achieving this commitment, and only when other components do not hinder or contaminate their recyclability.

   Examples:

   - *If a bottle and its cap are recyclable, the packaging can be claimed to be recyclable if it has a label (<5% of total weight) that does not hinder the recyclability of the bottle and cap.*
   - *If that same bottle has a label that hinders or contaminates the recycling of the bottle and cap, the entire packaging is non-recyclable.*
   - *If a package has (a) certain component(s) that are not recyclable and that make up >5% of the total packaging weight (e.g. 12%) and that do not hinder or contaminate the recycling of the remaining recyclable components of the package, then only that recyclable part (e.g. 88%) can be counted towards this commitment.*

   Longer-term, the aim should be for all packaging components (e.g. including labels) to be recyclable according to the above definition.
2. A packaging component is a part of packaging that can be separated by hand or by using simple physical means (ISO 18601), e.g. a cap, a lid and (non in-mould) labels.
3. A packaging component can only be considered recyclable if that entire component, excluding minor incidental constituents (6), is recyclable according to the definition above. If just one material of a multi-material component is recyclable, one can only claim recyclability of that material, not of the component as a whole (in line with US FTC Green Guides[14] and ISO 14021).
4. ISO 14021 defines post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It excludes pre-consumer material (e.g. production scrap).

[14] US Federal Trade Commission (2012), Guides for the Use of Environmental Marketing Claims ("Green Guides"), Part 260.

5. Packaging for which the *only* proven way of recycling is recycling into applications that do not allow any further use-cycles (e.g. plastics-to-roads) cannot be considered 'recyclable packaging'.
6. ISO 18601:2013: A packaging constituent is a part from which packaging or its components are made and which cannot be separated by hand or by using simple physical means (e.g. a layer of a multi-layered pack or an in-mould label).

Further explanatory notes

- **a.** By being based on the principle that recycling needs to work in practice and at scale, the definition requires the entire system to work: material choices, packaging design, the manufacturing process, the most likely way of using, disposing and collecting the packaging, and the availability, compatibility, and performance of infrastructure for collection, sorting and recycling. It also implicitly requires the system to work technically, conveniently (if it works in practice and at scale, it must be convenient enough for actors in the system to participate) and economically (if it works in practice and at scale, it must be that the economics are reasonable and that there are end markets for the resulting material).
- **b.** By being based on the principle that recycling needs to work in practice and at scale, the definition of recyclable packaging allows for innovation. A packaging item that is not currently recyclable could be so in future (e.g. by putting in place effective collection, sorting and recycling technologies at scale).
- **c.** It is important to assess the recyclability of each package separately, taking into account its design, manufacturing processes and most likely way of using, disposing and collecting it, which all have a significant impact on the possibility and probability of the package being recycled in practice. For example:
  - Design: For example choices of materials, the shape and size of the packaging, additives and colourants, glues, inks, caps, labels.
  - Manufacturing process: For example, sometimes additives are added to facilitate the manufacturing process or residual amounts of catalysts or other products end up in the packaging during the manufacturing process.
  - Most likely way of using and disposing: One should assume the most likely way of using and disposing the packaging and not assume unlikely conditions. For example, in most countries one cannot assume that a significant share of households will disassemble packaging before disposing of it. Other questions to consider include: Would the package be disposed most often with or without the label or cap still attached? Would it most likely be disposed of empty and clean, or contaminated with product residues, glue or lid residues?
  - Most likely way of collecting: Is the pack most likely to end up in a collection system for business-to-business bulk materials or in that for household materials? A package could be recycled in practice and at scale in business-to-business but not in business-to-consumer applications (e.g. PE pallet wraps usually end up in different collection systems than PE wraps around consumer products).
- **d.** While the definition does not specify where a package is recycled (i.e. allowing for the export and import of materials), businesses should ensure any exported packaging actually gets recycled before considering the recycling pathway to work in practice.
- **e.** The available technical design-for-recycling guidelines by organisations such as APR, PRE, EPBP, RECOUP and others bring a more technical and in-depth analysis of design for recycling prerequisites. As such, these guidelines are complementary to the 'recyclable' definition of this appendix, and businesses are encouraged to refer to and apply these design-for-recyclability guidelines.

Defining 'in practice' and 'at scale' quantitatively is challenging today because of data availability. However, a few (non-exhaustive) suggested qualitative prerequisites are listed below:[15]

1. There are significant and relevant geographical areas where (formal or informal) collection system(s) are in place that collect for recycling a large share of the packaging put on the market in that region.
2. The package is compatible with the material stream in which it is collected.
3. The package is sorted and aggregated into defined streams for recycling processes and the vast majority of what is collected actually gets recycled.
4. The package can be processed and recycled with commercial recycling processes.

[15] Building on APR/PRE Global Definition of "Plastics Recyclability" (July 2018).

5. A viable end market for the recyclate is available to put the material back in use.

One metric to determine to what extent these prerequisites are in place, and, therefore, if recycling of a certain packaging works in practice and at scale, would be the actual recycling rate. However, data on recycling rates by packaging type is very scarce and, therefore, does not yet allow for a fully quantified metric to be developed.

The New Plastics Economy team, together with the signatories of the Global Commitment, will explore if and how a broader evidence base can be developed to provide more detail on this definition as part of the 18-24 month Global Commitment review process.

The 'recyclable' definition above applies at a global level for global commitments: it is a characteristic of packaging and is not linked to any local context or specific geographical area. As such, this definition does not apply to claims linked to specific geographical areas (e.g. on-pack recycling labels, customer communications), as these should always take into account the local context and systems in place (in line with ISO 14021 and US FTC), and be in line with the local regulations that apply to such claims.

Finally, it is important to stress once more that, while the commitment to make all packaging recyclable by 2025, according to the definition above, is a necessary first step, it is not an end goal in itself. The target state to aim for is one in which all packaging is actually recycled in all markets where it is put on the market (ideally after several reuse cycles and not including some targeted applications where compostability might be the preferred solution).

4.3. Compostable packaging

In a circular economy, all (plastic) packaging should be designed to be recyclable, or where relevant compostable[16] (or both)[17], ideally after several reuse cycles. As designing packaging for recycling comes with the advantage of keeping the value of the material in the economy, it is in many cases preferred over designing for composting. However, the latter can be valuable for targeted applications where considered appropriate and beneficial, if coupled with the relevant collection and composting infrastructure to ensure it gets composted in practice.

These targeted applications include packaging items for which composting offers a mechanism to return biological nutrients from the product the packaging contains, which would otherwise have been lost, back to the soil in the form of fertiliser or soil improver. Examples could include tea bags, compostable bags for compost collection in cities, or packaging materials that often end up in organic waste streams (e.g. fruit/vegetable labels). Applications for which compostable plastic packaging is used are ideally harmonised across the industry and clearly indicated, to avoid cross-contamination of compostable and recyclable material streams.

Recognising that compostable plastic packaging is not a blanket solution but rather one for specific, targeted applications, shifting to compostable packaging where reusable and/or recyclable alternatives would be preferred purely to achieve a commitment is not in line with the vision and intention of the Global Commitment.

Compostable packaging needs to go hand in hand with appropriate collection and composting infrastructure in order for it to be composted in practice. Therefore, when claiming compostability in the context of a specific geographical area (e.g. on-pack recycling labels, public communications), it is important to take into account the local context and available systems in place as outlined in ISO 14021, and be in line with the local regulations that apply to such claims.[18]

Composting can take place in an industrial facility, following a controlled process managed by professionals, as well as in a collective or at home, where the process is subject to the householder's skills and other environmental conditions. The terms 'composting' and 'compostable' as referred to in this appendix mainly refer to industrial composting.

[16] Organic recycling includes composting and anaerobic digestion. Along with composting, anaerobic digestion can also be considered as a circular after-use pathway for plastics packaging, in line with ISO 18606. However, as the Foundation believes the use of anaerobic digestion is currently limited for plastic packaging as at the date of publication, this appendix focuses on composting.

[17] While the Foundation believes (based on research conducted to date) that no compostable plastic packaging is currently recycled at sufficient scale to be also 'recyclable' according to the definitions in this appendix, certain plastic packaging that is compostable and could technically be recycled, has been developed, such as packaging made with PLA, PBS and PHA. It is important for packaging aimed to be recycled and packaging aimed to be composted to be separated, so the material streams do not contaminate each other.

[18] See note d. under "compostable packaging" definition.

Composting

Definition: Composting
Aerobic process designed to produce compost.

Note 1 to entry: Compost is a soil conditioner obtained by biodegradation of a mixture consisting principally of vegetable residues, occasionally with other organic material and having a limited mineral content.

Source: ISO 472:2013, *Plastics - Vocabulary*.

Further explanatory note

a. Composting can take place in an industrial facility, a collective, or at home:[19]
- Industrial composting: Municipal or industrial composting is a professionally managed and controlled, aerobic thermophilic waste treatment process covered by international standards and certification schemes, which results in compost, a valuable soil improver.[20]
- Home composting: Designing packaging so that it is home-compostable means it adheres to more stringent conditions than industrially compostable packaging and increases the range of possible composting processes (both industrial and home composting). The home-composting process remains subject to the variability of householders' skills and experience, and the final product is not standardised.

Compostable packaging

Compostability is a characteristic of packaging or of a product, not of a material. As testing standards require packaging to disintegrate and biodegrade in a certain time frame, compostability is influenced not only by the material choice but also by, for example, the format, the dimensions, and usage of inks and colourants. For example, while a thin PLA film might be compostable, a solid block of the exact same material might not degrade fast enough to be considered compostable.

Care should therefore be taken when claiming 'compostability' for a material. When materials are referred to as compostable, it most often means that the material could be used to produce compostable items or packaging. It does not mean that all items produced using this material are compostable.

Definition: Compostable packaging
A packaging or packaging component (1) is compostable if it is in compliance with relevant international compostability standards (2) and if its successful post-consumer (3) collection, (sorting), and composting is proven to work in practice and at scale (4).

Notes

1. ISO 18601:2013: A packaging component is a part of packaging that can be separated by hand or by using simple physical means (e.g. a cap, a lid and (non in-mould) labels).
2. Including ISO 18606, ISO 14021, EN13432, ASTM D-6400 and AS4736.
3. ISO 14021's usage of term clarifies post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

[19] Along with composting, anaerobic digestion can also be considered as a circular after-use pathway for plastic packaging, in line with ISO 18606. However, as the Foundation believes the use of anaerobic digestion is currently limited for plastics packaging as at the date of publication, this appendix focuses on composting.
[20] European Bioplastics, Factsheet *Bioplastics – Industry standards & labels, Relevant standards and labels for bio-based and biodegradable plastics* (2017).

4. 'At scale' implies that there are significant and relevant geographical areas, as measured by population size, where the packaging is actually composted in practice.

Further explanatory notes

- **a.** As per ISO 18606, a package is industrially compostable if it meets the following criteria:
  - Characterisation: identification and characterisation of components prior to testing;
  - Biodegradation: conversion of at least 90% of organic carbon to CO_2 within 26 weeks under controlled composting conditions (at +58°C +/-2°C);
  - Disintegration: disintegration is considered satisfactory if within 12 weeks under controlled composting conditions, no more than 10% of the original dry mass of a package remains in the oversize fraction after sieving through a 2,0 mm sieve (at +58°C +/-2°C)
    - Compost quality: the compost obtained at the end of the process does not cause any negative effects;
    - Maximum concentration of regulated metals: it does not exceed a given concentration. of regulated heavy metals and other substances hazardous to the environment.
- **b.** As per ISO 18606, a package is considered compostable only if all the individual components of the package meet the compostability requirements specified. If the components can be easily, physically separated before disposal, then the physically separated components can be individually considered for composting.
- **c.** Compostable plastic can be composted in a municipal or industrial facility as well as, if it is designed to be home compostable, in a collective or at home as a complementary after-use option where relevant - *see 'Composting' definition*.
- **d.** In line with ISO 14021 and US FTC Green claims, a marketer should clearly qualify compostability claims to the extent necessary to avoid deception, e.g. taking into account if one component is not compostable or if the item cannot be composted safely or in a timely manner in a home compost pile or device. For example, the US FTC Green guide states: "§ 260.7 Compostable Claims: "*To avoid deception about the limited availability of municipal or institutional composting facilities, a marketer should clearly and prominently qualify compostable claims if such facilities are not available to a substantial majority of consumers or communities where the item is sold*."
- **e.** This 'compostable' definition applies at a global level for global commitments: it is a characteristic of packaging and is not linked to any local context or specific geographical area. It does not imply that it will be composted in every geographic area where it is put on the market. Local context and available infrastructure should be taken into account when claiming compostability in a specific geographic area.

The term 'biodegradable' should not be confused with 'compostable'. 'Biodegradability' designates a property which is needed - among others - to make a package compostable. It does not indicate whether a plastic package can in practice be collected and composted following a managed process (e.g. how quickly and under what conditions it can biodegrade).

5. Set an ambitious recycled content target

In a circular economy, products and components are to be made from as much recycled content as possible (where legally and technically possible). This enables a reduced dependence on virgin (fossil) feedstocks, and creates a demand-pull for recycled plastics, sending a clear signal stimulating investments in the collection, sorting, and recycling industry.

It is important that industries with requirements for high-quality materials, such as the packaging industry, maximise the use of recycled content (keeping in mind regulatory constraints, such as food contact and health and safety regulations). Firstly, because keeping materials at their highest utility and value at all times maximises the number of possible future use-cycles of the material. Secondly, because if all plastics were to be recycled with significant quality or value loss - for example if all plastic packaging were to be recycled into lower-quality applications - the '*high-quality industries'* such as packaging would remain dependent on continuous virgin material input.

As part of the Global Commitment, recycled content commitments aim to increase the use of post-consumer recycled content (as defined below).

Definition: Post-consumer recycled content

Proportion, by mass, of post-consumer (1) recycled material in a product or packaging.

Note

1. ISO14021's usage of term clarifies post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Source: ISO 14021:2016 modified, *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling), Usage of terms,* modified (focus on post-consumer recycled material)

Further explanatory notes

- **a.** While in a circular economy it is encouraged that pre-consumer waste is kept in the system, the priority is to avoid such pre-consumer waste as part of an efficient production process. This definition therefore excludes pre-consumer recycled content (ISO 14021, *Usage of terms, Recycled content:* Pre-consumer recycled content includes materials diverted from the waste stream during a manufacturing process).
- **b.** Transparency on the nature of the recycled content (i.e. post-consumer versus pre-consumer) is to be ensured whenever possible.
- **c.** As referred to in ISO 14021, the percentage of recycled material (by weight) shall be mentioned when a claim of recycled content is made, separately stating the percentage of recycled content used in products and packaging, without aggregating it.
- **d.** Amounts and quality of packaging made out of recycled content should be in line with relevant food contact and health and safety regulations where a packaging is put on the market.
- **e.** To verify or certify the use of recycled content, various verification systems from different assurance bodies exist.

6. Increase the share of renewable content from responsibly managed sources

As fossil feedstocks cannot be regenerated in any reasonable timescale, their extraction and use is a linear process and can therefore not be part of a long-term solution. Moving towards a circular economy for plastic packaging includes, over time, decoupling from finite (fossil) feedstocks. This is achieved first and foremost by drastically reducing the need for virgin plastics through dematerialisation, reuse and recycling, and then, over time, by switching the remaining virgin inputs (if any) to renewable feedstocks where this is proven to come from responsibly managed sources and to be environmentally beneficial.

In order to avoid unintended consequences it is important to ensure for all renewable feedstock responsible sourcing and regenerative agricultural principles are applied (taking into account the impacts of the agricultural processes, including land use, and any impact on food security and biodiversity).

To the Foundation's knowledge, as at the date of publication, no comprehensive and widely accepted definition, standard or certification scheme for responsibly managed sources exists. Their development is encouraged to ensure a clear framework for related commitments and actions.

Definition: Renewable material
Material that is composed of biomass[21] from a living source and that can be continually replenished. When claims of renewability are made for virgin materials, those materials shall come from sources that are replenished at a rate equal to or greater than the rate of depletion.

Source: ISO 14021:2016, *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling) - Sections 7.14.1. Usage of term and 7.14.2. Qualifications.*

Further explanatory note

a. ISO 14021: "An unqualified claim of renewability shall only be made when the product consists of 100% renewable material, allowing for de minimis amounts of non-renewable materials being contained in that material. Otherwise, renewability claims shall be qualified as follows:
a) where a claim of renewable material content is made, the percentage by mass of renewable material to the total mass shall be stated;
b) the percentage of renewable material content (mass fraction) for products and packaging shall be separately stated and shall not be aggregated."

Definition: Renewable content

Proportion, by mass, of renewable material in a product or packaging.

Further explanatory notes

a. The assessment of "renewable content" is done either through the direct measurement of biomass or bio-based carbon content in a product, or by a calculation. As plastic producing facilities sometimes use both fossil and renewable feedstocks at the same time, a certified mass balance approach could be applied to calculate and certify renewable content.
b. Renewable content can be made from bio-based materials (biomass or biogenic carbon), although it should be noted that bio-based materials are not always renewable.
c. Claims made on renewable content (biomass content, bio-based carbon content) should only be made in relation to the total mass or total carbon in the product.
d. Amounts and quality of packaging made out of renewable content should be in line with relevant food contact, health and safety regulations where packaging is put on the market.

[21] ISO 14021:2016: Biomass is defined as a "material of biological origin excluding material embedded in geological formations or transformed to fossilised material. Note 1 to entry: This includes organic material (both living and dead) from above and below ground, e.g. trees, crops, grasses, tree litter, algae, animals and waste of biological origin, e.g. manure.(modified: part on renewable energy excluded); ISO/IEC 13273-2:2015, *Energy efficiency and renewable energy sources — Common international terminology — Part 2: Renewable energy sources*, Biomass definition: Note 1 to entry: The biomass includes waste of biological origin. Note 2 to entry: The material includes animal by-products and residues and excludes peat.