



Global 
FOODTURE

New materials, technologies and regulations for the packaging of tomorrow

Workshop 12

19 October 2023

The workshop will start soon!



Organisers

Mireia Andreu

Innovation Manager

Mònica Riera

EU & Entrepreneurship
Project Manager

**PACKAGING
X CLUSTER**

Susanne Baden Jørgensen

Senior International Manager



Food & Bio Cluster
Denmark



Welcome to the last Thematic Workshop!



Over 775+ Participants

From 35 Countries



Questions?



Do you have any questions to our speakers?
Please raise them in the Questions-box in TEAMS and we will address them during the session.

Please state the following in the Question-box:

- Company name,
- Speaker to address the question to
- Your question



Global Foodture project



European project, collaboration of 7 European Clusters and Asian partners: Enterprise Singapore, Foodpolis, FoodInnopolis, TMA Thailand, Kobe University and NARO.

Aiming to stimulate innovation collaboration between European SMEs and Asian organisations - Japan, Singapore, South-Korea Thailand

2022 - 2023: Several activities, including matchmaking, training program, international missions and online thematic workshops - Community Platform with 775+ registered participants

Themes:

- Agriculture - cultivation & support solutions
- Alternative proteins
- **Sustainable packaging**
- Solutions to reduce food waste
- Health products, functional and personalised food





Global ● ● ●
FOODTURE

Let's start!

Programme

- 09.00 **Welcome & General Introduction** of the workshop, including the 2 Master Classes by Mònica Riera, Packaging Cluster
- 09.05 **Presentation of the overall theme** by Lorena Rodríguez, Packaging Group Leader, AIMPLAS
- Presentation by Food Manufacturing Centre of Innovation @ Republic Polytechnic** by Dawn Ong and Samuel Aw
- 09:45 **Introduction Master Class 1 “Advanced bioplastics and other material for food and consumer preferences towards sustainable packaging solutions”** by Moderator Susanne Baden Jørgensen, Food & Bio Cluster Denmark
- 09.50 **“Old Printing Company with New Ideas”** by Jens Bladt, Sales Manager, KLS Pureprint, A/S Denmark
- 10:00 **“Creation of Functional & Sustainable Packaging for a Better World”** by Dr. Pongsuda Phumathon Pongtanya, Managing Director, Deltalab SL, Member of SCGP Packaging, Thailand
- 10:10 End of Master Class 1
- 10:20 **Introduction to Master Class 2: “Food packaging regulations”** by Moderator Mònica Riera, Packaging Cluster
- 10.25 **‘EU packaging laws to foster the circular economy** Axel Darut - Minderoo Foundation - Advocacy & Engagement
- 10.45 Q & A and reflection by the Moderators
- 11.00 End of the Thematic Workshop
- 11:00 If any matchmaking meetings please go to your profile at the Community Platform



Keynotes

Presentation of the overall theme by Lorena Rodríguez,
Packaging Group Leader, AIMPLAS

**Presentation by Food Manufacturing Centre of Innovation @
Republic Polytechnic** Dawn Ong and Samuel Aw





*Sustainable
packaging*

19 October 2023 - 09:00-11:00

NEW MATERIALS, TECHNOLOGIES AND REGULATIONS FOR THE PACKAGING OF TOMORROW



Co-funded
by the COSME programme
of the European Union



Food & Bio Cluster
Denmark



Sustainable Packaging & EU Regulation

Lorena Rodríguez

Packaging Group Leader

lrodriguez@aimplas.es

Sustainable Packaging & EU Regulation



- AIMPLAS

- Packaging Waste

- Sustainable Packaging?

- EU Directives & Future Directives

- Trends in Packaging materials: SUP

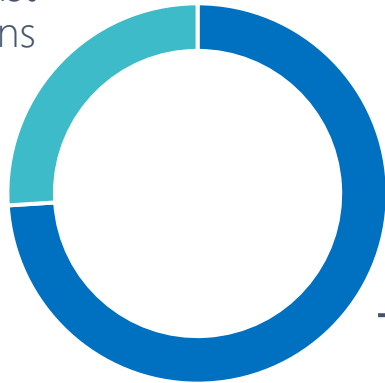


What is AIMPLAS?

A **technology centre** with more than 30 years' experience in the plastic sector.

Our team is made up of more than **250 highly qualified professionals**

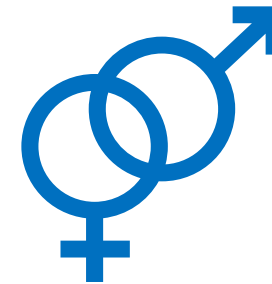
27%
specialist
technicians



31 PhDs

73%
university
graduates

60%
women



40%
men



average age:
38

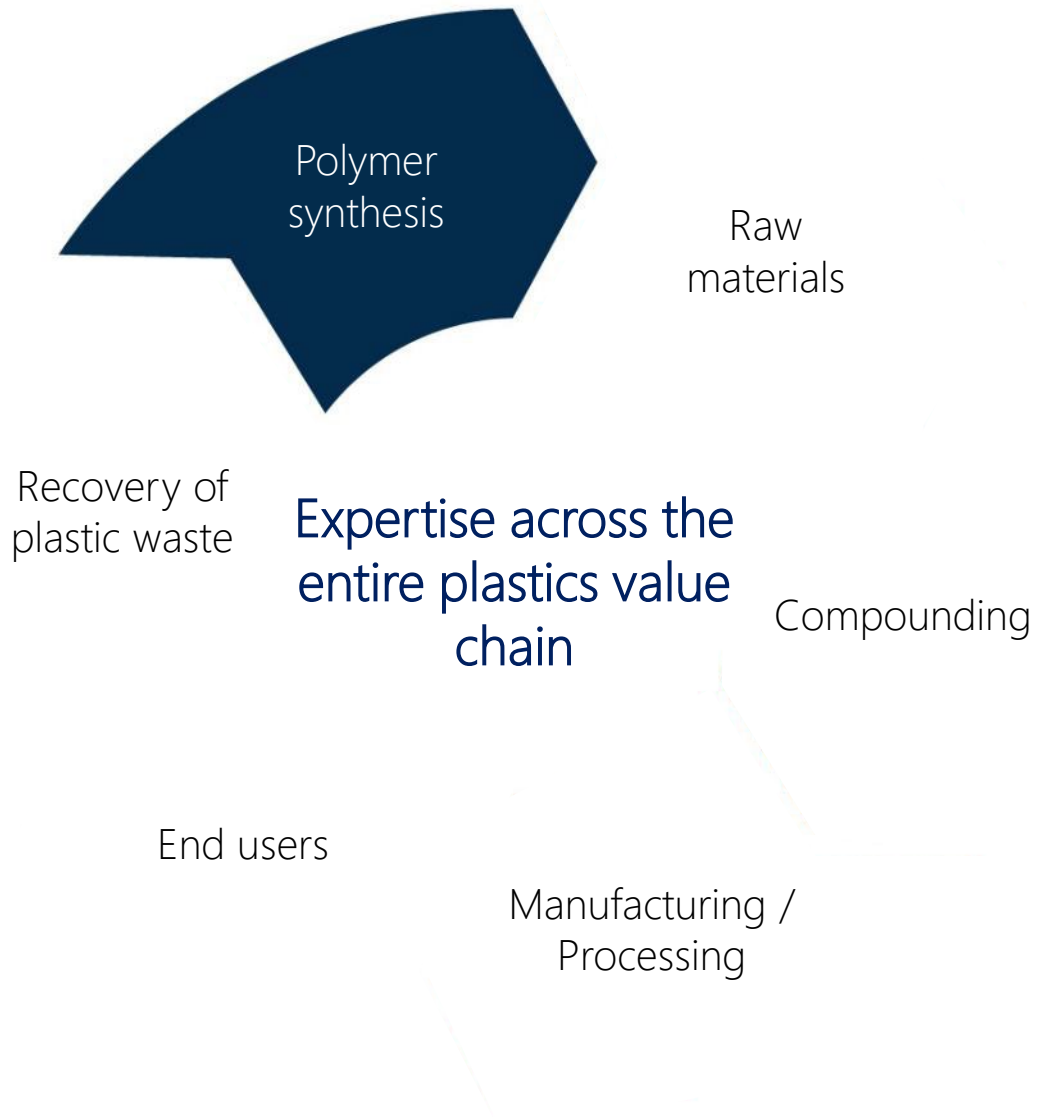
2021 DATA



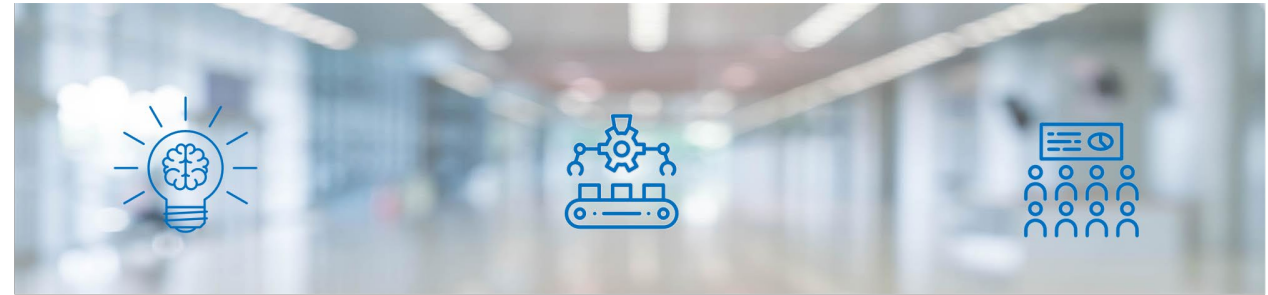
More than **10,500 m²**
of cutting-edge
facilities

Pilot plants (6,000 m²)

Laboratories (4,500 m²)



AIMPLAS services



1. R&D&I

2. Technology services

3. Training and events

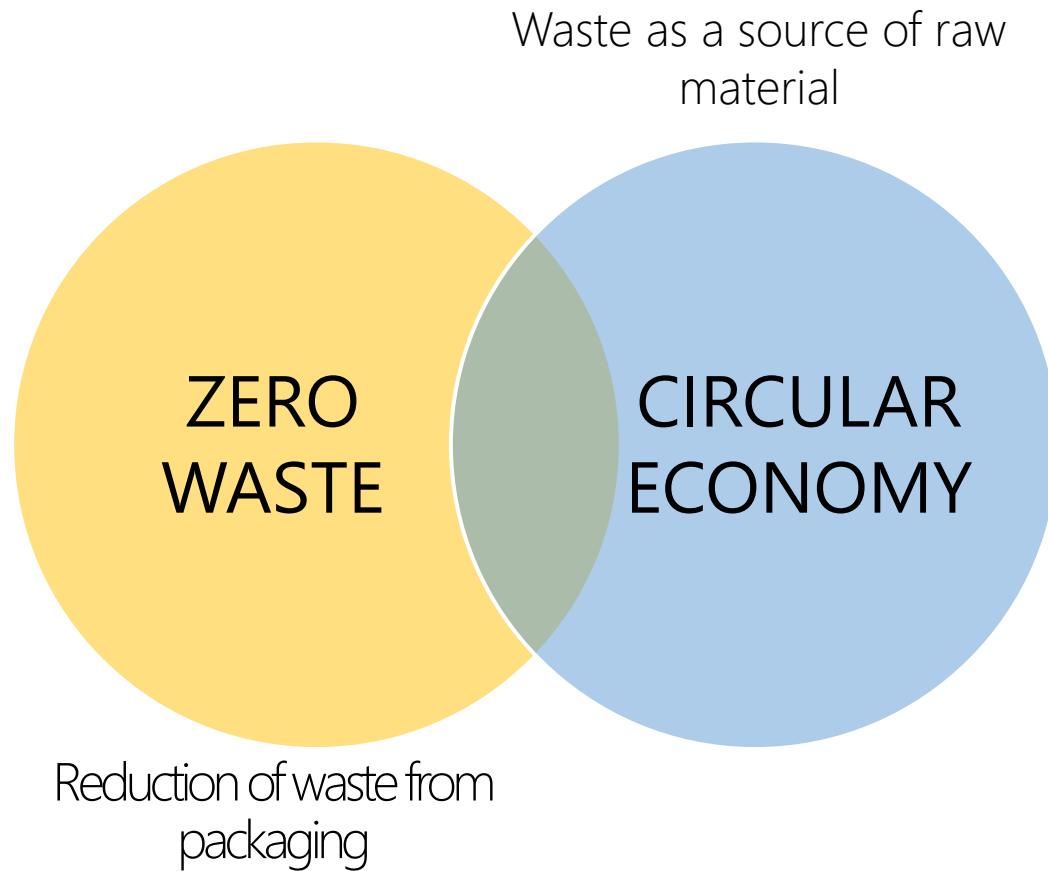




[New Circular Economy Action Plan](#)
EUROPEAN GREEN DEAL



COMPLY WITH THE LEGISLATION. Promotion of waste reduction and reuse.



1994 – PACKAGING AND PACKAGING WASTE DIRECTIVE

2019 – Directive (EU) 2019/904 (SUP)

2008 – WASTE FRAMEWORK DIRECTIVE

How are we reducing the plastic waste?

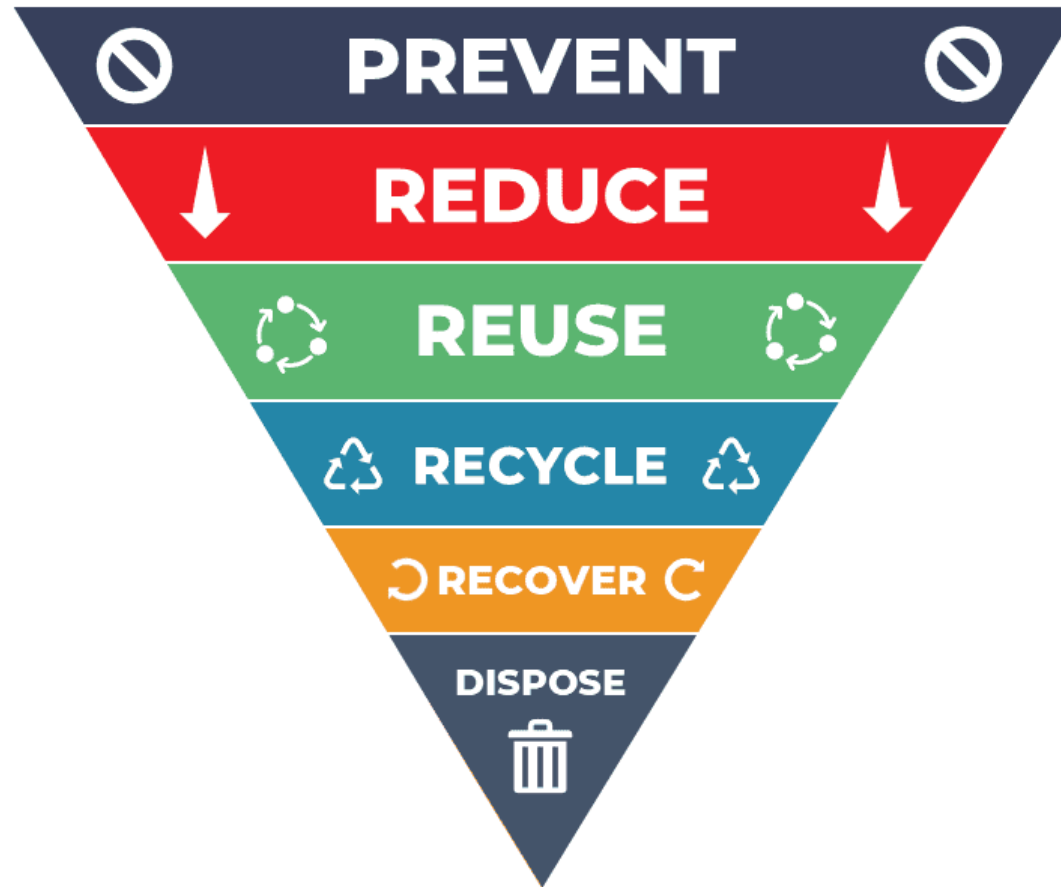


Are we reducing the waste or are we just reducing the plastic content in the final packaging?



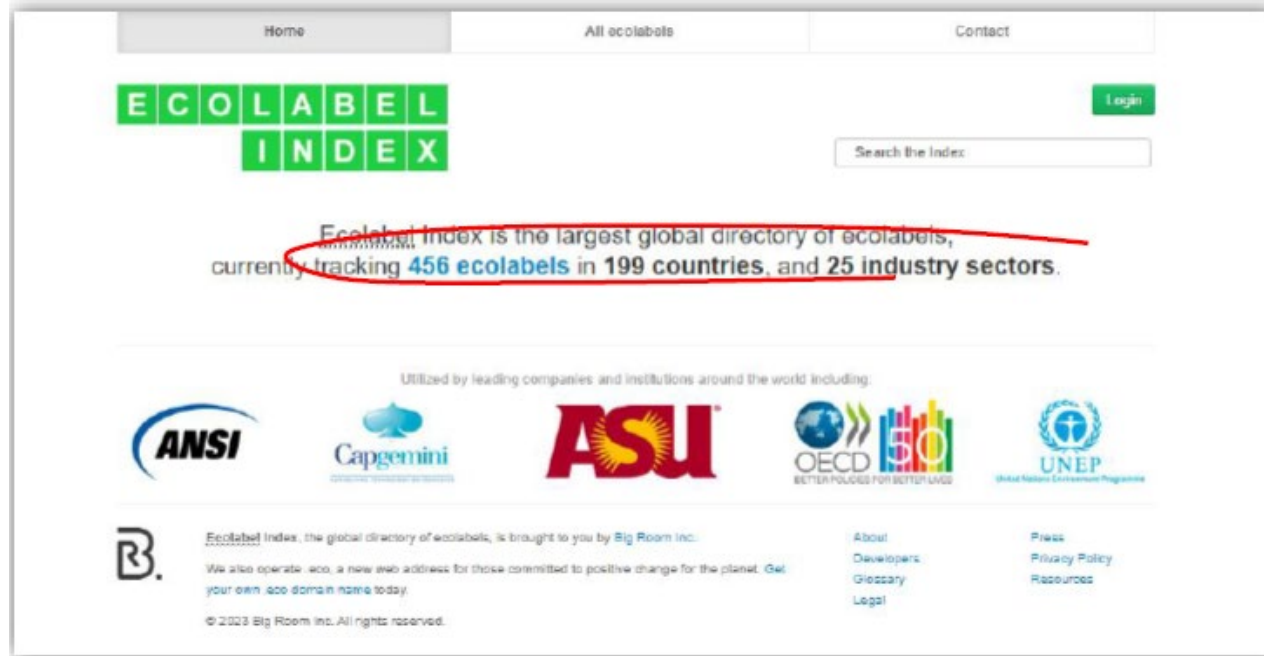
Are all these solution more sustainable than the plastic based one?  NEED OF LCA Assesment

Are we really aligned with EU purpose?



Directive 2008/98/CE- Waste Hierarchy

Are we really aligned with EU purpose?



Are we really aligned with EU purpose?



LACK OF RELEVANT INFORMATION



MESSAGES DO NOT CONTRIBUTE!
MANDATORY- Tethered caps in the EU as of 2024.

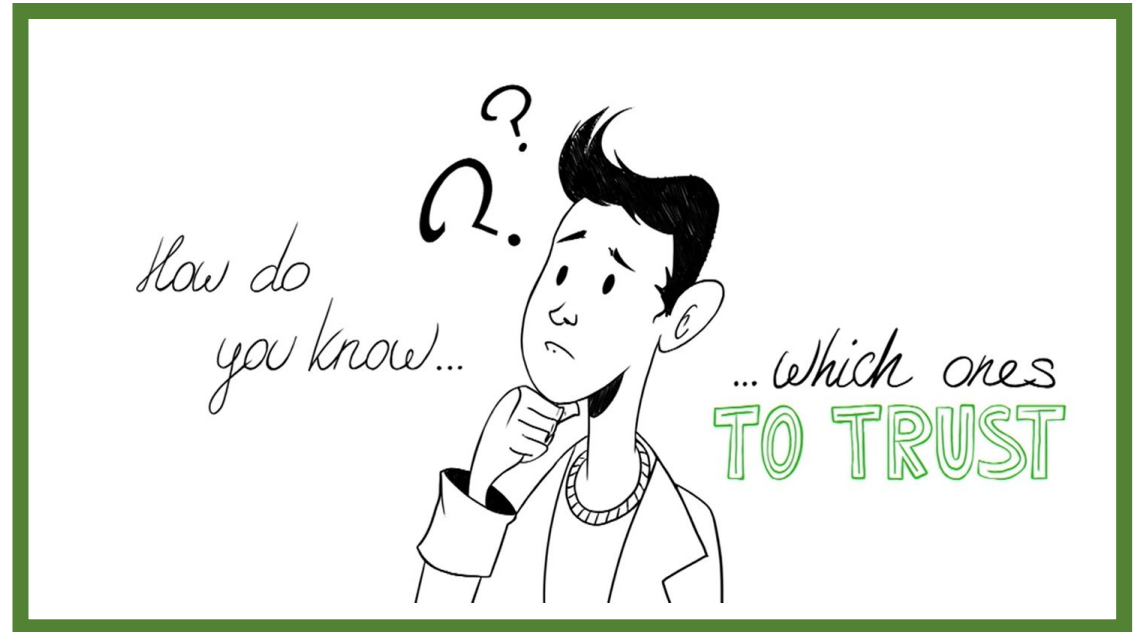
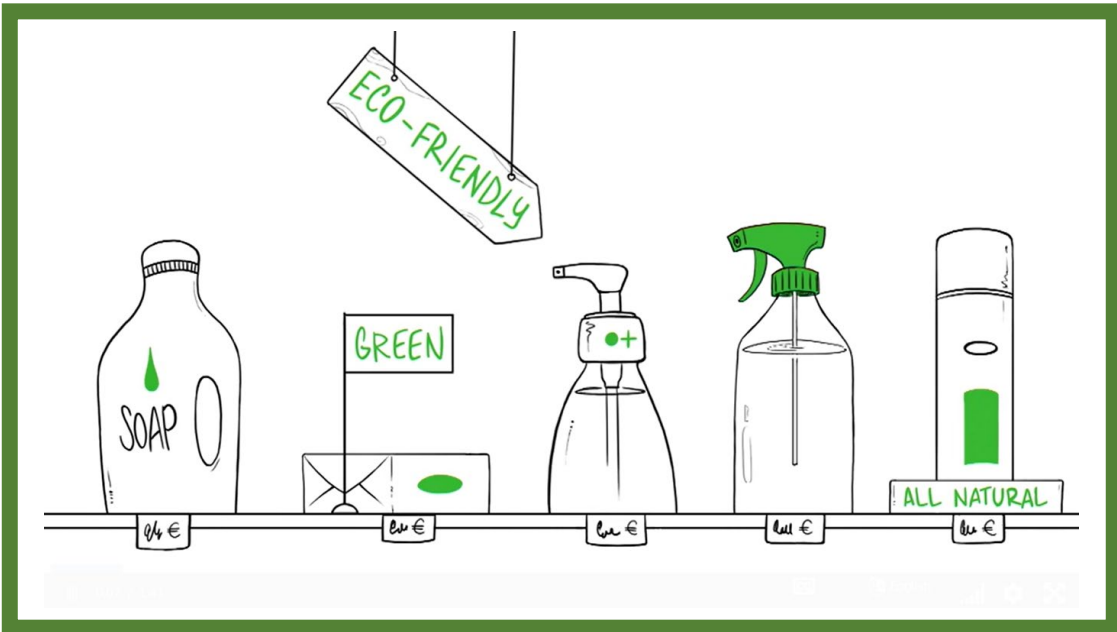
Are we really aligned with EU purpose?



MISLEADING INFORMATION, PLASTIC BASED



MISLEADING INFORMATION, PLASTIC BASED



GREENWASHING

TO TRICK CONSUMERS

INTO THINKING

a brand or product

IS GREEN

WHEN IN FACT... IT ISN'T REALLY

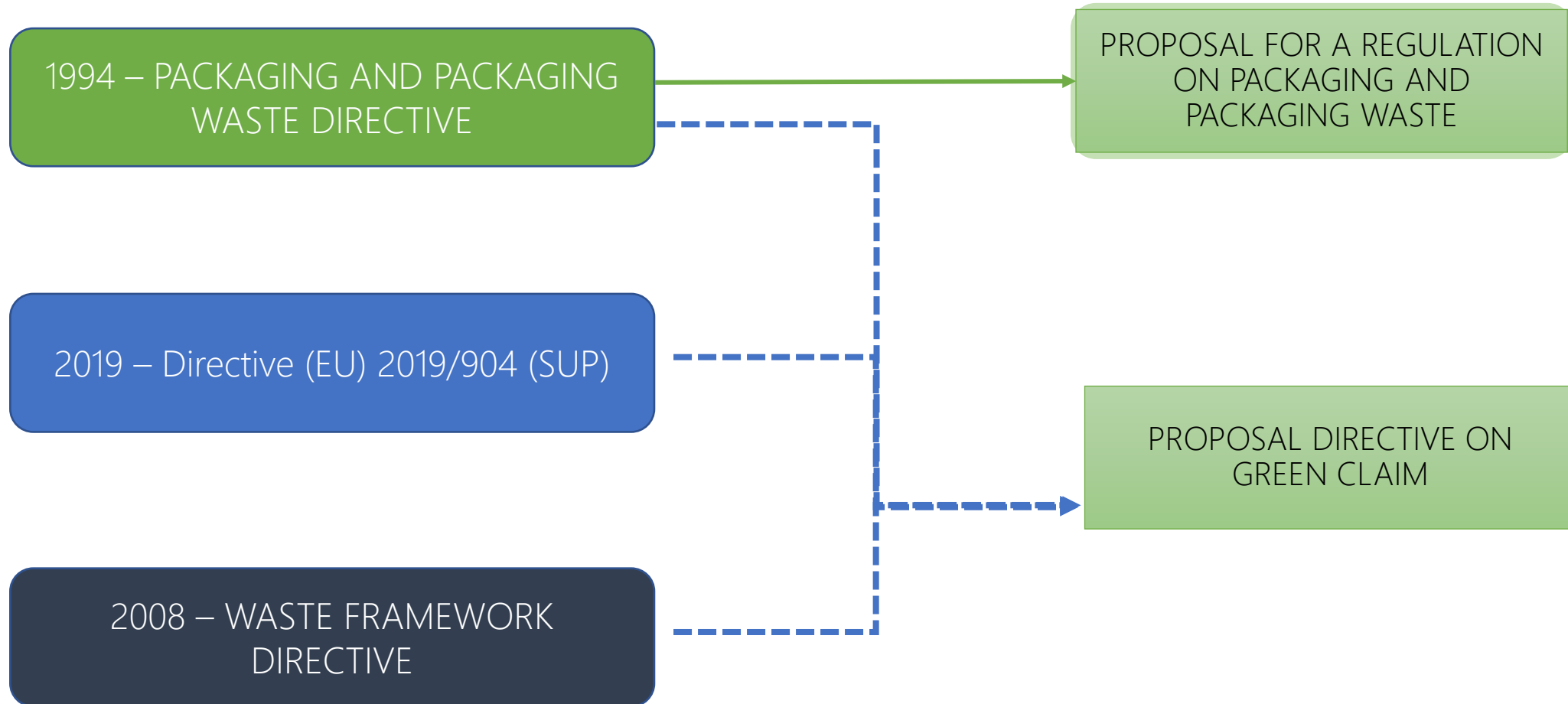


How
does
EU
HELP?

Making sustainable products the norm in a more resilient Single Market



COMPLY WITH THE LEGISLATION. Promotion of waste reduction and reuse.



PROPOSAL FOR A REGULATION ON PACKAGING AND PACKAGING WASTE

GENERAL OBJECTIVE: Putting an end to wasteful packaging, boosting reuse and recycling

Three main objectives:
prevention/ reuse & recycling

Reduce packaging waste by 15% through both reuse and recycling.

Foster reuse or refill of packaging

Mandatory rates of recycled content that producers have to include in new plastic packaging.

Standardisation of packaging formats and clear labelling of reusable packaging

Packaging fully recyclable by 2030: design criteria for packaging; mandatory deposit return systems

Certain forms of packaging will be **banned: SUP.**

Limited types of packaging must be compostable so that consumers can throw these to biowaste.

clear up confusion on which packaging belongs to which recycling bin. **The same symbols will be used everywhere in the EU.**

https://environment.ec.europa.eu/publications/proposal-packaging-and-packaging-waste_en

PROPOSAL DIRECTIVE ON GREEN CLAIM

https://environment.ec.europa.eu/publications/proposal-directive-green-claims_en

Proposal for a **Directive on Green Claims**- 22nd March 2023

New criteria to **stop companies from making misleading claims** about environmental merits of their products.

Detailed rules on the substantiation, communication and verification of voluntary environmental claims and environmental labels for products to EU consumers.

Rely on widely **recognized scientific evidence** and use accurate information

Environmental impacts that are subject to the claim are significant from a **life-cycle perspective**

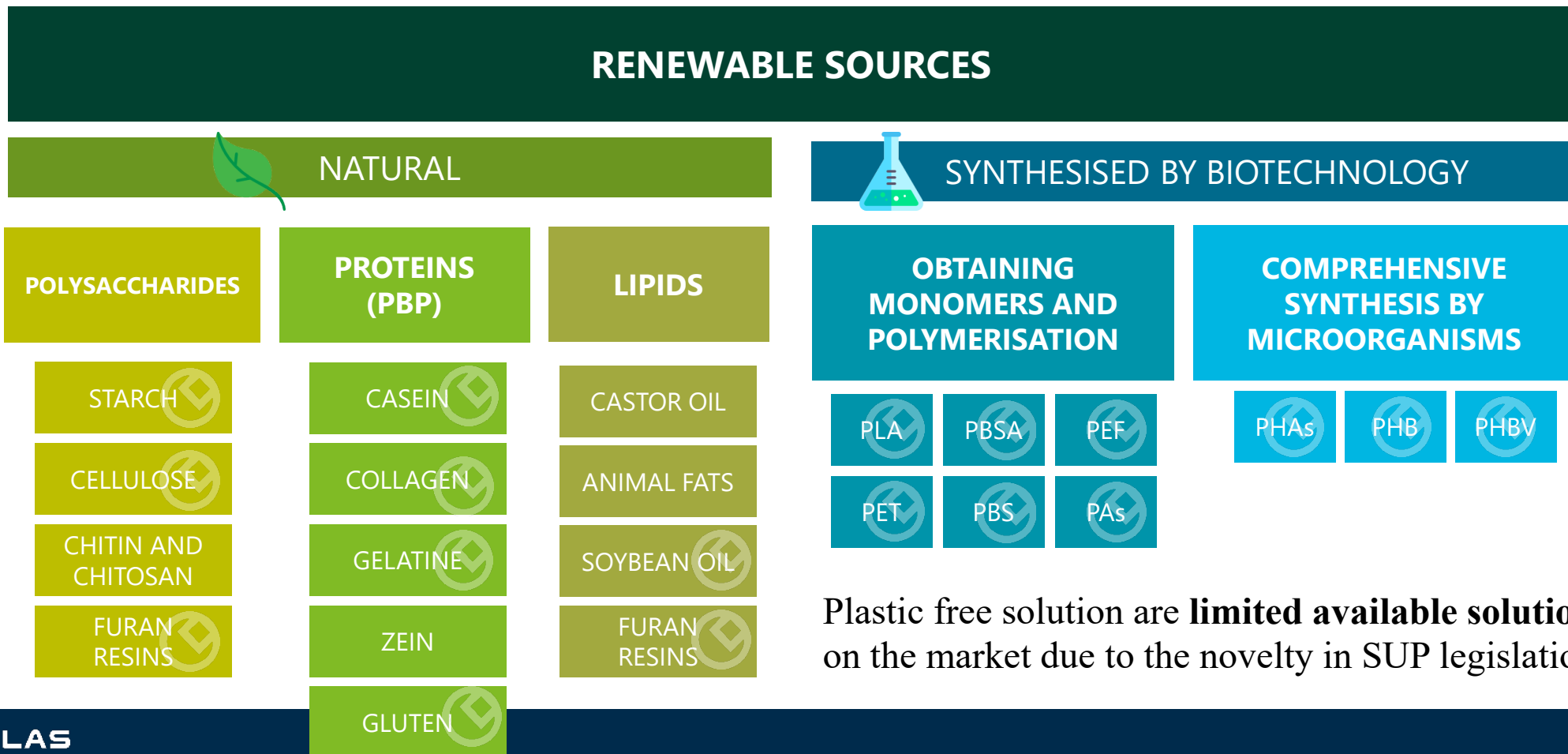
Take into account all **environmental aspects which are relevant** for the environmental performance assessment.

Trend in Packaging materials: SUP



Single use Packaging Legislation- Definitions

- ‘Plastic’ means a **material consisting of a polymer** as defined in point 5 of Article 3 of Regulation (EC) No 1907/2006, to which additives or other substances may have been added, and which can function as a main structural component of final products, **with the exception of natural polymers that have not been chemically modified;**

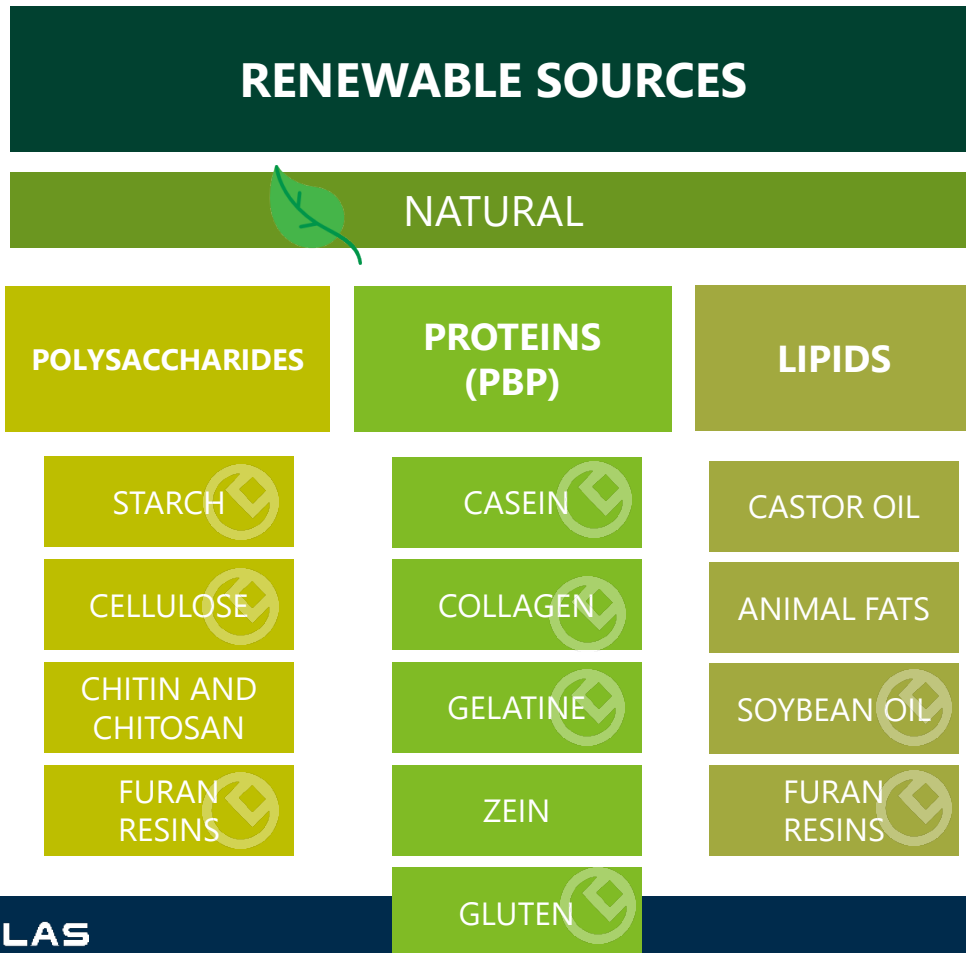


Plastic free solution are **limited available solutions** on the market due to the novelty in SUP legislation.



Single use Packaging Legislation- Definitions

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Oxygen barrier properties

- Gelatins.
- Microfibrillated cellulose.
- Whey protein.

Water vapour barrier properties

- Blends starch-chitosan.
- Blends natural waxes- chitosan.

Water resistance

- Natural waxes.
- Fatty acids.



Single use Packaging Legislation- Definitions

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By NOTPLA



By LACTIPS

SUMMARIZE



Current legislation in EU need to be review to reduce the plastic waste and made the plastic a high value material to recover and recycled.

Greenwashing in Packaging & green claims are misleading the customer who does not understand /trust the environmental performance of products.

LCA enviromental is a tool to evaluate the enviromental performace that allows to do the right choice in terms of material selection/ material design....end of life..

Waste management stream is mandatory to avoid Packaging waste.

EU is aware! The Packaging waste directive need to be update and the proposal Will foster the prevention, reuse and Recycling.

EU is aware! Directive on green claim Will protect EU to tackle unfair commercial practices that mislead consumers away from sustainable consumption choices

Natural Polymers an alternative material to be considered in SUP. Plastic free solution Packaging. Avoid Greenwashing



*Sustainable
packaging*

19 October 2023 - 09:00-11:00

NEW MATERIALS, TECHNOLOGIES AND REGULATIONS FOR THE PACKAGING OF TOMORROW



Thanks for your attention

Lorena Rodríguez

Packaging Group Leader

lrodriguez@aimplas.es



*Sustainable
packaging*

19 October 2023 - 09:00-11:00

NEW MATERIALS, TECHNOLOGIES AND REGULATIONS FOR THE PACKAGING OF TOMORROW



19 Oct 2023

Dawn Ong and Samuel Aw

Speaker Profile: Dawn Ong

- Senior Manager
- Chemicals and Materials Innovation Centre
- School of Applied Science, Republic Polytechnic

- MSc Materials Science and Engineering
- 3M Singapore Pte Ltd
- Agilent Technologies Pte Ltd
- Hewlett Packard Singapore Pte Ltd
- Mitsui Toatsu Kuok Pte Ltd
- dawn_ong@rp.edu.sg



Speaker Profile: Samuel Aw

- Senior Manager
- Formulation & Nutrition Science Technology Centre
- School of Applied Science, Republic Polytechnic

- MSc Packaging Science
- Nestle R&D Centre Singapore Pte Ltd
- Ngai Mee Packaging Pte Ltd
- Alfa Laval South-East Asia Pte Ltd
- Singapore Polytechnic
- Temasek Polytechnic
- Samuel_aw@rp.edu.sg



Vision and Mission

Vision

An educational institution of choice for nurturing innovative, entrepreneurial and cultured professionals

Mission

We nurture individuals to prepare them for a dynamic world in partnership with stakeholders, leveraging problem-based learning.





7 Schools

Applied Science
(SAS)

Engineering
(SEG)

Hospitality (SOH)

Infocomm (SOI)

Sports, Health
and Leisure (SHL)

Technology for the
Arts (STA)

Management and Communication (SMC)

4 Centres

Academy for Continuing Education (ACE)

Centre for Educational Development (CED)

Centre of Innovation for
Supply Chain
Management
(COI – SCM)

Urban Agriculture
Centre of
Innovation
(UA COI)



Established in **2002**



7 Schools & 4 Centres



**Problem-based
Learning (PBL)** and
other authentic
learning modalities

School of Applied Science

Diploma in

- Applied Chemistry
- Biomedical Science
- Biotechnology
- Environmental & Marine Science
- Pharmaceutical Science

Common Science Programme



Part-Time Diploma in

- Applied Science (Environmental Services and Management)
- Applied Science (Medical Laboratory Science)
- Applied Science (Nutrition and Food Science)
- Applied Science (Pharmaceutical Sciences)
- Applied Science (Urban Agricultural Technology)

Specialist Diploma in

- Agritechnology and Agribusiness
- Biomedical Informatics and Analytics
- Biomedical Technology

Short Courses



<https://go.gov.sg/sas-cet>

Partnering Your Success

RP relentlessly keep up with the industry transformation and technological disruption, and help transform companies through upskilling of workforce, raising operational efficiency, leveraging applied research and building overseas business networks.

We actively engage companies through numerous modes of collaboration such as industry projects, consultancy, internship, employment, training, sponsorships, and many other modes, to facilitate talent development opportunities for our students/graduates and expertise development opportunities for our lecturers.



75,000+

(and growing)

Future-ready Learners*



2,000+

Industry Partners

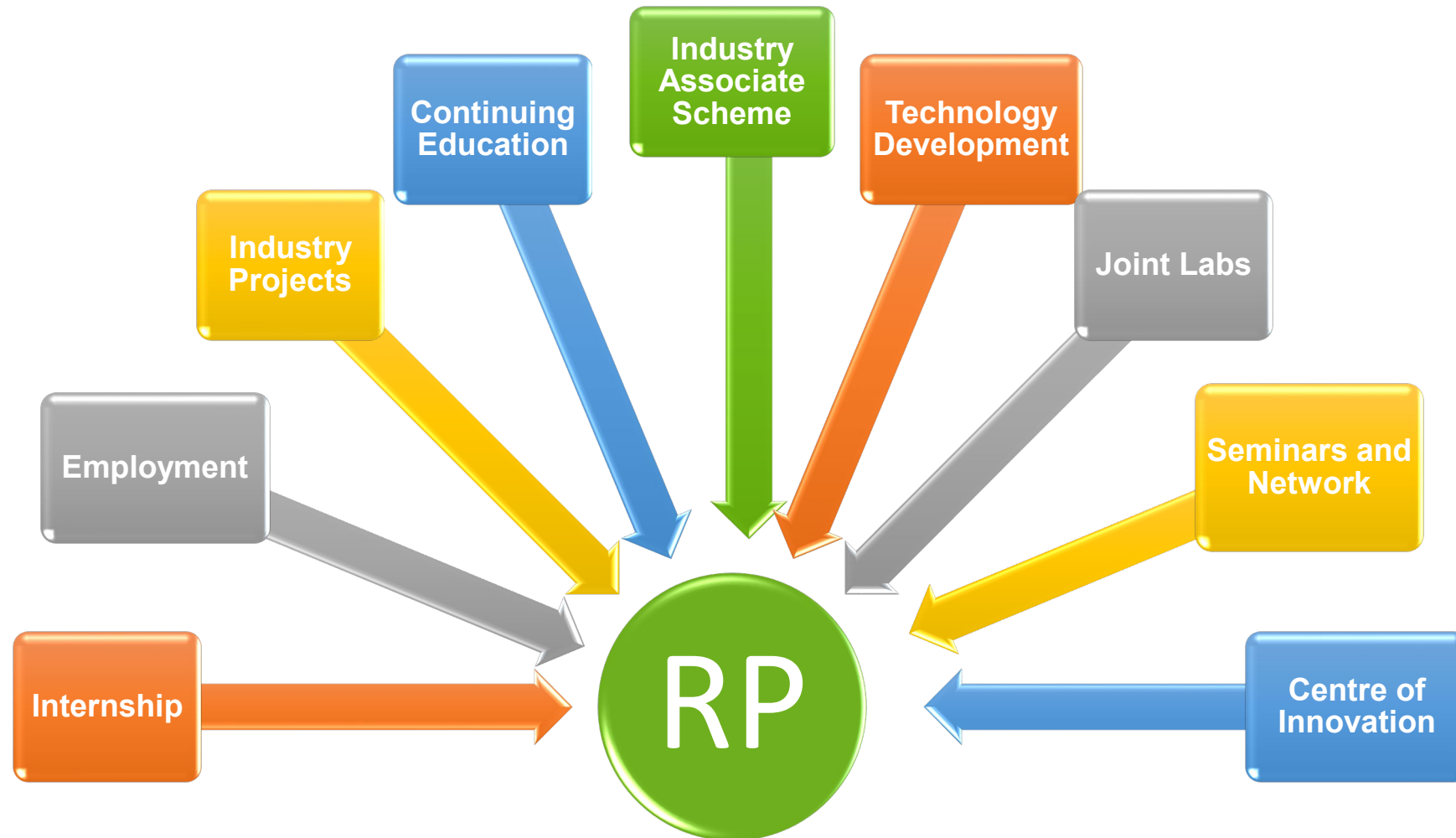


100%

Internship Placement

**comprises RP alumni and current students*

Industry Engagement



Focusing on TIE Efforts

Through deepening our **Technology, Innovation and Entrepreneurship (TIE)** efforts RP hopes to be able to help local enterprises and transform the industry.

Ultimately, RP is committed to:

1. Uplift local enterprises
2. Add value to the learning opportunities for both Pre-employment Training (PET) and Continuing Education and Training (CET) students
3. Effectively deploy and utilise our resources in RP, making it more synergistic.



Agri-Food Innovation

- Agri-Tech is the use of technology in **agriculture**, horticulture, and **aquaculture** with the aim of improving yield efficiency and profitability.
- In terms of **food innovation**, RP's focus is to formulate and optimise products to meet the nutritional needs of the food industries.



RP Conexus Centres

School of Applied Science

- Chemicals and Materials Innovation Centre
- Environmental Technology Centre
- Formulation and Nutrition Science Technology Centre
- Sustainable Aquaculture Technology Centre

School of Engineering

- SMART Engineering Technology Centre
- Supply Chain Technology Centre
- Aviation and Aerospace Solutions Centre

School of Sports, Health and Leisure

- ERGO Technology Centre
- Experiential Learning Research Centre
- Wellness Research Centre

School of Infocomm

- Cognitive Systems Technology Centre
- Internet of Things Solutions Centre
- Data Analytics Technology Centre

School of Technology for the Arts

- Creative Services Centre
- User Experience Design

School of Management and Communication

- Consumer Insights and Social Enterprise Research Centre
- Enterprise Service Centre

School of Hospitality

- Hospitality Solutions Centre

Chemicals & Materials Innovation Centre



**Smart Surface
Solutions**



**3D Modelling &
Additive
Manufacturing**



**Chemical Formulation &
Analytical Techniques**



**Sustainable
Packaging**

- Provide sustainable solutions towards smart functionalized surfaces (self cleaning/ self cooling/ anti-fouling).
- Innovate 3D modelling on novel materials used for rapid prototyping and customized solutions.
- Support nutrient profiling towards Agriculture, Agrifood and Aquaculture products.
- Innovating green solutions for sustainable packaging materials.
- Formulating chemical solutions for specialty chemical applications.

Sustainable Packaging Lab

- The Lab will support the testing and development of food packaging materials that are aligned with industry trends, focussing on
 - sustainable packaging materials
 - modified atmosphere packaging
 - food waste reduction
- The Lab will be equipped to train students from the Diploma in Applied Chemistry, Diploma in Biotechnology and CET Part-time Diploma in Applied Science (Nutrition & Food Science)
- RP hopes to strengthen its research capabilities to support PET/CET curriculum and partner companies on food packaging innovations, to reduce food waste and carbon footprint.

Packaging materials development projects



Water-based barrier materials for sustainable food packaging



Surface Modification of Glassine paper for cold supply chain distribution



Devt of mycelium-based materials for packaging applications



Devt of bio-composites using Fruit Waste



Bamboo sawdust valorization for alternative packaging material

Formulation and Nutrition Science Technology Centre

- provide **formulations** and optimisation of products for varied pharmaceutical, biomedical and **nutritional needs** of our society.



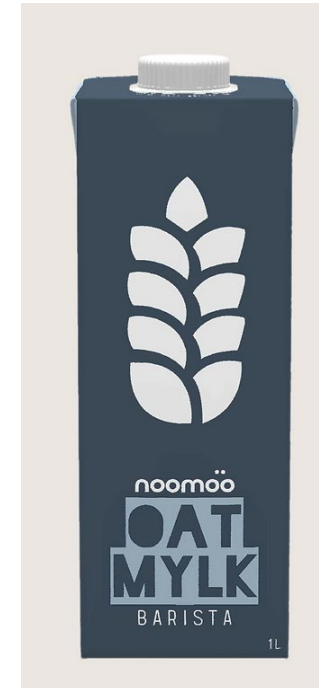
Food Packaging Enquiries:

1. Bakery goods
2. Fresh produce
3. Asian Cuisines
4. Fried Snacks
5. Asian Pastry
6. Bubble Tea



Food Manufacturing Centre of Innovation (FM COI@ RP) – one stop for

- Formulation
- Processing
- Packaging
- Shelf-Life Evaluation
- Consumer Acceptance Test



FANS– Industry Partners



Thank you!

Masterclass 1: Advanced Bioplastics and other material

- **Introduction Master Class 1**
“Advanced bioplastics and other material for food and consumer preferences towards sustainable packaging solutions” by Moderator Susanne Baden Jørgensen, Food & Bio Cluster Denmark





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Old Printing Company with New Ideas

by Jens Bladt, Sales Manager, KLS Pureprint A/S



Old Printing Company
With New Ideas
Oct. 19th - 2023

Started as a traditional printing company...

- Start in 1946 – 77 years old
- One of Denmark's largest printing houses
- 55 employees
- Copenhagen and Aarhus in Denmark
Helsingborg and Stockholm in Sweden



Disruption in the graphic industry!

- An industry about to disappear - digitization
- Severe overcapacity
- 13 years ago – approx. 2.000 offset printing houses
– today less than 50
- New strategy for survival



Vision in 2007



The Worlds most Sustainable
Printing Company

We had already come a long way...

- 28% reduction of electricity
- 74% reduction in water consumption
- 68% reduction in district heating
- 100% clean wastewater
- 100% CO₂ neutral in 2009
- Drive only in electric cars since 2010
- Denmark's first electric truck in 2010
- Only energy from own wind turbine since 2010



We already had all the "ordinary" sustainability labels, but...



We took a gamechanging decision

100 % sustainable product



KLSPurePrint®

The ambition

- 100% free of harmful chemicals
- 100% free of heavy metals
- 100% biodegradable
- 100% compostable
- Same quality
- Same price



A much bigger challenge than expected

Required own development of

- Inks
- Paper and cardboard
- Varnish
- Glue
- Other materials

in cooperation with ambitious
and visionary producers.



But we succeeded!

On the 4th of May 2015 the button was pressed for the first Pure Print print !

Carsten Hänel, CEO Carlsberg Danmark
Ida Auken, former Minister of the Environment
Helle Adelborg, Mayor of Hvidovre Municipality



The ultimate certificate

As only the second printing company in the world, KLS PurePrint was certified to the ultimate strictest environmental standard...

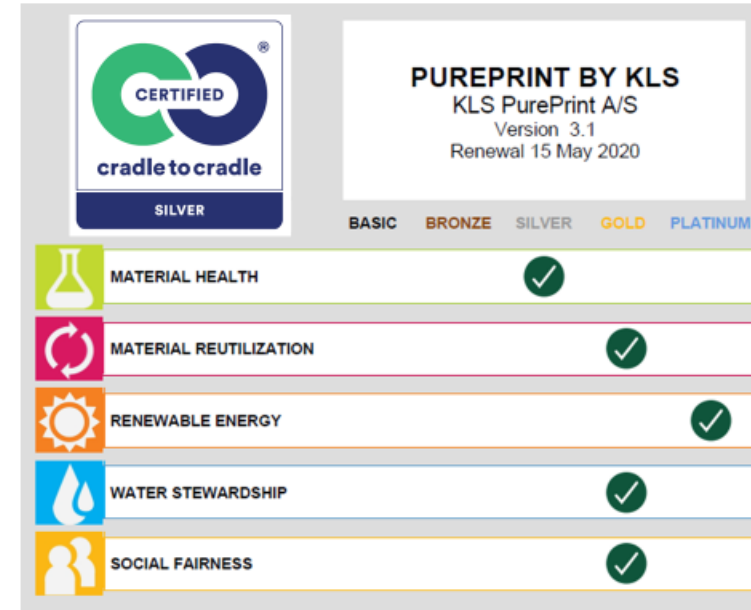


KLSPurePrint®

C2C certification

Hard requirements within Sustainability in five areas:

- Healthy materials
- Need reusable materials
- Need to be using renewable energy and limit the carbon footprint (CO₂)
- Secure the water resources
- Have to be social responsible





Cradle to Cradle products programme



PurePrint Uncoated
PurePrint Silk
PurePrint Coated Gloss
PurePrint Volume

PurePrint Cardboard
PurePrint Cardboard Double
PurePrint Folding Box Board

Cradle to Cradle products programme

- Annual reports
- Brochures
- Catalogues
- Leaflets
- Assembly instructions
- Books



Cradle to Cradle products programme

PACKAGING

- Packaging in cardboard
- For food and other industries



KLSPurePrint®

Cradle to Cradle products programme

PACKAGING

- Smaller packaging in cardboard
- Maximum packaging sizes
 - all able to print, cut and bend within a sheet size of 72 x 102 cm



KLS PurePrint®

Cradle to Cradle products programme

PACKAGING

- For sweets/chocolates



Cradle to Cradle products programme

PACKAGING

- Plante based foods



KLSPurePrint®

Cradle to Cradle products programme

PACKAGING

- Sustainable Treatbox for food waste
 - public kitchens & restaurants
- Part of a Japanese science project
 - purpose to reduce future food waste



Cradle to Cradle products programme

PACKAGING

- Interest from Hard Rock Café
 - Existing solution was not sustainable
 - Helping guests regarding food waste
 - Sustainable solution
 - Following the European standard of compostability – EN13432



Cradle to Cradle products programme

PACKAGING

Danfoss new ESG strategy in 2022

Wish for sustainable packaging





PurePrint® by **KLS**

Produced biodegradable
by KLS PurePrint A/S



More than 250 new customers

GREENPEACE



Poul Due Jensen
Foundation



coop



THANK YOU FOR LISTENING !





Global ● ● ●
FOODTURE

Creation of Functional & Sustainable Packaging for a Better World

By Dr. Pongsuda Phumathon Pongtanya, Managing Director,
Deltalab SL - Member of SCGP Packaging



Creation of Functional & Sustainable Packaging for a Better World

19 October 2023

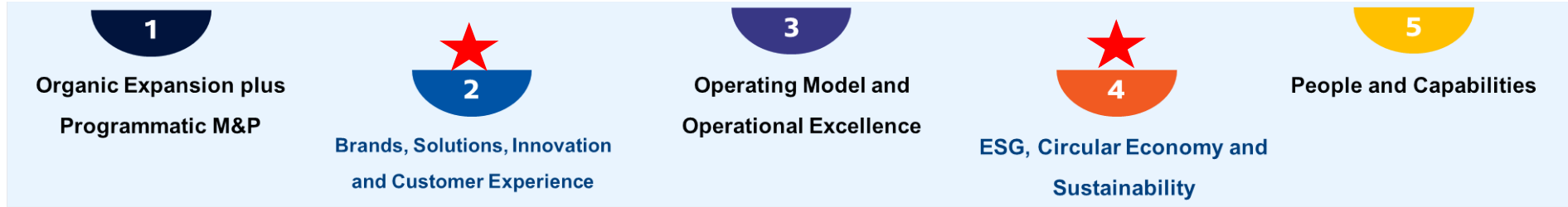
Dr. Pongsuda Phumathon Pongtanya

Managing Director

Deltalab SL, Spain

VISION: “A leading **multinational** consumer packaging **solutions** provider through **innovative** and **sustainable** offerings”

STRATEGY



BUSINESS: Wood, Pulp, Paper, Plastic, Packaging, Labware & Medware, Recycling Business

ESG & Circular Economy in Focus



Source: Frost & Sullivan & Company data

Note : 1. No.1 Market shares of packaging paper in TH, VN & PH and fiber-based packaging in TH & VN
2. Market capitalization as of 07 Apr 2023

Capturing consumer trends to develop “Sustainable & Innovative Packaging”

Deliver packaging solutions in line with consumer trends, fit with customer needs, and align with sustainability

Key trends over the next 10+ years

Implication to packaging industry

Key levers to drive holistic impact



1. Increasing awareness of sustainable packaging

Recyclability & renewable materials with sustainability in the value chain

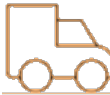


Circularity
Optimize recyclability & recycled content



2. E-commerce everywhere

Packaging features for omnichannel e.g. easy-to-pack, unboxing experience, convenience



Transport
Optimize transport efficiency



3. Rapidly changing consumer preferences

Innovation toward personalized, healthier, convenient packaging and SKU proliferation

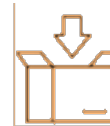


Redesign
Optimize customer experience



4. FMCG/retail margin compression

Collaboration between converters & customers to reduce costs & improve sustainability



Use less
Reduce materials or combine secondary and tertiary



5. Digitization/ internet of things (IOT)

Adoption of digital solutions through technology integration in packaging



GHG
Lower emission to comply with new regulations

Global Protocol on Packaging Sustainability

- Dealing with **the Increasingly Stringent Regulatory Landscape**
- Sustainability has become a key motivator for consumers

NORTH AMERICA

- UNITED STATE**
- US Plastic Packaging Directives
 - Plastic Minimum Content Standards (California's Assembly Bill 793)
 - SB 54 Plastic Pollution Producer Responsibility Act
 - SB 343 Truth in Labeling for Recyclable Material
- CANADA**
- Recycled content and labelling rules for plastics: Regulatory Framework Paper

EUROPE

- EUROPE**
- Single-Use Plastics Directive (2019/904)
 - Packaging Waste Directive (94/62/EC)
 - Eco-design Directive (2009/125/EC)
 - Waste Framework Directive (2008/98/EC)
 - REACH Regulation (1907/2006)
- SPAIN**
- Act 11/1997: Packaging and Packaging Waste
 - Royal Decree 293/2018: Reduction in the use of plastic bags
 - Law 7/2022: Plastic Tax
- GERMANY**
- German Packaging Act
 - German Ordinance on Single-Use Plastics
- DENMARK**
- PFAS Ban on Paper and Cardboard Food Packaging
- ITALY**
- The Italian Legislative Decree 196/2021
 - Italy's Plastic Tax
- FRANCE**
- French Environmental Code / Circular Economy Law
- THE NETHERLANDS**
- Environmental Management Act
- UNITED KINGDOM**
- UK Plastic Packaging Tax (PPT)

ASIA

- CHINA**
- Plastic Packaging Directives: Plastic Pollution Control
- INDIA**
- Plastic Packaging Directives: Plastic Waste Management Amendment Rules, 2021
- JAPAN**
- The Packaging Recycling Act: The Application of EPR to Packaging Policies in Japan
- VIETNAM**
- Enacted a detailed rule for EPR through Decree No. 08/2022/ND-CD

ASEAN

- THAILAND**
- has taken a significant step forward with its Roadmap on Plastic Waste Management, whose aim is to achieve 100% recycling of waste by 2027. It is also in the process of planning its own EPR framework.
- PHILIPPINES**
- The EPR Act RA 11898, enforced in 2023
- INDONESIA**
- Indonesia's ambitious presidential decree aims to reduce marine plastic litter by 70% by 2025. Through its Ministry of Environmental and Forestry, it has also set an ambitious target of reducing packaging waste by 30% by 2029.
 - The voluntary EPR scheme has been implemented since 2020.
- SINGAPORE**
- With plans to enforce EPR by 2025, Singapore has introduced Mandatory Packaging Reporting (MPR) for companies in the packaged goods sector.

SOUTH AMERICA

- BRAZIL**
- Producers are obligated by the 'Sector agreement to implement a reverse logistics system for general packaging'
- VENEZUELA**
- A packaging EPR law requires producers of packaging made from single-use paper, plastics and glass to register with the Ministry of Ecosocialism (MINEC). Producers must also submit individual or collective EPR plans and begin paying fees to the ministry based on the quantity and types of packaging materials put onto the market.

SCGP's Goal for sustainability



INCREASE
Recycled materials collection rate

TRANSFORMING
Waste into Plastic Resins

REDUCE
Resource usage

35% ↓
Water withdrawal by 2025

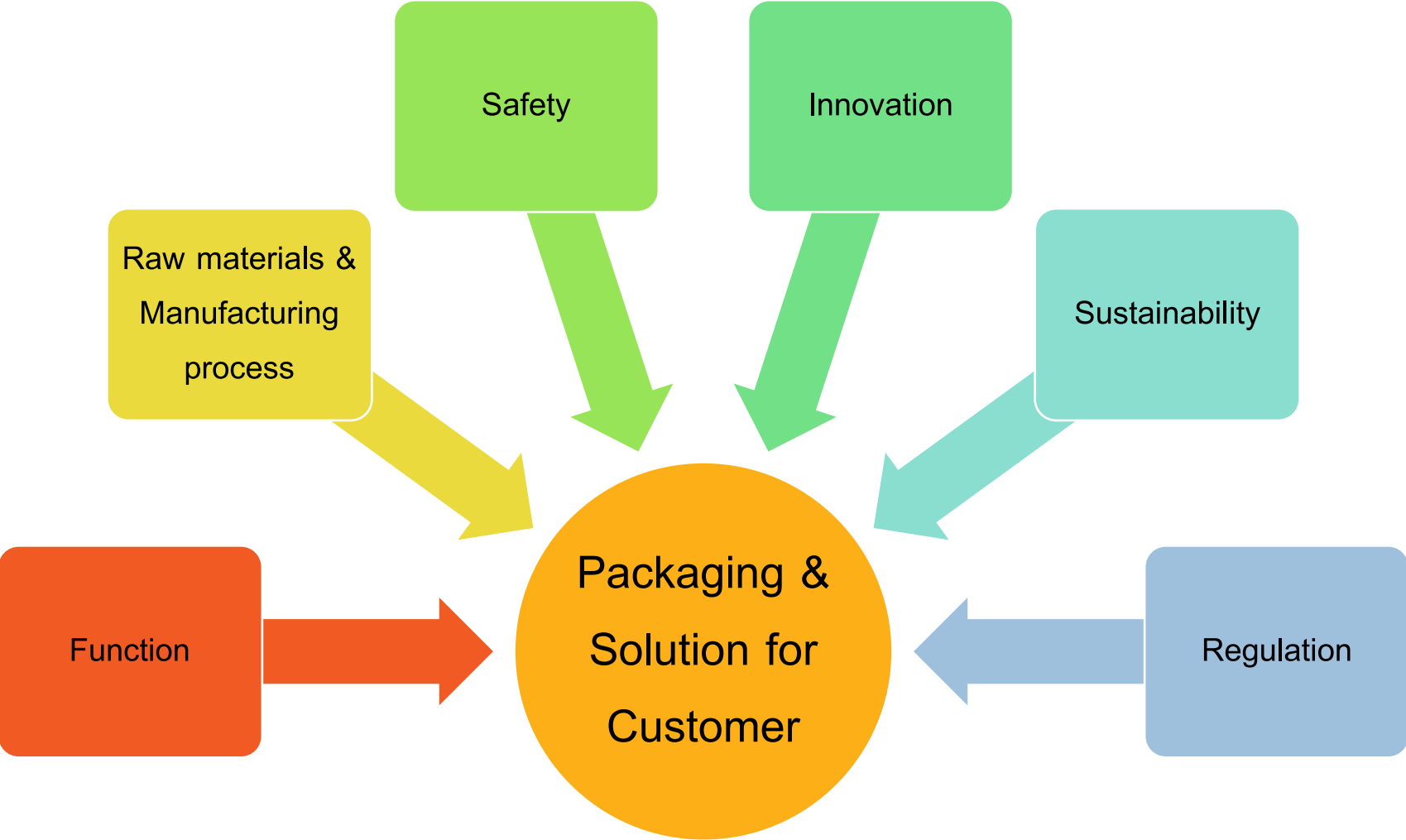
100% ↑
Recyclability by 2025

20% ↓
GHG Emission by 2030

80% ↑
Renewable energy by 2040



Creation Guideline of Packaging & Solution at SCGP



Highlight - Packaging for Food

Paper

Fest Redi Pak Chilled food ready meal tray to maintain the freshness and taste of food



Function: Hot filling, keep freshness, and microwavable

Sustainability: Pulp mold – Natural & renewable material with plastic film lid

Fest Fresh Pak Chilled fresh meat paper tray to preserve the freshness of meat



Function: Keep freshness, and protect from contamination

Sustainability: Pulp mold or paper – Natural & renewable material with plastic film lid

OptiBreath

Modified Atmosphere Packaging for Fresh Produce



Function: Prolong shelf-life 1-2 mth at 4-10°C, keep freshness, reduction of logistic cost, expand market to export

Sustainability: Plastic film & bag with perforation tech, Reduce food waste, Reusable & Recyclable

Plastic

Flexible Packaging Mono-Material (R1 and R1+)/ Fybrozeal (paper)

Lightweight laminated mono-material made from a single type of polymer for each layer



Function: Strong & high barrier property

Sustainability: PE with mono-material – Recyclable

Strong & high barrier property

Paper from Eucalyptus pulp – Renewable resource & Recyclable

Highlight - Packaging for **Non-Food**

Paper

Lightweight Green Carton



Function: Smart Corrugated box with lighter weight and stronger protection

Sustainability: Technology to decrease paper and energy consumption
Nanocellulose – binding additive
 Reduce, renewable and recycled fiber & recyclable

Paper Bottle



Function: Contain liquid products like personal care, beverage, etc.

Sustainability: 100% recyclable bottles made of wood fibers (Eucalyptus) with a bio-based material barrier suitable for liquid goods

Plastic

Packaging with Recycled Content (PCR or PIR)



Rigid Packaging
 Lubricant packaging made from environmentally friendly Post-Consumer Recycled (PCR) and Post-Industrial Recycled (PIR) resin and can be recyclable

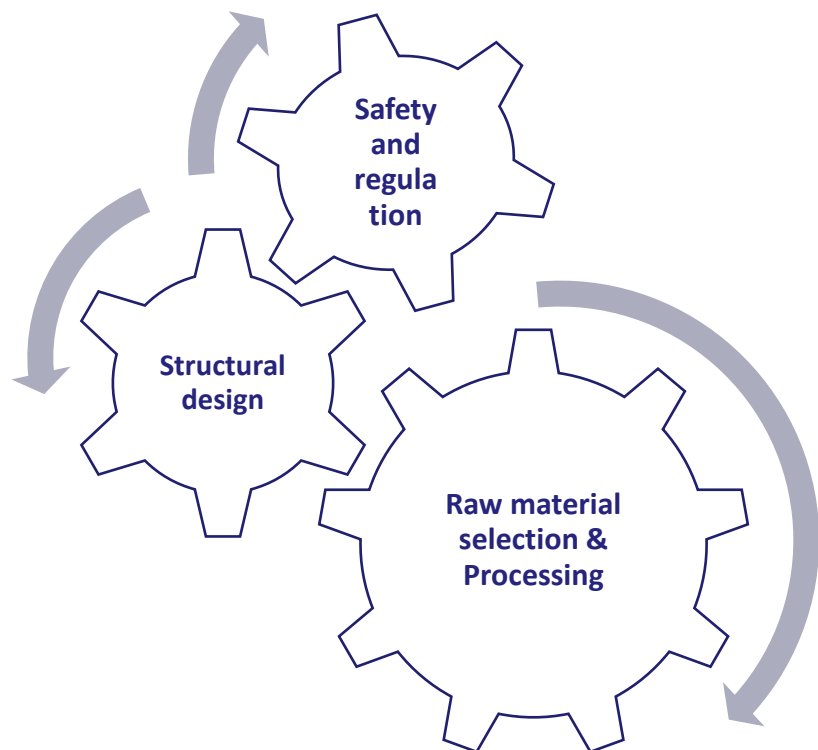


Flexible Packaging
 Packaging for hygiene products made from Post-Industrial Recycled (PIR) resin and can be recyclable because it is produced from mono-material

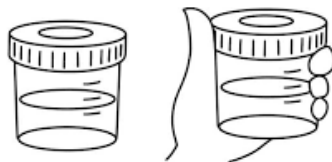
Sustainable / Green Labware Design Concept

- Academic research labs throw away 5.5 M tons of plastic every year
- Trends of “Low-carbon labware”

Balancing sustainability, functionality and safety of green labware and medical supplies



Potential approach for sustainable development in labware & consumables



Use less material with ensuring durability and lightweight design



Use mono-material and/or alternative bio-based material



Incorporate recycled content



Ensure compatibility of closures for recycling

The packaging cardboard materials used in for the products commercialized by Deltalab are biodegradable and recyclable.



Cardboard waste containers:

- 90% natural materials, of which 70% are recycled



Freezing cardboard storage box:

- Made of white treated cardboard and resist temperatures up to – 100 °C

Setting the labware product standard for product transparency and sustainability into every part of production flow which will be reflected in products.

<https://worldwide.promega.com/resources/student-resource-center/beyond-the-lab/my-green-lab/>

<https://capp.dk/blog/sustainable-lab-consumables/>

<https://www.selectscience.net/editorial-articles/low-carbon-labware-setting-the-standard-for-product-transparency-and-sustainability/?artID=57184>

Summary: SCGP Value Chain & Sustainability Pathway

- Natural Resources**
- Virgin raw materials (e.g. wood chips/ wood logs, virgin pulp, virgin film/resin)
 - Recycled raw materials (e.g. recovered paper, post consumer resin)
 - Water
 - Energy



- Global Protocol**
- Circularity**
- Transport**
- Redesign**
- Use less**
- GHG**

Packaging for a Better World

- Natural Impact**
- Reduction of CO₂ emissions
 - Air pollutants, waste and effluent appropriately managed and reduced
 - Reduction of energy and water consumption
 - Preservation of biodiversity

Source: Sustainability report 2022, SCG Packaging

Thank You





End of
Masterclass 1

Masterclass 2: Food packaging Regulations

- **Introduction to Master Class 2: “Food packaging regulations”** by Moderator Mònica Riera, Packaging Cluster





Global ● ● ●
FOODTURE

EU packaging laws to foster the circular economy

by Axel Darut , Minderoo Foundation – Advocacy & Engagement

EU Packaging and packaging waste regulation

Global Foodture webinar - 19th October 2023



Axel DARUT

EU Context



Overview of the main targets set by the previous circular economy package & SUP directive



Extended Producer

Mandatory EPR scheme for all packaging in 2025 (French implementation planned for 2021)

Coverage of necessary costs for an efficient system

Modulation of contributions from 2020

SUP directive: costs coverage for littering for certain packaging (food containers, flexible material packages and packaging, beverage containers, beverage cups)

Implementation planned by 05/01/2023 at the latest



Eco-design & recycling

New calculation point: implementation on 2020 tonnes, communication to Eurostat by mid-2021

Integration of recycled material: 25% for PET bottles by 2030, 30% by 2030 for all plastic bottles

Attached caps to all plastic beverage packaging from 03/07/2024

Separate collection rate for recycling of plastic beverage bottles: 77% by 2025, 90% by 2029

Recycling targets for packaging waste by 2025 and 2030: 65% for all packaging in 2025, 70% by 2030, 50% and 55% for plastics, 75% and 85% for paper



Other actions

Sorting of biowaste from 2023

Marketing restriction for certain single-use plastic products (SUP Directive: cotton swabs, cutlery, plates, drinking sticks, balloon rods, etc.)

Mandatory selective collection of textiles and hazardous waste from 2025

Landfilling of municipal waste limited to 10% in 2030

Ban on landfilling separately collected waste for reuse or recycling in 2030



The new circular economy action plan from 2020

In March 2020, the European Commission has published a new circular economy action plan focus on the sectors that use most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients.

In this perspective, the European Commission has published few proposals in 2022 including:

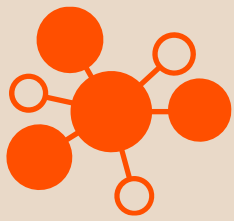
- ✓ A proposal for [Ecodesign for Sustainable Products Regulation](#) the 30th of March 2022 currently under negotiation between the EU institutions
- ✓ A proposal for the [revision of the Packaging and Packaging Waste Directive into a Regulation](#) the 30th of November 2022 which is under consultation for stakeholders until mid-April 2023.
- ✓ A [proposal to restrict intentionally added microplastics](#) from the 30th of August 2022 currently under negotiation between EU institutions
- ✓ [The Chemicals strategy for sustainability](#) including the revision of the existing REACH regulation from 2007



Focus on packaging - new circular economy action plan from 2020

*“measures to **reduce packaging and packaging waste**, drive design for **reuse** and **recyclability** of packaging, reduce the complexity of packaging materials and introduce requirements for **recycled content** in plastic packaging. Further, it strives in line with the European Strategy for Plastics that “all packaging, including plastics, on the EU market is reusable or recyclable in an economically viable, cost-effective manner way by 2030”*”

Communication on the Circular Economy Action Plan, delivering on the European Green Deal (COM/2019/640 final)



Problem areas for packaging

High and growing levels of packaging waste

High levels of avoidable packaging

Increase in the proportion of single-use packaging

Barriers to packaging circularity

Increased use of packaging design features that inhibit recycling

Cross-contamination of conventional and compostable recycling streams

Presence of hazardous substances

Waste management and reuse are not efficient

Inconsistent and confusing labelling

Downcycling

Low levels of recycled content in plastic packaging

PPWR proposal



Regulation with internal market legal basis

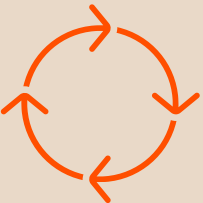
Directive 94/62/EC on packaging and packaging waste

- Article 114 TFEU
- Unenforceable and weakly formulated essential requirements
- Obligations on the members State have lead to market failures
- Early Warning Report



Regulation on packaging and packaging waste

- Article 114 TFEU: no change
- Modernise and reinforce requirements
- Detailed and directly applicable requirements on packaging and on economic operators Minimum requirements on extended producer responsibility as well as rules on collection and targets for reuse and recycling
- Avoid issues due to delayed or incorrect transpositions by the MS





Core measures on prevention and reuse

Target of 5% reduction of packaging waste by 2030 compared to the baseline of 2018 (10% by 2035 and 15% by 2040)
put on Member States & complemented by other measures

Waste prevention	Re-use
<ul style="list-style-type: none">✓ Requirement to minimise packaging volume and weight✓ Limiting void space:<ul style="list-style-type: none">○ In sales packaging (obligation of manufacturer)○ In grouped, transport and e-commerce packaging (obligation of economic operators supplying goods using such packaging)✓ Avoiding unnecessary packaging	<ul style="list-style-type: none">✓ Addressing reusable packaging formats and reuse systems✓ Sector specific re-use targets on economic operators; exemptions based on:<ul style="list-style-type: none">○ Micro-company status○ sales area and○ amount of packaging placed on the market



Reuse/refill targets on economic operators

Article 26

Sector	Packaging type	Packaging groups and products/ Obligated economic operator	Targets for 2023	Targets for 2040
Food and beverage HoReCa	<i>Primary B2C</i>	Beverage (cold and hot) filled into a container at the point of sale for take-away, to be sold in packaging within a system for re-use or refill = final distributor	20%	80%
	<i>Primary B2C</i>	Food for take-away, to be sold in packaging within a system for re-use or refill = final distributor	10%	40%
Food and beverage- retail	<i>Primary B2C</i>	Alcoholic beverages other than wine, aromatised wine products, fruit wine and spirits, and products based on wine, spirits or other fermented beverages mixed with non-alcoholic beverages, to be sold in packaging within a system for re-use or refill = manufacturer and final distributor	10%	25%
	<i>Primary B2C</i>	Wine other than sparkling wine to be sold in packaging within a system for re-use or refill = manufacturer and final distributor	5%	15%
	<i>Primary B2C</i>	Non-alcoholic beverages, such as water, soft drinks, juices, to be sold in packaging within a system for re-use or refill = manufacturer and final distributor	10%	25%
	<i>Primary B2B</i>	Large household appliances e.g., washing machines or fridges, to be sold in reusable packaging = ec. operator	90%	90%
Commercial and industrial	<i>Tertiary B2B</i>	Goods sold using pallets, crates, foldable boxes, pails and drums for the conveyance or packaging of the goods, to be sold in reusable packaging = ec. operator using transport packaging	30%	90%
	<i>Tertiary B2B</i>	Non-food goods sold via e-commerce using packaging for transport and delivery, to be sold in reusable packaging = ec. operator using transport packaging	10%	50%
	<i>Tertiary B2B</i>	Pallet wrappings and straps for stabilization and protection of goods during transport, to be sold in reusable packaging = ec. operator using transport packaging	10%	30%
	<i>Tertiary B2B</i>	Grouped packaging boxes (excl cardboard) e.g., pack of larger quantities of packaging units used, outside of sales packaging to group a certain number of goods to create a stock-keeping packaging	10%	25%



Reuse/refill targets on economic operators

Articles 26, 27, 28

General exemption for:

- micro-companies
- EO placing less than 1000 kg of packaging on the market
- For EO with a sales area less than 1000 m² (this exemption applies only for beverages and food targets)

Empowerment on the COM to adopt DAs to establish:

- Targets for other products
- Exemptions for other EOs
- Exemptions for specific packaging formats covered by the targets

Specific review clause in 8 years after the entry into force

Calculation of the targets

- based on the number of sales or equivalent units in calendar year (Art. 27, 28) =
Implementing act by 2028



Full recyclability of packaging by 2030 (1/2)

All packaging items have to undergo a recyclability assessment procedure for the category to which it belongs, to assure they meet the design for recycling (DfR) criteria established in a Delegated Act. The recycling performance in practice is verified by means of a methodology developed subsequently to the DfR criteria. Packaging is assigned a grade from A to E.

As from 2030 only packaging scoring grades A-D can be placed on the market.

Exception for innovative packaging (max 5 years), for certain packaging of pharmaceuticals and medical devices (max. up to 2035)

EPR fees to be based on the performance grades A to D

Grade	Score of compliance with Design for Recycling criteria of a unit of packaging*
A	95%
B	90%
C	80%
D	70%
E	Less than 70%

**in terms of weight of the unit of packaging*



Full recyclability of packaging by 2030 (2/2)

The recycling performance in practice ('at scale') will be verified as of 2035 by means of a methodology to be developed subsequently to the DfR criteria; the delegated act with DfR criteria and performance grades will, where necessary, be amended accordingly;

As from 2035 only packaging scoring grades A-D (then including recyclable 'at scale') can be placed on the market.





Compostability requirements

4 packaging formats (tea and coffee bags, tea and coffee single-serve systems, fruit and vegetable sticky labels and very light plastic carrier bags) must be compostable so that this packaging can go together with the product into the biowaste stream.

All other plastic containing packaging should go into material recycling.

Opening for light plastic carrier bags, a significant market item, to be compostable in Member States where there is the respective infrastructure that they go into composting.



Recycled content targets for packaging containing plastic part

- Ambitious targets for 2030 and 2040 for post-consumer recycled content in packaging containing plastic part (not for other packaging materials: glass, metal, paper)
- Requirement with respect to packaging placed on the EU market
- Different targets for different packaging categories – exemptions for medicinal products and medical devices:

Targets for recycled content packaging containing plastic part		
Packaging	2030	2040
SUP beverage bottles	30%	65%
Contact sensitive packaging		50%
<i>PET as major component</i>	30%	
<i>PET is not as major component</i>	10%	
Other plastic packaging	70%	65%

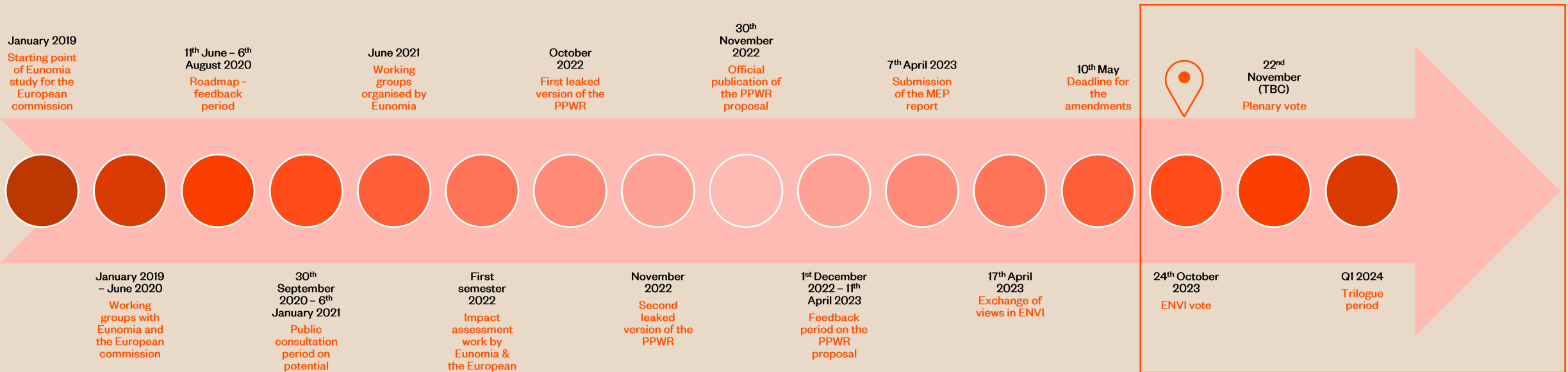


Enabling measures : labelling & DRS

- EU harmonised mandatory labelling of for products and waste receptacles to facilitate consumer sorting, inspired by Nordic pictogram system
- Harmonised mandatory labelling of reusable packaging including QR code
- Harmonised criteria for (voluntary) labelling of recycled content
- Abandonment of the current, alphanumeric material-based labelling
- Setting up of mandatory Deposit Return Systems (DRS) for plastic bottles and metal cans with opt out for MS achieving 90% recovery by other means
- Minimum requirements for all DRS



PPWR negotiations - next steps



January 2019 – June 2020
Working groups with Eunomia and the European commission

30th September 2020 – 6th January 2021
Public consultation period on potential measures

First semester 2022
Impact assessment work by Eunomia & the European commission

November 2022
Second leaked version of the PPWR

1st December 2022 – 1st April 2023
Feedback period on the PPWR proposal

17th April 2023
Exchange of views in ENVI

24th October 2023
ENVI vote

Q1 2024
Trilogue period





End of
Masterclass 2

Next activity

Global Foodture Company Mission Singapore

30 Oct - 3 Nov 2023



Last Chance for Matchmaking Meetings!

- You can book and have meetings until **30 October 2023**
- 775+ participants



Overview of the activities

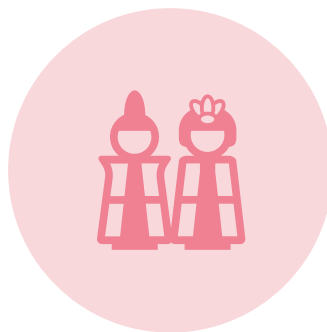
Click below:

[Past Activities](#)



12 THEMATIC WORKSHOPS

2925 REGISTERED PARTICIPANTS



**4 INTERNATIONAL TRAININGS ON
JAPAN, SINGAPORE, SOUTH KOREA
AND THAILAND**

463 REGISTERED PARTICIPANTS



**2 COMPANY MISSIONS: THAILAND
AND SINGAPORE**

45 PARTICIPANTS



TIME TO SAY GOODBYE

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FOODTURE

