
BEDRIFTENES LØFTE
PLAST
LØFTET
TIL PLANETEN

Velkommen til årets fjerde

Plastløftet-samling

Design for gjenvinning

Program

10.00 **Velkommen til Plastløftet**
Johannes Daae, Grønt Punkt Norge

10.05 **Standardisering av design for gjenvinning**
Sina Maria Lystvet, Grønt Punkt Norge

10.15 **Nye regler rundt gjenvunnet plast og matkontakt**
Tanja Radusin, Norner

10.30 **Sertifisering av Gjenvinnbarhet ResyClass, og planer for integrering av vår kalkulator**
Tanja Radusin, Norner
Johannes Daae, Grønt Punkt Norge

10.50 **Circular Packaging Cluster - Sorteringsgruppa og Digitaliseringsgruppa**
Sina Maria Lystvet, Grønt Punkt Norge
Petter Aaby Vebenstad, Plastretur

11.10 **Spørsmål og svar**

11.30 **Lunsj og mingling**

Har dere spørsmål?

Disse kan skrives i Q&A eller gjennom mikrofon

Opptak og presentasjoner legges ut på
Plastløftesidene i etterkant

Hold av datoene i 2023!

18.10 Fagdag 5: Sirkulær plastøkonomi i praksis

29.11 Fagdag 6:

Hva er Plastløftet?

1. Økt bruk av resirkulert plast
2. Unngå unødvendig bruk av plast
3. Design for gjenvinning

Meld din interesse om du vil ta Plastløftet her:
https://www.grontpunkt.no/emballasjedesign/plastloeftet/

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Grønt Punkt Norge

Standardisering av design for gjenvinning

Sina Maria Lystvet, phd

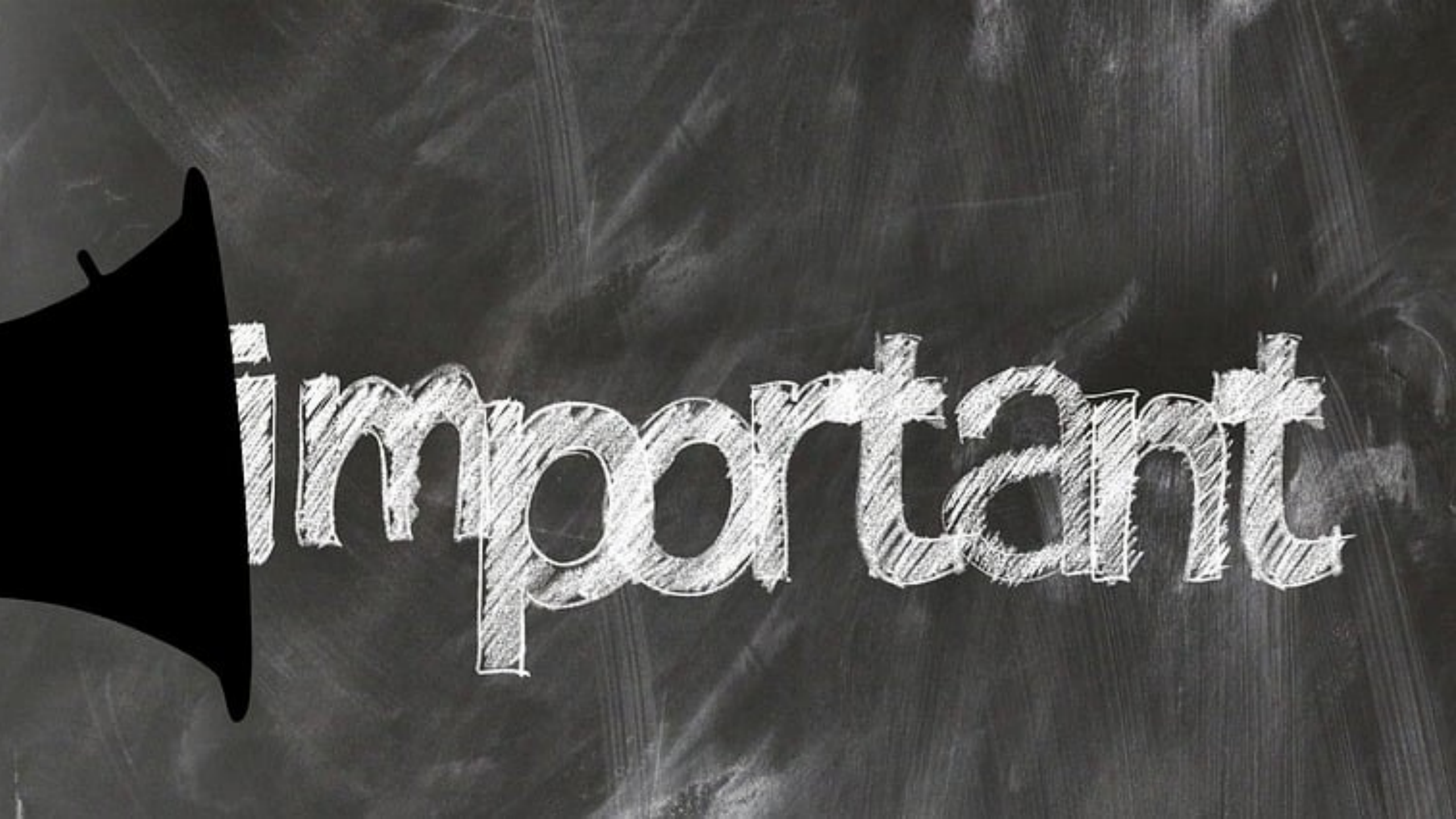
Fagansvarlig for
materialer og teknologi

Foto: Standard Norge

To hovedgrunner – volum og lovverk

Oppkonsentrerte volumer er enklere å gjenvinne

Myndighetsbestemte krav til gjenvinnbarhet krever at vi har felles forståelse for hva som er gjenvinnbart.


important

Standardisering for økt bruk av resirkulert plastemballasje

- Forprosjekt – definere områder og vurdere effekt
- Beskrive hvordan standardisering kan øke volumet av gjenvunnet plast
- Legge til rette for et større prosjekt
- Initiert av Circular Packaging Cluster
- Samarbeid med Grønt Punkt Norge, Emballasjeforenigen Klingelberg Products AS, Norner Research AS og Standard Norge
- Ferdig innen 1.11.2023


Standard
Norge

Deltakelse i internasjonalt standardiseringsarbeid

SNK 609 – Plast i miljø

- CEN TC 249 Plastic
- Arbeidsgruppe 11 – Plastic recycling
- Arbeides med:
  - Resirkulert plast – Karakterisering
  - Kvalitet på sortert plast til gjenvinning
  - Definisjoner av PCR og PIR-plast

SNK 611 – Avfall og gjenvinning

SNK 147 – Bærekraftig emballasje

- CEN TC 261 Emballasje
- Arbeidsgruppe 10 Design for resirkulering for plastholdig emballasje
- Arbeides med standarder for design for gjenvinning til bruk med PPWR
  - 2 standarder på metodologi
  - 6 standarder på retningslinjer
  - 7 standarder på protokoller
  - Ulike standarder for de ulike polymerene
  - Fokus på HH-plast i første omgang. Emballasje som inneholder mer enn 50% plast.

Sammen oppnår vi mer

- Du kan påvirke hvordan standardene blir
- Vi må alle dra i samme retning

Grønt Punkt Norge

Takk

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Nye regler rundt gjenvunnet plast og matkontakt

Plastløftet 13.09.2023

Tanja Radusin

Europa is determined to take the lead!

"The Green Deal is Europe's ***Man on the moon moment.***"
Ursula von der Leyen, President of the European Commission

- EU-27 Number 1 Strategic Priority with two key pillars:
  - Climate-neutrality by 2050
  - Circular Economy
- Transformational roadmap with impacts on all European industries
- Circular Economy Action Plan
  - Plastics, Packaging, Construction, Automotive

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Plastics will meet even stricter regulations

VISION = EU Green Deal + CEAP

CURRENT STATE

- new record of CO_2 emissions in 2022
- global consumption of materials
- packaging waste generation

FUTURE STATE

- climate neutral EU by 2050
- economic growth decoupled from resource use
- key product value chains: packaging & plastics

- Regulation on Packaging and Packaging Waste
- Regulation on the use of recycled plastics for FCMs

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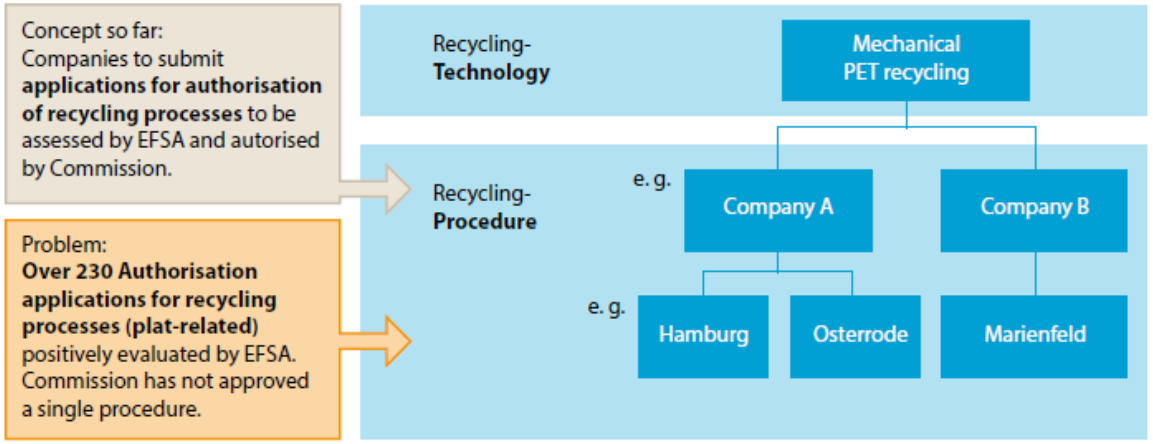
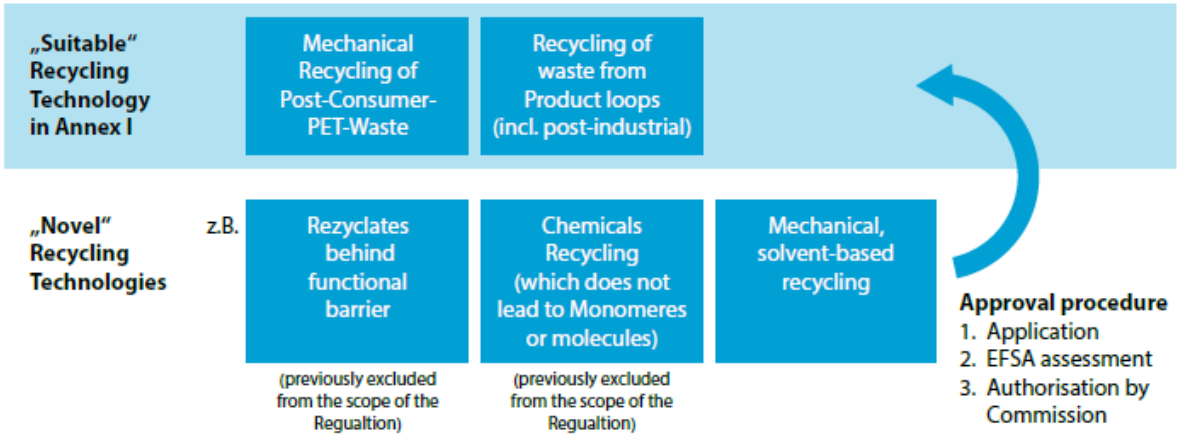
Commission Regulation (EU) 2022/1616 on recycled plastic materials and articles intended to come into contact with foods

- Old regulation 282/2008



- New regulation 1616/2022

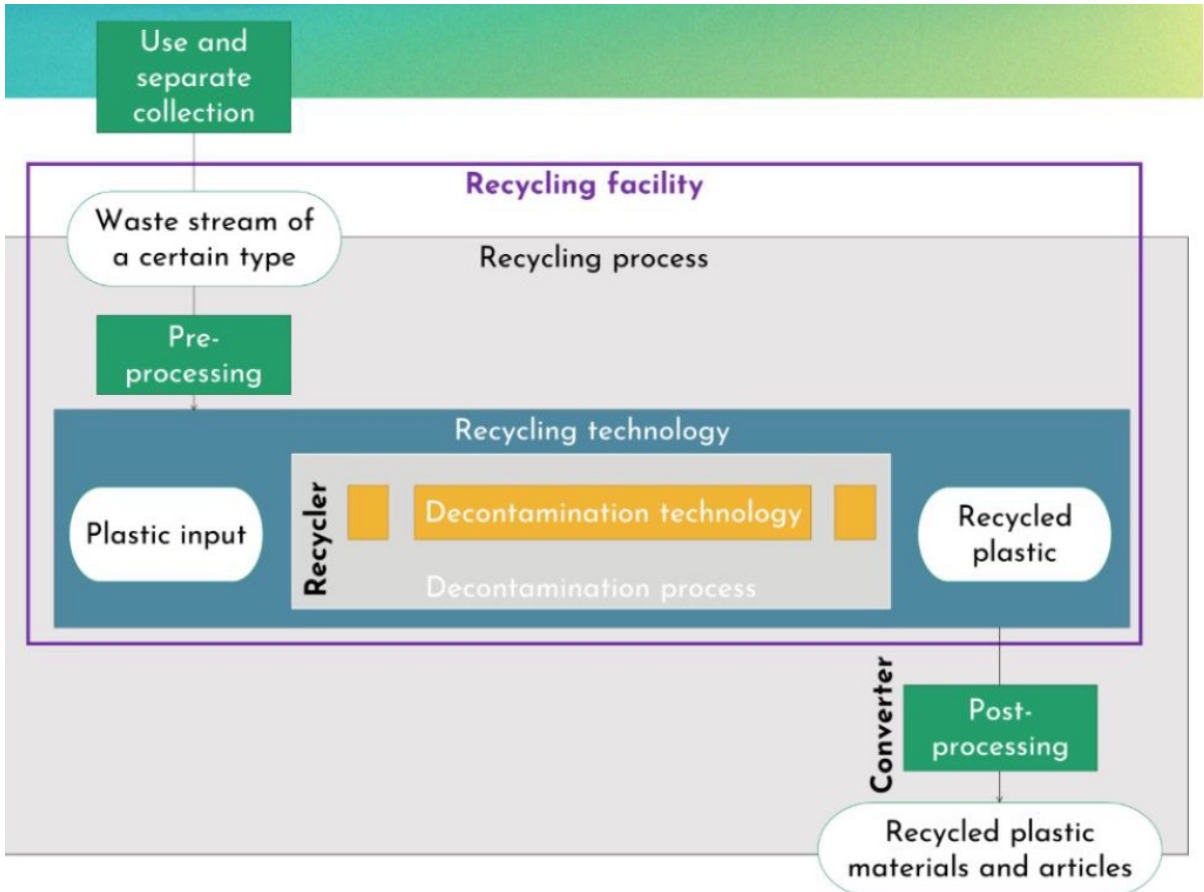


Commission Regulation (EU) 2022/1616 on recycled plastic materials and articles intended to come into contact with foods

- Objectives:
  - Ensure recycled plastic is ***safe for food contact***
  - Require that plastic is ***decontaminated during the recycling***
  - Regulate ***all recycling processes***
  - Ensure clear ***terminology***
  - Keep matters simple, including enforcement and evaluation
  - Build a ***transparent system*** with public register
- Focus: on decontamination
  - The technical detail od the decontamination process, quality if the input and output but not on technical details of pre- and post- processing (R 10/2011 applies)

Scope-the regulation sets requirements on the entire value chain

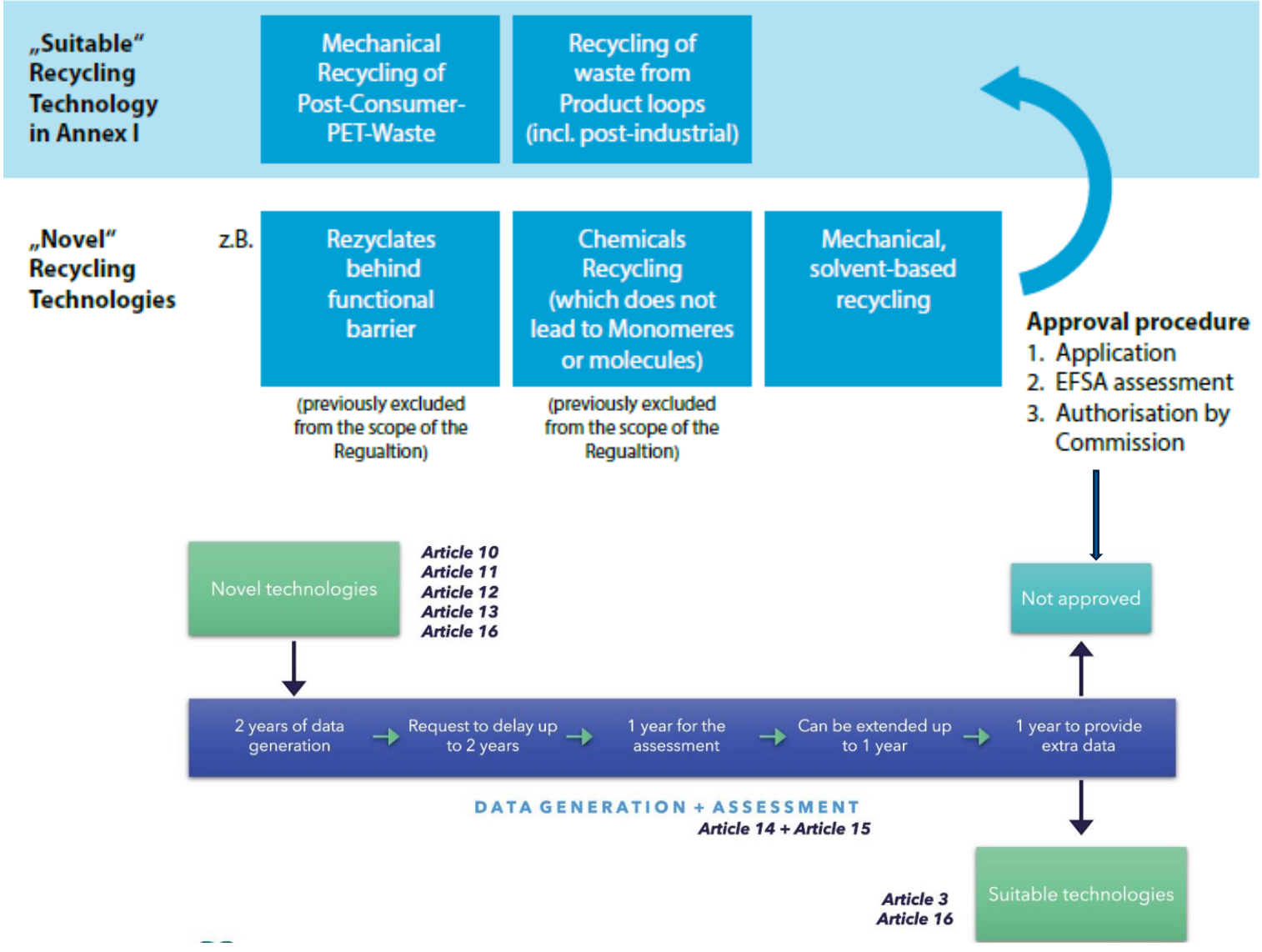
- The regulation (EU) 2022/1616 covers all recycling processes that produces material or article intended to come in contact with food
- The regulation has entered into force on October 10th 2022
- Technologies included:
  - Functional barrier
  - Chemical recycling
  - Physical recycling processes
  - Mechanical recycling
  - Closed loop recycling
- The goal is to cover all polymers



Commission Regulation (EU) 2022/1616 on recycled plastic materials and articles intended to come into contact with foods

- The new regulations stipulates that plastic recyclates can in principle be used in food contact materials if they are processed as:

1. *Suitable technology*
2. *Novel technology*



Suitable technologies

List of suitable recycling technologies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Recycling technology number	Technology name	Polymer type (detailed specification in Table 2)	Short description of the recycling technology (detailed specification in Table 3)	Specification of plastic input	Specification of output	Subject to the authorisation of individual processes	Specifications and requirements (reference to Table 4)	Derogations (reference to Table 5)	Recycling scheme applies
1	Post-consumer mechanical PET recycling	PET (2.1)	Mechanical recycling (3.1)	Only PET PCW containing maximum 5 % of materials and articles that were used in contact with non-food materials or substances.	Decontaminated PET, final materials and articles not to be used in microwave and conventional ovens; additional specifications may apply to output from individual processes	Yes	-	-	No
2	Recycling from product loops which are in a closed and controlled chain	All polymers manufactured as primary materials in compliance with Regulation (EU) No 10/2011	Basic cleaning and microbiological decontamination during remoulding (3.2)	Chemically uncontaminated plastic materials and articles produced from a single polymer or from compatible polymers which were used or intended for use under the same conditions of use and solely obtained from a product loop which is in a closed and controlled chain, and excludes collection from consumers	Remoulded materials and articles intended to be used for the same purpose and under the same conditions of use as the materials and articles circulated in the recycling scheme from which the plastic input was obtained.	No	4.1	-	Yes

Post-consumer mechanical PET recycling

- Only PET PCW containing maximum 5 % of materials and articles that were used in contact with non-food materials or substances
- Union register of technologies, recyclers, recycling processes, recycling schemes, and decontamination installations (Recycling Facility Numbers ‘RFN’):

202	NO0-4NY-0FJ	Veolia PET Norge AS	NO

cs_fcm_plastic-recycling_register_list-2_rfn.pdf (europa.eu)

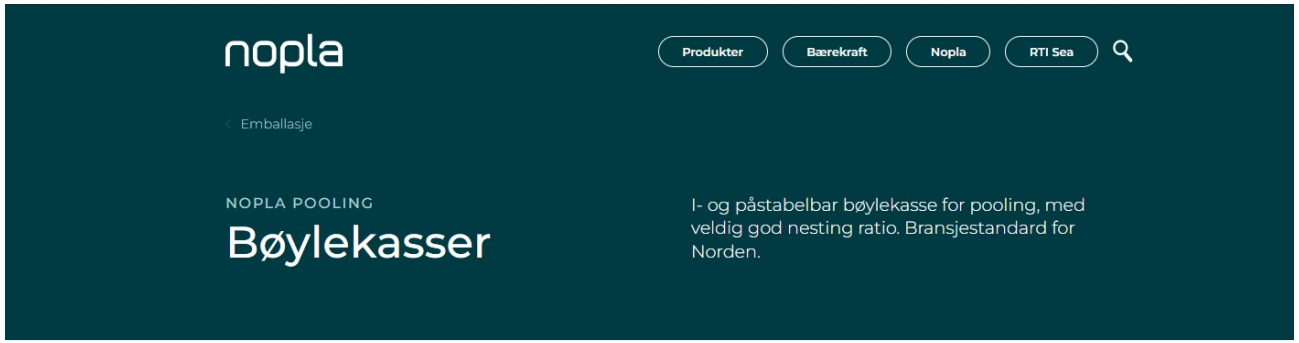
- Union register of technologies, recyclers, recycling processes, recycling schemes, and decontamination installations (Recycling company number ‘RON’):

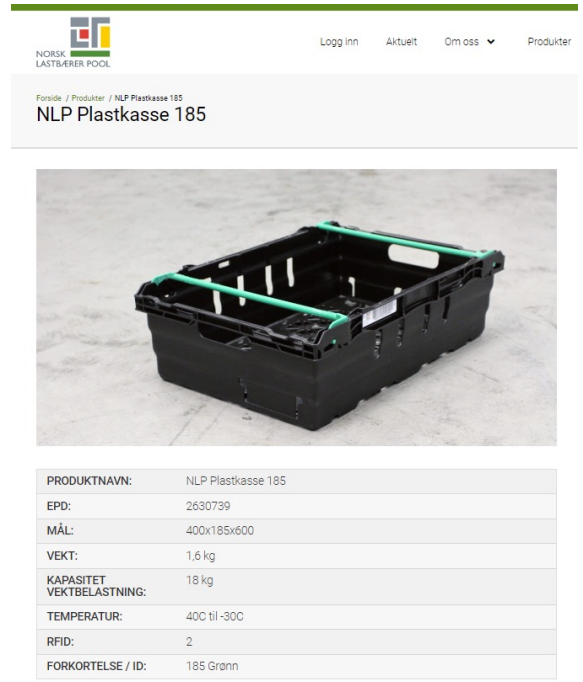
202	NO0-82Z-0OD	Veolia Umweltservice Beteiligungsverwaltungs GmbH	NO

DRAFT Union register of technologies, recyclers, recycling processes, recycling schemes, and decontamination installations (europa.eu)

Closed loop recycling

- Chemically uncontaminated plastic materials and articles produced from a single polymer or from compatible polymers which were used or intended for use under the same conditions of use and solely obtained from a product loop which is in a closed and controlled chain, and excludes collection from consumer
- *NOPLA has registered Recycling Scheme in October 2022 (register is still not published)*





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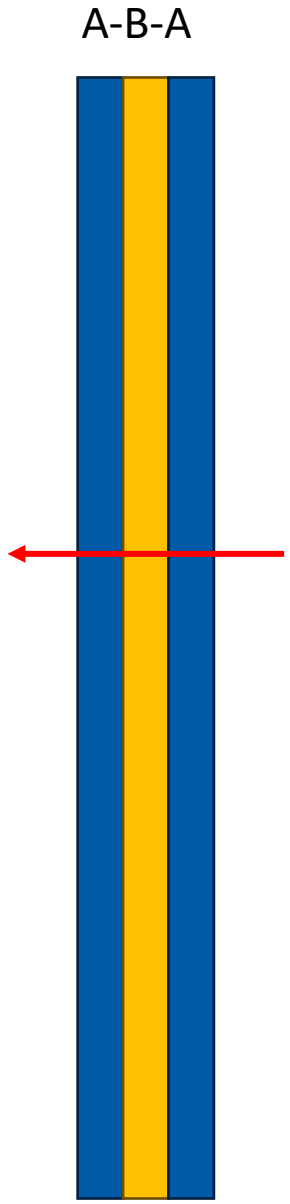
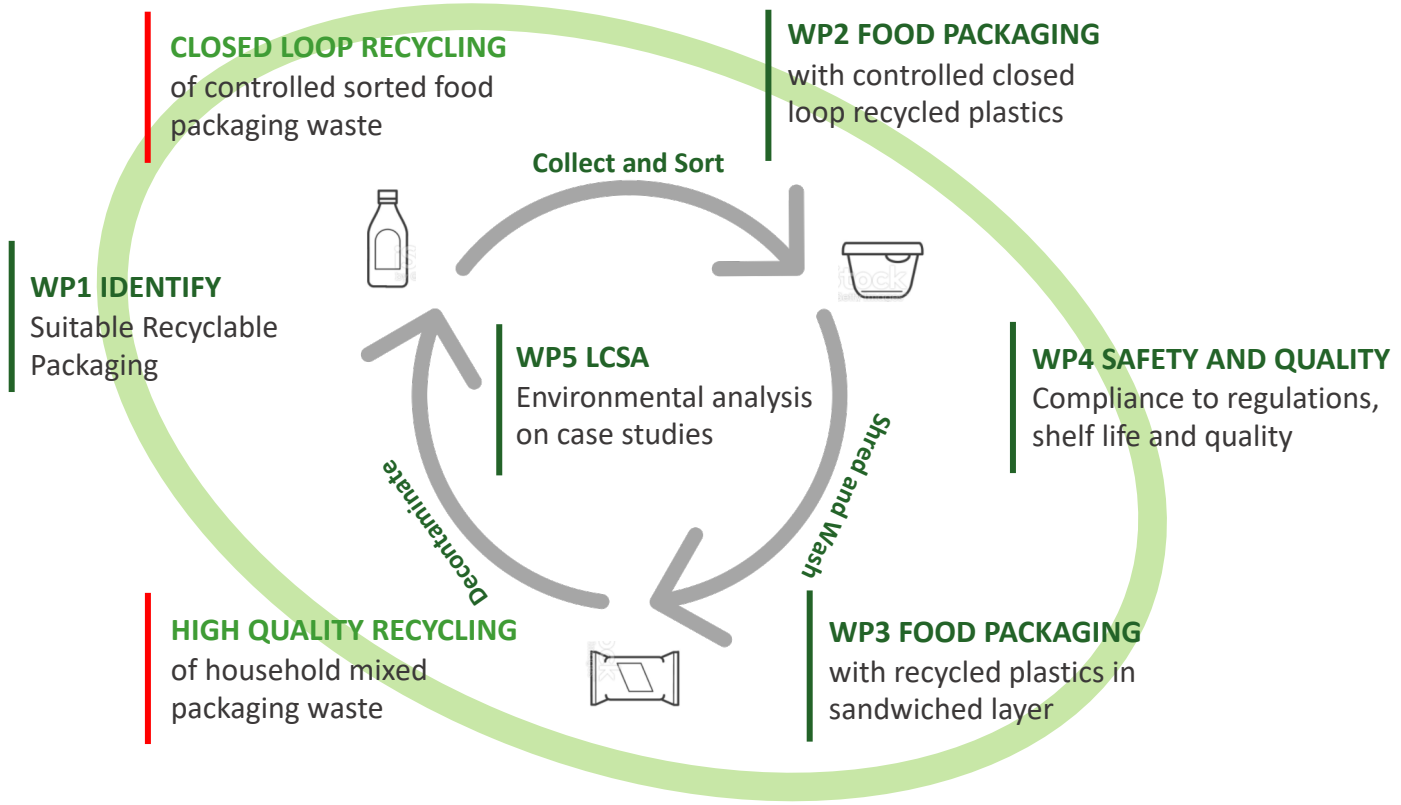
Functional barrier systems *Article 32*

- Considered NOVEL technology
- Recycled plastic in the core layer between virgin outer layers
- Proof of concept in line with (EU) 10/2011
- According to the Commission, the amendment affects *"several hundred recycling facilities"* that have so far used recyclates behind barrier layers
- Special transitional provisions in Art. 32 therefore apply to plants that were already operating before the Regulation entered into force: By 10 April 2023, the "developer" shall submit to the competent authority and the Commission
  - ✓ a list of the facilities and recycling technology together with
  - ✓ the results of migration tests, challenge tests and/or migration modelling which clearly show that the functional barrier is effective within the meaning of Regulation 10/2011 (Art. 32 para. 1).



RecyFoodPack – Recycled plastic for food packaging



RECY FOOD PACK

[RecyFoodPack (norner.no)]

Plastics will meet even stricter regulations

VISION = EU Green Deal + CEAP

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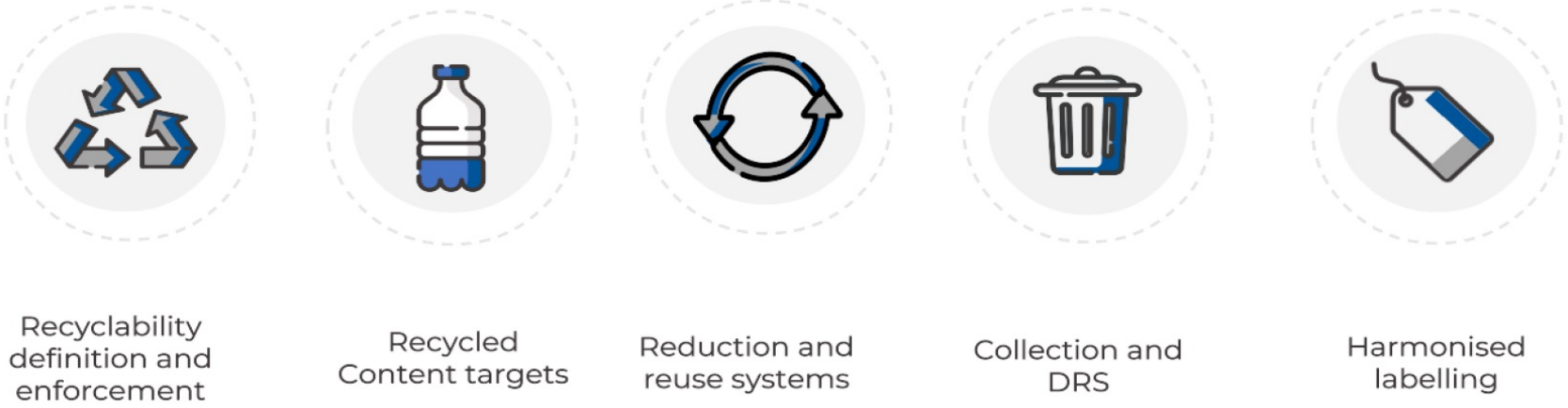
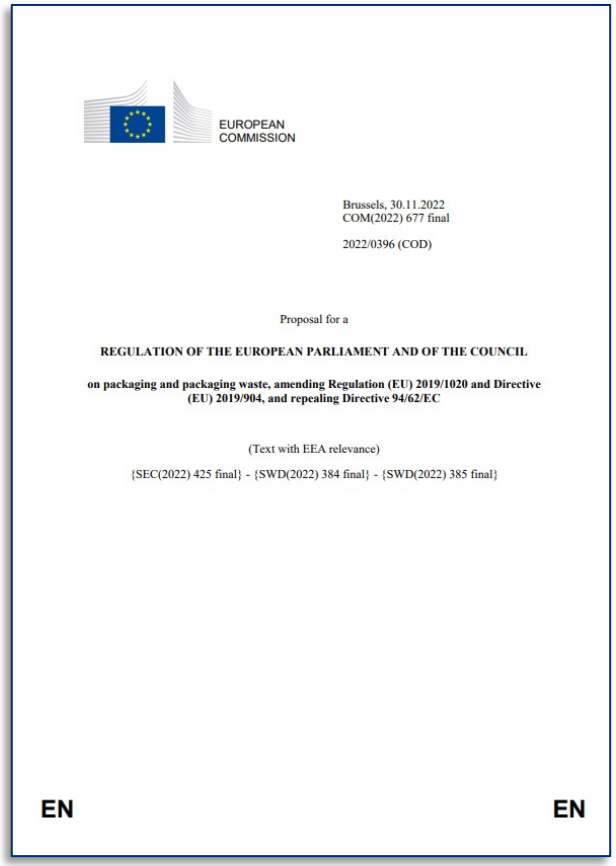
The ambitious regulation is coming!

- New proposal published on 30 November 2022
- Harmonize EPR requirements to make them more effective across the EU
  - Eco-modulation of EPR-fees on recyclability and percentage of recycled content
- **Improve packaging design to promote reuse and recycling**
- Increase recycled content in packaging
- Tackle excessive packaging
- Reduce packaging waste (by 15% by 2040)




EUROPEAN COMMISSION

Brussels, 30.11.2022
COM(2022) 677 final

2022/0396 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

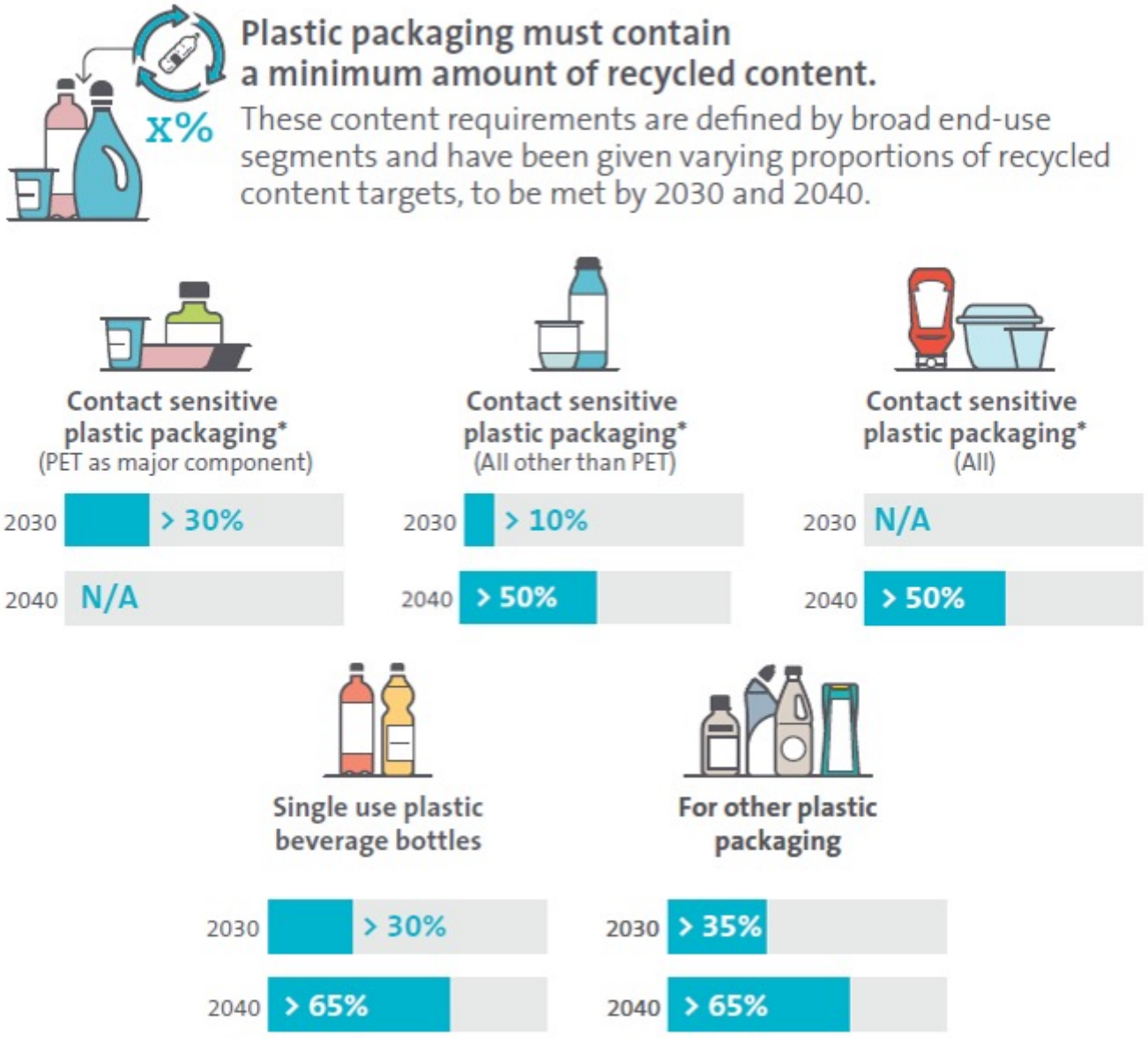
on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC

(Text with EEA relevance)

{SEC(2022) 425 final} - {SWD(2022) 384 final} - {SWD(2022) 385 final}

EN **EN**

Minimum recycled content as of 1st of January 2030



The European principles of Design for Recycling have been harmonised:

5 level categorisation

In terms of weight of the packaging unit, **a score greater than or equal to**		Compatibility with Design for Recycling criteria	Possibility of reusing materials
95%	A	**Fully compatible**	Generated secondary raw materials can feed a closed-loop scheme of the same quality
90%	B	**Minor recyclability issues**	The majority of the recyclate from this packaging can potentially feed a closed loop
80%	C	**Some recyclability issues**	May lead to material losses during recycling
70%	D	**Significant design issues that higly affect its recyclability or imply large material losses during recycling**	
70%	E	**Package is not recyclable**	

RecyClass

CLASS A: The packaging does not pose any recyclability issues and the recycled plastics can potentially feed a closed-loop scheme to be used in the same quality application.

CLASS B: The packaging has some minor recyclability issues that slightly affect the quality of the recycled plastic generated. However, majority of recycled plastics from this packaging can still potentially feed a closed loop.

CLASS C: The packaging presents some recyclability issues that affect the quality of the recycled plastics or lead to material losses during recycling. In the first case the recycled plastic could be used in a cascade open-loop scheme, whereas in the latter case the plastic could potentially feed a closed loop scheme.

CLASS D: The packaging has significant design issues that highly affect its recyclability or imply large material losses. In both cases the recycled plastic can only be fed into low-value applications (i.e. the packaging will be downcycled).

CLASS E: The packaging has major design issues that jeopardize its recyclability or imply severe material losses. The packaging is not considered recyclable and can only be used in incineration with energy recovery.

CLASS F: The packaging is not recyclable at all, either because of fundamental design issues or a lack of specific infrastructure for collection, sorting and recycling in EU28+2.

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Your packaging will be considered recyclable if:

As of 1st January 2030

It complies with with the above Design for Recycling for a packaging category, to which the unit belongs.

It is **effectively and efficiently separately collected.**

It is sorted into defined waste streams **without affecting the recyclability of other waste streams.**

It can be recycled so that the resulting secondary raw materials are of **sufficient quality to substitute primary raw materials.**

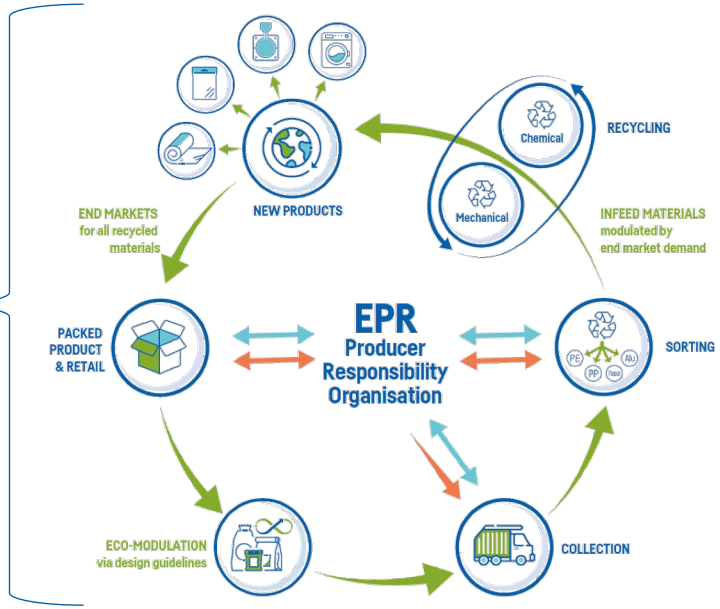
As of 1st January 2035

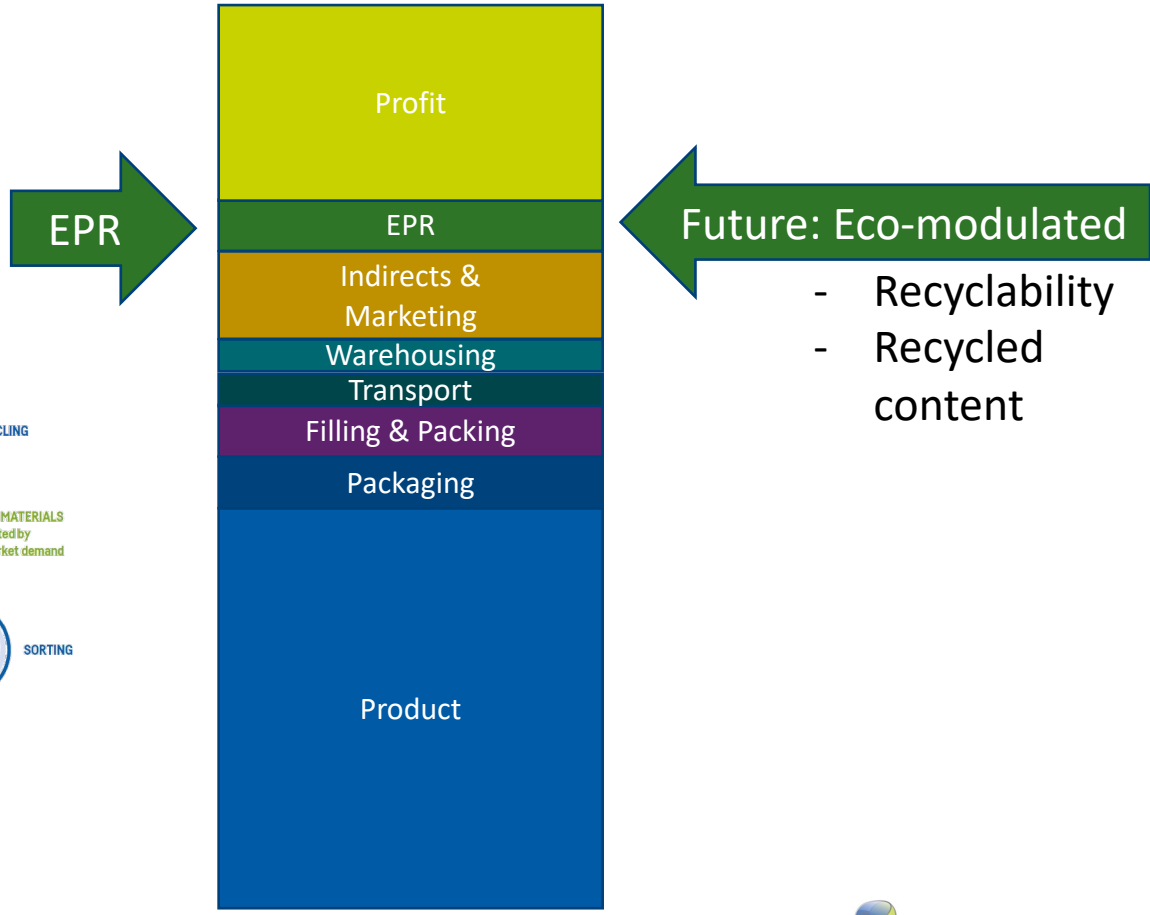
It can be collected, sorted and recycled in Member States at scale.

Future EPR fees will be eco-modulated

- Companies placing packaging (producers) on to the market pay a contribution per pack to the “EPR system” that pays for it to be collected, sorted and recycled
- The EPR contribution is:
  - Weight based & material specific
  - Set by the EPR system in the country
  - An integrated part of the product cost

The cost to enable circularity





Indicative Product Cost Make-up

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

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RecyClass og Grønt Punkt Norges kalkulator

Grønt Punkt Norge

Johannes Daae, phd

Utviklingssjef, Grønt Punkt Norge

Brukerveiledning

Kalkulator

Start ny kalkulasjon

GRØNT PUNKT NORGE AS Bibliotek

Søk

Filtrer etter:

- [ ] Emballasjekartong
- [ ] Bølgepapp
- [ ] Papir
- [ ] Glass
- [ ] Metall
- [ ] Annet
- [ ] Drikkekartong
- [ ] Plast

Emneknagger

Sorter etter: ( ) Nyeste ( ) Gjenvinnbarhet (•) Alfabetisk

< 1 2 3 ... 23 >

Yoghurt Bucket

C

Sist oppdatert	3 November 2020
Designet av:	Johannes Daae
I bruk:	Ja
Emneknagger:	
Notater:	-

Åpne i kalkulatoren

Yoghurt beger

C

Sist oppdatert	28 October 2020
Designet av:	Johannes Daae
I bruk:	Ja
Emneknagger:	
Notater:	-

Åpne i kalkulatoren

yes

C

Sist oppdatert	14 December 2020
Designet av:	Ola Jakubowska
I bruk:	Ja
Emneknagger:	
Notater:	-

Åpne i kalkulatoren

text box with handle

E

Sist oppdatert	14 June 2023
Designet av:	Johannes Daae
I bruk:	Nei
Emneknagger:	
Notater:	-

Åpne i kalkulatoren

Testproduktnavn i pose

C

Sist oppdatert	20 May 2022
Designet av:	Jan Petter Nerhus
I bruk:	Nei
Emneknagger:	
Notater:	-

Åpne i kalkulatoren

Fiskekasse | Formstøpt | Flowpack | Sprayboks | Kanne | Film | Crates pallets | White goods





Hoveddel (gi nytt navn)

Velg hoveddel som den emballasjedelen det er mest sannsynlig at hele emballasjen sorteres som og størst risiko for at eventuelt andre emballasjedeler følger.

Velg materialtype

Annet | Plast | Emballasjekartong | Bølgepapp | Papir

Glass | Metall | Drikkekartong | Recyclass

Oppsummering

vis forklaring

Emballasjetype: Bøtte

Lagre og legg til ny del | Lagre og avslutt | Avbryt

PART 1 : RECYCLABLE PLASTIC CONTENT

In this area your packaging is checked for its composition. More information can be found in the RecyClass Recyclability Methodology.

The design compatibility process is carried out to establish the amount of recyclable plastics in the packaging and its ability to replace virgin plastics in new products. Any non-recoverable (non-plastic) materials must be considered and removed from the proportion of recyclable plastics (e.g., inks, EVOH, barriers, adhesives for laminates, fillers, etc.). The class ranking to consider is the following:

Class A	Class B	Class C	Class D	Class E
X ≥ 95	90% ≤ X < 95%	70% ≤ X < 90%	50% ≤ X < 70%	X < 50%

What is the net weight of your packaging? (?)

40 grams

What is the net weight of PE in your packaging? (?)

40 grams

Are other polymers (PP, PET, PS, PVC, Others) present in and/or welded to the main body's structure? (?)

INTERIM RESULT:

INTERIM RECYCLABILITY RATE:

100.0%

What is the barrier of the package body made of?

Please make a selection

- No barrier layer (0)
- EVOH ≤ 6% wt + PE-g-MAH tie layers with MAH > 0.1% and EVOH : tie layer ratio ≤ 2 (0)
- Enkase™ fluorination barrier technology
- In-mould fluorination (0)
- SiOx plasma coating (0)
- EVOH > 6% wt + PE-g-MAH tie layers with MAH > 0.1% and EVOH : tie layer ratio ≤ 2 (-)
- EVOH ≤ 1% with any other tie layers (-)
- Plasma Fluorination (-)
- PVOH ≤ 1% (-)

Are there liners, seals or valves?

× Removable TPE with a density > 1 g/cm³ (-)

Is there a label?

In-Mould-Labels in PE printed with < 1 wt% of the total packaging

Which adhesive is used for labels?

No adhesive (0)

Which inks are used for the label?

Non-bleeding inks compliant with EuPIA Exclusion Policy (0)

Is there a sleeve?

PE-HD; PE-LD; PE-LLD; PE-MD sleeves (0)

Which inks are used for the sleeve?

QUESTIONS ANSWERED: **12/15**

SLIGHTLY NEGATIVE: **2** x selected

NEGATIVE: **0** x selected

VERY NEGATIVE: **0** x selected

DISQUALIFYING: **0** x selected

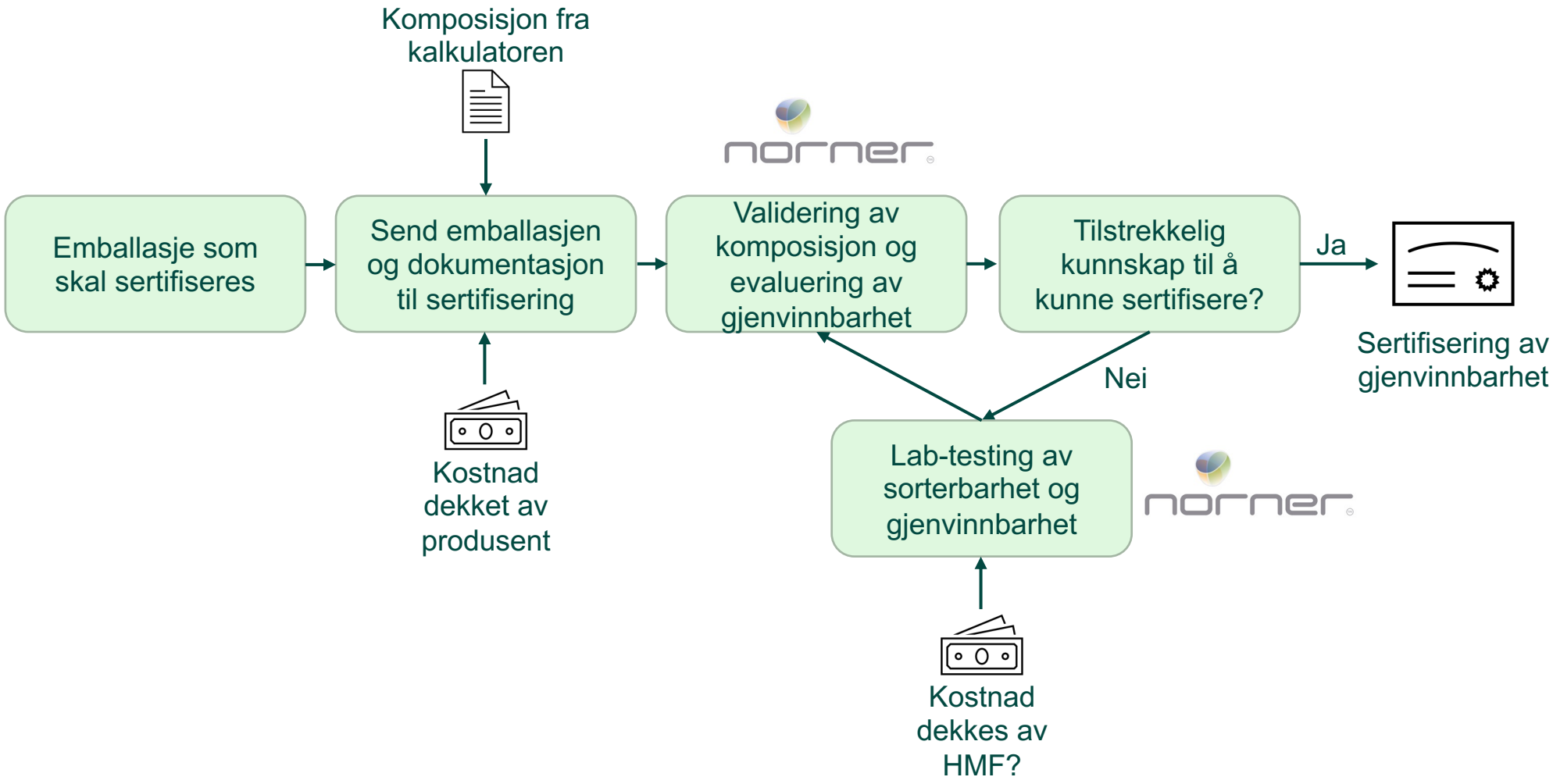
INTERIM RESULT:

The interim result of question area 1 has worsened by **1** class/classes :

INTERIM RECYCLABILITY RATE:

80.0%

Plan for flyt i sertifisering av gjenvinnbarhet av plastemballasje i Norge



RecyClass

PLASTIC FUTURE IS CIRCULAR

RecyClass

“Assesses, improves and endorses the recyclability & recycled content in plastic packaging and plastic products”

RecyClass Certification – www.recyclass.eu

An effective and science-based certification process for your packaging's way to comply with the EU Proposal for a regulation on Packaging and Packaging waste

Norner is a RecyClass approved 3rd party certification body

RecyClass Recyclability Certification evaluates the compatibility of plastic packaging with the entire waste management chain, which includes collection, sorting, recycling, and ability of the recycled material to be reused in its original application.

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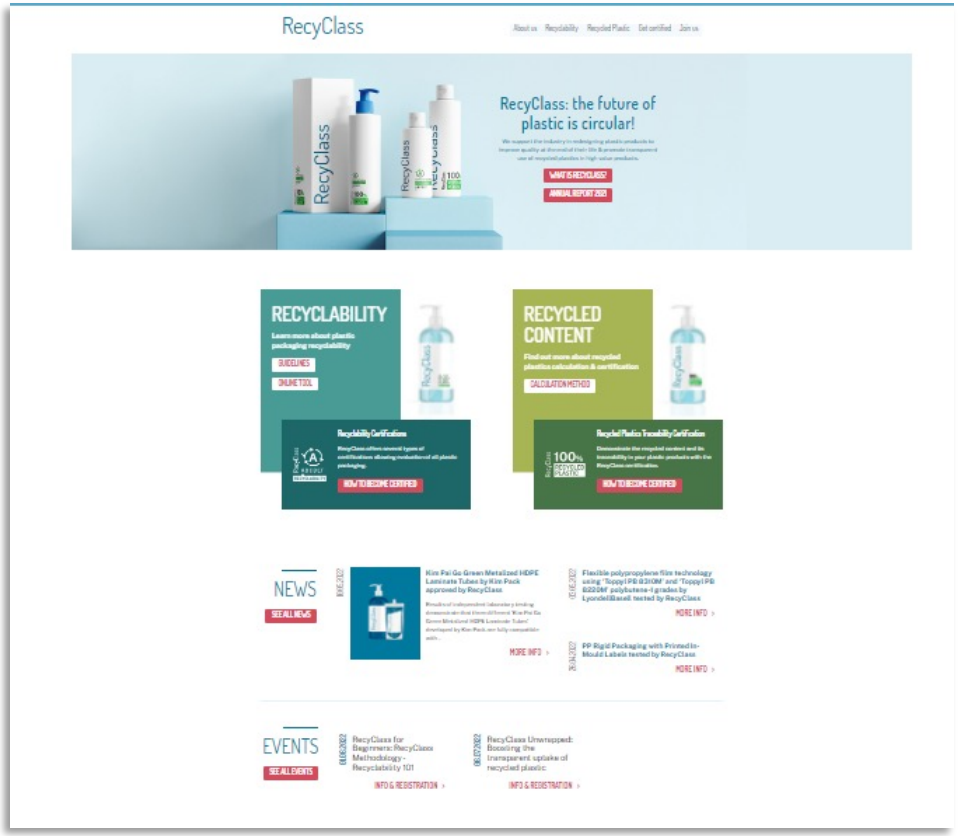
WHAT DOES RECYCLASS STAND FOR?

- Scientific findings
- Transparency
- Reliability
- Traceability



"With the growing amount of plastic waste, there is an urgent need to change the way we produce, use and dispose of plastic to increase the value at the end of its life".

- Applying reliable, transparent design-for-recycling principles
- Assessing recycling compatibilities of novel technologies
- Boosting the uptake of the recycled material in a wide range of new articles
- Including high-end products to ensure a circular plastic future.

www.recyclass.eu

RecyClass – Test campaigns: what, why & how?

- What are RecyClass test campaigns?
  - Tests of one or more packaging features according to RecyClass Sorting and/or Recyclability Evaluation Protocols.
- Why does RecyClass perform test campaigns?
  - Understand the effect of different features on plastic packaging recyclability by generating fact-based data.
  - Use this knowledge to update the Design for Recycling Guidelines.
- How does RecyClass do the test campaigns?
  - Support from Members and non-members for sample provisions.
  - Support from RecyClass Recognized Testing Facilities to carry out the tests.

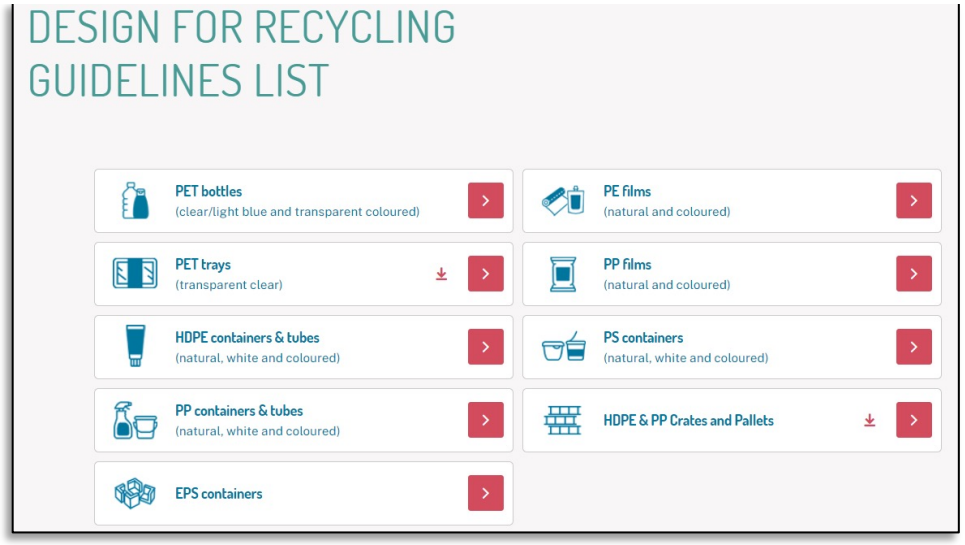
RecyClass – Scienced based D4R – backed by test data

The RecyClass Guidelines are based on a traffic-lights system:

FULL COMPATIBILITY	LIMITED COMPATIBILITY	LOW COMPATIBILITY
Green column gathers the preferred design features, that guarantee the best recyclability and quality of the recyclate.	Yellow column lists the second choices for each packaging feature, that have been tested or are known to slightly impact the recycling process and/or the quality of the recyclate.	Red column classifies the detrimental and disqualifying features that should be avoided when designing packaging, as these strongly impact the recycling process and/or the quality of the recyclate.

The RecyClass Online Tool simulates the recyclability of packaging according to RecyClass Methodology and in line with the information supplied in the Guidelines. The Tool offers more insights into the recyclability grading system.

SIGN-UP FOR THE ONLINE TOOL



RecyClass

Natural and White HDPE Containers

The same design for recycling recommendations apply to natural and white plastic packaging, to preserve the high-value of these materials and to ensure the availability of both white and natural recycled plastic on the markets. **However, natural and white packaging should be sorted into two distinct streams and recycled separately.**

		YES - FULL COMPATIBILITY	CONDITIONAL - LIMITED COMPATIBILITY	NO - LOW COMPATIBILITY
	MATERIAL COMPOSITION (TOTAL AMOUNT OF PE & PP IN THE PACKAGING)	A >= 95%, B >= 90% and all packaging features are FULLY compatible with recycling	C >= 70% and all packaging features are FULLY compatible with recycling	D >= 50%, E >= 30%, F < 30% and all packaging features are FULLY compatible with recycling
	DESCRIPTION (TEST PROTOCOL)	Materials that passed the testing protocols with no negative impact OR materials that have not been tested (yet), but are known to be acceptable in PE recycling	Materials that passed the testing protocols if certain conditions are met OR materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	Materials that failed the testing protocols OR materials that have not been tested (yet), but pose a high risk of interfering with PE recycling.
	DESCRIPTION (METHODOLOGY)	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from A to B or from B to C	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from C to D	In case of at least one limited compatibility one penalty is applied, lowering the recyclability class from D to E or from E to F
PACKAGING	MATERIALS*	HDPE; Multilayer PE with HDPE prevalence (LLDPE, LDPE, MDPE)	PP <= 10%	Multilayers HDPE with PLA, PVC, PS, PET, PETG; 10% <PP<= 30% (-2 classes); PP > 30% (-3 classes)
MAIN BODY	COLOURS	Natural (clear); White	Light colours	Black Inner layer; Black; Carbon Black; Other dark colours
	SIZE		Items compacted <= 5 cm	Items compacted <= 2 cm
	PRODUCT RESIDUES (EASY TO EMPTY INDEX)	A if the index is < 5%; B if the index is < 10%	C if the index is < 15%	D if the index is < 20%; E < if the index is 25%; F if the index is > 25%
	BARRIER	EVOH <= 6.0%wt + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layers ratio <= 2; Enkase (fluorination); In-mould fluorination	EVOH > 6.0%wt + PE-g-MAH tie layers with MAH > 0.1%wt and EVOH:tie layers ratio <= 2; EVOH <= 1% with any other tie layers	EVOH > 1% with any other tie layers; PA; PVDC; Plasma Fluorination; Aluminium
	ADDITIVES	Additives that are unavoidable in processing (stabilizers, antioxidants, lubricants, nucleating agents, peroxides) and density remains < 0,97 g/cm³	Mineral fillers (CaCO3, talc) not increasing density more than 0,97 g/cm³	Additives changing the material density > 1 g/cm³; Flame-retardant additives, plasticizers; Bio-/oxo-/photodegradable additives
ATTACHMENTS	CLOSURE SYSTEM	HDPE; LDPE; LLDPE; MDPE	PP; PET; PETG; PLA; PS (all with a density > 1 g/cm³); Removable aluminium lidding	Non-PO and/or foams with density < 1 g/cm³; Aluminium; Metal; PVC
	LINERS, SEALS AND VALVES	HDPE; LDPE; LLDPE; MDPE; TPO <= 1%; TPS <= 1%	PP; TPO; TPS; PET, PETG, PLA, PS (all with a density > 1 g/cm³); Removable silicon with a density > 1 g/cm³; PO foamed <= 1%	Non-PO and/or foams with density < 1 g/cm³; Any other TPE; Aluminium; Metal; Foiled paper; PVC
	OTHER COMPONENTS	HDPE, LDPE, LLDPE, MDPE	PP; PET; PETG; PLA; PS all with density > 1 g/cm³	Aluminium; PVC; Glass components; Foams with density < 1 g/cm³
	COLOURS	Natural (clear); White	Light colours	Black Inner layer, Black, Carbon Black, Other dark colours
DECORATION**	INKS	Non-bleeding inks compliant with EuPIA Exclusion Policy		Inks that bleed; Inks non-compliant with EuPIA Exclusion Policy; PVC binders
	LABELS MATERIALS (PSL, WET-GLUE LABELS, WRAP-AROUND LABELS, IML)	Labels in PE (all with density < 1 g/cm³)	Labels in PP, PO (with density < 1 g/cm³); Labels in PET, PETG, PLA, PS (all with density > 1 g/cm³); Labels in Paper without fibreloss; PO-foamed labels	Labels that hinder the recognition of the PE; Labels in non PO-materials with density < 1 g/cm³; Paper labels with fibreloss during recycling process; In-Mould-Labels; Aluminium; Metallised labels; PVC
	ADHESIVES FOR LABELS	Water soluble adhesive (@ less than 40°C); Water releasable adhesive (@ less than 40°C)		Non-water soluble adhesive (@ less than 40°C); Non-water releasable adhesive (@ less than 40°C)
	SLEEVES	Sleeves in PE (all with density < 1 g/cm³); Self-separable plastic and cardboard sleeves under mechanical pressure (sorting test mandatory)	Sleeves in PO (with density < 1 g/cm³); Sleeves in PET, PETG, PET-C, PLA, PS (all with density >1 g/cm³); Cardboard sleeves without fiberloss (sorting test mandatory)	Sleeves that hinder the recognition of the PE; Sleeves in non PO-materials with density < 1 g/cm³; Cardboard sleeves with fibreloss during recycling process; Aluminium; Metallised sleeves; Heavily inked sleeves; PVC
	DIRECT PRINTING	Laser marked; Production or best-before date		Any other direct printing
	OTHER DECORATIVE TECHNOLOGIES		Electroplating on attachments (with density > 1 g/cm³)	Electroplating on attachments (with density < 1 g/cm³)

RECYCLED CONTENT: No change in the recyclability assessment. A separate 'Recycled Plastics Traceability Certification' based on a Chain of Custody approach is available with RecyClass

* Polymer resin can be either fossil- or bio-based, virgin or recycled. If different grades of the same polymer are present, weights should be cumulated.

** Decorative technologies must not hinder the recognition of the underlaying PE-polymer. Features as size, print, mass colouration and/or barrier might require to perform a Sorting Evaluation Protocol. Known misleading features are listed on the RecyClass Methodology and the following size indications can be considered to ensure the recognition of PE:
- Size of non-PE detectable surfaces on containers > 500 ml: < 70% coverage
- Size of non-PE detectable surfaces on containers < 500 ml: < 50% coverage

Last update: January 2023

c/o Plastics Recyclers Europe
Avenue de Broqueville 12
1150 Brussels, Brussels

Phone: +32 2 786 39 08
info@recyclass.eu
www.recyclass.eu

1/1

[Design for Recycling Guidelines - RecyClass]

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NORNER & RECYCLASS

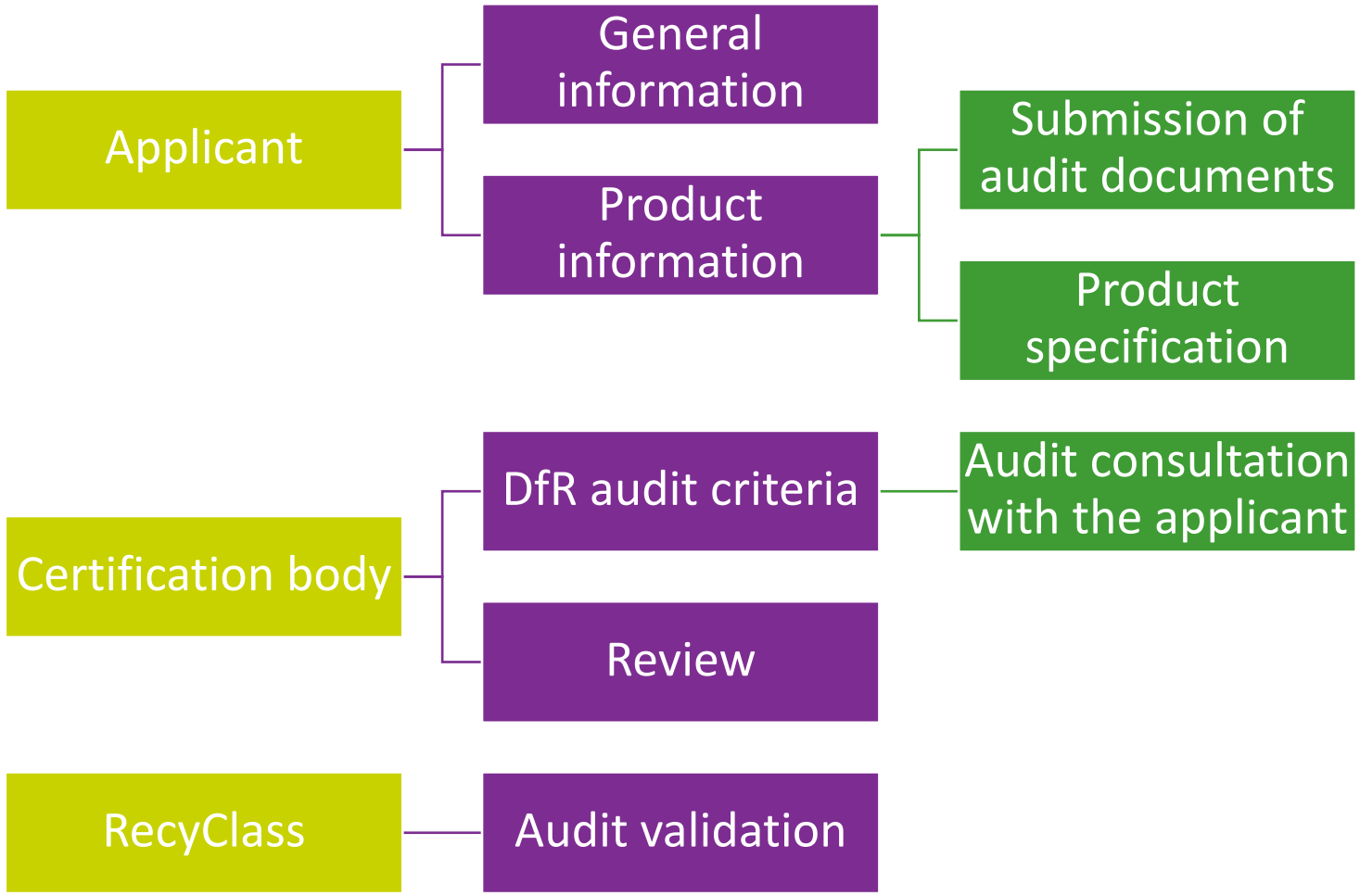
We support our customers in discovering and certifying recyclability of their products!

Norner is the **Certification Body** for recyclability and can perform the following assessment and issue certificates:

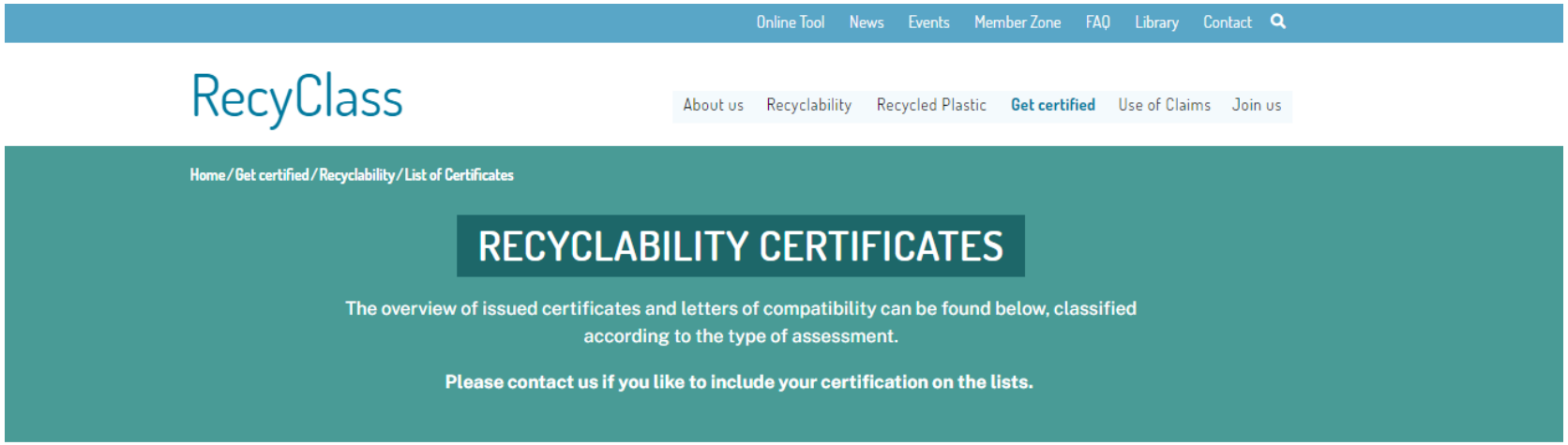
- **Design for Recycling (EU27+3)** - classifies qualitatively from A to F the technical recyclability of final plastic packaging.
- **Recyclability Rate -** rates the effective recyclability of final plastic packaging in **Norway**.
- **Letter of compatibility (EU27+3) -** evaluates qualitatively the recyclability of semi-finished packaging.

Certification audit

Collaborative platform between applicant-certification body and RecyClass



Recyclability certificates A-C



List of certificates

Certificate Code	Company	Product Identification name	Packaging format	Main polymer	Type of assessment	Recyclability class	Expiration date
Make a choice	Make a choice	Make a choice	Make a choice	Make a choice	Make a choice	Make a choice	Make a choice
002-PTC-NR	Prepack Thailand Company Limited	R1-PE Mono-Layer Pouch	Pouch	PE flexible	Design for Recycling	A	03/09/2026
340-gre-cp	Greiner Packaging	PP cup with cardboard sleeve 01-095-500-33 V99	Cup	PP rigid	Letter of Compatibility	A	29/08/2026
334-neo-cp	Neopac	Polyfoil MMB PF545/645	Tube	PE rigid	Letter of Compatibility	A	23/08/2026
335-scj-cp	SC Johnson	Mr. Muscle Platinum Shower	Bottle	PET	Letter of Compatibility	B	08/08/2026

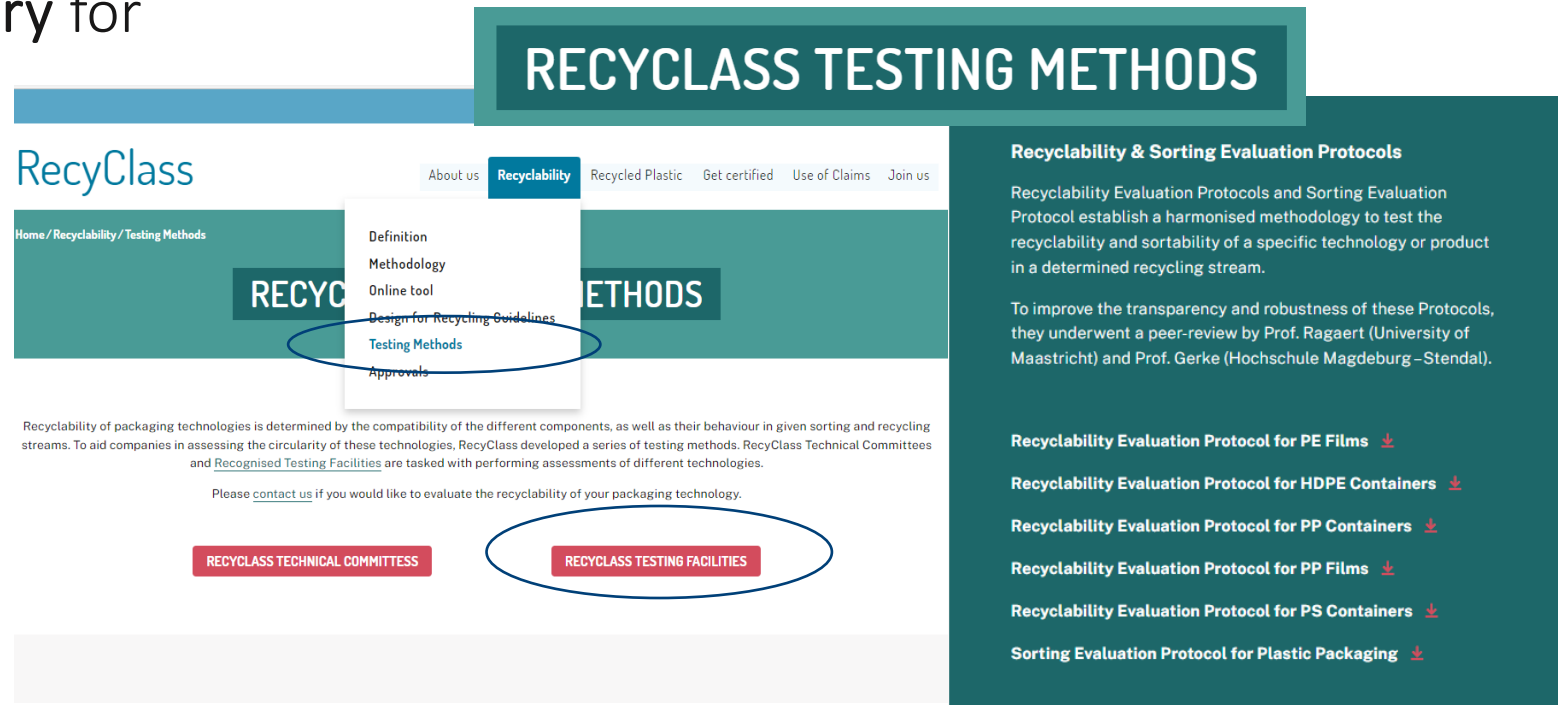
[List of Certificates - RecyClass]

Norner & RecyClass

We support the plastic and packaging industry in testing the recyclability of their products!

Norner is **Recognized Laboratory** for **protocol testing** for:

- **HDPE** containers
- **PP** containers
- **PE** films
- **PP** films
- **PS** containers (applied)



All tests are done in accordance with the Recyclability Evaluation Protocols

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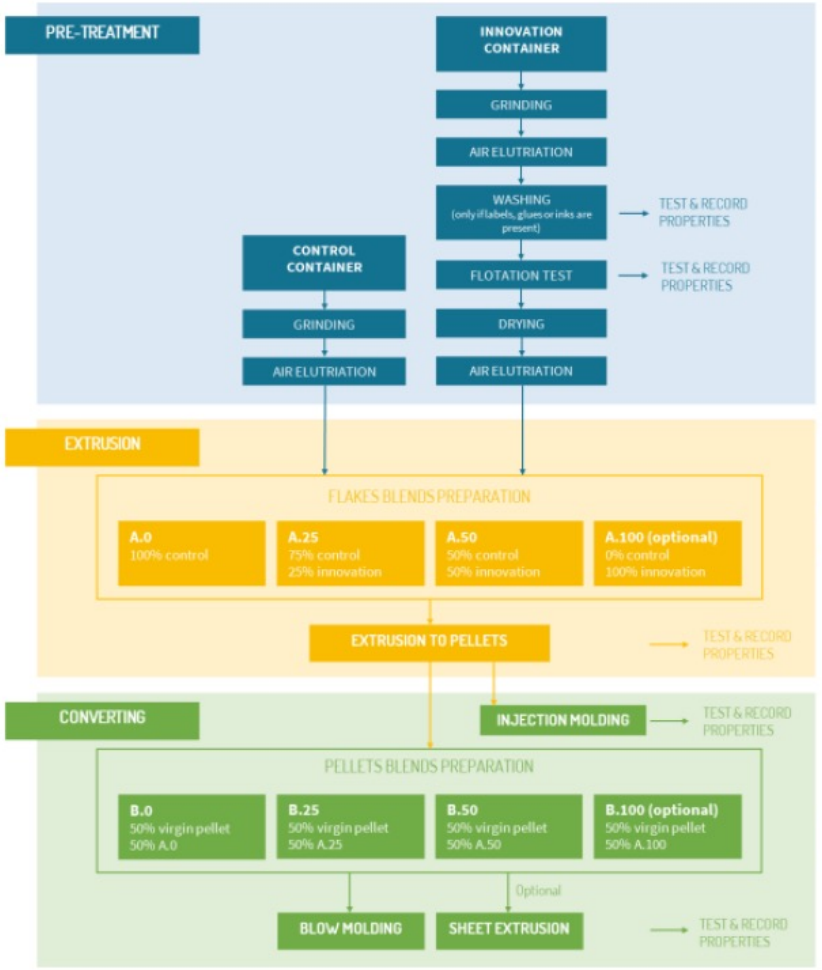
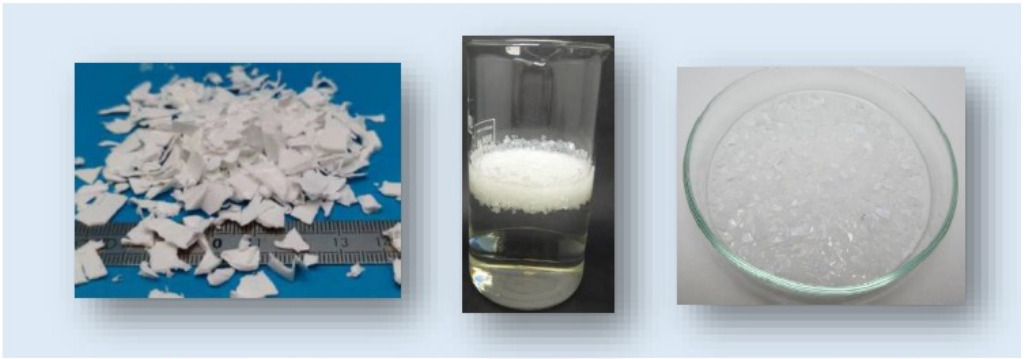
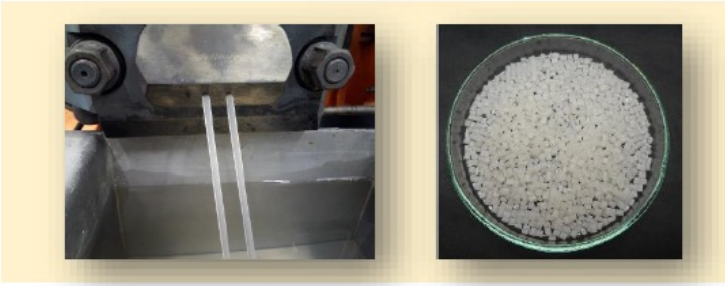
RecyClass – Test Campaigns: Laboratory testing

RecyClass Recyclability Evaluation Protocols are used as a reference to perform the tests.







Recyclability approvals

Please find below the list of the released Recyclability Approvals.

Approval type	Packaging type	Technology type	Company	Study
Make a choice	Make a ch...	Make a ch...	Make a choice	
Technology Approval	PP bottle	Adhesive for labels	Fedrigoni	PP White with acrylic emulsion PSA
Technology Approval	HDPE bottle	Adhesive for labels	Fedrigoni	PE White with UV-Cured Acrylic permanent adhesive
Technology Approval	PP container	Decoration	Propyplast	LMG CleanLoop®
Technology Approval	PE flexible	Additive	VOID Technologies	VO+ PE 1300 Series Voiding Agent
Technology Approval	PE flexible	Adhesive for lamination	Polysack	Pack & Cycle HHR
Technical Review	HDPE container	Barrier	RecyClass	SiOx Plasma Coating
Technical Review	HDPE container	Adhesive for	RecyClass	Adhesives for labels

[Approvals - RecyClass]

CHANGE OR BE CHANGED!

Tanja Radusin PhD
Senior Researcher
tanja.radusin@norner.no

norner
The Polymer Explorers

Program

10.00 **Velkommen til Plastløftet**
Johannes Daae, Grønt Punkt Norge

10.05 **Standardisering av design for gjenvinning**
Sina Maria Lystvet, Grønt Punkt Norge

10.15 **Nye regler rundt gjenvunnet plast og matkontakt**
Tanja Radusin, Norner

10.30 **Sertifisering av Gjenvinnbarhet ResyClass, og planer for integrering av vår kalkulator**
Tanja Radusin, Norner
Johannes Daae, Grønt Punkt Norge

10.50 **Circular Packaging Cluster - Sorteringsgruppa og Digitaliseringsgruppa**
Sina Maria Lystvet, Grønt Punkt Norge
Petter Aaby Vebenstad, Plastretur

11.10 **Spørsmål og svar**

11.30 **Lunsj og mingling**

Circular packaging cluster sorteringsgruppa

13.9.2023 Plastløftet

Mandat

Sorteringsgruppens mandat er å vurdere hvilke tiltak som gir høyest mulig grad av sirkularitet og å fremme formidling og implementering av slike tiltak.

(Fra oppstartsmøtet 23.09.2022)

Thomas Eie
Senior Emballasjeutvikler
Bama Industri

Daniel Millet
Chief Business Development Officer
GRIN

Sina M. Lystvet
Fagansvarlig for materialer og teknologi
Grønt Punkt Norge

Ferdinand Männle
Daglig leder
Klingelberg Products AS

Margit A.B. Hegna
Utviklingsdirektør
Lilleborg AS

Josefine
COO
Looping

Øyvind Sletta
Key Account Manager
MCC Norway AS

Stine Hallgren
Commercial Key Account
NNZ Norway AS

Marit Kvalvåg Pettersen
Seniorforsker
NOFIMA

Jawad Sarfraz
Forsker
NOFIMA

Jorunn Nilsen
Principal Researcher
Norner

Thor Kamfjord
Director Sustainability and
social responsibility, Norner

Anastasiia Moldavska
Fagsjef Emballasje
Norsirk

Pieter Callewaert
Forsker
Norsus

Daniel Bondeson
Fagspesialist & Senior produktutvikler
Orkla Home & Personal Care AS

Vibeke Söderström
Salg og Marked Norge
Treform Packaging AB

CIRCULAR PACKAGING CLUSTER

Dette gjorde vi i 2022

- Hva er bærekraft og sirkularitet for oss
- Design for gjenvinning – samling med nyttige linker
- Utfordringer med gjenvinning av PP-film
  - Lave volum + mye snacksemballasje = vanskelig å gjøre lønnsomt
  - Må ha fokus på farger, barrierer og lamineringslim

CIRCULAR PACKAGING CLUSTER

Opplegg:

- Lunsj
- Info
- Speed-date-diskusjoner (8 minutter med hver partner før man byttet)
- Oppsummering

Sina M. Lystvet
Fagansvarlig for materialer og teknologi
Grønt Punkt Norge

Anastasiia Moldavska
Fagsjef Emballasje
Norsirk

Margit A.B. Hegna
Utviklingsdirektør
Lilleborg AS

Josefine
COO
Looping

Øyvind Sletta
Key Account Manager
MCC Norway AS

Jawad Sarfraz
Forsker
NOFIMA

Daniel Bondeson
Fagspesialist & Senior produktutvikler
Orkla Home & Personal Care AS

Vibeke Söderström
Salg og Marked Norge
Treform Packaging AB

CIRCULAR PACKAGING CLUSTER

Endringer i produkter 1

Redusere unødvendig emballasje – redesign 2

Foto: Gilde

Design for ombruk (påfyll/ombruk) - fremme sirkularitet på høyere nivå. 3

Looping

Innføre lukkede systemer 4

Sporbarhet for plastemballasjeavfall 5

Foto:
Empower

Standardisering av polymer-anvendelsesområder 6

Foto:
Elvital/Oda
Define/Oda

Redusere materialkompleksiteten 7

Graphical abstract / Multilayers

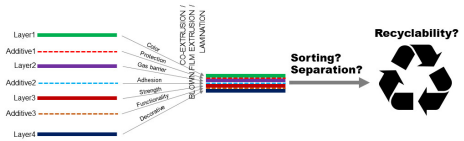


Foto: MDPI

Redusere skadelige stoffer i emballasje 8

Foto: https://www.dw.com/en/just-how-dangerous-is-mercury-anyway/a-16522491

Øke andel resirkulerte material 9

Foto: CocaCola

Design for gjenvinning: material, farge, format, etikett, design-elementer 10

Foto: Pixabay

Sertifisering av resirkulerbar emballasje 11

RecyClass
A
ABCDEF
RECYCLABILITY

Foto: RecyClass

Forbedre industrikunnskap om DfR 12

Foto: DNE (Emballasjeskolen)

Øke utsortering gjennom teknologiutvikling 13

Forbedre forbrukerkunnskap om sortering 14

Foto: Sortere.no

Øke kildesortering gjennom Design 15

Foto: GPN

Erfaringer fra arbeidsmøtet

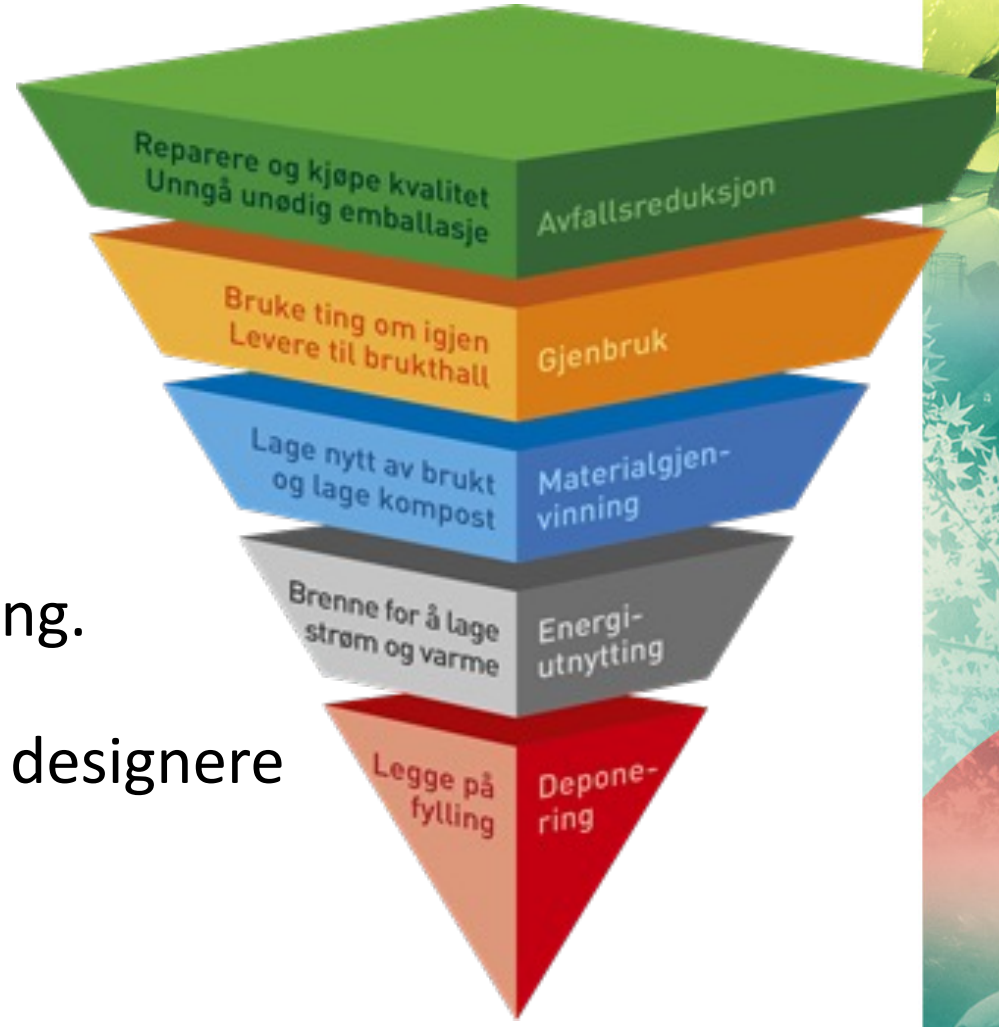
- Hensikten var å se om det er noen områder vi bør ha ekstra fokus på
- Mange gode diskusjoner
- Noe forvirring rundt miljøavtrykk, siden noen tiltak i seg selv har et lavt avtrykk, men effekten kan være stor
- Størst sprik i om det å endre produktet i seg selv har effekt, og om det er innfor vårt område.

Dagens viktigste kommentar

EU sier at 80% av de bærekraftige valgene for et produkt blir tatt i designfasen → Spesielt viktig å fokusere på og prioritere godt design for å bidra til en mer sirkulær økonomi.

Gode fokusområder

- Redusere unødvendig bruk av emballasje
- Ombruk, der det er hensiktsmessig
- Samle og spre kunnskap om design for gjenvinning.
  - Kanskje lage noe målrettet for markedsføringsavdelinger, da det ofte er her designere møter motstand.
- Bidra til økt utsortering
  - Rett merking
  - Bruke materialer som er intuitive å sortere
  - Mer harmoniserte innsamlingssystemer



CIRCULAR PACKAGING CLUSTER

Øke kompetanse om ombruk

- Når er ombruk hensiktsmessig
- Når skaper ombruksløsninger en større miljøbelastning
- Hvordan blir reglene
- Kommer til å snakke om dette på CPC sitt møte 24. oktober

CIRCULAR PACKAGING CLUSTER

Takk for oppmerksomheten

Sina Maria Lystvet

Fagansvarlig for materialer og teknologi

sina@grontpunkt.no

Digitalgruppen

13. september 2023

Petter Aaby Vebenstad
Plastretur AS

Digitalgruppen

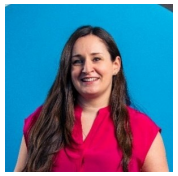
Mandatet er å kartlegge hvilke data som registreres i verdikjedens enkelte ledd og å vurdere hvilke data som ved deling kan bidra til sirkulær utvikling.

Gruppen skal også gi innspill om implementering av datadeling.

Deltakere

Ane Simonsen

NorgesGruppen



Pauline Bergan

TOMRA Collection

Marie Lerøy

AION

Daniel Millet

GRIN

Sara Dahl Blomquist

Orkla Home and Personal Care

Gilberto Cervantes

MCC Label

Jawad Sarfraz

Nofima

Petter Aaby Vebenstad

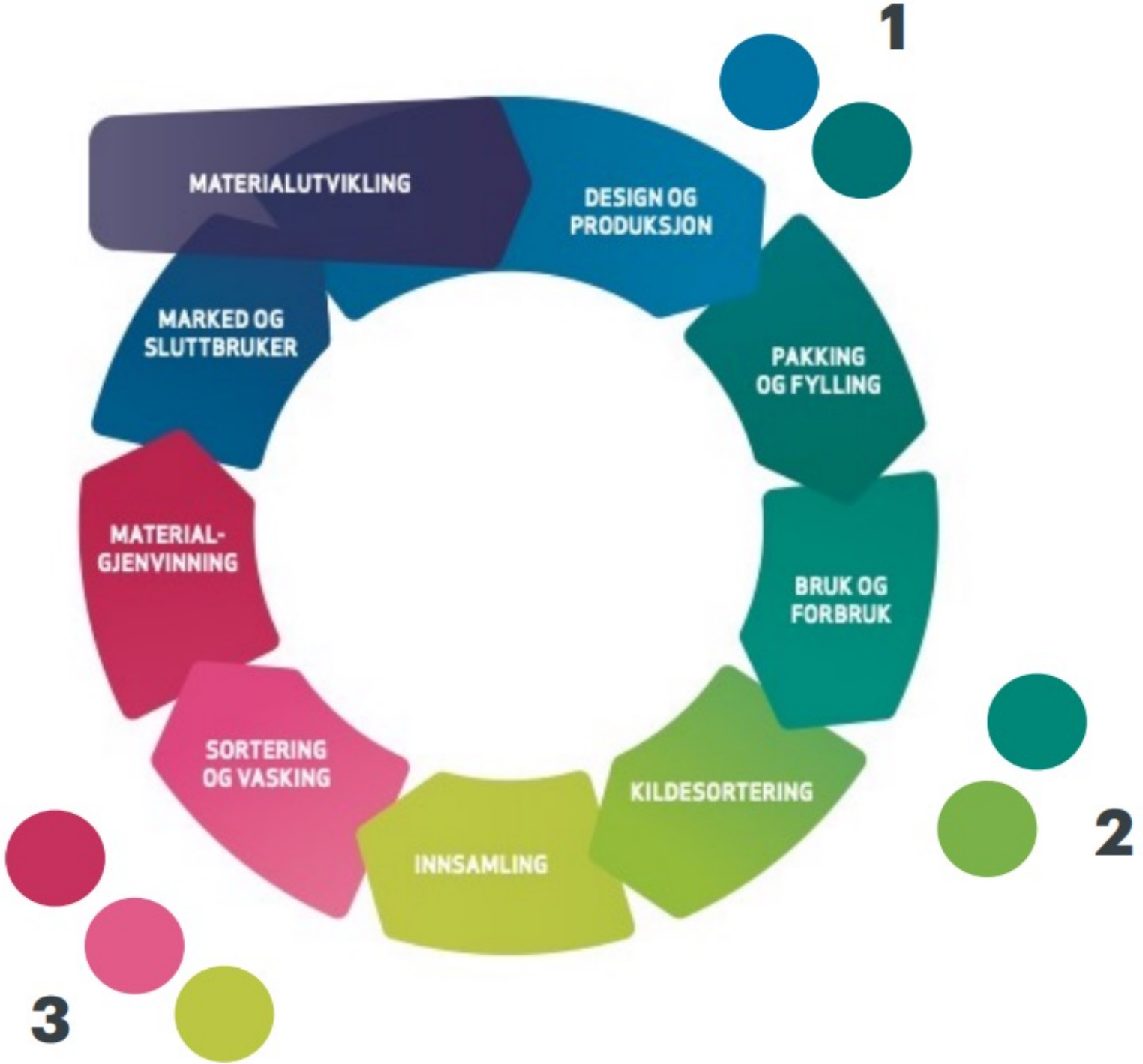
Plastretur

CIRCULAR PACKAGING CLUSTER

VIKEN FYLKESKOMMUNE | CIRCULAR PACKAGING CLUSTER

SLUTTRAPPORT APRIL 2023

Sirkulære blokkeringer og handlingsrom



CIRCULAR PACKAGING CLUSTER

Workshop 07.11.2022

Systemiq use cases

DATA GAPS (what data are we missing?)

General challenges

Existing solutions

Best practices for design for recyclability exists across world

Design for recycling calculator (Grønt Punkt)

Lack of awareness of tools available for improving recyclability

Lack of guidance on recyclable components for suppliers (inks, glues, etc.)

Cost implications of some design choices...

Lack of accessibility and difficult to understand data

Risk of errors (old data? good enough? approved? updated?)

Proof of identity and quality of recycled plastics

Missing data and raportation about fex specific plastics fractions (fex PP/rPP, HDPE/rHDPE, PET/rPET, multi-layer/multi-material)
This data is important if we want to premiere suppliers who are reusing plastics instead of using virgin plastics in the future, as well as using recyclable plastics as sopposed to non-recyclable.

Data on suppliers who are producing recycling-friendly components

Data on how to use recycled content (for foodgrade, functional barriers)

Transparency on design decision process/choices

EU regulation for food-grade plastics to corrospi within migration limits

Documenting material used. Today static data (xls, pdf, data sheet) which needs to be exported/imported manually

Standard on traceability material for optimal collection and recycling

Standardized reporting on components / materials used

Data for ex on glue on stickers and impact on recyclability

Categorizing of packaging types for better collection and recycling

Upstream data provision

Certification of recyclability

DIREKTIVER OG KRAV

Science-based policy enabler

Environmental footprint

Industry-wide provision of data as basis for rational policy-making and EPR accountability

Calculation and proof of environmental footprint, e.g., CO2 for ex bio-based

Recyclass

Dynamic data on supply on demand - for ex. rPET prices changing fast and strong impact, rPEE

FORECASTING Converters lack calculations on how much recycled plastics the packaging industry want to buy in the future. Hard to make investments, when this is so unpredictable

Converters and brand-owners often lack data on the origin(s) and qualities of the recycled material

Proof of recycled content and recyclability

Access to good material, sometimes changes in source without info

Consolidation of the value chain by some players

Standard granular reporting on recycling yield

Mixing tech for measurement points on "input to final recycling process" (input to extruder in mech recycling)

Aggregation of data to track and report recycling rates

Standard on reporting on process losses from recyclers / yield (easier if EU certified with auditors)

Granularity on data on yield per type of packaging material and type of supplier (ex. sorting facility)

Downstream data reporting

Design for recycling calculator (Grønt Punkt)

Data on output from recycling plant: what is preventing to recycling more? To increase the yield? To help the rest of the value chain

Granularity - all based on averages, need cross-checked, manual, specific QA

lack of standards across EU on measuring

Data that proofs that the packaging is really being recycled, not downcycled or burned. Tracker or scanning, which is connected with a program that can documents the handeling in the valuechain to verify this.

Better recycling

History of previous use

Data to track 'fate of plastic'

Easy storage and access of packaging data

Public information on what happens

Granular data on collection source

Lack of harmonized collection schemes

No data on players not sorting properly or not

Consumer transparency and engagement

Inform consumers on packaging for nudging for recycling

Educate consumers on recycling for nudging for recycling

Optimising reuse systems

History of previous use

Track & trace to enable efficient reuse packaging flows

Standard on traceability material for optimal collection and recycling

Categorizing of packaging types for better collection and recycling

the WHY

Clear standardized definition of recyclability

www.grontpunkt.no

Faktaark Definisjon av gjenvinnbarhet

Det er et økende behov blant medlemmene våre om klare retningslinjer for hvordan man best designer emballasje for gjenvinning. Derfor har vi utviklet faktaark for ulike plasttyper som beskriver hvilke bruksområde de egner seg til og hvordan emballasjen ...

DIREKTIVER OG KRAV

Oppstrøms datalevering

- Materialspesifikasjoner (fraksjonstype, lim etc.)
- Bruk av resirkulert innhold
- Åpenhet om designvalg og prosesser
- Kategorisering av emballasjetyper

Standardisert, automatisert og sentralisere datainnsamling og datadeling.

Innsamling og forbrukerengasjement

- Informere og utdanne forbrukere
- Fremmende tiltak for bedre sortering og resirkulering
- Optimalisere gjenbrukssystemer
- Systematisere data fra innsamlingsordninger
- Historie om emballasjens tidligere bruk

Standardisert sporbarhet av materiale for optimal innsamling og resirkulering

CIRCULAR PACKAGING CLUSTER

Resirkulering og nedstrømsdata

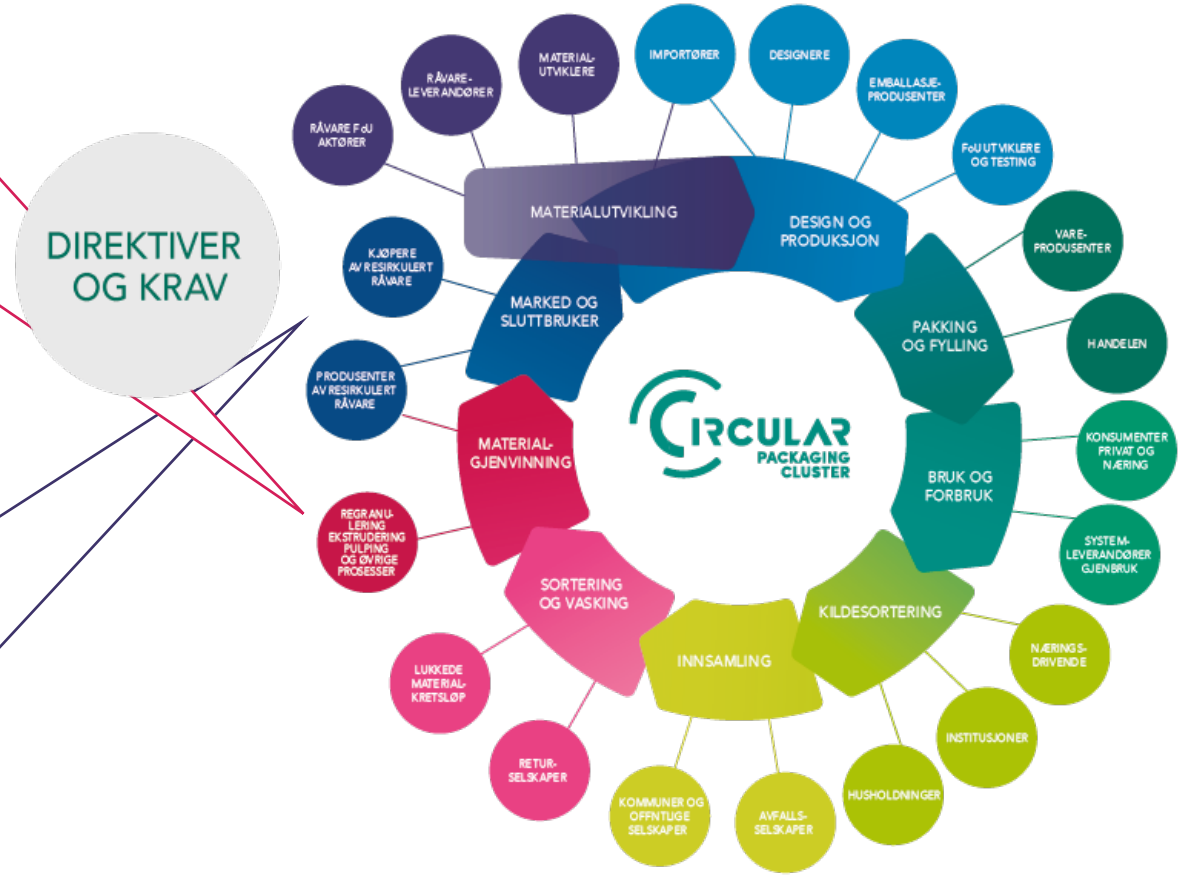
- Samle data for å spore og rapportere andel resirkulert materiale
- Granularitet på utbytte og prosesstap

Data for å spore skjebnen til emballasje og redusere verdi- og materialtap ved design for resirkulerbarhet

Bevis på resirkulert innhold og resirkulerbarhet

- Verifiserte data om opprinnelse og kvalitet
- Tilgang på konsistent materialkvalitet.
- Balansere tilgang og etterspørsel av resirkulert materiale for et mer forutsigbart marked

Felles spilleregler for forutsigbarhet, trygghet og rettferdighet mellom aktører



Fra 1D til 2D koder (GS1)

Bruksområder for 2D

Lagerstyring
- Opprettholde FIFO
- Lagernøyaktighet
- Tilgjengelighet og plasseringsinnsikt
- Unngå matsvinn

Sporbarhet
- Produktautentisering
- Ingrediens-opphav
- Synlighet i forsyningskjeden
- Forbrukertillit

Trygghet
- Merkevareintegritet
- Forhindre salg av utgåtte eller tilbakekalte produkter
- Bekjempe salg av forfalskede produkter

Matsvinn
- Best før dato inn i strekkoden på forbrukerpakningen muliggjør automatisk nedprising og mer effektive butikkprosesser
- Det stimulerer også til endret kundeadferd, gjennom å velge produkter med kort holdbarhet i bytte med lavere pris

Forbrukerkommunikasjon
- Tilgang til merkevareautorisert informasjon
- Kampanjer
- Oppskrifter
- Muligheter til å engasjere seg med merkevaren

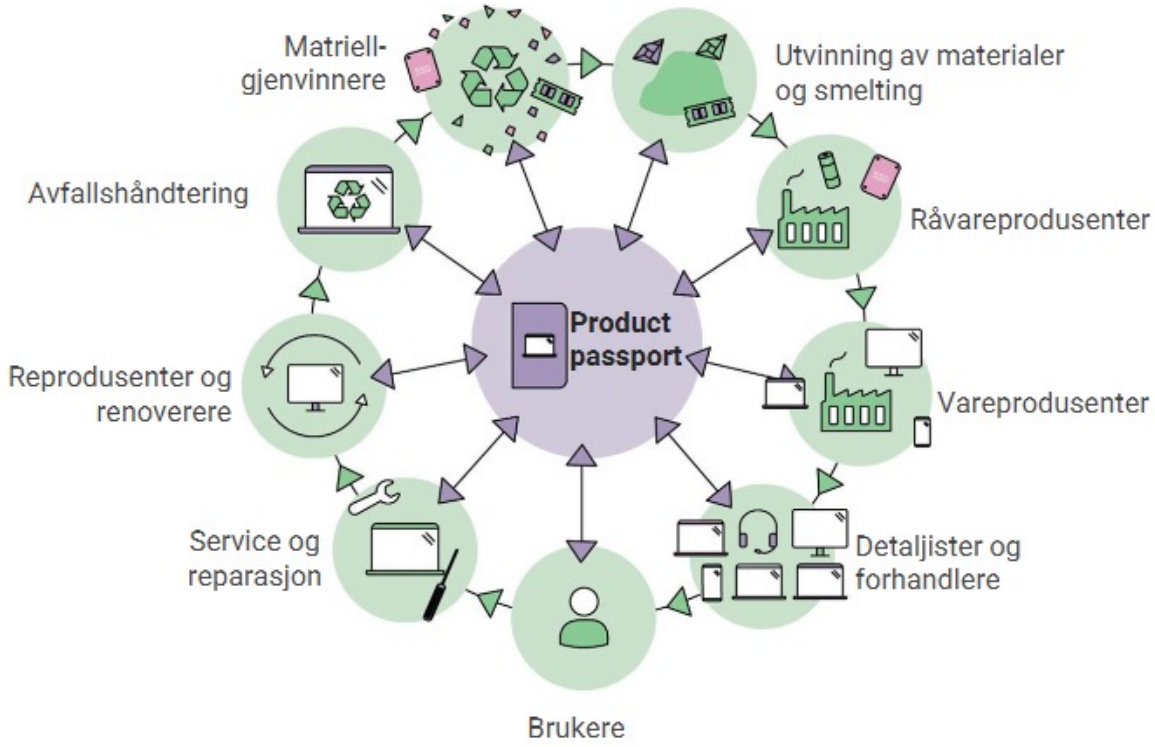
Forbedret emballasje
- Markedsføring på forpakningen
- Overholdelse av regelverk
- Forbedret forbrukeropplevelse

CIRCULAR PACKAGING CLUSTER

Bilde lånt fra GS1

Digitalt produktpass

- en del av EUs Green Deal
- Det vil bli lovpålagt med digitale produktpass for alle fysiske varer som selges på det europeiske markedet
- en samling av data om produkt og verdikjede
- skal hjelpe forbrukere med å ta bærekraftige valg
- skal gjøre det mulig for myndigheter å verifisere at lovverket overholdes
- skal fremme bærekraftig produksjon og muliggjøre overgangen til sirkulær økonomi



Bilde og tekst lånt fra GS1

Veien videre for digitalgruppa

- 2D-koder
- Digitalt produktpass
- Forslag til ny emballasjeforordning i EU (PPWD)
- AI – hvilke muligheter gir det innen emballasje?

Takk for meg!

Program

10.00 **Velkommen til Plastløftet**
Johannes Daae, Grønt Punkt Norge

10.05 **Standardisering av design for gjenvinning**
Sina Maria Lystvet, Grønt Punkt Norge

10.15 **Nye regler rundt gjenvunnet plast og matkontakt**
Tanja Radusin, Norner

10.30 **Sertifisering av Gjenvinnbarhet ResyClass, og planer for integrering av vår kalkulator**
Tanja Radusin, Norner
Johannes Daae, Grønt Punkt Norge

10.50 **Circular Packaging Cluster - Sorteringsgruppa og Digitaliseringsgruppa**
Sina Maria Lystvet, Grønt Punkt Norge
Petter Aaby Vebenstad, Plastretur

11.10 **Spørsmål og svar**

11.30 **Lunsj og mingling**

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