



Rushing to reach EU packaging waste targets

What choices are made and what are the implications?

10-March-2021, Alies Padding, NNZ 'The Packaging Network, Innovation manager

What is happening in the European market?

▶ Increase in the use of plastic and its poor waste management created the plastic waste patches in oceans. With also Asian Countries closed their frontiers for plastic waste EU prompted a new regulation for plastic.

▶ This packaging legislation is committed to a design for recycling, a reduction in plastic waste and the search for new materials: Re-cycle, Re-duce and Re-invent. EU pledge for all materials recyclable or compostable by 2025



Trends in the packaging industry revolve around a circular economy, driven by political pressure and consumer perception

Yet, consumers say they want environmental friendly packaging and show willingness to pay for it, yet their actual top buying criteria for fresh produce are quality and cost.



Retailers and manufacturers are rushing to reach the targets, desperate to solve this not-so-well described riddle.

What routes are they taking to meet the EU pledge?



▶ All paper and/or compostable packaging to meet plastic reduction targets and satisfy consumer perception

▶ All recyclable mono material plastic: adopt design for recycling and trust industry invests in ramping up recyclability streams

▶ what types of product do we see in the marketplace?

▶ what are the implications?

All paper and/or bioplastics



carton trays with karton sleever



carton trays with paper banderol



carton tray | compostable ching film



conical paper bags



bio Paper-Vento®



Bag-2-Paper®



cellulose netting



bio Paper-Vento®

Considerations replacing plastic by paper

- ▶ burden shift: it requires significantly more mass to fulfill the same function as its plastic counterpart, resulting in a higher overall environmental impact, except for its carbon footprint.
- ▶ recycling challenge: paper and cardboard recycling facilities would need to expand their operations to take in more recyclable waste.
- ▶ supply challenge: replacing plastics by paper: do we have enough forests to cut down for packaging needs, do we have space for reforestation?



Be aware of burden shifting and
look for lower weight paper

Considerations replacing plastic by bioplastics

burden shift: replacement might increase the environmental burden by reducing the carbon footprint while increasing acidification, the water footprint or other environmental impacts.

end-of-life waste stream: do we solve this with bioplastics?

supply challenge: can we grow enough raw sugarcane and other feedstock, required to replace fossil-fuel packaging products with bioplastics?



be aware of burden shifting and
look for superfluous biomass

Recyclable mono material plastic



Considerations focus on recycling

▶▶ we need to ensure recyclability equals recycling in a closed-loop system.

▶▶ regulators must plan the expansion of the recycling streams in coordination with their quotas.

▶▶ post-consumer packaging must meet stringent requirements (e.g. color, label material, empty-ness, seperability) in order to be recycled.



need for certification schemes
of design for recycling and
recyclability on country level

Considerations design for recycling

the 5-R's in order of importance

- Re-fuse** Elimination of multilayer materials
- Re-duce** Optimized material thickness and weight (no overpackaging)
 without compromising the strength or opacity of the packaging material.
- Re-use** Integrate use of recycled materials
 conformity material with food contact regulations
- Re-cycle** Use recyclable materials
- Re-design** Use bio-based, certified biodegradable or homecompostable materials
 communicate the type of material used on the packaging to allow for proper disposal by consumer, and attention to traceability of the material

Plastic and additives

- Eliminate dark colored plastic
- Do not use PVC or PS
- Reduce the amount of colorants
- Use same material for labels used for substrate

Rigid packaging

Preferred use of (R)PET, PE and PP monomaterial

Flexible packaging

Preferred use of monomaterial films

Ink, varnish and glue

- Ink** Use inks with reduced environmental impact: vegetable and waterbased
- Varnish** Avoid UV varnish, preferred use acrylic varnish
- Glue** Aqueous where possible, and removable in cold water for PE, PP and 80deg.C for PET

Carton | Paper



Carton | paper is considered recyclable from the moment it contains at minimum 95% fibres

- Use recycled carton | paper meeting requirements of MOSH (<2mg/kg) and MOAH (<LQ).
- Use certified FSC or PEFC materials
- Preference to un-bleached grades
- Do not use plastic laminated paper/carton

Considerations focus on recyclability

Design for Recycling Assessment:

Basis: Complete plastic packaging incl. all components and contents

Result: Certificate with recyclability class in A-F incl. report

Validity: 3 years, Europe-wide

Objective: To have the recyclable design of the packaging verified throughout Europe and to communicate this to customers.

Letter of Compatibility:

Basis: Individual packaging components (incomplete packaging) without contents

Result: Recyclability class in A-F

Validity: 3 years, Europe-wide

Objective: Demonstrate recycling-compatible design of packaging components throughout Europe lassen

Remark: Limitation of recyclability statements to the content of the LoC for communication to B2B customers

Recyclability Rate Assessment:

Basis: Complete plastic packaging incl. all components and contents

Result: Certificate with recyclability class in A-F and % rating incl. report

Validity: 3 years, Germany-wide

Objective: Demonstrate recyclability in detail in a specific geographic area

Source: RecyClass Webinar Feb 2021

and what about no packaging? food waste

Growing



500 kg fresh produce
500 kg CO₂-eq
100.000 liter H₂O

Packaging



500 kg fresh produce
20-50 kg CO₂-eq
100-600 liter H₂O

Sold in bulk



100 kg fresh produce wasted / not sold
100 kg CO₂-eq
20.000 liter H₂O

#Rethink your packaging



▶ the prime function of packaging is to protect the content, hence an instrument to reduce food waste

▶ our customer needs to make a fact based decision which fits his packaging strategy

▶ our customer needs to provide transparent communication to his consumer

▶ a balancing act between food waste, environmental impact of materials, cost and market acceptance

Check out our fact based #Rethink your packaging approach <https://youtu.be/KkzxxrWA800>



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