

Retail

Reimagined

7-8 & 14-15 June

The future
of retail is
sustainable.

What does
it take to
get there?

Agenda

- 14.00–14.05** Opening
- 14.05–14.45** Navigating sustainability: Regulations on packaging recycling and more
- 14.45–15.05** Explaining sustainability certifications and claims - a deep dive
- 15.05–15.25** From novelty to necessity: How connected packaging can be a force for good
- 15.25-15.35** Expert Q&A
- 15.35-15.40** Close of the day



Navigating sustainability: Regulations on packaging recycling and more

Agenda

- **European Green Deal:** The EU's overarching agenda for a circular economy, sustainable growth with initiatives around entire product life cycles.
- **Chemicals Strategy for Sustainability:** The long-term EU strategy (to 2050) for phasing-out toxic and potentially harmful chemicals from our everyday lives.
- **Packaging Design for Recycling:** Packaging must be reduced, re-used and enable circularity for recyclability and recycled content.
- **Sustainable Products; Ecodesign:** How we use guidelines set by the Ecodesign Directive in product development, designing for future needs and end-of-life.
- Upcoming legislation



Kenneth Schwartz
Vice President and Associate
General Counsel; Head of
Government Affairs EMENA
Avery Dennison



Emilie Bartolini
Government Affairs
Manager
Avery Dennison

Transforming the EU's economy for a sustainable future

Mobilising research and fostering innovation

A zero pollution ambition for a toxic-free environment

Preserving and restoring ecosystems and biodiversity

From 'Farm to Fork': a fair, healthy and environmentally friendly food system

Accelerating the shift to sustainable and smart mobility

The European Green Deal

Increasing the EU's Climate ambition for 2030 and 2050

Supplying clean, affordable and secure energy

Mobilising industry for a clean and circular economy

Building and renovating in an energy and resource efficient way

Financing the transition

Leave no one behind (Just Transition)

The EU as a global leader

A European Climate Pact

EU Commission and European Countries' Actions

Dec 2020

Chemicals Strategy for Sustainability

Towards a toxic-free environment

- Better protection of citizens and the environment
- Boost innovation for safe and sustainable chemicals

Mar 2020

New Circular Economy Action Plan

Building a truly circular economy

- Designing sustainable products
- Empowering consumers and public buyers
- Circularity in production processes



German Packaging Act 2019

To increase the recycling rate of plastic packaging from 58.5% to 63% by 2022.



French Circular Economy Law 2020

To use 100% recycled plastic nationwide from January 2025.



UK New Tax on plastic packaging in 2022

To achieve zero avoidable plastic waste by 2042 and to tax plastic packaging 20 pence/kg if contains less than 30% recycled content from April 2022.



Spain plastics tax. New tax on non-reusable packaging implementation is January 1, 2023. The tax will be determined by by the amount of non-recycled plastic, expressed in kilograms, contained in the products that are part of the objective scope of the tax and the tax rate will be 0.45 euros per kilogram.

Source: [European Green Deal](#), [New Circular Economy Action Plan](#), [Germany's Packaging Act 2019](#), [France's Circular Economy Law 2020](#), [UK 25-year Environment Plan](#), [UK Plastic Packaging Tax](#).

Chemical Strategy for Sustainability



Too many harmful substances on the market



Better regulatory tools needed



Achieving safe products and non-toxic material cycles



Greening and digitising the production of chemicals



Developing safe and sustainable by design criteria; innovative business models



Lead global sound management of chemicals

Impact of the Chemical Strategy for Sustainability

- **A changed approach:** Hazard-based vs Risk-based approach
- **Group bans:** not all members have the same undesired hazards
- **New hazard classes:** more chemicals will become eligible for SVHC inclusion
- **Essential use concept**
- **Safe and sustainable by design** chemicals
 - Safety as a condition for sustainability
 - Life cycle approach: focus on end of life

Packaging and Packaging Waste Directive

Regulates what kind of packaging can be placed on the EU market, as well as packaging waste management and packaging waste prevention measures.

A forthcoming review (Q3 2022) will focus on:

- Ensuring that all packaging is **reusable or recyclable** by 2030;
- Tackling **over packaging** and waste generation;
- Drive **design for recycling** and reuse;
- Mandatory **recycled content** for plastic packaging.

Extended Producer Responsibility (EPR) is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products. EPR will involve “eco-modulation” which means costs of EPR will vary based on the recyclability of the product.

Source: [OECD](#)



A new approach to recyclability

Different policy options considered by the European Commission:

- Focus on the **process**: collection/sorting/processing/new virgin material
- At least **95% of the unit** of packaging shall be recyclable
- **A list of negative features** that hinder recycling
- A positive list of **design for recycling criteria** (also) developed by industry groups
- **Innovative packaging** placed on the market will be recyclable at scale in 5 years

Ecodesign for Sustainable Products Regulation

The Commission's intent is to revise the Ecodesign Directive and broaden its scope beyond energy-related products. The updated scope would cover material efficiency measures, such as **reparability, durability, reuse, and recycling**. Priority will be given to textiles, chemicals, electronics, furniture, batteries.

Objectives

- Establish *overarching product sustainability principles and specific environmental requirements* per product groups;
- Measures to ban the destruction of unsold durable goods.
- Introduction of a *digital product passport*.

The Benefits of EcoDesign

Supply chain transparency

Digital product passports will enable more transparency and better communication along value chains

Innovative

Technological innovations can **optimise product efficiency and sustainability.**

Customer satisfaction

Consumers' needs are met with **more attractive products** that satisfy an increasingly demanding public.

Commitment

Companies benefit from innovation and are incentivised to produce more sustainable products

Market differentiation

Sustainable products have added value that gives companies a competitive advantage.

Source: What is EcoDesign?

The EU digital product passport

The EU '*Digital Product Passport*' (DPP) will contain key information concerning:

- Durability ;
- repairability.
- recycled content ;
- hazardous chemicals ;
- expected product lifespan ;
- carbon footprint ;
- other.

Objectives:

- Ensuring reliable information for customers and producers. It would be mandatory for *all products to which ecodesign requirements apply*.
- Tracking the life story of a product, enabling services related to its remanufacturing, reparability, second-life, recyclability, new business models
- *Facilitate enforcement by public authorities of new and existing product related legislation and contribute to a level playing field* for EU manufactured and imported products

Design for Recycling

Avery Dennison

“Eco-design is a multi-disciplinary and criteria based process to develop products that will have the best positive social, environmental and financial impact.

It gives guidelines throughout the whole development process, from the ideation to the implementation, on how our product impacts the entire value chain.”

- Choose the best option available for your packaging
- We are a centre of expertise for customers on eco-design
- Helping industry to lower environmental impact
- Enabling recycling on the value chain



Q

&

A

Explaining sustainability certifications and claims - a deep dive

Agenda

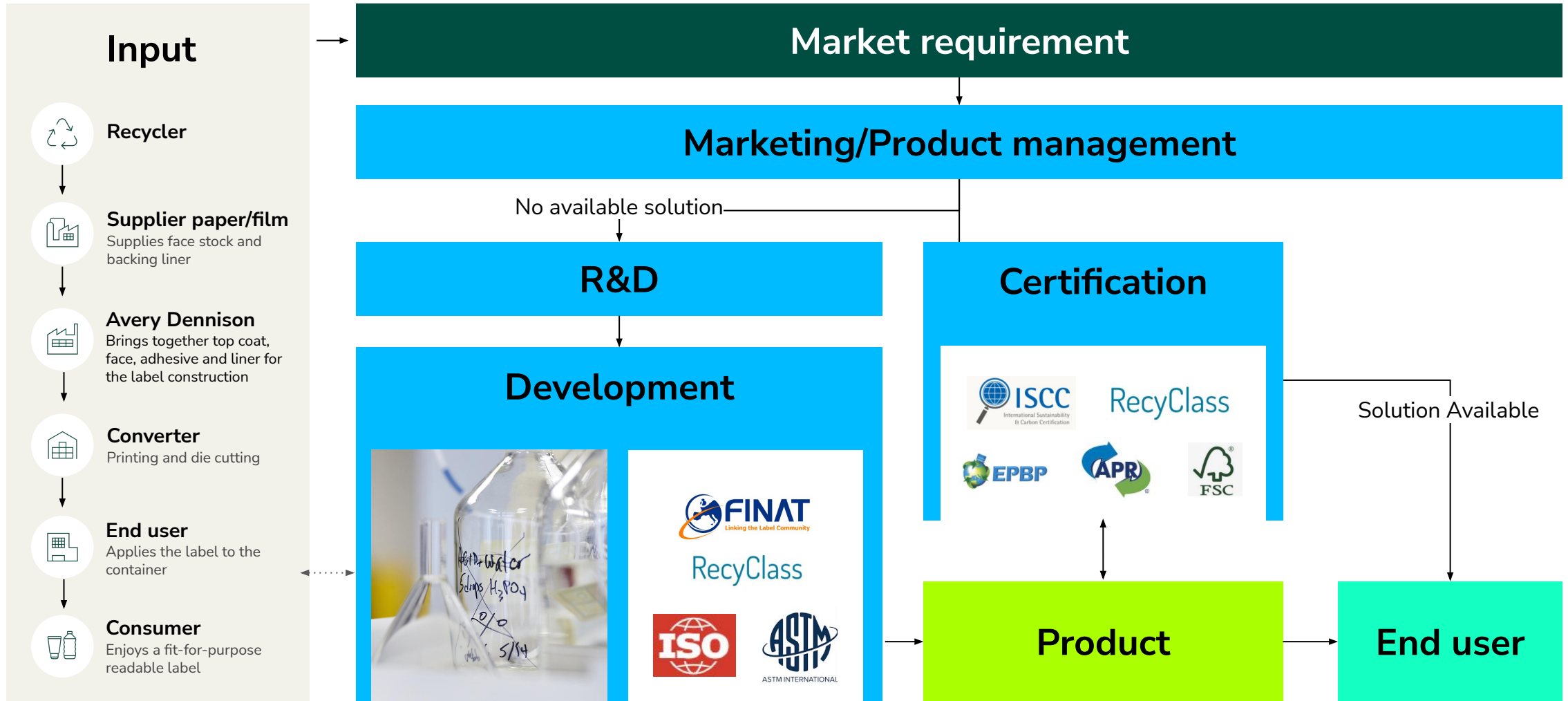
- The certifications used to make sustainability claims, both in the EU and globally
- The importance of processes and standards for sustainability certifications and claims
- The ways Avery Dennison uses LCA tools to determine product sustainability and climate impact



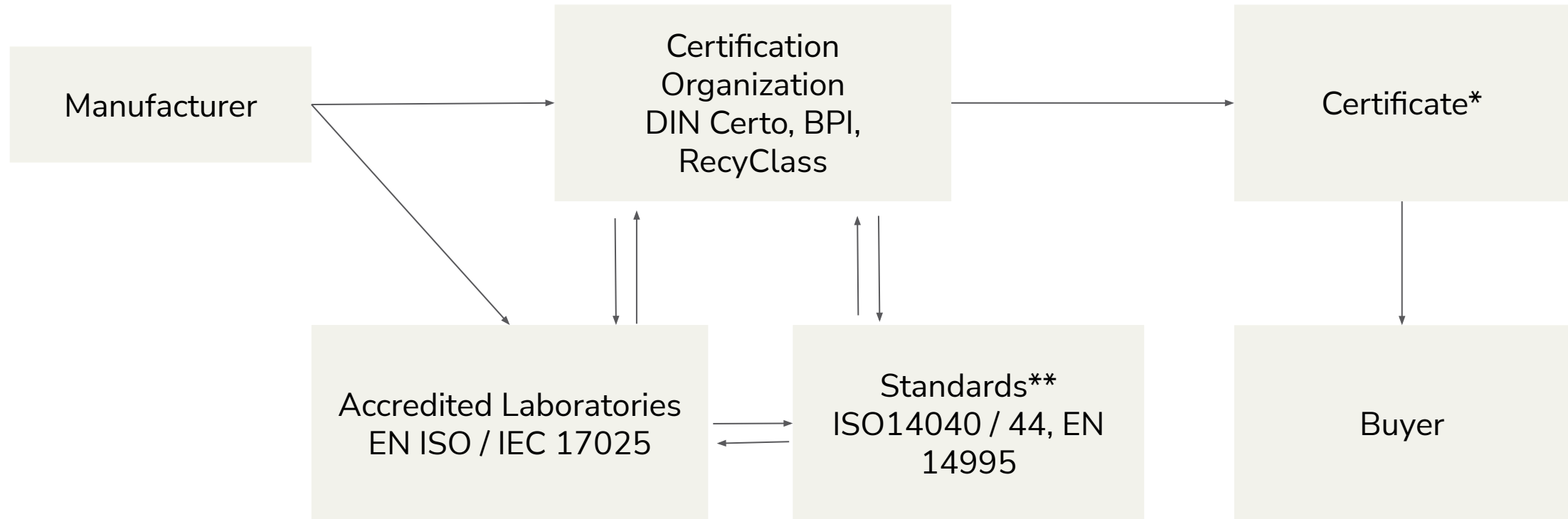
Wyeth Larson
Director, ESG
Avery Dennison



Product Development



Certification Process

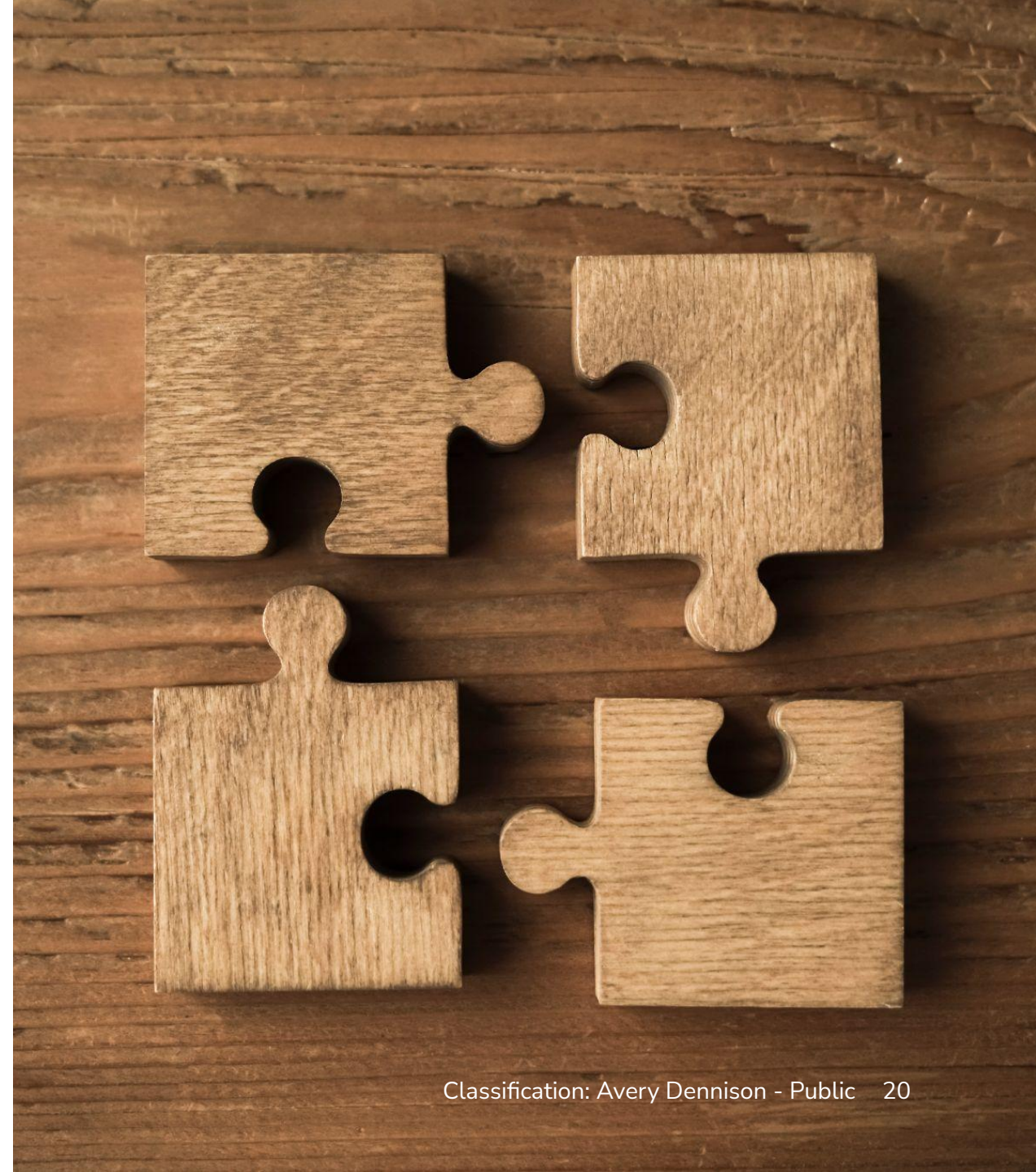


* Only final products shall be certified.

** Important to be aware of differences between the underlying standards on which the information is based e.g. biomass content (eg EN 16785-1 and -2) and biobased carbon content (eg EN 16640)

Benefits of certification

- **Problem-solving:** mitigation of issues addressed
- **Stakeholder acceptance:** serve as signals of quality and provide assurance
- **Market diffusion:** provide companies with competitive advantages such as permanence, access to markets, and price premiums
- **Behavioral changes in the company:** indicators and requirements of a certification standard ensure responsible practices and serve as a means to operationalize sustainability



Guidelines for sustainability claims

- Make **clear** what sustainability benefit the product offers in terms that are **easy-to-understand**
- Substantiate your sustainability claims with **facts**, and keep them up-to-date
- **Fair comparisons** with other products, services, or companies
- Be **honest and specific** about your company's efforts with regard to sustainability
- Make sure that visual claims and labels are **useful** to consumers, **not confusing**
- Be **careful** when using specific and statutorily protected terms such as “organic”, “carbon neutral”, “eco-friendly” and so forth.



Examples of Claims

Carbon Neutral

- Calculation of the total emissions of greenhouse gases produced by the product
- Make production processes more sustainable in order to produce fewer emissions
- CO₂-compensation as a supplementary and temporary instrument
- Inform consumers about the exact amount of CO₂ - compensation and project(s) details
- Certified in accordance with a specific standard



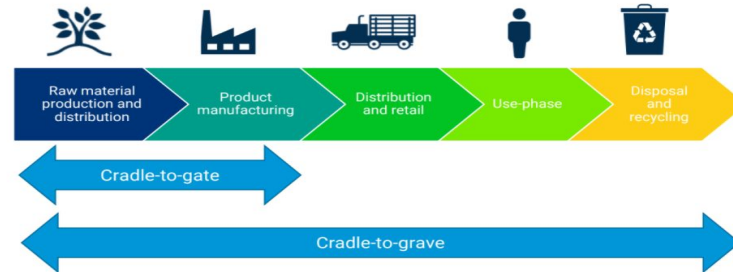
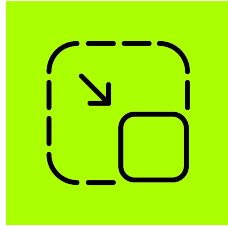
Organic

- Criteria that EU regulations set (e.g. food products)
- Used for products with no specific rules (e.g. textiles and cosmetics)
- Protects interests such as the environment, biodiversity, natural resources, and animal welfare
- More than 95% of materials or ingredients come from certified organic production
- Non-organic materials do not reduce or offset the benefits of the organic
- Partially organic then indicate the percentage (ranges) of organic materials or ingredients



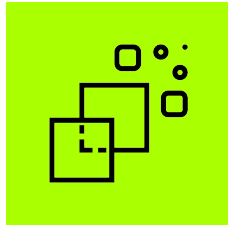
Certifications

Reduce



An internal / 3rd party LCA tool developed as per LCA standard e.g. ISO 14040

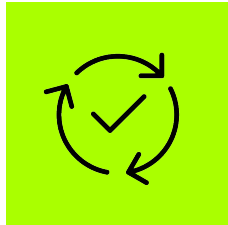
Recycled Content



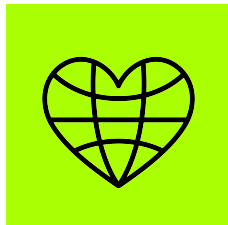
RecyClass



Reuse / Compostable



Responsibly Sourced



Avery Dennison Life Cycle Assessment Tool

- Product must be evaluated before it can be included in the Avery Dennison Sustainable Portfolio
- Helps customers understand the environmental consequences of their labelling and packaging decisions
- Communicates a product's environmental impact across **two categories**
- Scope of the LCA is from cradle to grave i.e. material extraction, to processing by Avery Dennison, to end-of-life



Reduction in the use of materials

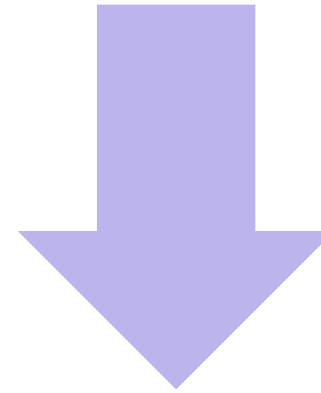
ThinkThin™ Films



- Operational efficiencies; less downtime, storage and transportation.
- Reduce carbon footprint by reducing material use.

Using 1,000,000 m2 of our ThinkThin™ label materials instead of conventional materials enables users to achieve the following resource savings at no extra cost:

PP60 S4000 PET30 v PP50 S7000 PET23

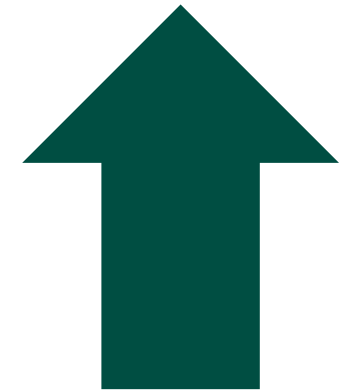


Reduce:

- Fossil fuel consumption by 25%
- Energy usage by 26%
- Waste production by 26%
- Greenhouse gases by 25%
- Water consumption by 14%

Increase:

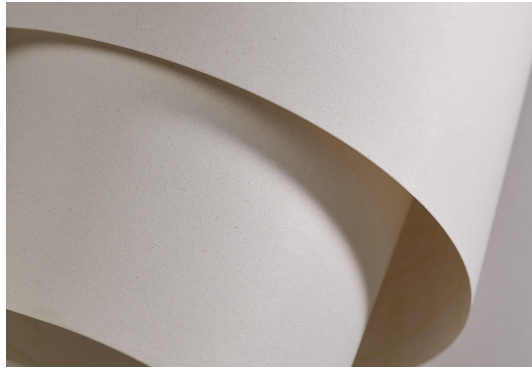
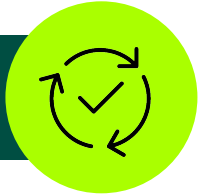
Operational efficiencies; less downtime, storage and transportation.



Sustainable labelling product portfolio

Contains recycled content

Give a second life to what we have already used



rCrush



rDT eco



rMC



rPE



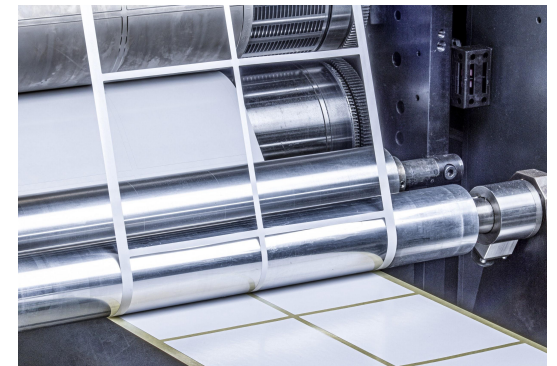
rPP Post-Consumer Recycled



rPP Post Industrial Waste

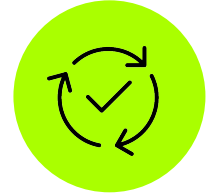


Recycled wine labels



rBG & rPET Liner

Contains recycled content rPP



Mechanically Recycled rPP

- 30% **Post Industrial Recycled (PIR)** content
- Appearance close to standard PP, some batch-batch variation
- Available in **white** and **clear**.
- No direct food approval

Chemically Recycled rPP PCR

- **>90% post-consumer recycled content**
- **ISCC** certification based on mass balance * Full value chain needs to be ISCC certified
- **Equal** properties with standard film
- Almost any PP available

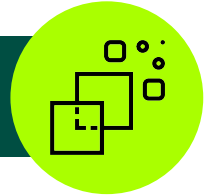
Product Code	Product Name	Service
BV331	rPP60 CAVIT TOP WHITE S692N-BG40WH FSC	2m FTO

Product Code	Product Name	Service
BW035	rPP60 TOP CLEAR ISCC S692N-BG40WH FSC	2m FTO
BU578	rPP60 CAVIT TOP WHITE ISCC-S692N-PET23	2m FTO
BV997	rPP50 TOP CLEAR ISCC-S7000-rPET23	2m FTO

Sustainable labelling product portfolio

Enables recycling, reuse or compostability

What we use can be used again



CleanFlake™ Technology



Compostable Labels



Glass Recycling



MultiCycle



Reclosures solutions: PP and PE



Reclosures solutions:
Oxygen Barrier PP



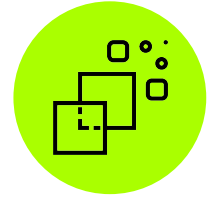
Wash-off paper adhesives



Wash-off labels

Enables recycling / compostability

Compostable Labels



- Compostable packaging not only protects and promotes products, but also enables environmentally friendly end-of-life disposal and returns nutrients to the ecosystem once it is fully broken down.
- In order to claim compostability, the packaging and label has to pass rigorous third-party testing for disintegration, biodegradation and (non-)toxicity, this is described in the **EN 13432:2000** standard.

Sustainability fundamentals

- **OK Compost certified** laminate or components (incl S9500 adhesive)
- Expanding range of Compostable Paper and Filmic facestocks.

Product Code	Product Name	Service
BW099	THERMAL ECO BPA FREE SX6030-BG40WH*	2m FTO
AM424	TRANSFER VELLUM FSC S9500-BG40WH FSC**	1m FTO
AM581	NATUREFLEX WHITE S9500-BG40WH FSC**	1m CTO
AO293	NATUREFLEX CLEAR S9500-BG40WH FSC**	1m CTO

* laminate certified ** facestock and adhesive separately certified.

Sustainable labelling product portfolio

Responsibly sourced

FSC certified and responsibly sourced papers, renewable films & chemicals



Bio-based PE



Bio-based PP



Cane Fiber Paper



Cotton

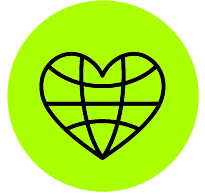


MarbleBase



FSC certified paper facestocks

Responsibly sourced: Bio-based PE



- Helps brands communicate positive brand values
- Certified under the **Bonsucro**[®] scheme
- A facestock made entirely from sugar cane ethanol

1 Mil SQM of BioBased PE85 v.s. PE85 (reductions)

- Fossil Fuel 97% = 700 barrels of oil
- Energy usage 45% = 58 households/year
- Waste 5%= 6 households/year

Functionality and System compatibility

- Converts in a similar way to PE
- Can be recycled in the standard PE recycling stream

Sustainability fundamentals

- Reduction on fossil fuels protecting scarce resources
- Reduces footprint by using plant biomass

More information:
Product overview FAQ

Product Code	Product Name	Service
BC449	PE85 BIOB White S692N-BG40WH FSC	EXT 2m
BD380	PE85 BIOB Clear S692N-BG40WH FSC	FTO 2m

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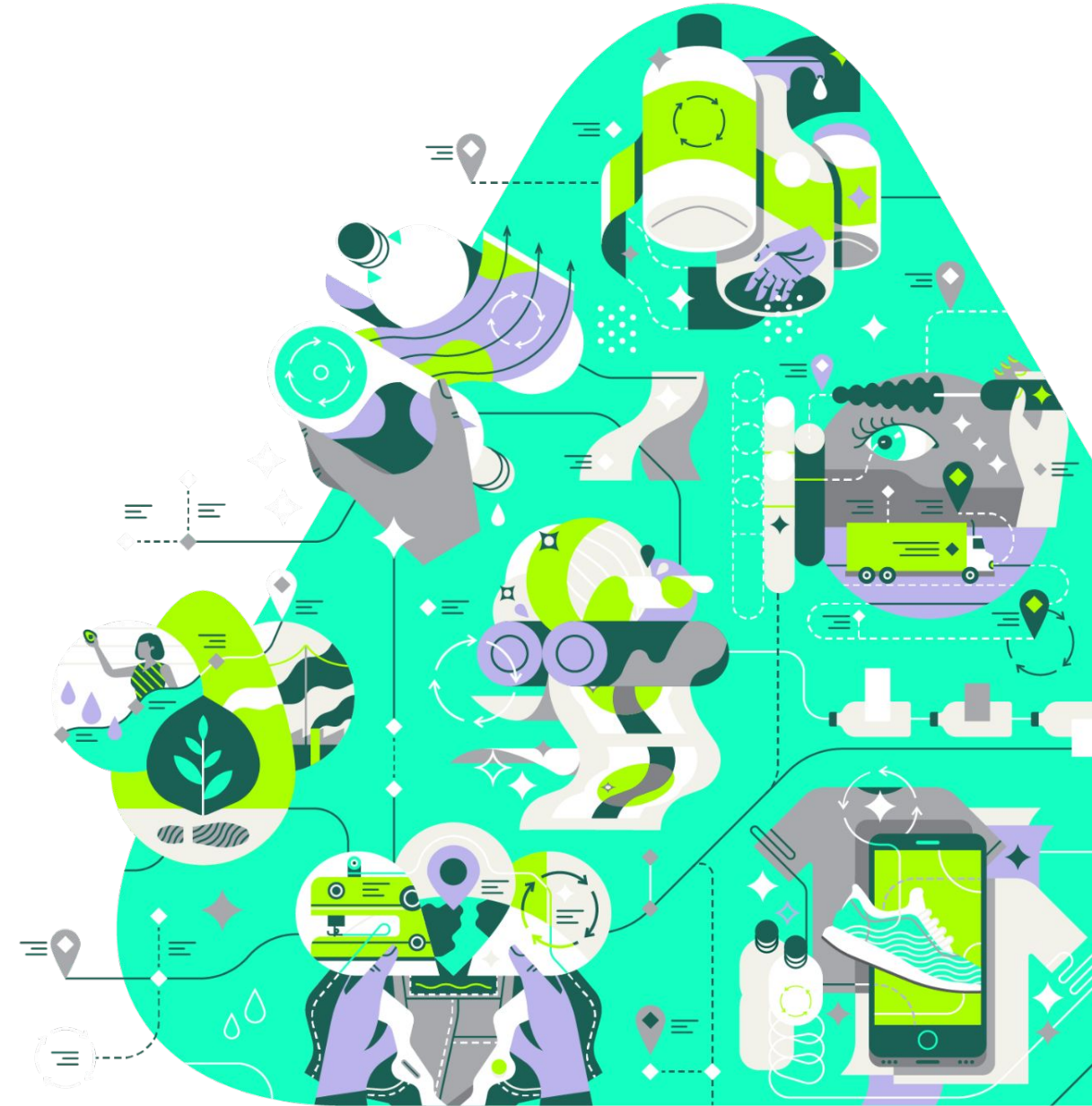
**From novelty
to necessity:
How connected
packaging can be
a force for good**

Agenda

- Key drivers
- How we are making our products more sustainable
- Packaging's potential
- atma.io and sustainability - How can a connected product cloud help with sustainability pressures?



Tyler Chaffo
Manager, Global Sustainability
Avery Dennison Smartrac



Sustainability Drivers

Consumers

Products marketed as sustainable grow **5.6x faster** than regular products

73% of consumers expect to change their consumption habits to reduce the impact on the environment

57% of consumers are willing to pay more for sustainable products

Apparel resale market is **growing at 21x** vs. the traditional market

Investors

The Task Force On Climate-related Financial Disclosures (TCFD) is supported by investors **in holding \$118T**

78% of global investors say that they place more emphasis on sustainability now than they did five years ago

Suppliers

50% of companies see supplier decarbonization as a priority however **only 14%** are requiring suppliers to set science-based targets

Unilever has seen short-term impact by focusing on the long-term, **with \$1.5B from “sustainable sourcing”**

Waste reduction and water efficiency improvements perceived as most likely to have a financial benefit

Employees

In the US, **75% of 18 to 34-year olds** expect their employees to take a stand on climate change

16% higher employee productivity in firms with greater corporate social responsibility performance

Over 75% of executives believe that excellent execution of a leading sustainability strategy will provide a competitive advantage

Regulations

Paris Accord to limit temperature rise to 1.8 C **ratified by 189 parties**

SEC proposed rule on **GHG emission** disclosures

France’s “anti-waste” bill passed

12 US states considering Extended Producer Responsibility (EPR) Laws

Germany’s **Supply Chain Due Diligence Act**

Source: [World Economic Forum](#), [Engie](#), [GlobeScan](#), [GreenBiz](#), [Forbes](#), [Supply Chain Dive](#), [Waste Dive](#), [Gartner](#), [Harvard](#)

What Makes Our Products Sustainable



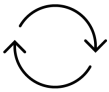
Materials

Improve the sourcing and the use of certified materials, increasing recycled content and replacing less sustainable materials, such as PET, when applicable.



Manufacturing

Implementing best manufacturing processes available and managing our own operations and supply chains.



End of life

End of life product recyclability and impact on the recycling chain.



Measurement

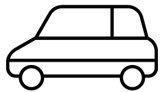
Our Life Cycle Assessment will help to identify and improve the lowest carbon footprint solutions, this analysis is carried out with an external consultancy, providing visibility into the sustainability of our products.



Our Inlays Have One of the Lowest Carbon Footprints

Through the use of materials and manufacturing methods mentioned, we've found that our inlays have up to a **90% lower carbon footprint compared to benchmarks on the market.**

For 2 billion inlays this innovation represents a substantial savings equivalent to :



20,308 passenger cars driven for one year



CO₂ emissions from **10,577,248 gallons** of gasoline consumed



A forest nearly **10x** the size of Manhattan to offset that amount of carbon

RFID Journal, Image Source: Temptalia , EPA.gov





Inlay Recyclability Roadmap

Avery Dennison only pre-qualified intelligent labels provider to receive How2Recycle® label for RFID paper hang tags

GLENDALE, Calif. – 23 September, 2021, Avery Dennison Corporation (NYSE: AVY) today announced it has become the first and only pre-qualified intelligent labels provider to receive the How2Recycle® label for RFID paper hang tags. The label has been assigned based on a number of factors that How2Recycle considers: applicable law, collection (access to recycling), sortation (MRF package flow), reprocessing (technical recyclability), end markets. This development follows many years of research and development within Avery Dennison Smartrac to develop a unique combination of materials, adhesives, and inlay construction to enable RFID labels to be recycled alongside any other residential recycling stream, meaning they can be transformed with any other paper-based materials.



Key Focus

- Is the tag recyclable?
- What happens to existing item's recyclability?
- What happens to the different components of the inlay?
- Confirm recyclability impacts across multiple application and regions

Findings (to-date)

- Antenna and carrier does not negatively impact recyclability
- When applied to corrugate does not cause an issue
- The size of the tag is ultimately whether it will be recycled or not

Strategy

- **Short-Term**
 - Ensure the addition of RFID does not affect an item's recyclability
 - Maximize material that is recovered
- **Long-Term**
 - Recovery of all RFID components (including closed loop processes)
 - Challenging applications approved (i.e. PFL)
 - RFID as an enabler of recycling

Packaging's Potential

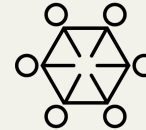


Plastic production

To have **doubled** in the next 15 years and almost **quadrupled** by 2050³



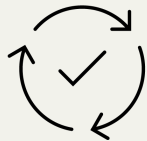
12 US states considering Extended Producer Responsibility (EPR) Laws¹



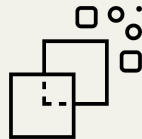
< **2%** of Global Commitment signatories share of packaging is and > **50%** reported 0% reusable packaging²



127 countries ban or tax single-use plastics⁴ **175 countries** have signed on to the UN Plastic Pollution treaty



100% of packaging is expected to be recycled in all QSRs stores by 2025⁵



3 to 5 times more energy can be saved through reuse, recycling and composting than incineration...



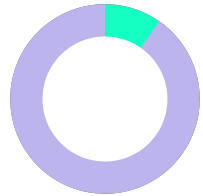
... with **95% of the value of plastic packaging** (\$80-120B annually) lost to the economy after a short first-use cycle⁶



36% of consumers want restaurants to concentrate on producing less packaging waste⁷

Source: 1. Waste Dive, 2. Ellen MacArthur, 3. The New Plastic Economy, 4. EllenMacArthur and UN, 5. SEVENROOMS, 2020,Burger King UK, 6. The New Plastic Economy, 7. SEVENROOMS, 2020,Burger King UK

Packaging's Potential

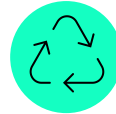


46%

Of global consumers buy sustainable packaging to have a positive impact on the planet

8 in 10

consumers are trying to reduce their plastic waste.¹



74%

of consumers are willing to pay more for sustainable packaging.²

80%

of surveyed packaging companies plan to invest in recycling and waste-related sustainability initiatives over the period (2020-2025)³

73%

Of Generation Z are keen to reuse packaging



60-90%

Of carbon dioxide elimination associated with the traditional packaging and distribution of premium spirits through reusable packaging

\$10B

Is the market opportunity for reusable packaging and one strategy to unlock will be through the token economy such as NFTs and cryptocurrencies

Source: ¹YouGov, ²Boston Consulting Group, ³Euromonitor Cognizant Accenture UNGC, [Duo](#), [WEF](#)

Retail Reimagined seminars - June 2022



Consumer awareness over sustainability has undergone a massive shift in the last decade as the reality of climate change has increased the urgency.

What's the impact of e-commerce vs in-store shopping

The demand for convenience has been accelerated by the Covid-19 pandemic – but so has awareness around humanity's environmental impact. Consumers are now challenging brands to create offerings that cater to the duelling desires of convenience and sustainability.

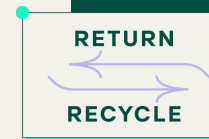
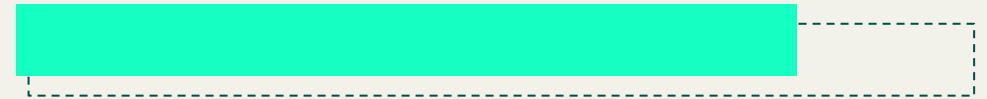
Citizen shopper

According to NRF, the type of consumer who wants retail stores to be more than just places to shop. Today's shoppers vote with their wallets, supporting brands and stores that stand for important causes, including equity, sustainability and climate change.¹ With **65%** of global digital consumers indicating they are worried about climate change.

Source: ¹National Retail Federation, ²Optoro, ³OPFS / Live Area, [Retail Dive](#), Euromonitor

330m Sq feet of warehouse space to keep up with e-commerce.

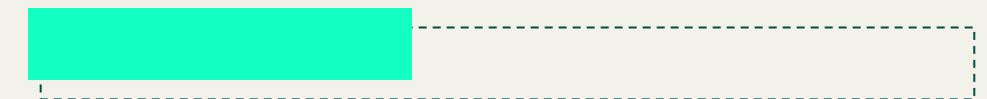
83% of consumers say convenience is more important when shopping than five years ago.¹



9.6 billion

pounds of waste are generated from returned merchandise each year.²

40% of all emissions in these supply chains could be abated with readily available and affordable levers, e.g. circularity, efficiency and waste reduction.³



Why connected products?



RAIN RFID

#1

Identified as the #1 technology for the next 5 years to enable transparency followed by blockchain and DNA tagging



Digital Twinning

44%

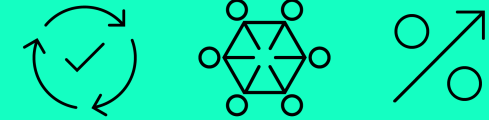
Of Global CEOs say that digital twin technology will make a significant impact on sustainability in their industry over the next 5 years



Sensors and IoT

77%

Of executives in the US and EU list IoT and sensors to meeting sustainability goals



\$1.3B Is the value created through virtual twins and **7.5 Gt CO2e** emissions reductions through 5 use cases. CEOs agree that technology is enabling new business models and will unlock the future of industry decarbonization. **81%** are leveraging technology to collect and manage organization-wide ESG data; yet only one-quarter of these CEOs (**25%**) are managing their data at an advanced level. CEOs also highlight the potential of real time track-and-trace and blockchain technologies to collect quality sustainability data. However, there is a technology barrier with **53%** listing limited knowledge about deploying technology for sustainability.
– Accenture

Source: [McKinsey](#) [Cognizant](#) [Accenture](#) [UNGC](#)

What is atma.io?

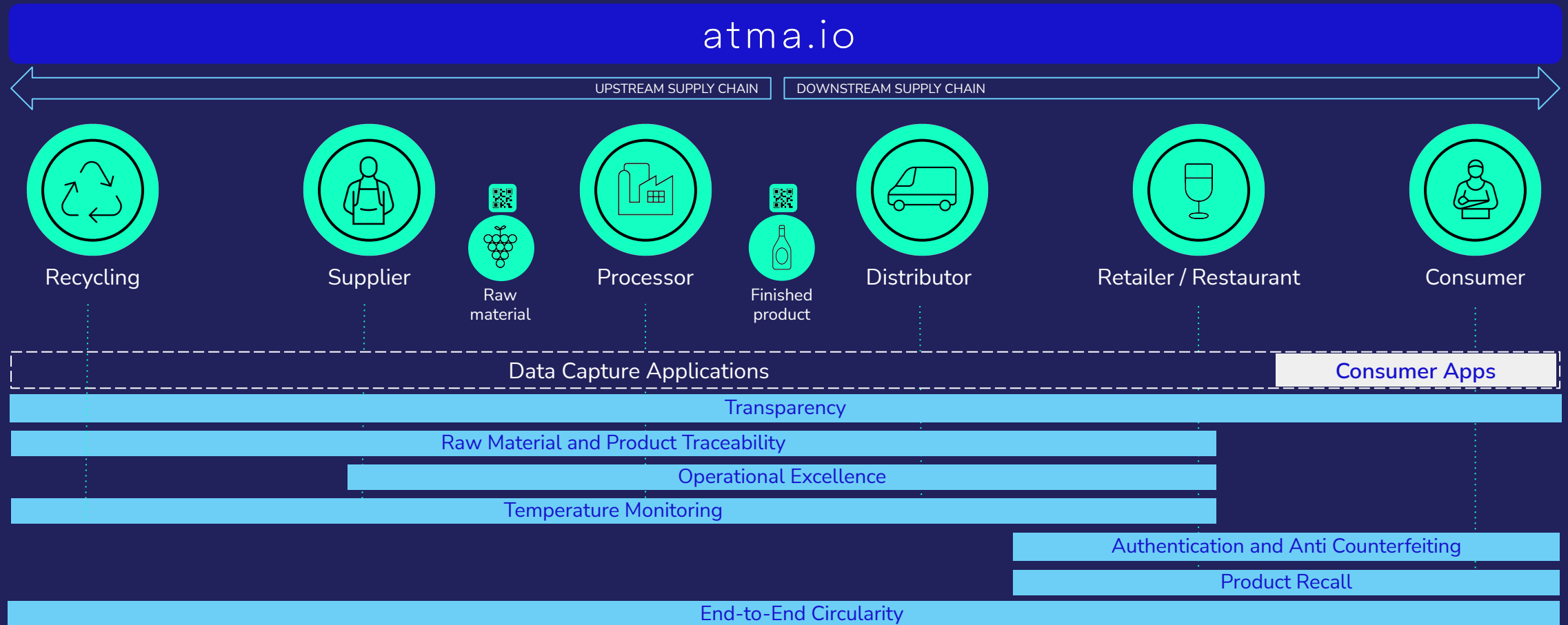
atma.io, connected product cloud by Avery Dennison

A platform that unlocks the power of **connected products** by assigning unique digital IDs to everyday items, providing unparalleled **end-to-end traceability and transparency** by enabling access to an **ecosystem of applications** designed for tracking, storing and managing all the events associated with each individual product – all the way from source to consumer and beyond, enabling circularity.



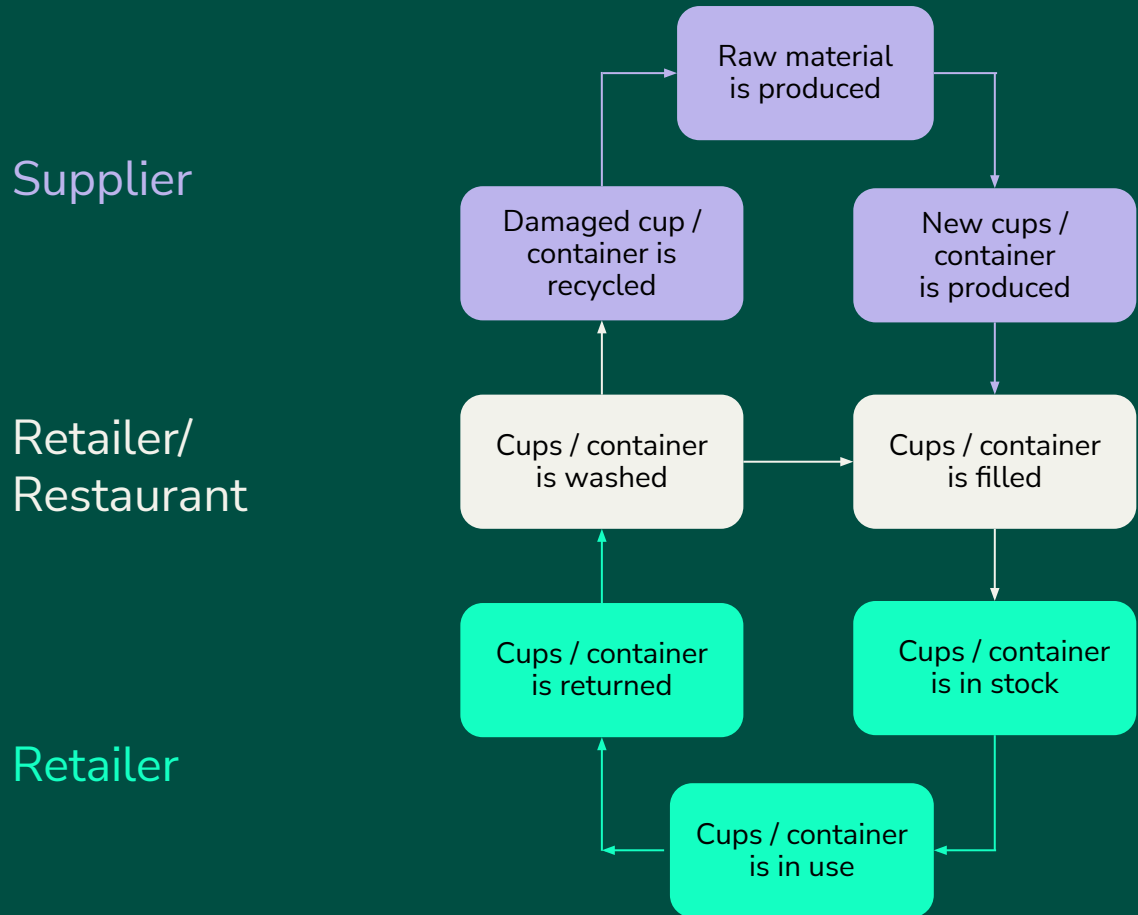
atma.io Drives Item-Level Use Cases Throughout the Supply Chain

API integration with existing systems: Sourcing, material management, ERP, OMS, CRM, POS, WMS, SCM...



Lifecycle traceability

A day in the life of a reusable package



Key point to consider...

Utilize digital solutions to empower consumers with information – apps that offer details around provenance, traceability and carbon footprint can help encourage consumers to maintain green behaviour. - Euromonitor

Create the digital replica of your supply chain by capturing value chain events at an item level with serialized digital triggers, from raw materials to finished product, gaining visibility on the entire lifecycle of the item.

Track and trace all aggregation and logistics steps, from the carton and pallet creation, to the shipping and receiving events.

Access custom dashboards and reports to measure and monitor in real-time:

- Item location
- Dwell time
- CO² footprint
- Cycle counts
- Shelf life
- Distribution

Thank you

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Expert Q&A + Closing



Thank you

