



The Future of Synthetic Turf Recycling

ESTC

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10 July 2024

Agenda

Future of Synthetic Turf Recycling

- ESTC: EMEA synthetic Turf Council
- Synthetic Turf for the benefit of society
- Composition of Synthetic Turf
- Recycling of Synthetic Turf today
- Innovation towards Circularity
- Questions?

ESTC - EMEA Synthetic Turf Council



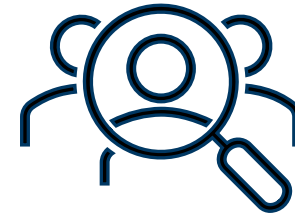
VISION

To serve as the forum to promote, develop, grow and advocate for the synthetic turf industry.



OBJECTIVES

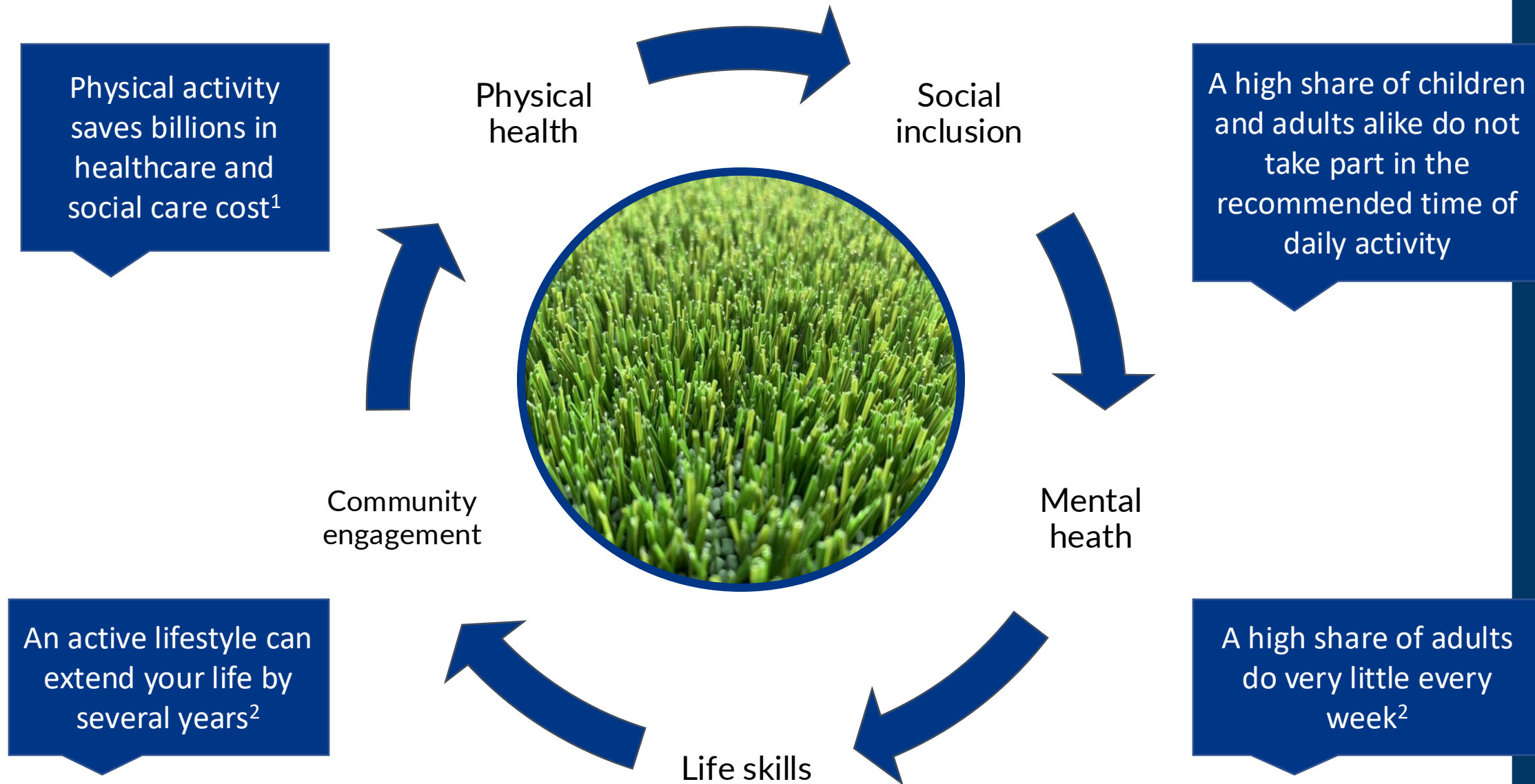
Bring the industry together at all levels.
Serve as the Voice of the Industry.



REGIONAL FOCUS



Activity is good for you, and good for society



¹ See e.g. the extensive UEFA studies on SROI in Sweden, Italy and Scotland

² E.g. Sport England / DCMS Active Lives identified 9 years of lifespan extension and less than 30 minutes of activity by 60% of UK adults



Synthetic turf surfaces allow

All weather use

High levels of use

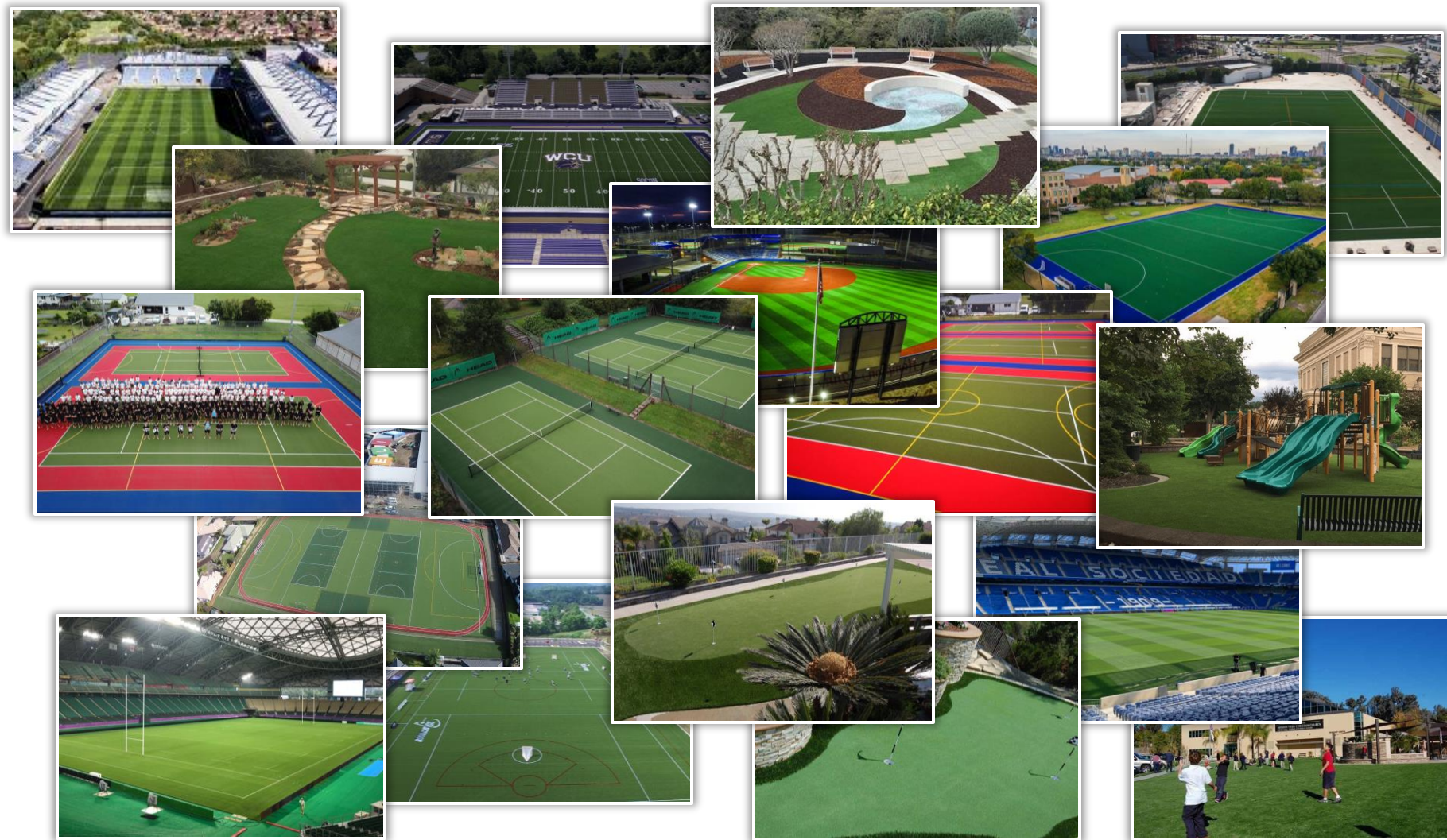
Simpler
maintenance

Consistent & safe
use

Cost effective and sustainable



Extensive range of welcoming and enjoyable applications



Facts & Figures about Synthetic Turf in Europe

- Production
 - European suppliers produce around 60 million m² per year
- Installed Synthetic Turf Surface in Europe
 - around 120 million m² per year
 - Split around 50/50 between sports surfaces and landscaping surfaces
 - Growth significantly above GDP at around 5-6% per year
- Use
 - Typical community field 50-60 hours per week
 - High-profile field about 40 hours per week



Environmental Care



Centre of the strategy of ESTC

Proactive approach
on environmental care



Promote benefits of
synthetic turf & show
accountability for industry

Understand and minimize any side effect
of synthetic turf on the environment.

Microplastics Reduction

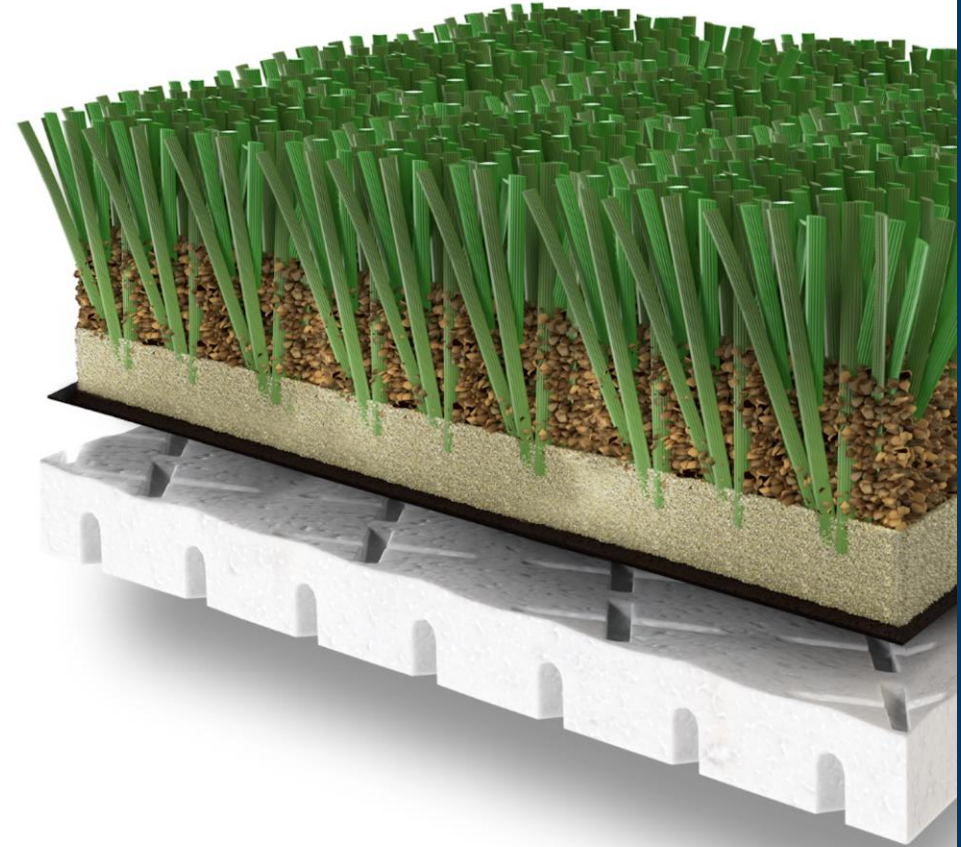
REACH Compliance →
Safe Materials (PFAS)

End-of-Life → Circularity

PEFCR project → industry wide LCA

Synthetic Turf Composition

Performance Infill		Infill (optional) Loose granular material placed inside the synthetic turf fibres.
Stabilising Infill		Lots of different types which can be adopted for different applications
Yarns		Synthetic Turf
Primary Backing		The basis of the synthetic turf. Lot of different yarns types and turf configurations for a wide range of applications
Secondary Backing (Coating)		
Shockpad		Shockpad (optional) To provide comfort, protection or performance under the turf



Polymers

- 1960's: Nylon - first hockey field
- 1970's: Polypropylene
- 1990's: Polyethylene

Today: Sports

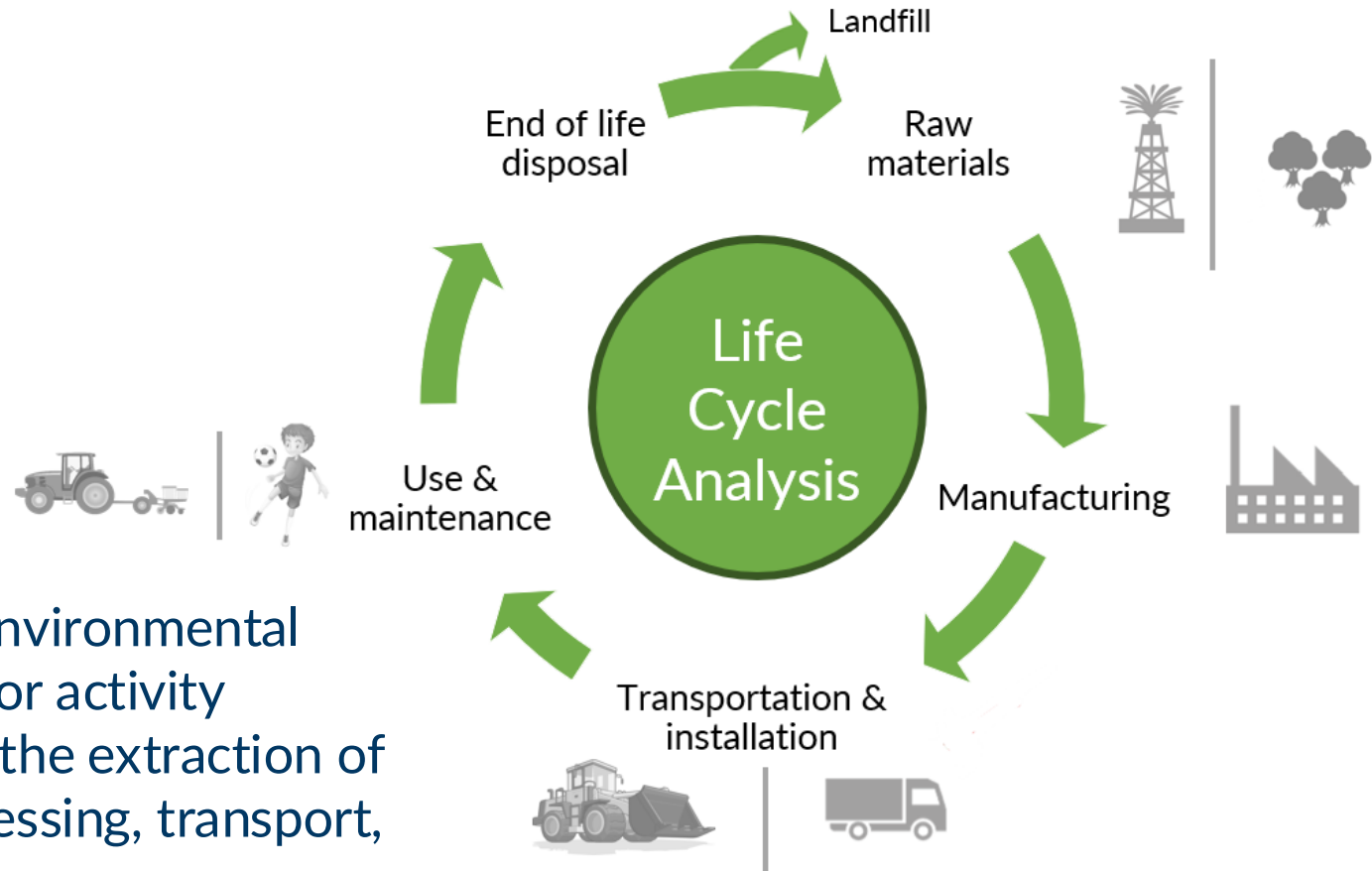
- Face yarns: 90% Polyethylene / 10% Polypropylene
- Backing cloth: 90% Polypropylene / 10% other
- Shockpads: Polyethylene / Polyurethane Foam

Today: Landscape

- Face yarns: 90% Polyethylene / 25% Polypropylene (texturized)
- Backing cloth: 90% Polypropylene / 10% other

Recycling critical for LCA

Recycling critical to obtain good LCA score



LCA: tool used to assess the environmental impacts of a product, process or activity throughout its life cycle; from the extraction of raw materials through to processing, transport, use and **disposal**.

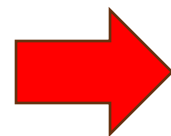
PEFCR: Industry Wide LCA
Product Environmental Footprint Category Rules

PROCESS		ENVIRONMENTAL RATING	AVAILABILITY
RECYCLING	MECHANICAL		Increasingly available in larger markets. These facilities also have capacity to handle surfaces transported from elsewhere in Europe
	CHEMICAL		New technology now starting to be introduced to the European market that should allow wider localised access to recycling facilities
RECOVERY			Readily available in many countries
DISPOSAL			Currently available but increasingly being restricted due to its poor environmental rating. Disposal should be considered as an option of last resort

End-of-Life Synthetic Turf – The future is now!

- Significant number of recycling facilities already exist – starting from zero in 2010
- Methods and guidelines are in place for testing of materials

Recycling Facilities Overview

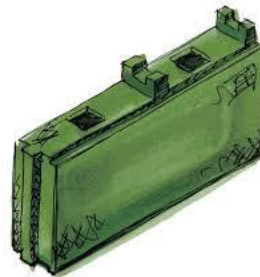
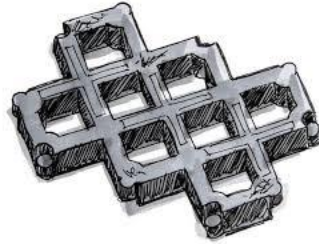


Challenge for recyclers: Suitable end-markets of sufficient size
Harmonised rules are likewise important

Perfect world: Closed Loop Recycling



Today: Open Loop Recycling



Innovation towards Circularity

- Design for Circularity
 - 100% Polyethylene Synthetic Turf?
 - Drive towards single polymer turf systems (One DNA?)
 - Secondary backing from PU or latex to PE?
 - Primary backing compatible with face yarn? From PP to PE?
 - 100% Polyester → yarn, backing and coating → one component
- Turf with recycled content
 - 2 initiatives on the market today
 - Recycled core / virgin outer layer
- Biobased / Biodegradable polymers
- Chemical Recycling

What drives Synthetic turf recycling?

- Personal drive: Environmental concerns
- Social responsibility: Be(-come) sustainable business
- Economical: Profit driven
- Legislation: Enforcement → UK, EU, other

Recycling unites CRUK & ESTC



Working
together
towards
a sustainable
future!



Any Questions?