



Atelier n°1

Les rendez-vous de l'éco-conception

« La trilogie des matières »

Re_fashion

Objectifs & méthodologie

- Informer autour des enjeux propres aux matières dans une perspective cycle de vie
- Donner des clés pour se forger un esprit critique dans une démarche d'éco-conception
- Structurer une feuille de route pour une stratégie matière cohérente avec votre démarche d'éco-conception

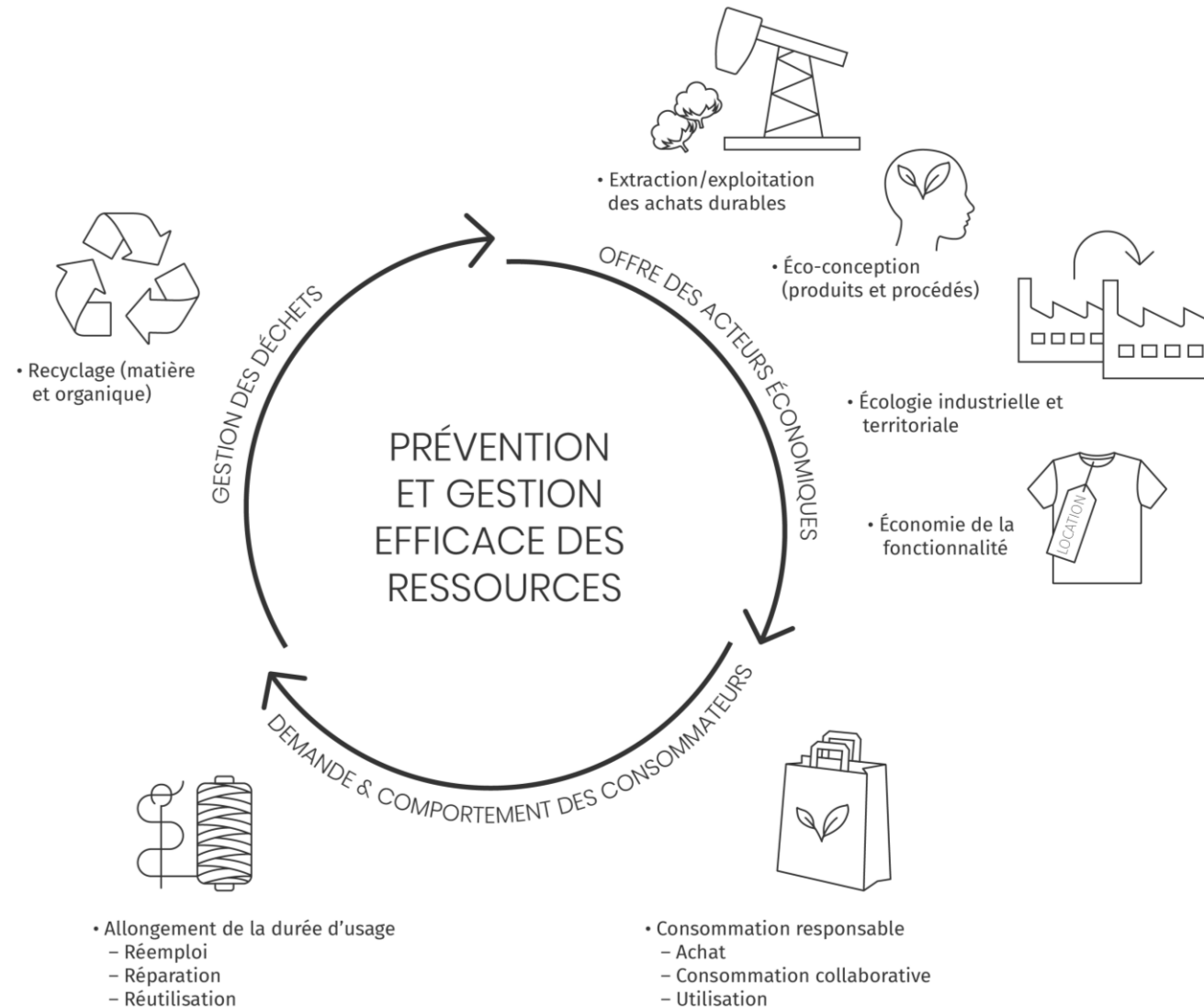


Apport d'expertise : le B.A.BA de l'éco-conception

intervention d'Adèle Routhiau

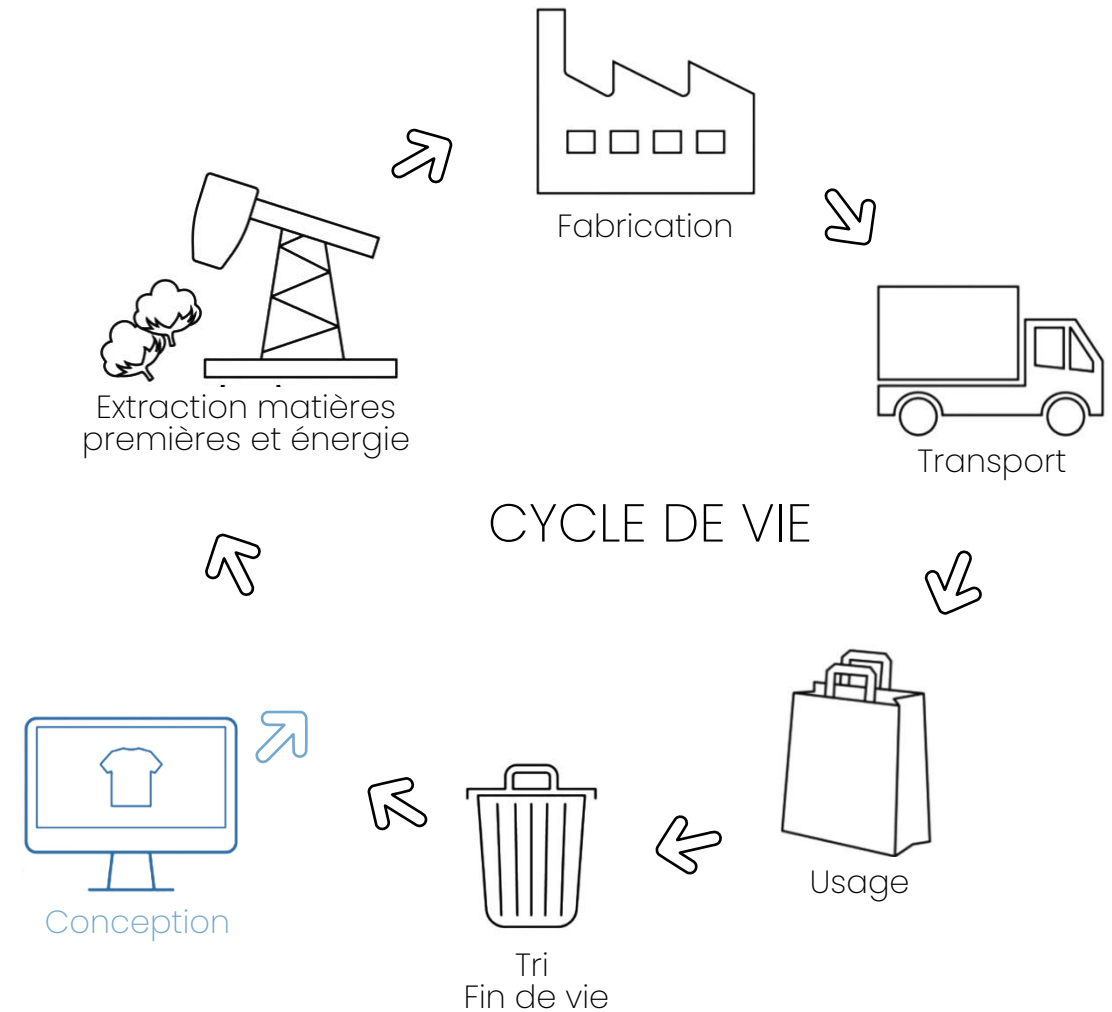
[Replay ici](#)

Pilier de l'économie circulaire



Définition

« L'éco-conception vise, dès la conception d'un procédé, d'un bien ou d'un service, à prendre en compte l'ensemble de son cycle de vie (confection, transport, entretien, fin de vie ...) pour minimiser les impacts environnementaux. »



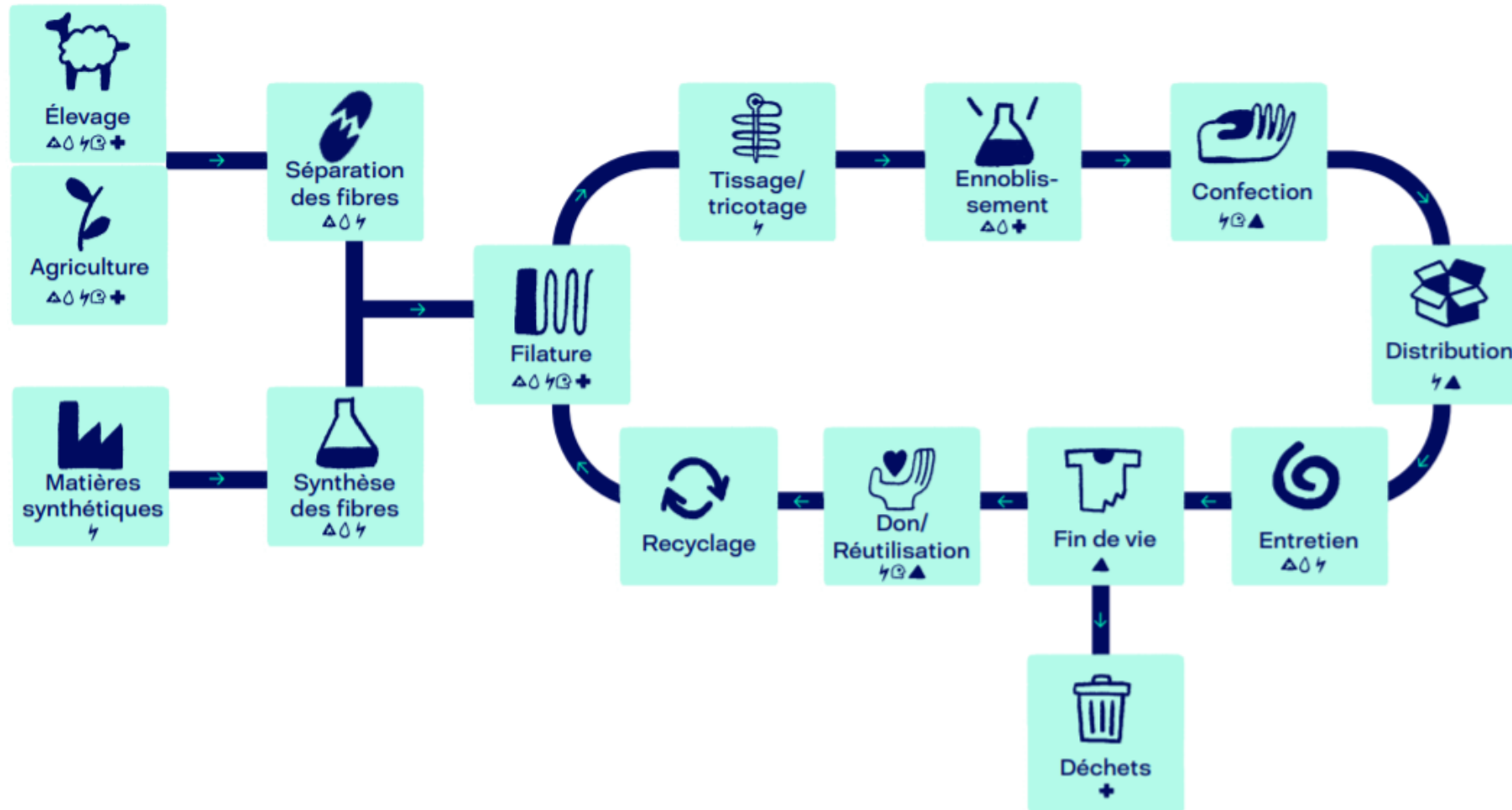
Pourquoi se lancer ?

- Minimiser l'impact environnemental
- Répondre aux attentes des consommateurs
- Innover
- Gains économiques
- Respecter les réglementations
- ...

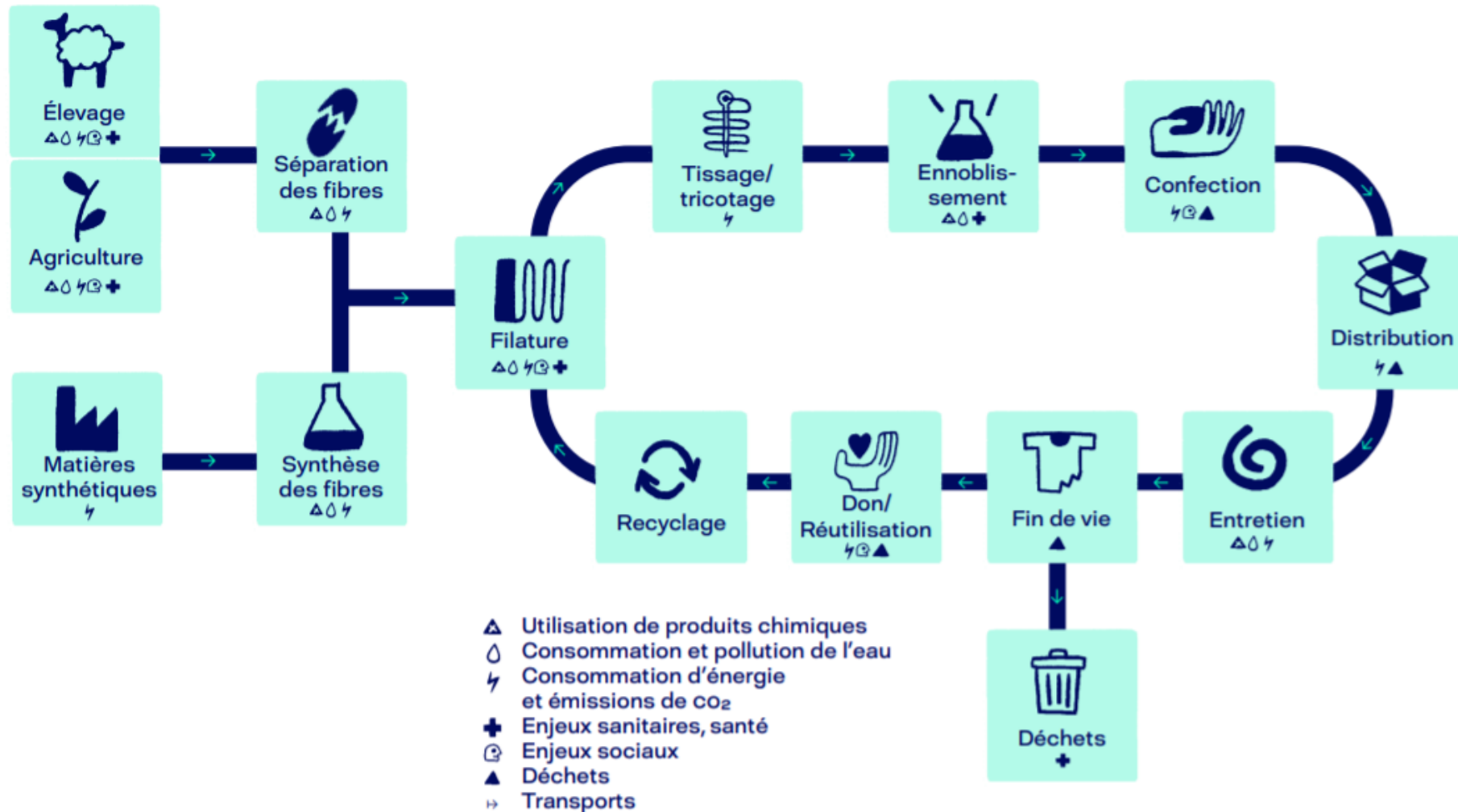
Une priorité pour Refashion

- Réduire la quantité de déchets
- Améliorer la durabilité
- Améliorer la recyclabilité

Une approche multi-étapes



... et multi-critères !



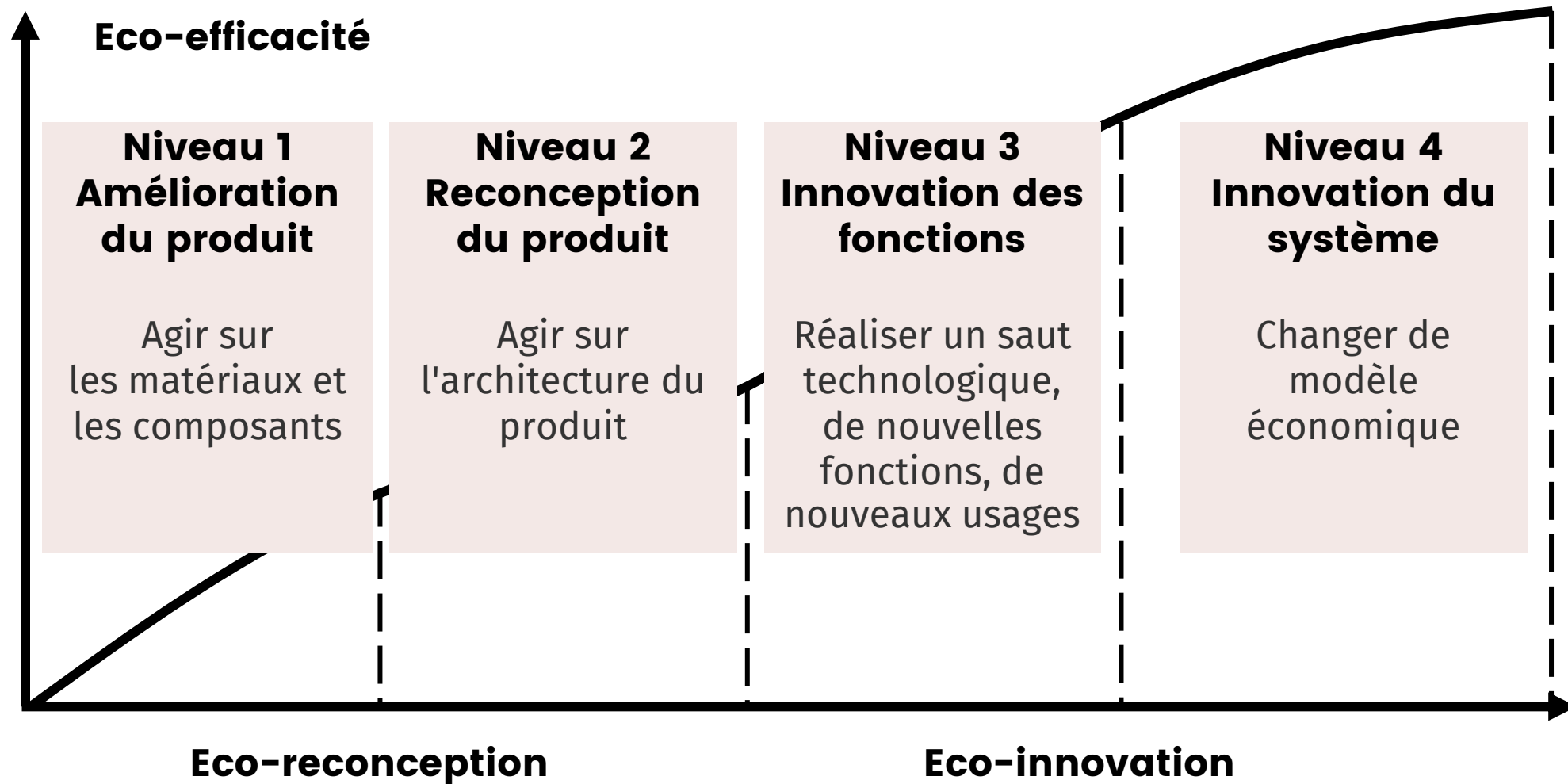
Démarche de compromis

Eco-concevoir pour allonger la durée de vie		Eco-concevoir pour plus de circularité		
Eco-concevoir pour durer	Eco-concevoir pour réparer	Eco-concevoir pour faciliter le désassemblage	Eco-concevoir pour faciliter le recyclage	Eco-concevoir pour faciliter la biodégradabilité

Faire des compromis

Identité de la marque – Offre produits – Faisabilité technique – Coûts – Temps – Attentes clients ...

Les niveaux d'éco-conception



Diagnostic de votre structure

Fiche diagnostic :

[Télécharger ici](#)

Elodie TERNAUX

**Co-fondatrice et spécialiste matériaux
et durabilité – HYLOH**

Replay ici

h^{yl}oh.

an ecosystem of consultants, focusing on materials and circular economy

New York . Paris . Shanghai . Sydney . Brisbane . Taipei . Minneapolis . Melbourne . Seattle



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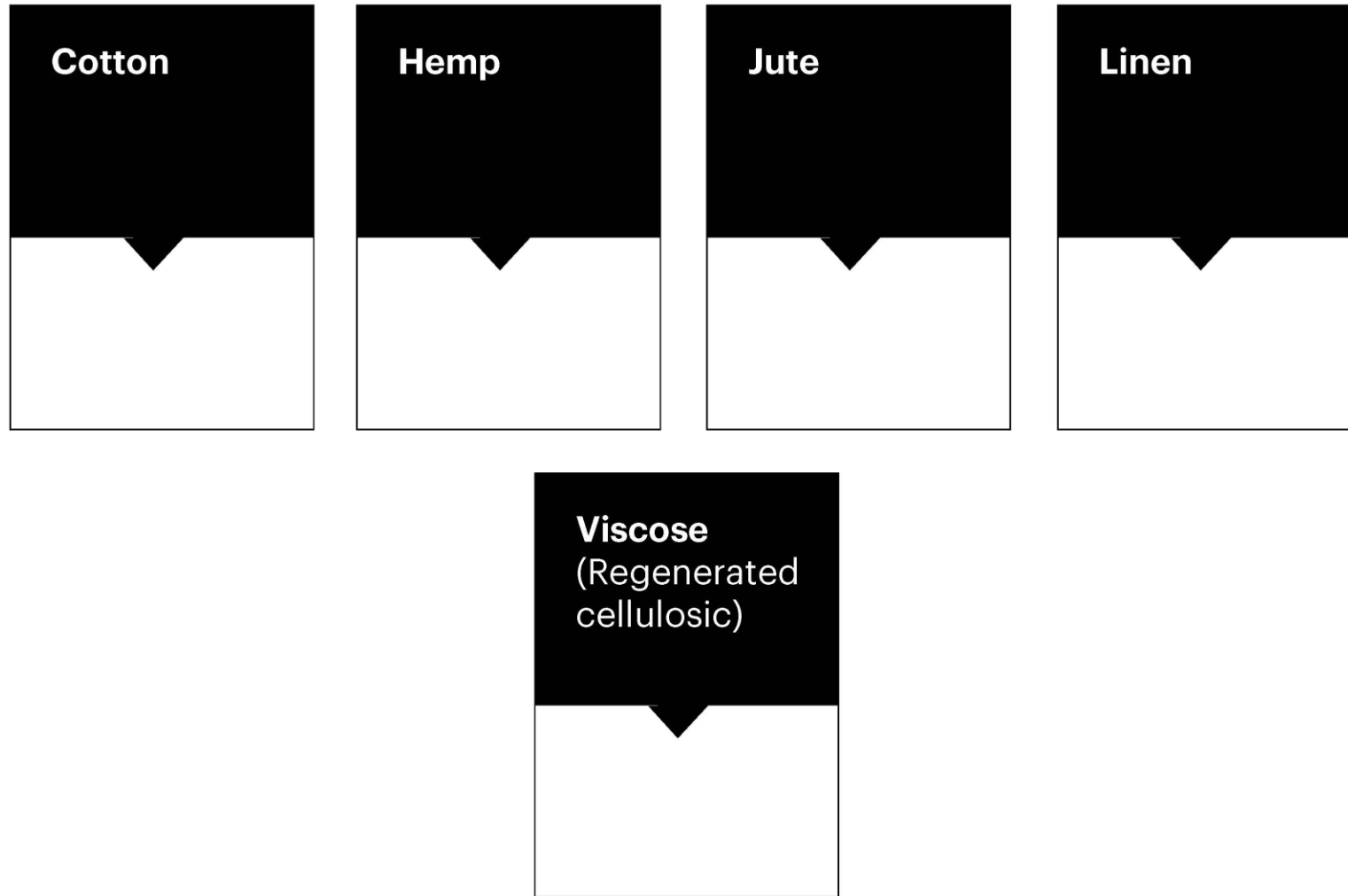
OUR WORK

MATERIALS

The background is a full-page image of marbled paper in various shades of green, from light lime to dark forest green, with intricate, swirling patterns.

THERE ARE NO SUSTAINABLE MATERIALS

MATERIAL **CATEGORIES** - NATURAL CELLULOSIC TEXTILES



COTTON

DESCRIPTION

A natural cellulosic fibre that is soft and absorbent. It is harvested from the seed pod (boll) of the cotton plant.

RECOMMENDATIONS

- Favour organics to minimize chemical pollution
- Favour traceable cotton to ensure it is farmed sustainably (included Fair Trade)
- Organic options available, look especially for those with the Global Organic Textile Standard (GOTS)
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

Mono-material (depends if the cotton is blended with other fibres; assuming it isn't for this application)

Renewable

~~Recycled Content~~ (not widely available at the moment)

~~Recyclable~~ (chemically recyclable into regenerated cellulose; mechanically recyclable available but usually PIR - neither is widely available yet)

Compostable (depends if the cotton is blended with other fibres; assuming it isn't for this application)

Low Toxicity (growing synonymous with chemical pollution, namely from pesticides, however organic options are available)

COTTON

SUGGESTION



Material reference

Pure Waste

Assets

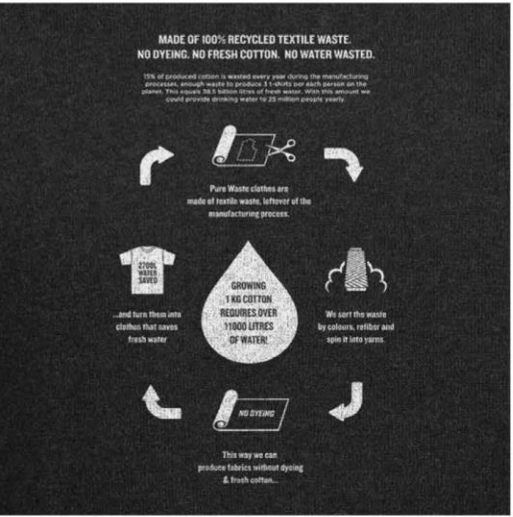
Textile waste is mechanically separated and re-spun into yarn with minimal loss in fibre length. The yarn is then knitted into jersey and sold as yardage.

Material manufacturer

Pure Waste Textiles

Website

purewastetextiles.com



HEMP

DESCRIPTION

A natural cellulosic fibre that is strong and has inherent antimicrobial and anti-odour properties. It is harvested from the inner core of hemp stalks.

RECOMMENDATIONS

- There is not enough recent research to definitely say that hemp is less impactful than other natural fibres, but it has been said to require less water in comparison to cotton
- Hemp can be used a rotational crop
- Hemp, like all natural plants, is a carbon sink (exact figures in comparison to other fibres however to be determined)
Verify the retting process have minimal impact
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

~~Mono-material~~ (hemp is likely blended with other fibres at this early stage of its resurgence)

Renewable

Recycled Content (not widely available at the moment)

~~Recyclable~~ (technologies used for recycling cotton may work on hemp, but are not widely available anyway)

Compostable (this would need to be verified)

Low Toxicity (to be verified: some retting process introduce harsh chemicals and contaminated water as a result of the retting process)

JUTE

DESCRIPTION

A long natural cellulosic fibre that is harvested from the stalks of the flowering Corchorus plant. It is described as strong, soft, long and shiny and used to make burlap or hessian.

RECOMMENDATIONS

- Verify the labour used to strip the fibre from the stalk, as children may be used in some instances
- Verify the retting process have minimal impact
- Favour textiles with eco certifications (such as bluesign, oeko-tex)
- Seek organic options to minimize pesticides or chemical fertilisers

SUSTAINABILITY ATTRIBUTES

~~Mono-material~~ (jute may be blended with cotton, aka Juco)

Renewable

~~Recycled Content~~ (some recycled content may be available)

~~Recyclable~~ (technologies used for recycling cotton may work on jute, but are not widely available anyway)

Compostable (this would need to be verified)

Low Toxicity (to be verified: some retting process introduce harsh chemicals and produce contaminated water)

LINEN

DESCRIPTION

A long natural cellulosic fibre that is harvested from the stalks of the flax plant. It is described as soft, shiny and flexible and used to many different textiles that get softer with age.

RECOMMENDATIONS

- Verify the retting process have minimal impact
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

Mono-material (assuming its not blended in this application)

Renewable

~~Recycled Content~~ (not widely available at the moment)

~~Recyclable~~ (technologies used for recycling cotton may work on linen, but are not widely available anyway)

Compostable

Low Toxicity (to be verified: some retting process introduce harsh chemicals and produce contaminated water)

VISCOSE

DESCRIPTION

Fibre with similar properties to cotton that is extruded from a solution of dissolved natural cellulose sources (wood pulp and cotton linters for example). The intermediate polymer.

RECOMMENDATIONS

- Viscose is preferred over rayon due to 'cleaner' processing
- Favour those from recycled sources
- Favour textiles with eco certifications (such as bluesign, oeko-tex)
- New examples using waste products such as orange, milk are available
- Bamboo viscose also available, bamboo a rapidly growing plant

SUSTAINABILITY ATTRIBUTES

Mono-material (depends if the viscose is blended with other fibres; assuming it isn't for this application)

Renewable

Recycled Content (some versions using recycled content are available)

Recyclable (chemically recyclable into more regenerated cellulose)

Compostable

~~Low Toxicity~~ (cellulose derivative is obtained by the addition of various chemicals, depending on the system, exact toxicity of the process to be verified)

VISCOSE

SUGGESTION



Material reference

Circulose

Assets

Recycling technology that converts cotton and Lyocell textile waste into a pulp that is then respun into fibers for further textile processing.

Material manufacturer

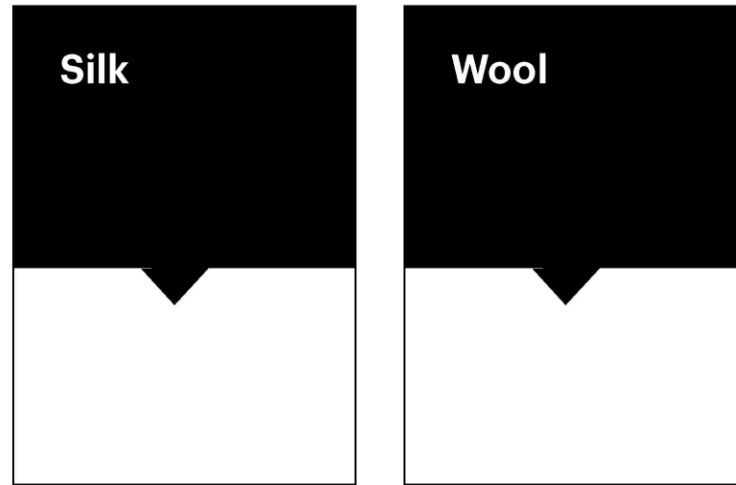
re:newcell AB

Website

renewcell.com



MATERIAL **CATEGORIES** - PROTEIN TEXTILES



SILK

DESCRIPTION

Natural protein fibre spun from the silkworm who feeds on mulberry leaves. The silkworm extrudes the fibre in a cocoon around themselves.

RECOMMENDATIONS

- There is a movement for Peace Silk: allowing the moth, who has undergone chrysalis from the worm, to escape the cocoon rather than be killed during the fibre harvested proces. This does result in shorter fibres however as the continuous filament would be severed in multiple places.
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

Mono-material

Renewable

~~Recycled Content~~

~~Recyclable~~ (unknown: may technically be possible)

Compostable

Low Toxicity

SILK

SUGGESTION



Material reference

PEACE SILK

Assets

"Peace silk" or cruelty-free silk allows the silkworm to live out its full life cycle and emerge from their cocoons as moths.

Material manufacturer

ZS FABRICS

Website

www.zsfabrics.com



WOOL

DESCRIPTION

Natural protein fibre from the fleece of sheep. It is cleaned to remove the natural protective oils before it is spun into yarn and woven or knitted, or before it is felted.

RECOMMENDATIONS

- Seek recycled wool
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

Mono-material

Renewable

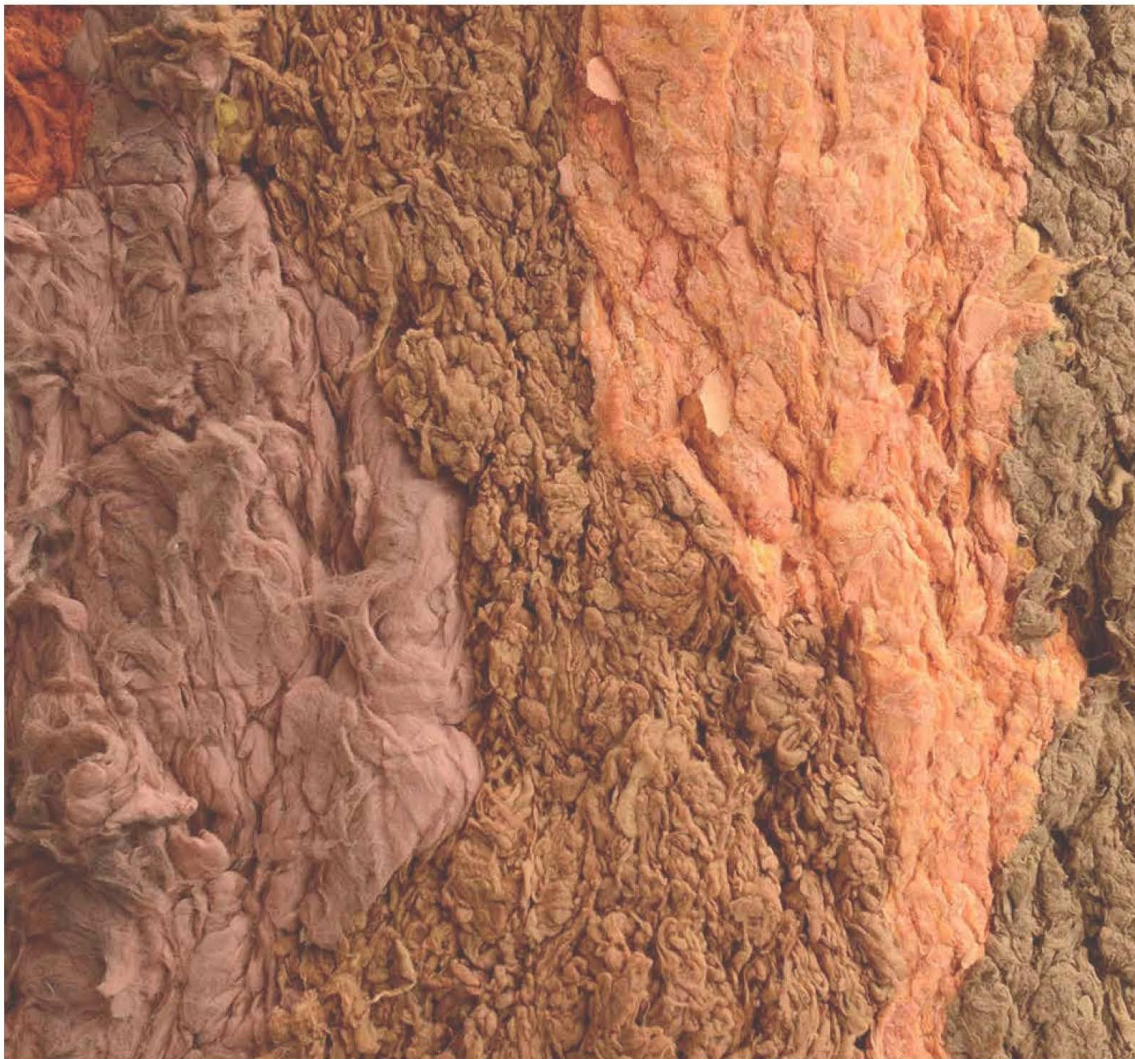
Recycled Content (some available)

Recyclable (recycling wool is an established practice in namely Italy and China, but they typically use garments)

Compostable

Low Toxicity (depends on processing)

WOOL

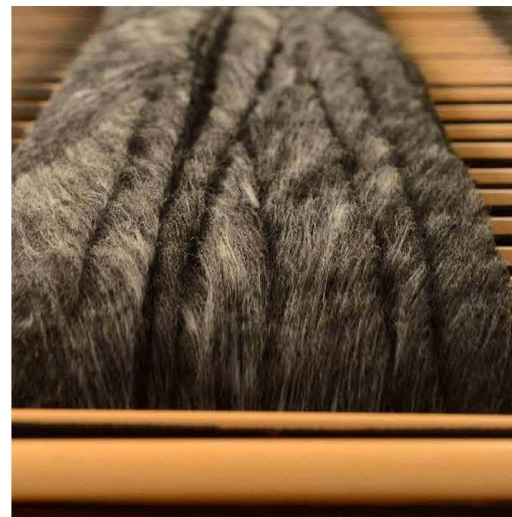


Material reference
RECYCLED WOOL YARNS

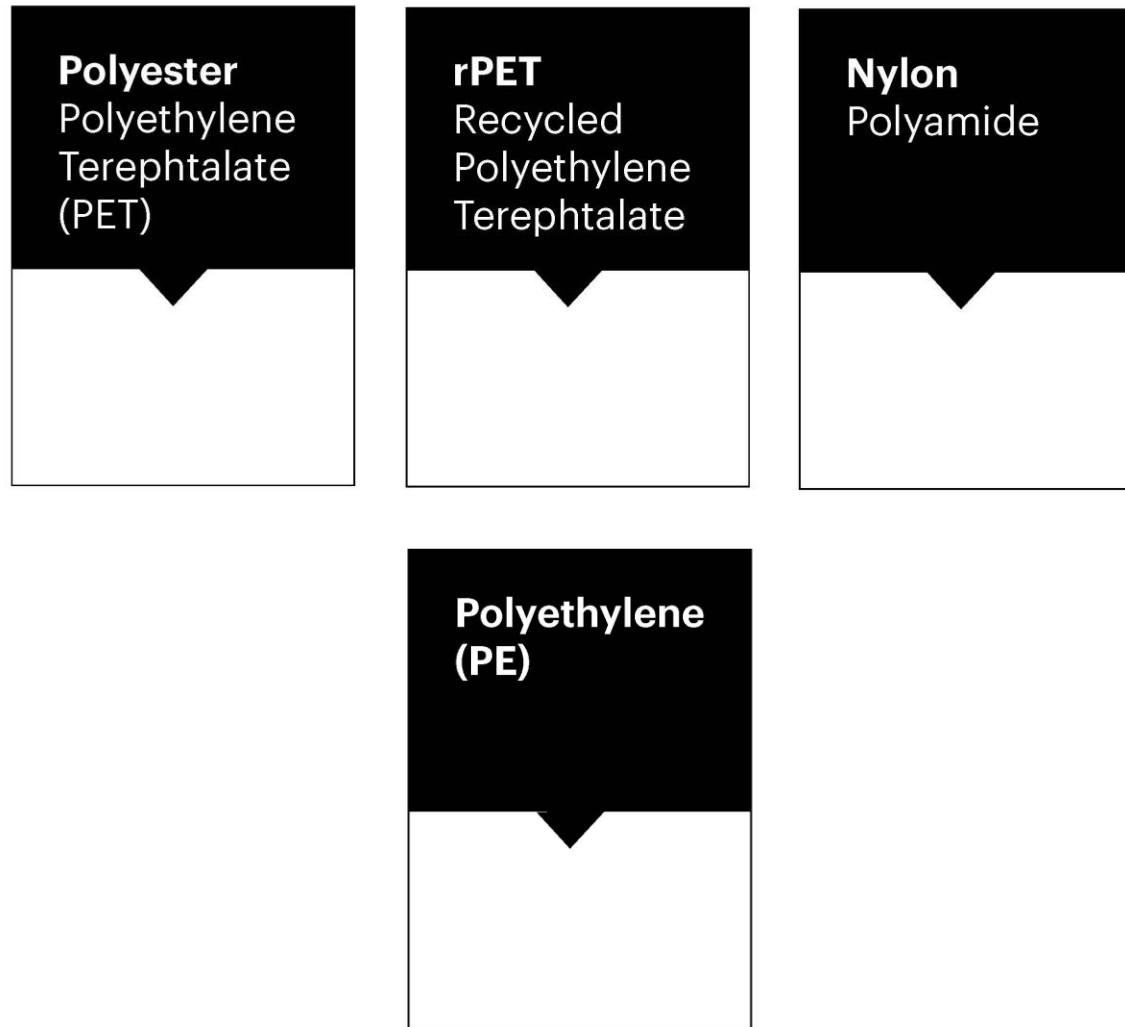
Assets
Processing waste textiles composed of wool
into usable yarns for fabric production.

Material manufacturer
3C FILATI
Website
www.3cfilati.it/en/i-prodotti

SUGGESTION



MATERIAL **CATEGORIES** - SYNTHETIC TEXTILES



POLYESTER (PET or rPET)

DESCRIPTION

Saturated polyester that is thermoplastic allowing it to be extruded and processed into fibres that can be spun into yarns for conversion into fabric. It is the same material that can be molded in the case of bottles.

RECOMMENDATIONS

- Favour recycled content, especially from post-consumer (PCR) sources
- Favour textiles with eco certifications (such as bluesign, oeko-tex)
- Certified sources of ocean plastic are also an option

SUSTAINABILITY ATTRIBUTES

Mono-material (depends if the polyester is blended with other fibres; assuming it isn't for this application)

~~Renewable~~

Recycled Content (increasing amounts of recycled fibre available;

The recycled content may be either post-industrial or post-consumer)

Recyclable (processing for recycling polyester are increasingly being developed, however there exist challenges in reverse logistics to ensure that the fibre is indeed recycled)

~~Compostable~~

Low Toxicity (may depend on coatings)

RECYCLED POLYESTER (rPET)

SUGGESTION



Material reference

SEAQUAL

Assets

100% recycled polyester filament made from plastic collected from the bottom of the ocean.

Material manufacturer

SEAQUAL

Website

www.seaqual.com



RECYCLED POLYESTER (rPET)



SUGGESTION

Material reference

REPREVE

Assets

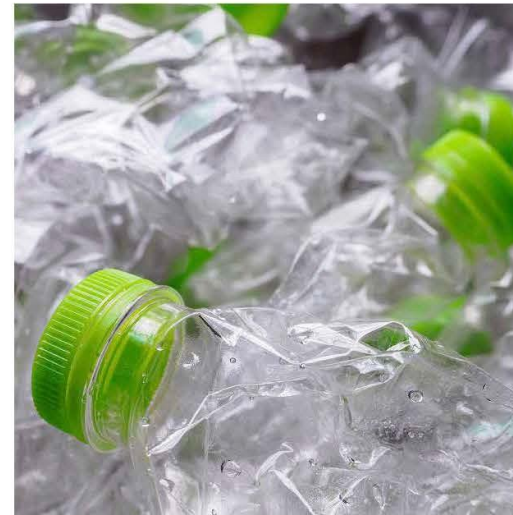
Recycled yarns made from waste, both post-industrial (nylon) and post-consumer (polyester from plastic bottles).

Material manufacturer

UNIFI

Website

unifi.com



POLYETHYLENE (PE)

DESCRIPTION

Paper-like formats made from extruded high-density polyethylene (HDPE) fibers, without the need for binders.

RECOMMENDATIONS

Take advantage of take-back programs offered by manufacturers (Dupont's Tyvek for example)

SUSTAINABILITY ATTRIBUTES

Mono-material

~~Renewable~~

~~Recycled Content~~ (not typically recycled back into itself)

Recyclable (the primary product Dupont, offers a take-back program;

the material is mechanically recycled into other applications; sewing, gluing printing does not inhibit recycling)

~~Compostable~~

Low Toxicity

POLYETHYLENE (PE)

SUGGESTION



Material reference

TYVEK

Assets

100% high-density polyethylene (HDPE) in a paper-like format with a metallic finish.
Responsible Return Program

Material manufacturer

DUPONT

Website

www.dupont.com/graphics/tyvek-graphics.html



NYLON

DESCRIPTION

A synthetic fibre made from polyamide, extruded into filaments and converted into yarn and fabric.

RECOMMENDATIONS

- Favour recycled content
- Sources collected from environmental pollution (fishing nets for example) instead of virgin material are becoming increasingly available
- Favour textiles with eco certifications (such as bluesign, oeko-tex)

SUSTAINABILITY ATTRIBUTES

Mono-material (depends if the nylon is blended with other fibres; assuming it isn't for this application)

Renewable

Recycled Content (increasing amounts of recycled fibre available)

Recyclable (processing for recycling nylon are increasingly being developed)

Compostable

Low Toxicity (may depend on coatings)

NYLON



Material reference

ECONYL®

Assets

Nylon yarn made from waste such as fishing nets, carpet, and fabric scraps. The process 'regenerates' the nylon back into a fibre of the same quality as virgin.

Material manufacturer

ECONYL®

Website

www.econyl.com

SUGGESTION



Contact

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