

# innovation

Re\_fashion

# #10

## Discover the winners of the 2020 Innovation Challenge

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Presentation of the Innovation Challenge

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Textiles and footwear cartographies

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The projects funded by Refashion since 2010

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**Maud Hardy**  
Circular Economy Director

# Editorial

The European Textile Industry faces a major challenge: the acceleration of used textiles and footwear recycling. In the face of the ever-increasing consumption of textiles and footwear products, and the industry's major environmental impacts, **the recycling of non-reusable products has become a priority**. This requires a commitment of all industry stakeholders. **It is therefore urgent to ensure the progression of the processing and recovery of non-reusable textiles and footwear, namely by supporting the sector's innovation pioneers.**

Thanks to the annual call for projects via the **Innovation Challenge**, for the past 11 years the eco-organisation has been financing innovative projects aiming at industrializing the recycling and recovery of used textiles and footwear. The challenge consists in innovating at the level of industrial processes in order to speed up the development of a more circular industry and to transform the 100 000 tons of used, non-reusable textiles and footwear generated every year into new products and / or new materials.

Since 2010, **55 projects have been selected by Refashion's Scientific Committee's Jury with more than 5 million Euros being invested** to further innovation and develop recycling. Thanks to financing by the French eco-organisation, several initiatives have progressed from the R&D stage to the industrial pilot stage. Among them, **Plaxtil**, which develops plastic composites integrating up to 40% of non-reusable textiles, **Prémices&co** the designer of **Pierre Plume**, a range of decorative, acoustic tiles composed of recycled textiles or **Wecosta** which is developing the eHHo range of acoustic and insulating nonwoven materials.

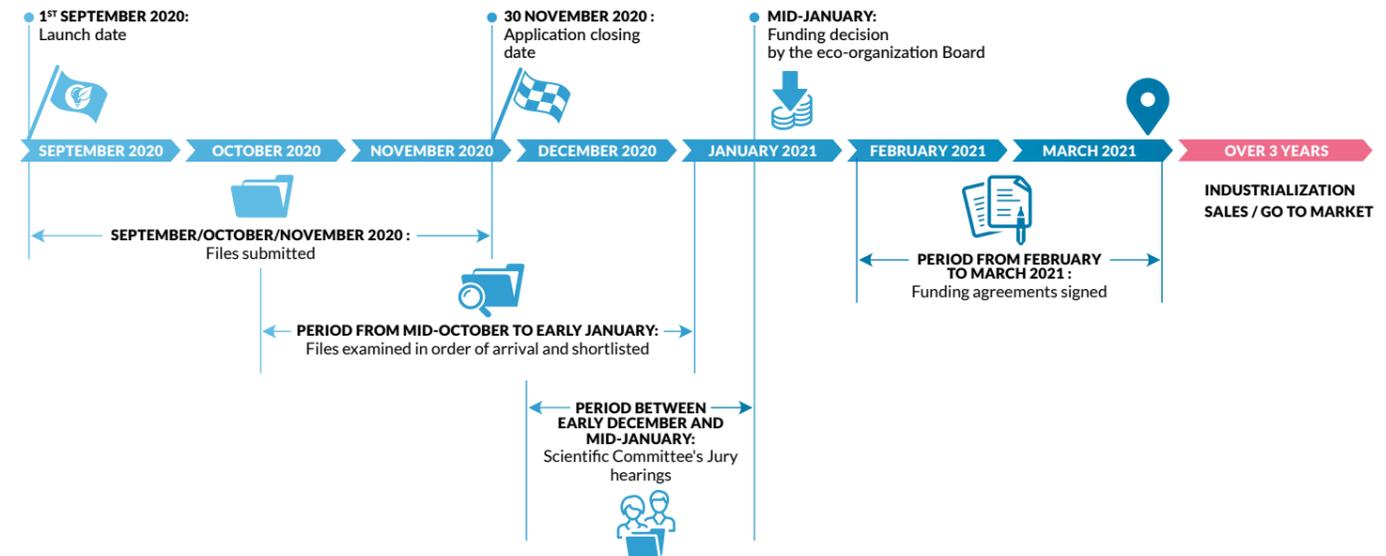
Other initiatives by textile groups have also appeared on the market. Via its Design for Repair project, **The Eram Group** has designed Sessile sneakers which can be dismantled and reconditioned, allowing their life duration to be extended. The **1083** brand recycles cotton from used jeans to create new pairs of jeans and **Les Filatures du Parc**, after having proven the industrial feasibility of recycling wool and cotton / polyester into yarns, is now working on recycling polyamide. All of these examples are clear illustrations of the textile industry's capacity to reinvent itself.

# Feedback on the 2020 Innovation Challenge

Open to all in France and in Europe, the Innovation Challenge funds a minimum budget of €500 000 per year, without shareholding requirements or royalties. This call for projects has a twofold objective: **to extend innovative industrial and commercial solutions** whilst optimising the recycling of used textiles and footwear from household consumption, and secondly to **speed up the development of a more circular industry in synergy with other sectors** (building, automobile, etc.).

This year, with a view to accelerating the industrialisation of used textile and footwear recycling, **the project proposals had to reach TRL (Technology Readiness Level) between 4 and 6**, corresponding to the prototype development stage leading to industrial demonstrators.

## THE KEY STAGES OF THE 2020 INNOVATION CHALLENGE

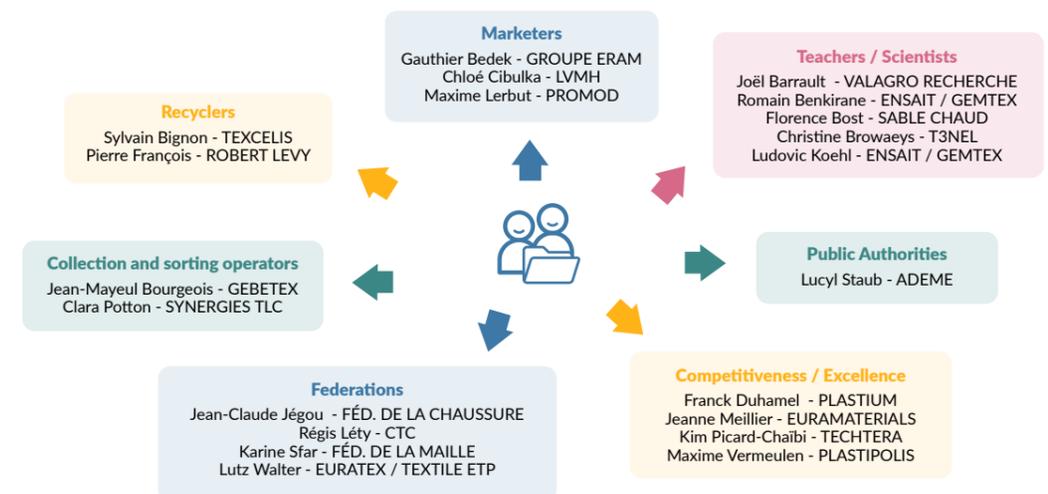


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## THE 2020 INNOVATION CHALLENGE JURY





# Zapateko II Project

#1  
A small step forward for the Textile Industry, a giant leap forward for footwear recycling

### The main stages of the project

- 1 - Footwear identification using optical sorting.
- 2 - Sole removal using a robotic arm.
- 3 - Sole recycling.

### The Eram Group provides its expertise to help footwear disassembly

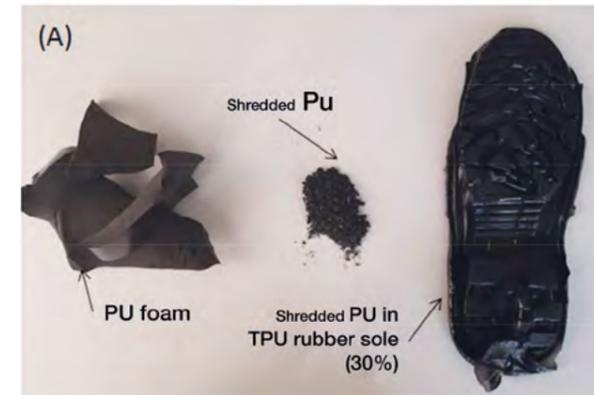
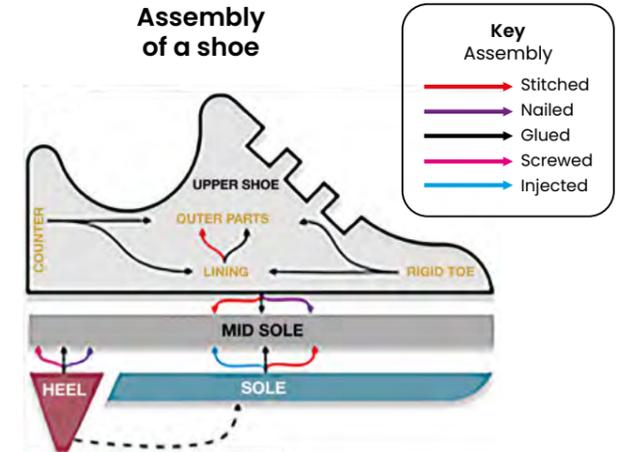
Committed to a circular economy approach for several years, the Eram Group makes recyclability of its end-of-life products one of its key stakes. A virtuous approach which is put in place from the design stage to ensure that the entire product offer moves towards greater sustainability and reparability. An initiative which, in the short term, must enable waste volumes to be reduced, favour the use of more recyclable materials and give a second lease of life to products and / or materials composing them.

A major challenge central to the company's project, recycling is also one of the priorities for the Textile Industry. As a marketer, the Eram Group is convinced of the role it must play to structure footwear recycling, which is currently less advanced than textile recycling.

### ZAPATEKO II, a promising project for industrial footwear disassembly

More than a simple company initiative, ZAPATEKO II is an industry project aiming at developing a non-reusable footwear dismantling demonstrator based on the automated visual recognition of the footwear model enabling the assisted removal of the sole from the upper of the shoe. Spurred on by its footwear expertise, the Eram Group is the first French industry player to focus on this theme in conjunction with other marketers, such as Decathlon. This unique initiative benefits from €20 135 funding from the eco-organisation within the context of the 2020 Innovation Challenge.

The technical feasibility and the study on the recovery of dismantled parts will be the focus of a 6 month study phase from October 2021. The results will enable new development phases to be initiated in order to put in place the demonstrator. The Zapateko II project is yet another illustration of the Eram Group's commitment to the circular economy.



Shredded soles reintegrated into new soles

The ERAM Group is committed to:

“ **-30%**  
Carbon emissions by  
**2030**  
Thanks to the circularity  
of our product offer. ”

« This project is important for the circularity of the footwear industry insofar as findings may be used by other stakeholders / brands »

Christine Browaeys - Director of T3Nel (TIC, Textiles, New Technologies) - Member of the 2020 Innovation Challenge Jury.

### PROJET SYNOPSIS

**OBJECTIVE:** Development of a demonstrator for disassembling non-reusable footwear via automated sorting and assisted pulling.

Project duration  
**18 MONTHS**

PROJECT STRATEGIC AREA:  
Preparation of materials for recycling

Type of CHF\* covered:  
**FOOTWEAR**

Refashion funding: **€20 135**

\*CHF = Clothing, Household linen and Footwear - Photo credit: @ERAM



# R-Shape Project

#2

Sports equipment integrating recycled textiles, a real first in Europe!

### The main stages of the project

- 1 - Non-reusable polyester sportswear.
- 2 - Recycling process.
- 3 - Obtaining an injectable plastic composite to produce sporting accessories.

### Transforming sports shirts into plastic composites to make sporting accessories

Nothing is lost, nothing is created, everything is transformed... A formula which perfectly corresponds to the R-SHAPE recycling solution developed by the eco-responsible sporting goods manufacturer Phenix Sport which has set itself the objective of transforming used sports shirts into sporting equipment.

### R-Shape, the story of a circular project by two sports fans

Five years of hard work and a lockdown were needed for the R-SHAPE project to finally come to life. At the origin of this solution, Olivier Guignonis and Paul-Emmanuel Guinard, the founders of Phenix Sport, both huge sports fans and experts in the field.

Committed to an eco-responsible approach since the launch of their company, by manufacturing and distributing sports shirts in recycled polyester, it's only natural that these two young entrepreneurs went for a recycling adventure. Sustainable and circular, their R-SHAPE project consists in collecting used polyester sportswear from clubs, federations and local authorities to transform them into plastic composites. This material is then used to manufacture sporting accessories, mostly plastic cups used in various sports.

Co-developed with the company Mapéa, a plastic materials specialist (Eco-charges project, 2013 Innovation Challenge), the R-SHAPE project will eventually enable a complete range of sporting equipment to be produced. To facilitate the development of non-reusable sporting textiles recycling into educational equipment, Refashion is funding Phenix Sport's project up to €96 143.



### Phenix Sport's commitment:

We are able to create

**10**

sporting cups from

**1**

recycled sports shirt

« The recycling initiative on a promising market such as the sportswear market is of great interest. The project is well-structured with solid partners both upstream and downstream. »

Lucyl Staub – EPR Textiles Sector Engineer, ADEME – Member of the 2020 Innovation Challenge Jury

### PROJECT SYNOPSIS

**OBJECTIVE:** Developing a demonstrator for recycling non-reusable polyester sportswear into plastic composites used to create sport accessories.

Project duration  
**14**  
MONTHS

**PROJECT STRATEGIC AREA:**  
Incorporation of materials from textile recycling into other sectors

Type of CHF\* covered :  
**CLOTHING**

Refashion funding: **€96 143**

\*CHF = Clothing, Household linen and Footwear – Photo credit: @Phenix Sport



# TexID Project

**#3**  
When smart sensors revolutionize used textile sorting

- ### The main stages of the project
- 1 - Automated textile material sorting pilot line using near infrared spectrometry.
  - 2 - Automated sorting line industrialisation.
  - 3 - Textiles sorting per material and per colour on an industrial scale.

## Soex at the origin of an automated sorting pilot line

Sorting textiles according to the materials they contain (cotton, polyester, wool...) is far more complex than it seems. With 40 years experience in used textiles and footwear sorting and recycling, the SOEX Group, alongside several partners from the European project Resyntex, has developed an automated sorting pilot line for textiles at its Wolfen sorting centre in Germany.

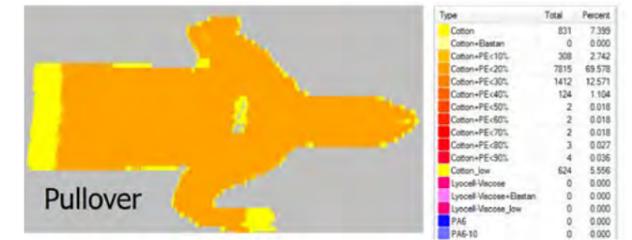
[Refashion study on automated sorting](#)

## New technologies to further recycling

Thanks to a smart sensor based on near infrared technology (NIR), it is possible to identify the material composition of every textile. This innovative recognition and automated sorting system thereby allows a higher volume of non-reusable textile waste to be better characterized so to recycle into materials with a higher added value.

In 2020, a new generation sorting line was installed at the Wolfen facility in Germany. The objective of this project, known as TexID, submitted by SOEX within the context of the 2020 Innovation Challenge, is to pursue the development of this automated line in order to bring it to an industrial scale. The automated identification of the material composition of textiles to be recycled is an essential stage in optimising the performance and efficiency of material sorting.

The German group SOEX is one of the world's leading textile sorting, recycling and reuse stakeholders. Refashion is funding the TexID project up to €232 647 for the industrial development of this solution.



**SOEX Group's commitment:**  
Today the sorting capacity of our line is

# 50 kg

per hour.

Our objective :

# 1 Ton

per hour.

« This project tackles the major challenge of the Textile industry: the automated characterization of used textiles. It offers a good industrialisation perspective which will allow ever-increasing textile waste volumes to be recycled in Europe. »

Lutz Walter – General Secretary of the ETP, The European Technology Platform for the Future of Textiles and Clothing – Member of the 2020 Innovation Challenge Jury

### PROJECT SYNOPSIS

**OBJECTIVE:** Developing an automated sorting pilot line for textile materials recognition through NIR spectroscopy to the industrial scale.

Project duration

# 24

MONTHS

**PROJECT STRATEGIC AREA:**

Preparation of materials for recycling

Type of CHF\* covered :

# CLOTHING

Refashion funding: **€232 647**

\*CHF = Clothing, Household linen and Footwear – Photo credit: @SOEX



# Solioti Project

**#4**  
A meeting between recycled textiles and nature...

### The main stages of the project

- 1 - Recycling used textiles into a nonwoven.
- 2 - Development of a plant-growing support from the nonwoven.
- 3 - Creation of an eco-responsible green wall.

### Solioti, a new generation of eco-responsible green wall

The SOLIOTI project, developed by the landscaping company Vert-tical Nord, is a fine example of used textiles open-loop recycling. For the past few years, the company manager, Frédéric Logez, has been working towards creating a new generation of green walls made from recycled textiles thereby replacing mostly used substrates such as peat moss. Designed to help cities and their inhabitants to combat global warming, this project also meets the thermal performance challenges of the building industry, along with rainwater management goals and objectives to bring biodiversity to urban settings. A unique initiative in France.

### More ecological green walls, a first of its kind in France

For Frédéric Logez, “even if they offer several interesting benefits, the fabrication of green walls is not really ecological owing to the use of raw materials which impact the environment.”

On the basis of this observation, this entrepreneur imagined a more eco-responsible, sustainable and efficient green wall. In June 2021, a first full-size demonstrator wall (between 50m² to 100m²) integrating a recycled textiles nonwoven as a growing support and an optimized water system, will become a reality in France’s Hauts-de-France region. This pilot project is the fruit of several years’ work and marks a new development stage for the SOLIOTI project. From this summer, this first new generation green wall will enable energy performance data to be collected, with a technical opinion to be issued in 2022 so to propose this solution within the context of public calls for tender. Refashion is funding this project up to €71 813.

The SOLIOTI project also benefits from the support of two local partners, EuraTechnologies and Maille’Immo.

### Transforming used textiles into a plant growing support, how does it work?

To obtain this material, the company Vert-tical Nord is working alongside the operator Le Relais. Once collected and sorted, non-reusable clothing is shredded and transformed into a nonwoven used as a support for growing plants.



### Vertical Nord’s commitment:

“ One square meter of green wall corresponds to

**8,4 kg**

of recycled textiles

or

**56** “

adult tee-shirts

« This used textiles open-loop recycling project follows the proof of concept already supported by Refashion in 2018. »

Jeanne Meillier – Business Manager at EuraMaterials – Member of the 2020 Innovation Challenge Jury

### PROJECT SYNOPSIS

**OBJECTIVE:** Development of a full size green wall demonstrator integrating a recycled textile nonwoven and an optimised watering system.

Project duration

**18**  
MONTHS

**PROJECT STRATEGIC AREA:**

Incorporation of materials from textile recycling into other sectors

Type of CHF\* covered :

**CLOTHING & HOUSEHOLD LINEN**

Refashion funding: **€71 813**

\*CHF = Clothing, Household linen and Footwear – Photo credit: @Vert-tical Nord



# Mapping of footwear recycling

→ Industrial stage  
 → R&D projects or trials in progress  
 \*SRF: Solid Recovered Fuel

**A vast majority**  
 of collected footwear  
**can be reused**



**A small fraction**  
 of collected footwear  
 cannot be reused and  
**therefore must be recycled**

**Manual AND/OR  
 automatical  
 sorting  
 of non-reusable  
 footwear**



**Disassembly  
 upper-sole  
 + remanufacturing  
 or sole recycling**



**Closed loop  
 recycling  
 (shredding-melting-  
 injection)**  
 → Single-material footwear



**Industrial  
 composting**  
 → Biodegradable materials  
 that degrade when composted

**Slicing  
 of sports footwear:  
 separation of the shoe  
 upper from the sole**

**Sorting then shredding  
 into 3 types of granules:  
 RUBBER, FOAM AND FIBRES**  
 → Flooring surfaces, outsoles



**SRF\*,  
 Energy recovery or  
 incineration/landfilling**

**Shredding/  
 compressing**

Models containing sorting disruptors:  
 • Toe caps (in metal or hard plastic) in safety footwear  
 • Heels in hard ABS plastic + shoe uppers in steel  
 • Parts which cannot be separated  
 • Electrical and/or electronic components

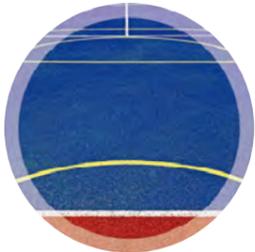


**SHREDDING  
 CHALLENGES:**  
 • Limit intra-material  
 pollution,  
 • Reduce  
 and homogenize  
 particle size

**Complete  
 shredding of footwear**  
 Coarse shredding  
 (about 2 cm<sup>2</sup>).  
 All types of footwear

**Delamination  
 then densimetric separation  
 of materials**

**RUBBERS  
 (NATURAL AND  
 SYNTHETIC ELASTOMER),  
 FOAM, PVC, PU, ETC.  
 FROM SOLES**  
 → Hard or bouncing floorings,  
 thick mats, outsoles



**METALS**  
 → Existing metal recycling  
 processes

**TEXTILES  
 (NATURAL AND SYNTHETIC  
 MATERIALS)**  
 → SRF\*, Energy recovery  
 → Integration into nonwovens



**REJECTS  
 AND DUST PARTICLES**  
 → SRF\*, Energy recovery

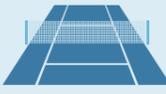


**LEATHER/FAUX LEATHER**  
 → Shredded to be used as filler  
 → Mixed with PVC to be used  
 as filler  
 → Mixed in with wood fibres  
 to produce acoustic panels  
 → Integration into compressed  
 wood panels  
 → Thermal recovery



**2,500 pairs...**

of foam insoles  
 allow one tennis court  
 to be built



of rubber outsoles,  
 300m<sup>2</sup> of children's  
 playgrounds



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# OVERVIEW OF PROJECTS FUNDED BY REFASHION SINCE 2010 WITHIN THE INNOVATION CHALLENGE

## KEY

### Strategic area

-  Preparation of materials for recycling.
-  Incorporation of materials coming from CLF recycling into other industries.
-  Eco-design of products in the CLF industry.

### Status

-  Project abandoned/inconclusive results.
-  Finalised project/ conclusive results but no industrial development planned.
-  Projects in progress.
-  Finalised projects/ industrial pilots.

### CLF category

-  Textiles
-  Footwear

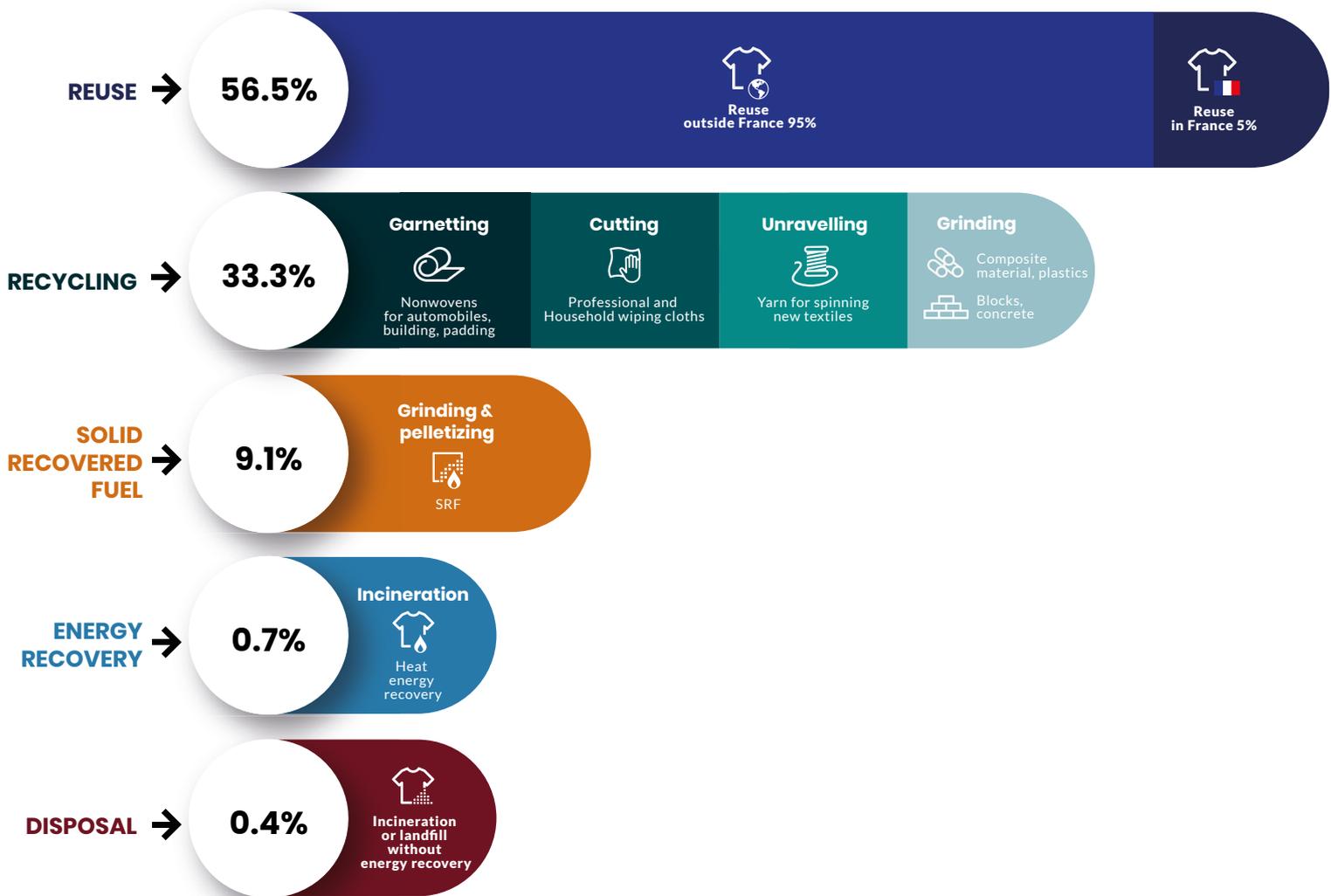
N°	Name of project leader Project name	Project	Contact	Mail	RFP year	Strat. area	Status	CLF category
1	BIC ISOKTEX	Developing an innovative textile insulation.	Michel KEKAYAS	m.kekayas@cobic.fr	2010			
2	NOVAFLOOR NOVATEX	Incorporating end-of-life textiles as inert fillers in decorative plates.	Vincent FORGET	vf@ecolomy.com	2010			
3	DECATHLON OXYLANE	Manufacturing polyester yarn from post-consumer polyester textiles.	Raffaele DUBY	raffaele.duby@decathlon.com	2010			
4	PÔLE ÉCO-INDUSTRIES POITOU-CHARENTES MULTITEX	Developing a process for chemical separation of used mixed textiles.	Damien DELETRAZ	d.deletraz@pole-ecoindustries.fr	2011			
13	PÔLE ÉCO INDUSTRIES POITOU-CHARENTES MULTITEX 2	Feasibility study of a pilot enabling the chemical separation of used mixed textile materials.	Damien DELETRAZ	d.deletraz@pole-ecoindustries.fr	2013			
5	FILATURES DU PARC FILATURES DU PARC	Manufacturing recycled wool yarns of the same quality as yarns made with virgin wool fibres.	Fabrice LODETTI	filatures.parc@wanadoo.fr	2011	 		
6	TRUCS-TROUVAILLES TRUCS-TROUVAILLES	Recycling rubber soles into new soles.	Sylvie DAMERON	sylvie.dameron@gmail.com	2011	 		
7	AGENCE AIR COOP FOOTWEAR RECYCLING PROJECT	Developing and testing an industrial grinding and separation process in view of creating a footwear recycling pilot line.	Benjamin MARIAS	bm@air.coop	2012			
18	AGENCE AIR COOP FOOTWEAR RECYCLING PILOT LINE	Improving the purity of the resulting materials (leather/ rubber) and output from the recycling line.	Benjamin MARIAS	bm@air.coop	2014			
8	FRAMIMEX VIACOVER	Developing an exterior sound insulation shield in lightweight concrete integrating post-consumer textile fibres.	Mehdi ZERROUG	mehdi.zerroug@ecotextile.fr	2012			
9	FEYECON SEPARIX DECOTEX 1	Developing an undyeing process for used polyester clothes to enable their recycling.	Daniéla TRAMBITAS	daniela.trambitas@feyecon.com	2012			
21	SEPARIX DECOTEX 2	Moving the DécoTex I project (FEYECON) - supercritical CO2 undyeing technology to pilot scale.	Daniéla TRAMBITAS	daniela.trambitas@feyecon.com	2015			

10	CC PAYS DE COLOMBEY & SUD TOULOIS RECYTEX	Technical, economical and commercial feasibility study of creating a rigid decorative tile integrating 20 to 50% of used textiles.	Raphaël KUENY	raphael.kueny@univ-lorraine.fr	2012			
11	PRÉMICES & CO. BÉTON DE CHIFFON	Creating a range of decorative acoustic products entirely made from recycled textiles.	Amandine LANGLOIS	amandine@premicesandco.com	2013			
27	PRÉMICES & CO. PIERRE PLUME	Finishing the "Béton de chiffon" project and developing it to industrial scale.	Amandine LANGLOIS	amandine@premicesandco.com	2016			
12	MAPEA ÉCO-CHARGES	Recycling of used cotton and polycotton on clothes for use as reinforcement in the plastics industry	René GENILLON	r.genillon@mapea.com	2013			
14	LE RELAIS EKOROOM	Developing acoustic suspended ceiling tiles from recycled textiles.	Jean-Paul LOPEZ	jplopez@lerelais.org	2014			
15	FILATURES DU PARC PARCOT	Developing a defibration method for recycling used polycotton on clothes into materials suitable for weaving or knitting new clothing products.	Fabrice LODETTI	filatures.parc@wanadoo.fr	2014	 		
16	MINOT RECYCLAGE TEXTILE MINOT RECYCLAGE TEXTILE	Optimising the end-of-life textiles recycling process in order to achieve a higher percentage of used textiles in the garning process.	Jean-Luc DUSSART	jldussart@lerelais.org	2014	 		
17	CHAUSSETTES ORPHELINES ANIMA	Recycling used socks into a recycled yarn for use in hosiery.	Marcia DE CARVALHO	contact@marciadecarvalho.fr	2014			
19	WECOSTA SILENCIO	Developing an eco-friendly acoustic silencer for housing ventilation systems.	Hugues BROUTÉ	hbroute@wtxautomotive.com	2015			
20	IN SOFT ECTOR	Developing an eco-designed shoe with a knitted fabric upper.	Patrick MAINGUENÉ	pamainguene@in-soft.fr	2015			
34	IN SOFT ECTOR SE RECYCLE	Recycling the Ector eco-designed shoes.	Patrick MAINGUENÉ	pamainguene@in-soft.fr	2017			
22	SYNERGIES TLC AUTOTRI	Studying and developing a new sorting method for non reusable textiles in order to use these secondary materials.	Thomas FRAINEUX	thomas.fraineux@synergiestlc.fr	2015			
23	CETI DELISS	Studying and developing either automatic or semi-automatic processes for removing trims from used clothing to facilitate recycling.	Pascal DENIZART	pascal.denizart@ceti.com	2016	 		
24	CTC GROUPE THERMICUIR	Recovering heat from waste leather from end-of-life shoes.	Régis LETY	rlety@ctcgroupe.com	2016	 		
25	LA MANUFACTURE GROUPE ERAM DESIGN FOR REPAIR	Developing a new design and manufacturing process allowing for easy disassembly of all components in a shoe at end of life.	Gauthier BEDEK	gbedek@eram.fr	2016			
26	L'ÉQUIPE 1083 JEANS RECYCLÉS	Developing a recycled cotton yarn from old jeans.	David LEROMAIN	david@1083.fr	2016			

N°	Name of project leader Project name	Project	Contact	Mail	RFP year	Strat. area	Status	CLF category
28	<b>SILAC INDUSTRIE</b> ECO3F	Making a range of acoustic insulati on for the automotive industry from used textile materials.	Valéran HIEL	vhiel@silacindustrie.com	2016			
29	<b>IFTH / UTT / LE RELAIS</b> CAREFIL	Improving the quality of yarns made from recycled used clothes.	Philippe MESNAGE	pmesnage@ifth.org	2017			
30	<b>CID PROCESS</b> CID PROCESS	Mechanical separation of cotton and elastane in used jeans.	Roland GUIBERT	roland.guibert@wanadoo.fr	2017			
31	<b>L'ÉQUIPE 1083</b> CELL-JEANS	Wet-spinning cott on waste from used jeans in order to create a man-made cellulosic fibre.	David LEROMAIN	david@1083.fr	2017			
32	<b>CAMY</b> HODEI	Designing and developing a modular, monomaterial and recyclable shoe.	Benjamin CAMY	benjamin@hodei.fr	2017			
33	<b>AUDACIE</b> PLAS'TILE	Recycling used non-reusable textiles into plastic resins.	Charlotte WALLET	c.wallet@audacie.org	2017			
35	<b>AGENCE AIR COOP</b> REVIVE/RECYCLE	Setting up a pilot project for repairing used clothes and preparing them for recycling.	Virgile AYMARD	va@air.coop	2017			
36	<b>LES TISSAGES DE CHARLIEU</b> LES TISSAGES DE CHARLIEU	Improving, in terms of technology and industrial process, an article entirely made of recycled postconsumer polyester from Europe, and assessing the difference between the cost price and the market price.	Éric BOËL	e-boel@ltc-jacquard.com	2017			
37	<b>AUCHAN</b> RECYC'LAB	Recovering fibres from end-of-life clothing into mobile phone cases using the Roctool induction heating technology.	Isabelle DAYDE	idayde@auchan.fr	2018			
38	<b>DECATHLON</b> 4RFID	Developing a pilot to achieve textiles' traceability, allowing for their end-of-life management, thanks to the RFID technology.	Stéphanie BAILLY	stephanie.bailly@decathlon.com	2018			
39	<b>FCBA</b> MOBIOTEX	Assessing the possibilities of using recycled textile fibres as an essential component of wood framed constructions.	Zaratiana MANDRARA	Zaratiana.Mandrara@fcb.fr	2018			
40	<b>MAXIMUM</b> TISSIUM	Developing a rigid material made from textile waste fibres intended for furniture manufacturing for the tertiary sector.	Romée DE LA BIGNE	romee@maximum.paris	2018			
41	<b>TECHTERA</b> JEPLAN	Assessing the reliability of an implantation project in France of a JEPLAN's plant for recycling used polyester textiles into recycled PET pellets.	Julie RAFTON-JOLIVET	jrafton@techtera.org	2018			
42	<b>VERT-TICAL NORD</b> ÉCO-LOGIC WALL	Developing a green wall using recycled textiles to replace substrates and sphagnum (natural moss) currently used.	Frédéric LOGEZ	contact@vert-tical.fr	2018			

43	<b>WECOSTA</b> QWIET	Developing solutions to improve the acoustic comfort in public spaces (offices, industrial premises, etc.) by using ecological materials including materials from the used textiles sector.	Hugues BROUTÉ	hbroute@wtautomotive.com	2018			
44	<b>CYCL-ADD</b> TEXTIC	Developing a recycling process for used non reusable polyamide clothing, including sorting, trimming, characterisation, micronization and compounding for plastics making.	Hervé GUERRY	hguerry@cycl-add.fr	2019			
45	<b>FABBRICK</b> FABBRICK	Developing a structural, insulating and aesthetic construction material from recycled used textiles.	Clarisse MERLET	clarisse.merlet@fabbrick.fr	2019			
46	<b>FILATURES DU PARC</b> PAMREC	Recycling used polyamide clothes into a recycled yarn for use in textile products.	Fabrice LODETTI	filatures.parc@wanadoo.fr	2019			
47	<b>HUMEAU BEAUPRÉAU</b> REBOOT	Pre-study on the feasibility and cost of recycling used PVC footwear; and testing of a recycling loop with defining specifications for setting up the recycling loop at an industrial scale.	Anne-Céline HUMEAU	ac.humeau@bopy.fr	2019			
48	<b>IDELAM</b> RECHAUSS	Developing an innovative technology for delaminating shoes (leather/textile) by supercritical fluid and a new recycling loop for used shoes.	Eric DURIVALT	eric.durivault@idealtechnologies.fr	2019			
49	<b>LE SLIP FRANÇAIS</b> LE SLIP CIRCULAIRE	Developing a yarn containing the highest possible % of recycled cott on with a fineness up to 1/60Nm from used underwear and socks for use in the making of Le Slip Français' products.	Solène NAEYE	solene.naeye@leslipfrancais.fr	2019			
50	<b>SYNERGIES TLC</b> UTILE	Feasibility study of setting an industrial unit for the trimming and sorting of used cotton, polyester and polyamide textiles (100% and blends), based on materials specifications defined with recyclers.	Clara POTTON	c.potton@synergies-tlc.com	2019			
51	<b>VALVAN</b> TRIMCLEAN	Development of an automated integrated solution that allows the removal of trims (including labels, buttons, zippers etc.) from used clothing.	Maurits VANDEPUTTE	Maurits.Vandeputte@valvan.com	2019			
52	<b>Groupe ERAM</b> ZAPATEKO II	Development of a demonstrator for disassembling non-reusable footwear via automated sorting and assisted pulling.	Gauthier BEDEK	gbedek@eram.fr	2020		NEW	
53	<b>Phénix Sport</b> R-Shape	Developing a demonstrator for recycling non-reusable polyester sportswear into a plastic composite material used to create sport accessories.	Paul-Emmanuel GUINARD	paul@phenix-sport.com	2020		NEW	
54	<b>SOEX</b> TexID	Developing an automated sorting pilot line for textile materials recognition though NIR spectroscopy to the industrial scale.	Louisa TEMAL	temal@ico-spirit.com	2020		NEW	
55	<b>VERT-TICAL NORD</b> SOLIOTI	Development of a full size green wall demonstrator integrating a recycled textile nonwoven and an optimised watering system.	Frédéric LOGEZ	contact@vert-tical.fr	2020		NEW	

## A second life for textiles and footwear <sup>(1)</sup>



(1) Sorting in facilities under contract in and outside France.

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