Discover the winners of the 2020 Innovation Challenge

Presentation of the Innovation Challenge

The projects funded by Refashion since 2010

Textiles and footwear cartographies

Cover photo: ©Refashion – foam granulates from shredded post-consumer footwear.
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, namely by speeding up the development of a more circular industry in synergy with other sectors (building, automobile, etc.).

Since 2010, 55 projects have been selected by Refashion’s Scientific Committee’s Jury with more than 5 million Euros being invested 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, 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 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 reconditioned, allowing their life duration to be extended.

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.

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 2020 Innovation Challenge has three stages:

1. Launch date: 1ST SEPTEMBER 2020
2. Application closing date: 30 NOVEMBER 2020
3. Scientific Committee’s Jury hearings: MID-January

The projects are classified in five categories: Recyclers, Users, Marketers, Teachers and Scientists, Public Authorities and Competitiveness / Excellence.

The key stages of the 2020 Innovation Challenge are:

- Files submitted: PERIOD FROM MID-OCTOBER TO EARLY JANUARY
- Files examined in order of arrival and shortlisted: PERIOD BETWEEN EARLY DECEMBER AND MID-JANUARY
- Scientific Committee’s Jury hearings: MID-JANUARY
- Funding agreements signed: PERIOD BETWEEN FEBRUARY TO MARCH 2021
- Launch date: 1ST SEPTEMBER 2020
- Application closing date: 30 NOVEMBER 2020

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Maud Hardy
Circular Economy Director

Diagram of flows

Overview of projects funded

Mapping of textiles recycling

Mapping of footwear recycling

Diagram of flows following sorting

THE KEY STAGES OF THE 2020 INNOVATION CHALLENGE
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 repairability. 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 marker, 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.

**The 4 winners of the 2020 Innovation Challenge**

<table>
<thead>
<tr>
<th>OBJETIVE:</th>
<th>Development of a demonstrator for disassembling non-reusable footwear via automated sorting and assisted pulling.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROJECT SYNOPSIS</strong></td>
<td><strong>PROJECT STRATEGIC AREA:</strong> Preparation of materials for recycling</td>
</tr>
<tr>
<td><strong>PROJET SYNOPSIS</strong></td>
<td><strong>FOOTWEAR</strong></td>
</tr>
<tr>
<td><strong>Type of CHF</strong> covered:</td>
<td>Shredded soles reintegrated into new soles</td>
</tr>
<tr>
<td><strong>Assembly of a shoe</strong></td>
<td>“This project is important for the circularity of the footwear industry insofar as findings may be used by other stakeholders / brands”</td>
</tr>
<tr>
<td>Christine Browaeys - Director of T3Nel (TIC, Textiles, New Technologies) - Member of the 2020 Innovation Challenge Jury.</td>
<td></td>
</tr>
<tr>
<td>“-30% Carbon emissions by 2030 Thanks to the circularity of our product offer.”</td>
<td></td>
</tr>
</tbody>
</table>

The ERAM Group is committed to:
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 Guigonis 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 Mapía, 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.

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.

“Phenix Sport’s commitment:

We are able to create

10 sporting cups from

1 recycled sports shirt.”

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

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.”

PROJECT SYNOPSIS

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

Refashion funding: €96,143

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

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.

"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

SOEX Group’s commitment:

Today the sorting capacity of our line is 50 kg per hour.

Our objective: 1 Ton per hour.

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.

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

PROJECT SYNOPSIS

Refashion funding: €232,647
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.

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.
Mapping of footwear recycling

A vast majority of collected footwear can be reused

1st SORTING

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

- Manual AND/OR automatical sorting of non-reusable footwear
- Shredding/compressing
- Slicing of sports footwear: separation of the shoe upper from the sole
- Delamination then densimetric separation of materials
- Complete shredding of footwear: Coarse shredding (about 2 cm²). All types of footwear

SRF*: Energy recovery or incineration/landfilling

Shredding/compressing

- 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

Industrial composting

- Biodegradable materials that degrade when composted
- Single-material footwear

Closed loop recycling (shredding-melting-injection)

Disassembly upper-sole + remanufacturing or sole recycling

- Single-material footwear

Industrial stage

R&D projects or trials in progress

* SRF: Solid Recovered Fuel

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

A vast majority of collected footwear can be reused

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

- 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

- Single-material footwear

- Biodegradable materials that degrade when composted

- Existing metal recycling processes

2,500 pairs... of foam insoles allow one tennis court to be built

of rubber outsoles, 300m² of children's playgrounds

Mapping of footwear recycling

* SRF: Solid Recovered Fuel

For a 100% circular textile industry
# Overview of Projects Funded by Refashion Since 2010 Within the Innovation Challenge

## Key

<table>
<thead>
<tr>
<th>Strategic area</th>
<th>CLF category</th>
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<tbody>
<tr>
<td>Preparation of materials for recycling.</td>
<td>Textiles</td>
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<tr>
<td>Incorporation of materials coming from CLF</td>
<td>Footwear</td>
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<td>Eco-design of products in the CLF industry.</td>
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<table>
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<tr>
<th>N°</th>
<th>Name of project leader</th>
<th>Project name</th>
<th>Contact</th>
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<tr>
<td>1</td>
<td>Michel Kekayas</td>
<td>BIC ISOTEX</td>
<td><a href="mailto:m.kekayas@cobic.fr">m.kekayas@cobic.fr</a></td>
<td>2010</td>
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<td>2</td>
<td>Vincent Forget</td>
<td>NOVAFLOOR NOVATEX</td>
<td><a href="mailto:vlf@ecolomy.com">vlf@ecolomy.com</a></td>
<td>2010</td>
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<td>3</td>
<td>Raffaele Duby</td>
<td>DECATHLON OXYLANE</td>
<td><a href="mailto:raffaele.duby@decathlon.com">raffaele.duby@decathlon.com</a></td>
<td>2010</td>
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<td>4</td>
<td>Damien Deletraz</td>
<td>PÔLE ÉCO-INDUSTRIES MULTITEX</td>
<td><a href="mailto:d.deletraz@pole-ecoindustries.fr">d.deletraz@pole-ecoindustries.fr</a></td>
<td>2011</td>
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<td>5</td>
<td>Damien Deletraz</td>
<td>PÔLE ÉCO-INDUSTRIES MULTITEX 2</td>
<td><a href="mailto:d.deletraz@pole-ecoindustries.fr">d.deletraz@pole-ecoindustries.fr</a></td>
<td>2013</td>
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<td>6</td>
<td>Fabrice LodeTTI</td>
<td>FILATURES DU PARC PARCOT</td>
<td><a href="mailto:filatures.parc@wanadoo.fr">filatures.parc@wanadoo.fr</a></td>
<td>2011</td>
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<td>7</td>
<td>Sylvie Dameron</td>
<td>TRUCS-TROUVALLES TRUCS-TROUVALLES</td>
<td><a href="mailto:sylvie.dameron@gmail.com">sylvie.dameron@gmail.com</a></td>
<td>2011</td>
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<td>8</td>
<td>Benjamin MARIAS</td>
<td>AGENCE AIR COOP FOOTWEAR RECYCLING PROJECT</td>
<td><a href="mailto:bm@air.coop">bm@air.coop</a></td>
<td>2012</td>
<td>+</td>
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<td>9</td>
<td>Benjamin MARIAS</td>
<td>AGENCE AIR COOP FOOTWEAR RECYCLING PILOT LINE</td>
<td><a href="mailto:bm@air.coop">bm@air.coop</a></td>
<td>2014</td>
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<td>10</td>
<td>Mehdi Zerroug</td>
<td>FRAMIMEX VIACOVER</td>
<td><a href="mailto:mehdi.zerroug@gecoatex.fr">mehdi.zerroug@gecoatex.fr</a></td>
<td>2012</td>
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<td>11</td>
<td>Daniella Trambitas</td>
<td>FEYECON SEPAREX</td>
<td><a href="mailto:daniella.trambitas@feyecon.com">daniella.trambitas@feyecon.com</a></td>
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<td>Daniella Trambitas</td>
<td>SEPAREX DECOTEX 1</td>
<td><a href="mailto:daniella.trambitas@feyecon.com">daniella.trambitas@feyecon.com</a></td>
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<td>13</td>
<td>Daniela Trambitas</td>
<td>SEPAREX DECOTEX 2</td>
<td><a href="mailto:daniella.trambitas@feyecon.com">daniella.trambitas@feyecon.com</a></td>
<td>2015</td>
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</table>

## Projects

### 16. CC RAYS DE COLOMBEY & SUD TOULOIS RECYPTEX
- Technical, economical and commercial feasibility study of creating a rigid decorative tile integrating 20 to 50% of used textiles.
- Raphael KUENY
- raphael.kueny@univ-lorraine.fr
- 2012

### 17. PRÉMICES & CO. BÉTON DE CHIFFON
- Creating a range of decorative acoustic products entirely made from recycled textiles.
- Amandine LANGLOIS
- amandine@premicesandco.com
- 2013

### 18. PRÉMICES & CO. PIERRE PLUME
- Finishing the "Béton de chiffon" project and developing it to industrial scale.
- Amandine LANGLOIS
- amandine@premicesandco.com
- 2016

### 19. MAPA ECO-CHARGES
- Recycling of used cotton and polycotton on clothes for use as reinforcement in the plastics industry.
- René GENILION
- r.genillon@mapa.eu
- 2013

### 20. LE RELAIS EKOROOM
- Developing acoustic suspended ceiling tiles from recycled textiles.
- Jean-Paul LOPEZ
- jlopez@ferekies.org
- 2014

### 21. FILATURES DU PARC PARCOT
- Developing a decontamination method for recycling used polycotton on clothes into materials suitable for weaving or knitting new clothing products.
- Fabrice LODERETI
- filatures.parc@wanadoo.fr
- 2014

### 22. 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 garneting process.
- Jean-Luc DUSSEART
- jldussart@kerelais.org
- 2014

### 23. CHAUSSETTES ORPHÉMELINES ANIMA
- Recycling used socks into a recycled yarn for use in hosiery.
- Marcia DE CARVALHO
- contact@marciadecarvalho.fr
- 2014

### 24. WECCOSTA SILENCIO
- Developing an eco-friendly acoustic silencer for housing ventilation systems.
- Hugues BOUTE
- hkube@wxautomotive.com
- 2015

### 25. IN SOFT ECTOR
- Developing an eco-designed shoe with a knitted fabric upper.
- Patrick MAINGUENÉ
- pamainguene@in-soft.fr
- 2015

### 26. IN SOFT ECTOR SE RECYCLE
- Recycling the Ector eco-designed shoes.
- Patrick MAINGUENÉ
- pamainguene@in-soft.fr
- 2017

### 27. SYNERGIES TLC AUTOTRICE
- Studying and developing a new sorting method for re-useable textile materials in order to use these secondary materials.
- Thomas FRAINEUX
- thomas.fraiseux@synergies-tlc.fr
- 2015

### 28. CETI DÉLIES
- 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

### 29. CTC GROUPE THERMICUR
- Recovering heat from waste flue gas from end-of-life shoes.
- Régis LETY
- rlety@ctcgroupe.com
- 2016

### 30. 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

### 31. L’ÉQUIPE 1083 JEANS RÉCYCLÉS
- Developing a recycled cotton yarn from old jeans.
- David LEROMAIN
- david@1083.fr
- 2016
<table>
<thead>
<tr>
<th>N°</th>
<th>Name of project leader</th>
<th>Project</th>
<th>Contact</th>
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<th>CLF category</th>
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<tr>
<td>28</td>
<td>SIAC INDUSTRE ECO3F</td>
<td>Making a range of acoustic insulated for the automotive industry from used textile materials.</td>
<td>Valérian HIEL</td>
<td><a href="mailto:vhiel@siacindustre.com">vhiel@siacindustre.com</a></td>
<td>2016</td>
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<td>29</td>
<td>ITH / UTT / LE RELAIS CAREFIL</td>
<td>Improving the quality of yarns made from recycled used clothes.</td>
<td>Philippe MESSANGE</td>
<td><a href="mailto:pmesnage@ith.org">pmesnage@ith.org</a></td>
<td>2017</td>
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<td>30</td>
<td>CID PROCESS CID PROCESS</td>
<td>Mechanical separation of cotton and elastane in used jeans.</td>
<td>Roland GUIBERT</td>
<td><a href="mailto:roland.guibert@wanadoo.fr">roland.guibert@wanadoo.fr</a></td>
<td>2017</td>
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<td>31</td>
<td>L’ÉQUIPE 1083 CELLJEANS</td>
<td>Wet-spinning cott on waste from used jeans in order to create a man-made cellulose fibre.</td>
<td>David LEROMAIN</td>
<td>dav4l1083.fr</td>
<td>2017</td>
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<td>32</td>
<td>CAMY HODEI</td>
<td>Designing and developing a modular, monomaterial and recyclable shoe.</td>
<td>Benjamin CAMY</td>
<td><a href="mailto:benjamin@hodei.fr">benjamin@hodei.fr</a></td>
<td>2017</td>
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<td>33</td>
<td>AUDACE PLASTILE</td>
<td>Recycling used non-reusable textiles into plastic resins.</td>
<td>Charlotte WALLET</td>
<td><a href="mailto:c.wallet@audacie.org">c.wallet@audacie.org</a></td>
<td>2017</td>
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<td>34</td>
<td>AGENCE AIR COOP REVIVE/RECYCLE</td>
<td>Setting up a pilot project for repairing used clothes and preparing them for recycling.</td>
<td>Virginie AYMARD</td>
<td><a href="mailto:v.ca@air.coop">v.ca@air.coop</a></td>
<td>2017</td>
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<tr>
<td>35</td>
<td>LES TISSAGES DE CHARLIEU LES TISSAGES DE CHARLIEU</td>
<td>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.</td>
<td>Eric BOEL</td>
<td><a href="mailto:e-boel@ltc-jacquard.com">e-boel@ltc-jacquard.com</a></td>
<td>2017</td>
<td></td>
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<tr>
<td>36</td>
<td>AUCHAN RECYCLAB</td>
<td>Recovering fibres from end-of-life clothing into mobile phone cases using the an Rfcted induction heating technology.</td>
<td>Isabelle DAYDE</td>
<td><a href="mailto:idayde@auchan.fr">idayde@auchan.fr</a></td>
<td>2018</td>
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<tr>
<td>37</td>
<td>DECATHLON 4961D</td>
<td>Developing a pilot to achieve textiles’ traceability, allowing for their end-of-life management, thanks to the RFID technology.</td>
<td>Stéphanie BAILLY</td>
<td><a href="mailto:stephanie.bally@decathlon.fr">stephanie.bally@decathlon.fr</a></td>
<td>2018</td>
<td></td>
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<tr>
<td>38</td>
<td>FCSA MOBIOTEX</td>
<td>Assessing the possibilities of using recycled textile fibres as an essential component of wood framed constructions.</td>
<td>Zaratiana MANDRARA</td>
<td><a href="mailto:Zaratiana.Mandrara@fcba.fr">Zaratiana.Mandrara@fcba.fr</a></td>
<td>2018</td>
<td></td>
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<tr>
<td>39</td>
<td>MAXIMUM TISSUM</td>
<td>Developing a rigid material made from textile waste fibres intended for furniture manufacturing for the tertiary sector.</td>
<td>Roméo DE LA BIGNE</td>
<td><a href="mailto:romeo@maximum.paris">romeo@maximum.paris</a></td>
<td>2018</td>
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<tr>
<td>40</td>
<td>TECHTERA JELPLAN</td>
<td>Assessing the reliability of an implantation project in France of a JELPLAN’s plant for recycling used polyester textiles into recycled PET pellets.</td>
<td>Julie RAFTON -JOLIVET</td>
<td><a href="mailto:jrafton@techtera.org">jrafton@techtera.org</a></td>
<td>2018</td>
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<tr>
<td>41</td>
<td>VERT-ICAL NORD ECO-LOGIC WALL</td>
<td>Developing a green wall using recycled textiles to replace substrates and sphagnum (natural moss) currently used.</td>
<td>Frédéric LOGEZ</td>
<td><a href="mailto:contact@vert-ical.fr">contact@vert-ical.fr</a></td>
<td>2018</td>
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<tr>
<td>42</td>
<td>WECOSTA QUIVET</td>
<td>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.</td>
<td>Hugues BRIOTTE</td>
<td><a href="mailto:hbroute@wctautomotive.com">hbroute@wctautomotive.com</a></td>
<td>2018</td>
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<td></td>
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<tr>
<td>43</td>
<td>CYCL-ADD TEXTIC</td>
<td>Developing a recycling process for used non reusable polyamide clothing, including sorting, trimming, characterisation, micromodelling and compounding for plastics making.</td>
<td>Hervé GUERRY</td>
<td><a href="mailto:fgurry@cycl.add.fr">fgurry@cycl.add.fr</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>44</td>
<td>FABBRICK FABBRICK</td>
<td>Developing a structural, functional and aesthetic construction material from recycled used textiles.</td>
<td>Clarisse MERLET</td>
<td><a href="mailto:clarisse.merlet@fabbrick.fr">clarisse.merlet@fabbrick.fr</a></td>
<td>2019</td>
<td></td>
<td></td>
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<tr>
<td>45</td>
<td>FILATURES DU PARC PAMREC</td>
<td>Recycling used polyamide clothes into a recycled yarn for use in textile products.</td>
<td>Fabrice LODETTI</td>
<td><a href="mailto:filatures.parc@wanadoo.fr">filatures.parc@wanadoo.fr</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>46</td>
<td>HUMEAU BEAUPRÉAU REBOOT</td>
<td>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.</td>
<td>Anne-Céline HUMEAU</td>
<td><a href="mailto:ac.humeau@topy.fr">ac.humeau@topy.fr</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>47</td>
<td>IDELAM RECHAUSS</td>
<td>Developing an innovative technology for delaminating shoes (leather/textile) by supercritical fluid and a new recycling loop for used shoes.</td>
<td>Eric DURIVAULT</td>
<td><a href="mailto:eric.durivault@idealtechnologies.fr">eric.durivault@idealtechnologies.fr</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>48</td>
<td>LE SLIP FRANÇAIS LE SLIP CIRCULAIRE</td>
<td>Developing a yarn containing the highest possible % of recycled cotton on with a fineness up to 1/60Nm from used underwear and socks for use in the making of Le Slip Français’ products.</td>
<td>Solène NAÉEY</td>
<td><a href="mailto:solene.naeye@leslipfrancais.fr">solene.naeye@leslipfrancais.fr</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>49</td>
<td>SYNERGIES TUC UTILE</td>
<td>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.</td>
<td>Clara POTTON</td>
<td><a href="mailto:c.potton@synergies-tuc.com">c.potton@synergies-tuc.com</a></td>
<td>2019</td>
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<tr>
<td>50</td>
<td>VALVAN TRIMCLEAN</td>
<td>Development of an automated integrated solution that allows the removal of trims (including labels, buttons, zippers etc.) from used clothing.</td>
<td>Maurits VANDEPUTTE</td>
<td><a href="mailto:maurits.vandeputte@valvan.com">maurits.vandeputte@valvan.com</a></td>
<td>2019</td>
<td></td>
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<tr>
<td>51</td>
<td>Groupe ERAM ZAPATEKO II</td>
<td>Development of a demonstrator for disassembling non-reusable footwear via automated sorting and assisted pulling.</td>
<td>Gauthier BEDEX</td>
<td><a href="mailto:gdbdik@eram.fr">gdbdik@eram.fr</a></td>
<td>2020</td>
<td>NEW</td>
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<tr>
<td>52</td>
<td>Pheïnix Sport R-Shape</td>
<td>Developing a demonstrator for recycling non-reusable sportswear into a plastic composite material used to create sport accessories.</td>
<td>Paul-Emmanuel GUINARD</td>
<td>paul@pheïnix-sport.com</td>
<td>2020</td>
<td>NEW</td>
<td></td>
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<tr>
<td>53</td>
<td>SOEX TESTD</td>
<td>Developing an automated sorting pilot line for textile materials recognition through NIRSpectroscopy to the industrial scale.</td>
<td>Louis TEMAL</td>
<td><a href="mailto:temal@ico-spirit.com">temal@ico-spirit.com</a></td>
<td>2020</td>
<td>NEW</td>
<td></td>
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<tr>
<td>54</td>
<td>VERT-ICAL NORD SOLIDITI</td>
<td>Development of a full size green wall demonstrator integrating a recycled textile nonwoven and an optimised watering system.</td>
<td>Frédéric LOGEZ</td>
<td><a href="mailto:contact@vert-ical.fr">contact@vert-ical.fr</a></td>
<td>2020</td>
<td>NEW</td>
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For a 100% circular textile industry

Revaluing waste

ANNUAL REPORT 2020

HEALTH CRISIS IMPACT ON WASTE COLLECTION AND SORTING IN 2020

Over several weeks in 2020, the health crisis paralyzed ‘downstream’ activities: VDP owners regularly couldn’t empty the VDP containers. Consequently, sorting operators had to slow or even halt their operating units, and because national borders were closed, they couldn’t export the bulk of the sorted items to their usual destinations (India, Pakistan, Sub-Saharan Africa, Tunisia…).

To support operators cope with both storage constraints (sorted materials and those awaiting sorting), and the corresponding fall in their business revenues, Refashion proposed and implemented financial support measures. In consultation with representatives for the sorting operators, local authorities, and public authorities, these measures were split into two types. Firstly, support was provided to help cover companies’ cashflow needs for quarterly arrears related to 2020 production. Secondly, support was provided to help with the costs of processing sorted items for recycling and SRF.

Overall, these provisions have resulted in additional financial support totalling €5 million, and was made possible thanks to the eco-organization’s access to the State-guaranteed loan scheme (Prêt garanti par l’État).

▶

For the 50 sorting facilities operating in France, which account for 83% of the total tonnage sorted, below are the changes from 2019 across the main sorting categories:

A second life for textiles and footwear (1)

- Reuse accounts for 56.6% (down 0.9% vs. 2019) and now includes an additional category (reusable curtains and net curtains). The percentage for 1st choice quality items remained

- Recycling accounts for 32.2% (down 0.4% vs. 2019). Volumes for garnetting remained stable but fell for wipers.

- SRF increased significantly, reaching 10% (up 1.3% vs. 2019), while disposal with and without energy remained stable at around 1%.

In the 14 sorting facilities outside France, the main data breakdown differences compared with facilities in France are as follows:

- Reuse represents 56.1%. The share of reuse in 1st choice and in footwear is much lower, while curtains and net curtains represent up to 1% of the total for those who report at this level of detail.

- Recycling accounts for 38.8% of the tonnage sorted, split between wipers (14.4%) and garnetting (24.4%).

- SRF and disposal with energy recovery accounts for 5.1% of the total sorted tonnage.

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

Re_fashion