

2022 ANNUAL REPORT

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ecosystem
recycler c'est protéger

2022
ANNUAL REPORT

Interactivity



*The contents, on the following
page, is interactive*



Back to contents



Back to cover



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CONTENTS

Editorial

● Page 5

01

Reducing the use of new resources

● Page 6

02

Protecting our environment and our health

● Page 14

03

Encouraging the durability of equipment

● Page 18

04

Creating new solidarity opportunities

● Page 24

05

Providing support for the transitions of society

● Page 28

2022 Highlights

● Page 32

● Page 34

● Page 36

● Page 37

EDITORIAL

With its high expectations and down-to-earth approach ecosystem is a company that is constantly changing.



Nathalie Yserd

General Manager, ecosystem

In 2022 ecosystem accelerated its work in prolonging the service life of electrical and electronic equipment. The launch of two major measures deriving from the French Anti-Waste for the Circular Economy (AGEC) Law, the Repair Fund and the Reuse Fund, kept our in-house teams and our stakeholders busy, including those in the public and economic sectors and associations. This makes us the first Extended Producer Responsibility scheme to have implemented these new measures. This responsibility requires commitment and encourages us to reinvent ourselves as a company and together with our stakeholders find new solutions for cooperation and development.

In regard to reuse, our commitment to the social and solidarity economy is part of ecosystem's DNA and has been right from the start. The Reuse Fund enables us to accelerate our work and to involve more local entities in order to strengthen the solidarity aspects of our environmental activities.

The merging of all our logistical and treatment processes into a single IT system in 2022 has also strengthened and optimised our organisation. This very demanding project, that also mobilised our in-house resources, allows us to provide the best service possible to the sector.

Lastly, the 2022 collection results show an increase compared to those of 2019, the pre-Covid reference year. 2022 therefore marks a return to our normal growth

rate despite unfavourable conditions market placement given the on-going war in the Ukraine, rising inflation and the lack of availability of certain electronic components.

During this challenging year our human capital grew too. 2022 also saw the creation of our Mission Committee (Comité de mission) that, in an impartial, constructive and attentive manner, provides support in rolling out our undertakings and operational goals. Thanks to our company purpose and its mission of general interest we can attract new talents. To support the expansion of its activities the number of ecosystem employees rose by nearly 30% in just two years.

With its high expectations and down-to-earth approach, ecosystem is a company that is constantly changing. In 2023 we will continue our work on giving a second life to electrical and electronic equipment that is eco-logically sound, economically efficient and socially fair and to provide solutions that contribute even further to the ecological transition.

For instance, we can cite our Kheops project focusing on an industrial treatment process for hot water tanks and the Carros project working on a reuse pre-sorting "hub" that you can read more about in the pages that follow.

I hope you enjoy reading this report!

REDUCING THE USE OF NEW RESOURCES

Our commitment

Combat the depletion of fossil and mineral resources by developing collection operations and contributing to the development of new industrial processes that produce quality recycled materials meeting the manufacturing requirements of new materials.



2022 was a pivotal year marking the transition to a new authority approval period and the broadening of our responsibilities which, in addition to our collection, pollutant removal and recycling core activities, now include the stepping up of activities that prolong the service life of products, in particular through the Reuse Fund and Repair Bonus. To face these challenges, structuring activities and innovative solutions were implemented in 2022.

A new contract for local authorities

In 2022 ecosystem's authority approval was renewed and along with it came significant changes in the management of local authority contracts. Local authorities account for 49.5% of the household equipment that is collected. To boost their collection capacities, the funding scale was increased by 18.7% in 2022, i.e. an extra 40 million euros of funding that will be paid in 2023 including a 50% increase in the flat rate to secure sources during the new authority approval period. Another noteworthy change is that the contracts can now be signed directly by the local authorities and producer responsibility organisations (PRO) and no longer with the OCAD3E. However, this coordinating PRO for the WEEE sector will continue to act as a single point of contact by offering an administrative interface for signing contracts with producer responsibility organisations. It carries out other tasks such as monitoring collection activities and supports local authorities in preventing theft and looting from municipal recycling facilities, etc.



18,7%

This is the increase in the funding scale in 2022, i.e. 40 million euros paid to local authorities in 2023 for collection operations

Spotlight



Supporting the growth of collection operations

Sébastien Partida

Deputy Manager, Development Department

The Development Department's mission is two-fold:

- support the growth in collection operations for all the sectors concerned (household, professional, lamps and small fire extinguishers)
- develop the reuse of equipment in partnership with Social and Solidarity Economy (SSE) organisations.

In 2022 a drop in collection figures can be seen for the two the major household and professional equipment sectors. For the household sector this can be explained by the difficult international and economic business climate caused by inflation, the war in Ukraine and the energy crisis resulting in an explosion in the prices of raw materials and equipment, considerably reducing consumption by households and investment by professionals. However, an overall rise in collection can be seen in relation to the pre-Covid reference year, 2019. For collection there

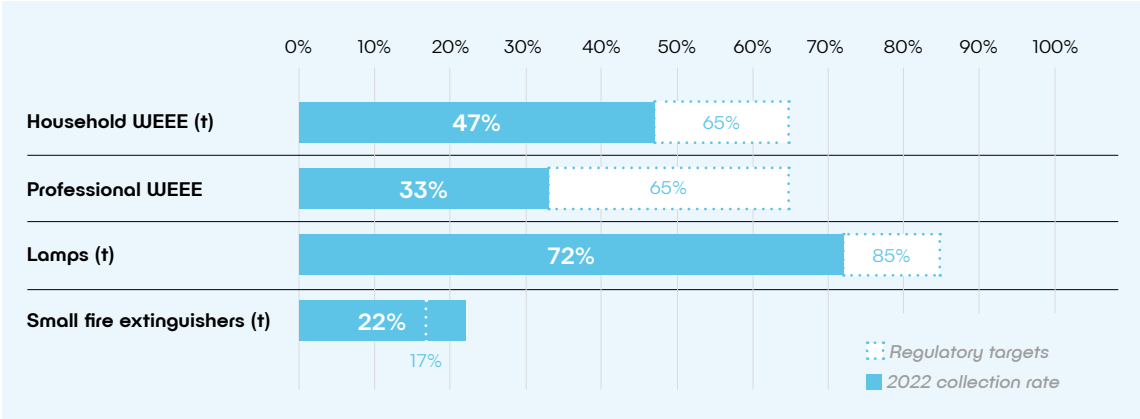
is also a challenge in terms of quality: collection must be enhanced in order to supply SSE organisations with quality equipment. It is with this in mind that we opened our logistics "hub" which is totally focused on preparing batches for reuse. This is currently on trial and will then be extended to other activities thereby supplying SSE organisations throughout France with the equipment they need. Finally, in a last structuring project which took place at the end of the year we prepared the activities to be carried out in the construction industry, whose EPR scheme will be launched on 1 January 2023, for the collection of electrical and electronic equipment and lamps resulting from maintenance works, re-lamping and cleaning operations. The Class 1 Construction and Building Materials sector (PMCB¹) is developing and with our extensive experience in cleaning and demolition sites we will be able to provide the support it requires.

¹ Products and materials from the construction sector

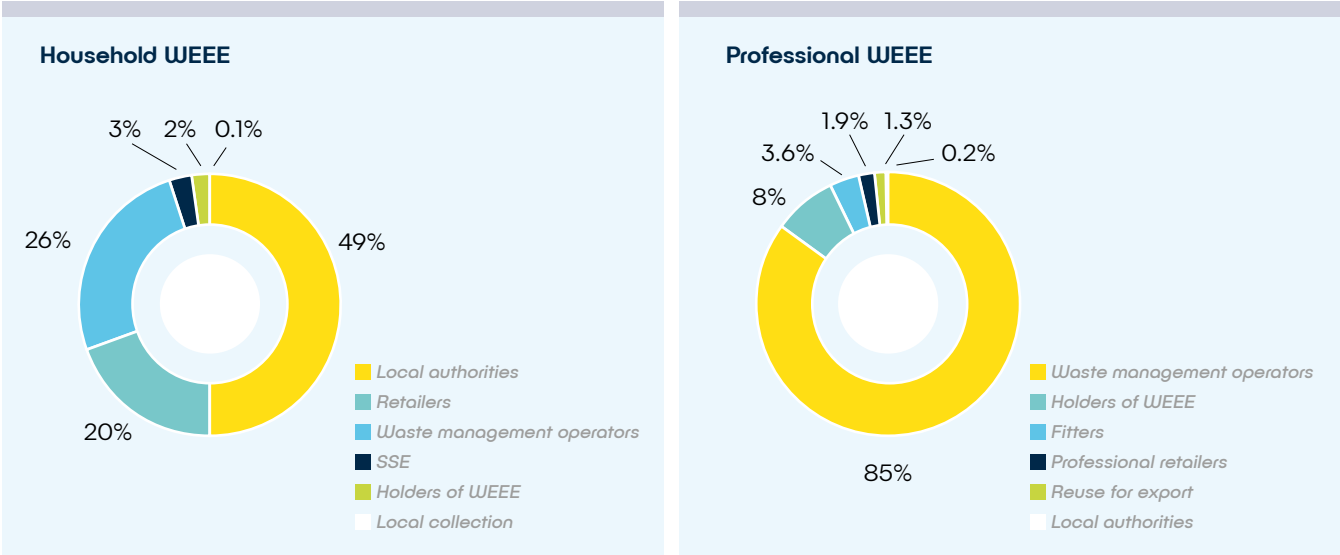
Tonnes collected in 2022

	2021	2022	% change	Units collected in 2022
Household WEEE (t)	664,854	625,563	-5.9%	103,774,897
Professional WEEE	70,964	66,854	-5.8%	-
Lamps (t)	5,166	4,608	-10.8%	51,238,962
Small fire extinguishers (t)	347	388	11.8%	164,575

Collection rate



Tonnes collected per channel



Structuring activities to secure sources

According to a major study carried out in 2019 to characterise WEEE available for collection, a quarter of the 1.8 million tonnes of WEEE elude the authority-approved system due to illegal practices. This tonnage is either recovered by metal recyclers who are not under contract with a producer responsibility organisation (PRO) and who send the metals to shredding centres where it cannot be proved that pollutant removal operations comply with European standards. Or they are illegally sent overseas and sold to recyclers despite the fact that this type of waste cannot be exported unless specific prior notification has been given.

To combat the environmental and public health-related problems that this represents, ecosystem intensified its activities in 2022 to protect the collection of this equipment in the most sensitive areas.

This is achieved by boosting security in Municipal Recycling centers funding video-surveillance systems and installing shipping containers to store appliances outside of working hours. 500 of these types of containers were installed in 2022. Thanks to the “Boost” plan equipment collection rounds were increased so that equipment is collected before dusk at our 84 most-used sites thereby preventing theft.

Marking equipment also helps in combating fraud. In 2022, 60% of “white” appliances were marked by municipal recycling facilities under contract with ecosystem.

Lastly, cooperation with the local authorities and the public authorities was strengthened so that this type of theft is legally recognised as an offence and surveillance by the parties involved, enhanced.

Poster to combat the theft of WEEE



2022 figures for the “Boost” Plan



84

Problem collection points identified



4 counties (départements)

A four-month pilot (from end August to end December) in four counties: Loire-Atlantique, Rhône, Isère and Var



33%

Increase in tonnages collected for the entire areas covered and up to 40% for certain collection points





Innovative collection solutions

In 2019 ecosystem launched the “jedonnemontelephone.fr” operation to collect old mobile phones through the postal system and give these a second lease of life by repairing them, their condition permitting, or by recycling them. 300,000 telephones were collected via this service in 2022.

As the “jedonnemonelectromenager.fr” home-collection pilot with an appointment system yielded such good results in 2021 it was rolled out to four counties in 2022 and concerning 2.5 million people. By 2027 this system will cover all the densely populated urban areas in France, i.e. 20 million people.

These innovative collection operations boost the reuse rate by SSE organisations thanks to the delivery of better quality equipment and by combating a resurgence in theft and looting particularly from municipal recycling centers or before bulky waste collection rounds.

Telephone collection operations in 2022

Excluding collection bins containing small electrical appliances mixed with other waste



180,000

telephones collected separately, including:

• 50,000

telephones received via “jedonnemontelephone.fr”

• 110,000

telephones collected through partnerships with reconditioning professionals

• 20,000

telephones collected during events



115,566

visits to the “jedonnemontelephone.fr” website



New challenges for recycling

If appliances are not repaired or redeployed, the pollutants they contain are removed. They are then recycled in treatment centres under contract with ecosystem throughout France. Following mechanical treatment and the separation of ferrous and non-ferrous metals and plastics, the materials recovered are transformed and reused by industry.

In 2022 ecosystem obtained recycling efficiency rates higher than those required in its authority approval specifications. However, new challenges are appearing because despite the efforts made in eco-design and the sector’s maturity and expertise, the composition of waste electrical and electronic equipment is forever changing meaning that technologies need to be constantly adapted too. Appliances contain less and less metals and more and more plastics, some of which need to undergo specific sorting process at specialised sites, such as brominated plastics. They also contain increasingly sophisticated electronic circuit boards that need to be recycled depending on the types of processors, alloys, metals, etc. present. This requires once again the knowledgeable input of experts and the development of R&D to recover the strategic metals that they contain and thereby reduce the dependency of France in terms of the availability of these critical metals.



Spotlight

jedonnemontelephone.fr
an increasingly popular solution

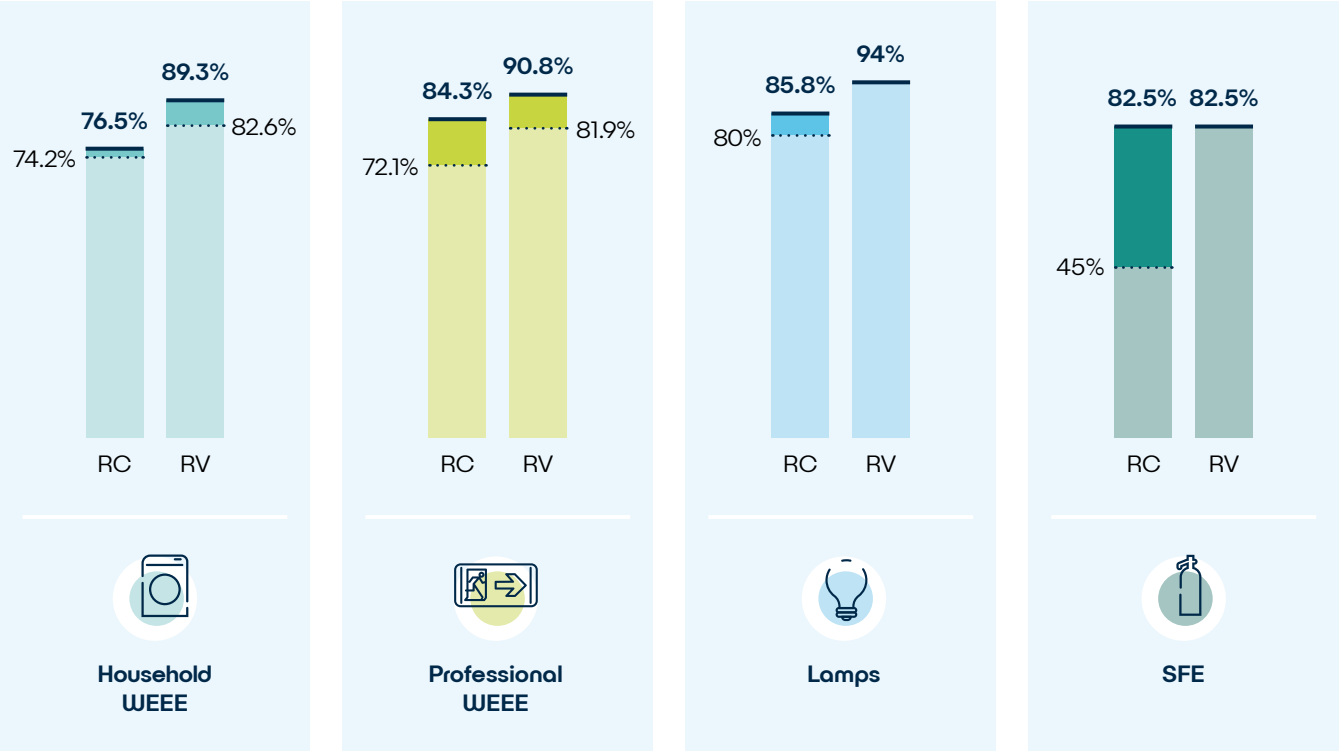
Laura Harb
Collection Solutions Development Officer

2022 witnessed the development of our “jedonnemontelephone.fr” solution. We particularly worked on our website’s user experience. We are planning to carry out an online survey at the beginning of 2023 in order to measure the level of user satisfaction and identify any areas of improvement. We also deployed our label printing service for the digital processes of our partners such as SFR and Orange. Our solution for Orange was used in an employee telephone recovery operation. One-off collection operations to renew telephones were also an important lever to achieve our targets. In 2022 we also collected

nearly 65,000 telephones from the Gendarmerie Nationale and entrusted these to the Ateliers du Bocage association, a social and solidarity economy organisation responsible for organising their reuse. These special collection operations, such as those undertaken during the Tour de France where specific donation boxes were installed along the entire route, meant that 20,000 extra telephones were collected in 2022. In 2022, an additional 11,000 telephones were also registered with our professional reconditioning partners, Econocom Factory and Largo. Our 2023 target is to have collected 500,000

telephones since 2019. To achieve this we must continue to publicise the free and practical “jedonnemontelephone.fr” solution and develop partnerships especially with companies. We also have high hopes for the “take-back bonus” that we set up at the end of 2022. Users can choose an association that will benefit from a donation funded by ecosystem once their telephones have been received. In 2023 we will evaluate the influence that this solidarity-supporting telephone donation initiative will have had on collection.

2022 recycling and recovery rates



RC Recycling
RV Recovery
— Rate achieved (in %)
..... Target rate (in %)

Material balance of household WEEE and lamps collected in 2022

Collected household WEEE and lamps are delivered to specific treatment sites for recovery. Below are the recovery figures that actively contribute in combating the depletion of mineral resources and fossil fuels.



Along with the sector, ecosystem is preparing itself for regulatory obligations to increase recycling rates, effective as of 2024. With this requirement, included in ecosystem's specifications, France goes above and beyond European regulatory requirements. If we take the example of a refrigerator, currently 80% of it needs to be recycled in the form of materials and 5% recovered in the form of energy, i.e. an overall rate of 85%. In 2024, this overall rate will rise to 95%. 2022 was therefore a year of studies and preparation work with treatment centres in order to analyse the fractions whose sorting could be improved or find effective recovery processes.

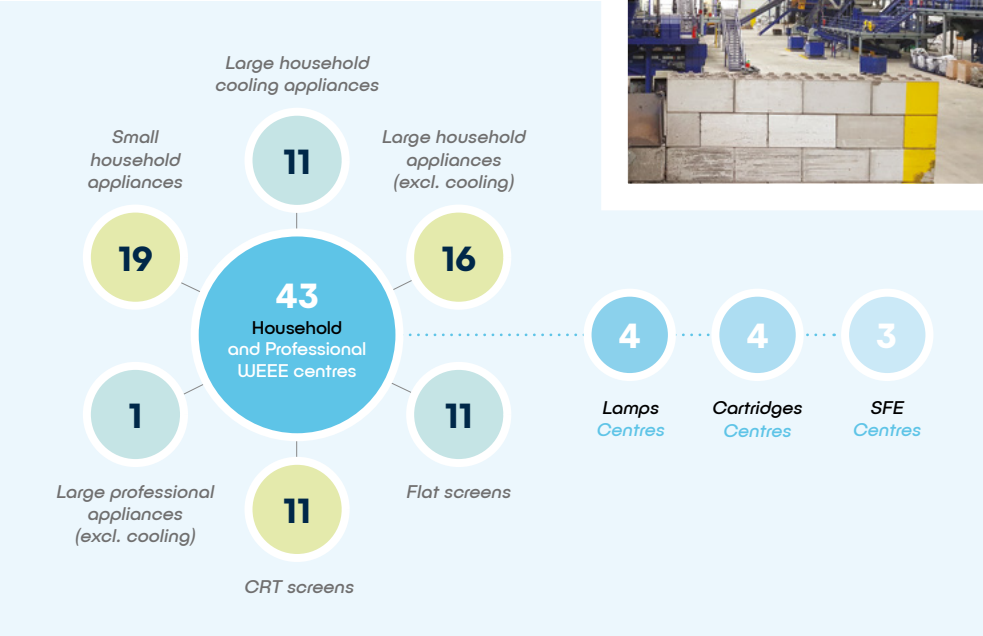


54 industrial centres

specialised in treating the different waste streams located all over France

43 industrial WEEE sites managing 69 treatment lines

Our industrial partner centres



Innovation Challenge

Improve the recycling of LED bulbs

Replacing fluorescent or halogen bulbs with LED bulbs is a challenge in terms of recycling because their composition is similar to that of a small electronic appliance. Fluorescent bulbs used to be made mainly from glass and metal. LED bulbs contain less glass and more electronic components including micro-circuit boards that are mainly comprised of precious metals such as gold and silver. The challenge here lies in maximising their capacity to be recycled whilst extracting strategic materials such as gold, gallium, indium, etc.

In 2022 interesting progress was made and a patent was filed, linked to a project by a student engineer on extraction and recycling funded by ecosystem within the framework of the "Urban Mines" Chair, created in 2020 with three French higher education schools: Chimie ParisTech, Mines Paris-Tech and Arts and Métiers. This involves a chemical process to extract certain strategic materials such as gold, silver and palladium from, for example, chips and LED bulbs. In 2022, this Fondation PSL (Paris Sciences et Lettres) project reached a level of maturity that enabled a process to be rapidly produced on an industrial scale.

PROTECTING OUR ENVIRONMENT AND OUR HEALTH

Our commitment

Protect the environment and the health of all by removing polluting or hazardous substances and by reducing the environmental footprint of our operational activity.



Removing pollutants from electrical and electronic equipment before it is recycled protects both public health and the environment. This is, therefore, a core activity for ecosystem who, in 2022, optimised the effectiveness of pollutant removal and recycling operations at treatment centres whilst improving the sector's environmental balance, in particular by working on the efficiency of the supply chain.

Protecting by removing pollutants

Electrical and electronic equipment contains many pollutants that need to be extracted and treated in a specific and safe way. In 2022, like previous years, extracting the gases contained in compressor cooling circuits and insulation foam, both of which release significant GHG¹, from large household cooling appliances represented a significant challenge. Mixed small household electrical appliances, SHA, also represent a problematic waste stream due to the presence of capacitors that may contain PCB (polychlorophenyls), bulbs from flat screens that can potentially contain mercury, or fire-resistant plastics containing bromine. To ensure that polluting substances in this equipment are removed under the best possible conditions, ecosystem:

- **monitors each treatment centre** through the reporting of all extracted substances,
- **undertakes an annual WeeeLabex²** audit to validate that the standards related to this certification have been met,
- **performs annual characterisation exercises** by weighing fractions at each treatment centre in order to measure the effectiveness of pollution removal operations.
- **performs local monitoring through its regional managers** who monitor each centre's work and quality.

The 2022 results are satisfactory and meet expectations.

¹Greenhouse gases

²European Certification for organisations in the WEEE sector based on complying with technical standards in collection, logistics and treatment processes.

Avoided pollution results in 2022

Without recycling, the production of new raw materials would have had significant environmental impacts. In 2022, the removal of pollutants from Lamps and household WEEE and their recycling enabled:



220,520 kg

of gases responsible for the depletion of the ozone layer to be removed (CFC-11 equivalent).



4,032,184 cars

the emission of molecules responsible for peaks in ozone pollution to be avoided, equivalent to those released by 4,032,184 cars per year.

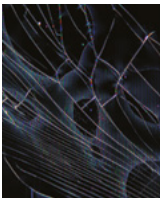


556,495,261 m²

the emission of molecules which would have generated the equivalent of one year's worth of acid rain on a surface area of 556,495,261 m², to be avoided.

What happens to hazardous or regulated substances?

Protecting health is one of reasons that this sector exists. Its purpose is to remove and neutralise any potentially hazardous substances contained in the household WEEE and bulbs collected. This activity has led to the creation and development of specific treatment sites in France. This year, ecosystem collected nearly 697,025 tonnes of WEEE (household and professional appliances) and lamps in France. Many hazardous or regulated substances have been extracted from the tonnages collected, including:



400 kg of components containing mercury

Mercury is a toxic metal that harms the body, in particular the nervous system and the kidneys. It is also a reproduction and development disruptor. It is mainly found in screen backlight bulbs (LCD) and in fluorescent lamps and tubes. Mercury is also used as a switch in certain appliances such as chest freezers and lap tops. Mercury is stabilised before being landfilled in purpose-built facilities for hazardous waste.

<http://ampoules-mercure.ecosystem.eco/>



1,299 tonnes of batteries and accumulators

These contain heavy metals which have harmful effects on living organisms if found in land and water. After having been removed from appliances, batteries and accumulators are treated by the producer responsibility organisations, Scirelec & Corepile, who are responsible for their treatment.



16,532 tonnes of potentially brominated plastics

In some electrical and electronic appliances the plastics within contain brominated flame retardants. Some plastics in small mixed household appliances (SHA) and screens may be classed as hazardous and "POP" (persistent organic pollutants). These are incinerated in incinerators for hazardous products equipped with high-temperature furnaces. By applying the precautionary principle, the category "potentially brominated" covers all brominated plastics as well as those for which there is a doubt, so that they undergo the same treatment.



338 tonnes of printing ink cartridges

These contain pigments the inhalation of which may cause respiratory disorders. They are recovered and cleansed in order to be reconditioned. Specialised companies treat cartridges that cannot be reconditioned.



350 tonnes of capacitors

These are either capacitors likely to contain PCBs (polychlorobiphenyls), or electrolytic capacitors. PCBs are persistent organic pollutants and very resistant to biological breakdown in the environment. They accumulate in the tissues of organisms all along the food chain and can seriously damage reproductive and immune systems. Capacitors are treated in special hazardous waste sites equipped with very high temperature furnaces (1,200°C).



9,553 tonnes of cathode ray tubes

Cathode ray tubes are comprised of barium- and lead-containing glass. Barium-containing glass is considered as non-hazardous and may be recycled in the manufacture of materials for the construction industry. Glass with lead or mixed glass (unsorted) is considered as hazardous. Lead is a heavy metal which accumulates in the tissues of organisms and seriously affects the reproductive system and the development of living organisms. It is sent to hazardous waste landfills.



Global stream management and treatment

Laurent Vacher
Deputy manager Operations Department

In 2022 the OPERA project entered into its operational phase, pooling the logistical services for our various businesses following the merger of Eco-systèmes and Récylum, and then pooling the treatment of household and professional WEEE. The project ended in February 2022 and required the full-on support of our teams. The routine practices of service providers were upturned by the transition changing from logistical services that were organised according to the waste stream to an organisation whereby waste streams are globally managed and treated. We take this opportunity to emphasise that we fully appreciate the resilience and understanding they showed when faced with certain difficulties in this transition. A lot of time and energy went into managing this change and in providing support to our service providers by


associating them with this transition over the last two years in order to overcome as many obstacles as possible.

We also assisted our new service providers because following an invitation to tender 20% of our logistical and treatment service providers changed on 1st February 2022. Several months were required to stabilise this new situation and we are now in a position of continuous improvement.

This project also optimised the environmental performance of our operational activities by establishing a logistics master plan, by pooling transport and the allocation of waste sources, all of which were managed by our new supply chain service.


2022 environmental results


Combating natural resource depletion

 **3,754,829 tonnes**
of primary raw materials saved thanks to recycling
→ *i.e. an equivalent of 9,357,077 pieces of IT equipment*

 **1.7 billion kWh**
saved thanks to recycling
→ *i.e. the equivalent to the energy consumption of 372,363 inhabitants in France for heating for a year*

Combating climate change

 **517,905 tonnes**
of avoided CO₂ emissions
→ *i.e. an equivalent of 4.7 billion km travelled by car*

 **1,273,620 tonnes**
CO₂ equivalent removed.
→ *i.e. equivalent to the CO₂ absorbed by 106,135,025 trees in one year*

Innovation Challenge

Removing pollutants and recycling hot water tanks without releasing greenhouse gases

In France, 100,000 hot water tanks are placed on the market each year. The expanded foam used for insulation purposes in this apparatus contains chlorinated and fluorinated greenhouse gases or hydrocarbons with very high global warming potentials. However, there were no technical solutions and or plants in France capable of treating hot water tanks without releasing the greenhouses that they contain. This is why following an invitation to tender in 2022 we selected four projects to create a pollution removal and non-GHG emitting treatment activity for hot water tanks. Six plants will be built starting in 2024 to develop this new treatment activity.



ENCOURAGING THE DURABILITY OF EQUIPMENT

Our commitment

Contribute in prolonging the service life of appliances by preventing waste through repair or reuse and by encouraging producers to eco-design with a focus on durability.



Co-building electrical and electronic equipment with producers is key to improving the durability of equipment. The entry into force of the AGECE Law (French Anti-Waste for A Circular Economy Law) formally required that a waste prevention and eco-design plan be produced for their products in 2023. This law also establishes the repair of equipment in solutions for durability. To meet this requirement, producer responsibility organisations have set up a network of certified repair operators, launched in 2022.



Assisting our member producers with their processes

The acceleration in establishing waste prevention and eco-design plans as required by the AGECE Law significantly increased requests for assistance by our members. In 2022 our teams rallied round, notably through extensive work carried out with other producer responsibility organisations and in working groups that included sector members, in order to provide operational tools making it easier for producers to establish effective and streamlined plans. The aim: to reduce the use of non-renewable resources, increase the use of recycled materials and increase the recyclability of products, as well as increase the information provided to consumers. In 2022 we worked on new indicators for consumers on sorting instructions for electrical and electronic equipment.

Professional federations, trade unions and producers who are already very much committed to this teaching process took part in this complex brainstorming work. The sorting information label, "Info-tri", was generalised in 2022 in order to provide consumers with clear information regarding the handling of their old appliances. Its purpose is to guide consumers on the disposal solutions available for old appliances (take-back during delivery, at municipal recycling centers, in-shop collection bins, etc.), while inciting them to prolong the service life of their equipment by repairing them or donating them if they are still in working order.



4,629 producers
members in 2022



€ 272,500,000
net in eco-fees received



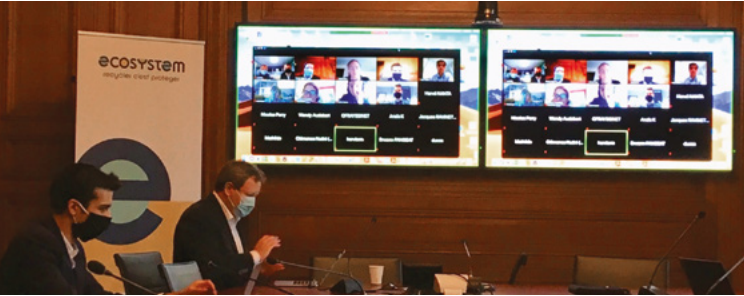
Spotlight

Helping our members to prepare their waste prevention and eco-design plans

Axel Roy
Environmental expert - Eco-design and circular economy leader

For many of ecosystem's members, in particular the SME, waste prevention and the eco-design of products are new topics. We are regularly contacted to explain and put into laymen's terms what is expected by the law and ensure that the waste prevention and eco-design plans meet the requirements of the AGECE Law. Producers have until 31 July 2023 to formalise their plan.

Webinars carried out in 2022 enabled us to attract a large number of people simultaneously. We also created a video tutorial which explains the implications of these plans and how to use the waste prevention plan template that we designed with CITEO, Refashion and Ecomaison, other producer responsibility organisations. We have also set up a hotline for our members to answer any questions they may have.



2022 Results on assistance provided to producers



1,127 participants
in different support sessions



48 sessions
were held (webinars, awareness-raising workshops, training, etc.)



403 organisations
were provided with assistance (members and non-members alike, public authorities, producer responsibility organisations, treatment centres, consultants, etc.)



Establishing eco-fee modulation

In 2022, within the framework of the AGECE Law and its authority approval, ecosystem set up working groups in which certain producers and their professional representatives reviewed the eco-modulation mechanism that had been in place since 2013. Upon completion of this work, proposals were put forward to the public authorities, including the review of current criteria (e.g. incorporation of recycled material), the proposal of new criteria (i.e. the separability of batteries), the inclusion of new equipment in the scheme (i.e. electronic cigarettes) and broadening the basis for calculating bonuses and penalties (i.e. 20% of the fee amount per criteria). Although the respective Stakeholder Committees voted in favour of these measures, the French Directorate for Risk Prevention (DGPR) requested that the producer responsibility organisations rework their proposals so that the modulation values provided an even greater incentive. Producer responsibility organisations were invited to continue this work in 2023.



Spotlight

Boosting our e-commerce relations

Jean-Paul Auberger
Producer Relationship Director

Our teams adjusted to the particularities of the equipment declarations submitted by e-commerce platforms and the sellers that use these, who are often based abroad, as well as to their complex back-office management. Indeed, the weight of the equipment for sale must be declared but the platforms do not necessarily have this information. So it was necessary for us to develop a simplified fee scale with an average weight chart on the one hand and an increased fee on the other so as not to create an imbalance with the declarations made by our historic members. Compliance is already ensured on platforms where products are directly negotiated. However this is not the case for products on platforms that are merely intermediaries.

The system for marketplace declarations was set up in consultation with the stakeholders concerned and their professional representatives and involved big names in e-commerce such as Ali Express. Co-building and facilitating work are absolute priorities for us so that we can take on the complexities of regulatory obligations as effectively possible and provide our members at all levels with simple and effective solutions for the new and numerous issues they face.

eeeasy! in figures



308 accounts
created in 3 months (from September to December 2022)



243 companies
of which 204 are producer members

2023 goal



x2
double the number of accounts and obtain local feedback in order to make the most of studies on real life cases.



Spotlight

eeeasy, helping companies to train

Violaine Delahoche
B to B Communication Manager (Producers and Repair Operators)

To meet stakeholder expectations (producer members, retailers, waste management operators) in terms of raising awareness on the second life of electrical and electronic equipment, ecosystem has made a standalone and useful tool available: the eeeasy! programme, launched in September 2022.

Accessible via the company-orientated digital platform, eeeasy! is an information and awareness-raising programme divided into three themed modules:

- Understanding the ecological crisis and the impacts of EEE
- Finding out about solutions in order to take action
- Knowing all there is to know about what becomes of collected appliances

Each theme has e-learning modules, knowledge testing quizzes and tools to help organise workshops for company employees. Companies can thereby increase their employees' knowledge and organise theme-based days on CSR and sustainable development.

Boosting the compliance of online retail platforms




2022 was a year that laid the foundations for the generalisation of the unique identification number (UID) that producers present on Market Places need to provide (retail and on-line purchasing platforms) in order to check that their eco-fee is order. Since 2022 online retail platforms are responsible for ensuring that sellers operating on their sites have submitted a declaration to their respective producer responsibility organisations and paid their eco-fee or, failing this, pays it for them. This is a complex matter that requires considerable preparation to identify sellers and integrate new procedures in the IT systems of e-commerce platforms.

Encouraging the repair of equipment

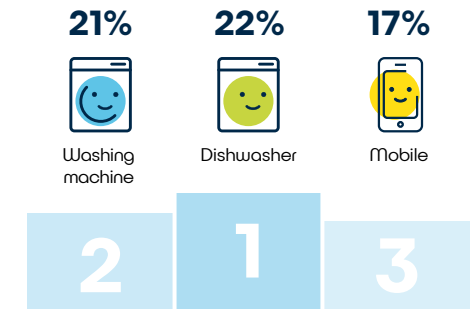
The “repair bonus” set up by ecosystem and Ecologic came into effect on 15 December 2022 with the goal of providing a financial incentive for people to repair their electrical and electronic equipment when warranties are no longer valid. 500 QualiRepar certified repairers are now referenced all over France after having applied on the certification platform set up by the producer responsibility organisations and following audits by certifying bodies : AFNOR, Bureau Veritas or SGS. They are listed in an online directory on the producer responsibility organisations’ websites or on the www.label-quali-repar.fr website. This directory will continue to grow to include 4,000 certified sites by the end of 2023.

As consumers do not need to make a request to be reimbursed it is very simple for them to have equipment repaired. The bonus is immediately deducted from their bill by the certified repairer who is in turn reimbursed by the producer responsibility organisations. Depending on the 31 types of appliances concerned, ranging from mobile telephones to washing machines, the repair bonus corresponds to about 20% of the repair costs. This provides a strong incentive to prolong the service life of equipment, in keeping with the AGEC Law objectives, and protects natural resources even further.

Results at 30 March 2023

-  **1,189 QualiRepar sites**
covering 4,500 technicians
including 2,150 travelling technicians
-  **67%**
This is the percentage of certified
1-2 person companies
-  **€ 450,170**
18,685 repairs having benefited
from the Bonus, i.e. €450,170 have
been paid out. Average amount
per bonus: €24

Top 3 appliances repaired



Innovation Challenge

Technicals plastics made
from recycled polystyrene

2022 saw the completion of the first research phase to transform recycled polystyrene (rPS) into technical, fire-resistant plastic that can be used in industry. This research was undertaken with producers, two engineering schools, Centrale Lille and Chimie Lille, and other recycling-regeneration operators, one in the Netherlands and one in France. This first phase has enabled a polystyrene regeneration formula to be stabilized. This research work will continue in 2023 with an industrial demonstrator showing that it is possible to manufacture technical plastics having fire-resistant properties using recycled polystyrene.



La maison chartraine, QualiRepar certified since 2022

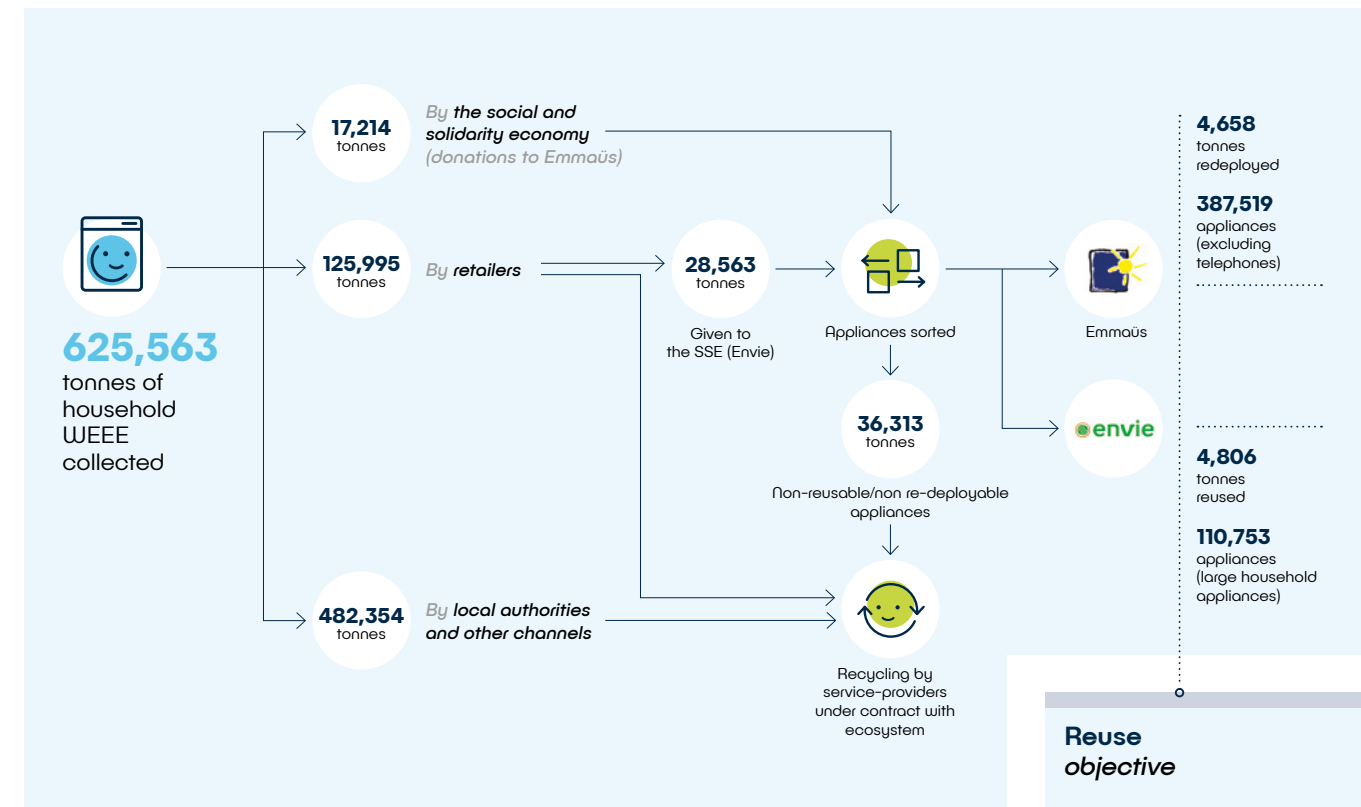
CREATING NEW SOLIDARITY OPPORTUNITIES

Our commitment

Contribute to the development of new jobs and skills in the sector's core activities and provide assistance to professional integration efforts in the social and solidarity economy professional.

Under our new authority approval, our goal is to triple the number of appliances that are reused by 2027 by improving the quality and quantity of reusable appliances, by providing funding to the social and solidarity economy (SSE) and by developing skills in the entities concerned. Reuse was established right from the outset when ecosystem was created seventeen years ago, but the AGECL Law gives a boost to our activities, especially in providing assistance to new SSE organisations and in accelerating reuse thanks to the Reuse Fund.

Reuse is an important component of ecosystem activities since its creation and new ambitious goals have been set



Providing assistance to new SSE organisations and deploying the Reuse Fund

To achieve the reuse goals we need to bolster our historic partners, in particular Envie and Emmaüs, and reference and assist new partners. This requires significant work in identifying local and independent organisations in terms of their logistical compliance, their capacity to generate effective reusable appliances as well as the type of appliances that they are able to process so that the categories of appliances provided to them can be adapted. This involves connecting these organisations with retail partners in their geographical areas. Since the launch of the referencing platform in April 2022 around forty new organisations have begun to order supplies from retail partners.

Reuse objective

2% of tonnages placed
on the market

→ **x3** compared to current performances

i.e 28 kt

252

SSE organisations provided with assistance

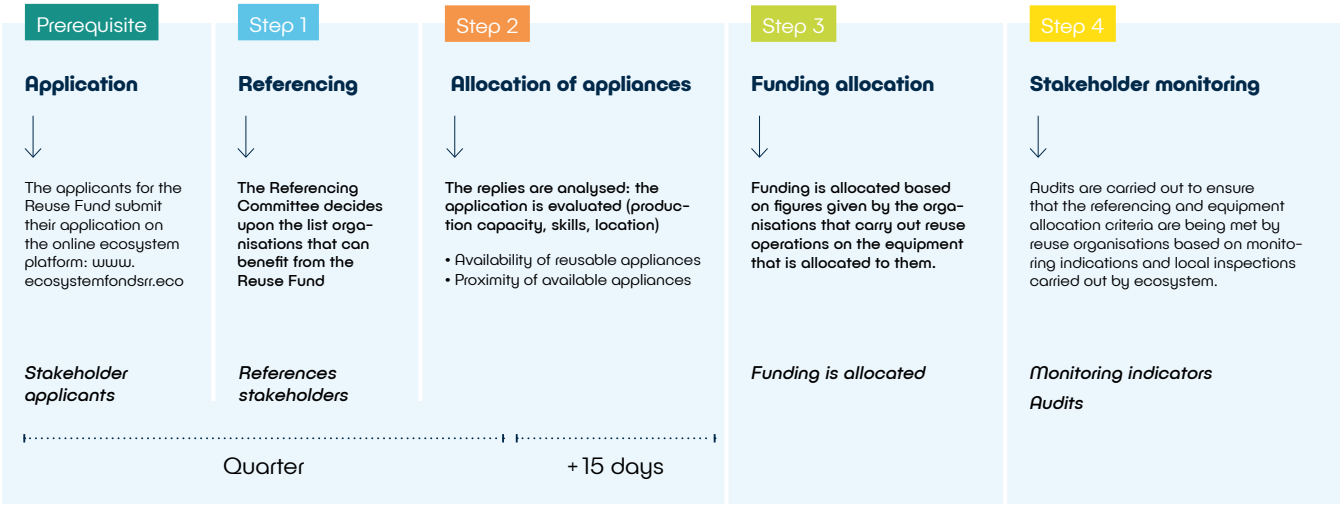
7,35 m paid

The referencing and follow-up process

We are stepping up our activities with our partner networks. In 2022 the Envie network created many new entities that need to be supplied with appliances that can be reused. These are proven specialists with whom we are pursuing our pre-existing national agreements while providing news solutions to recover appliances. In 2022 we worked on the Manufacture Project with the Emmaüs network, a reference Emmaüs site that has the capacity to collect more appliances and prepare them for redistribution in the network, per region, much like a hub. This is a structuring project for the future.



30
referenced organisations
by the end of March
2023



The reuse fund,
a solidarity accelerator

Mathilde Maillard,
SSE Manager

Our aim is to provide our social and solidarity economy partners with quality appliances for repair and give them a second lease of life. We provide funding for the reuse activities of these organisations. We also provide funding for non-reusable appliances that are recycled. 2022 was a structuring year that saw not only the launch of the Reuse Fund, that we have been preparing for over two years, but also the creation of a referencing platform for SSE organisations wishing to be associated with this activity. Under this system we connect newly referenced organisations with partner retailers in accordance with the supply needs of each organisation and the equipment available in each appliance category. Following the platform's launch in April, 10 SSE organisations were referenced in October, and this

number should reach forty by the end of the first quarter of 2023. We also provide monitoring and support for all our partners because these represent major transformations for both retailers and associations who are required to declare appliances that have been handled. We optimise the allocation of appliances by asking certain retailers to sort the appliances that can be potentially reused from those that are too damaged and that are sent directly to a recycling centre. Today, new partners are regularly integrated into the system satisfying both the retailers involved and the SSE organisations.

Spotlight

Increasing the number of reusable appliances

To achieve the regulatory target of 2% of appliances that can be reused in relation to the number of appliances placed on the market in year N-1 by the end of our authority approval period, the quantity and quality of appliances intended for reuse both need to be increased. SSE organisations are partially supplied with appliances that can be reused by retailers who take-back old appliances from customers. However the number of "hubs" like the one near the town of Nice, needs to be increased in order to prepare and distribute reusable appliances according to the needs of each local area. Indeed, some French counties (départements) have too few SSE organisations in relation to the availability of appliances whereas others have numerous SSE organisations but where the number of appliances cannot satisfy demand.

In addition to activities that help increase reuse quantities, ecosystem has developed a home-collection solution, "jedonneuneelectromenager.fr" that enables the quality of appliances that are collected with care to be maintained. Appliances are then bulked together at transfer stations before being sent to SSE organisations.

2022 Results



jedonneuneelectromenager.fr



4,649
large household
appliances collected



1.37
products on average
per collection round



3,376
collected from the home



37%
reuse rate

2023 Goals



120,000
appliances collected
for a population of
13 million

Promoting access to jobs

In addition to the environmental benefits linked to the reuse of electrical and electronic equipment, the work carried out with the sector's stakeholders and those of the SSE creates long-lasting, non-relocatable jobs in France's regions and boosts access to inclusive jobs for persons in vulnerable situations nationwide.

Jobs in the EEE sector
(reuse and recycling)

14,495

jobs

6,862

full-time equivalent posts

2,100

persons with professional
integration contracts

including jobs in the SSE

3,076

jobs

(+30% compared to 2015)

1,818

full-time equivalent posts

700

Persons with professional
integration contracts



Innovation Challenge

Circular economy training

In 2022 in partnership with the École des Mines and Paris-Dauphine, ecosystem launched a "Circular Economy Certificate" for professionals that already work within companies to enable them to initiate a solid social economy process within their companies. This intensive 3-month course covers the project's stakes and challenges, processes, tools and its preparation. The amount of applications received at the launch of the 2022 training course meant that a full 2023 training course could be created, with a waiting list for the next session, and bears witness to the interest shown in the circular economy by companies.

AIDING TRANSITIONS IN SOCIETY

Our commitment

Accelerate changes in personal and professional behaviour in order to foster more environment-friendly consumption, production and management practices.



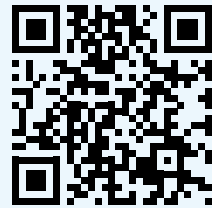
Raising the French population's awareness in repairing, donating, recycling good practice is one of ecosystem's main missions to support the ecological transition. More specifically, in a climate where vulnerability is on the increase the social and solidarity aspects of the second life of EEE, especially via donations and reuse, become crucial especially as some electrical and electronic items are essential items. Raising the awareness of individuals and professionals alike kept the ecosystem teams busy in 2022.

Having a better understanding of the circular economy, as young as possible

For the last ten years, ecosystem has headed an educational project to raise the awareness of school children from the ages of 6 to 11 on the importance of giving a second lease of life to electrical and electronic equipment and bulbs. This is the ecosystem challenge. Thanks to purpose-designed kits, teachers can organise educational and fun classes on donating, repairing and recycling through activities called "challenges" that correspond to the French national curriculum. They then validate their challenges on a special website. For every 1,000 challenges validated, an electricity provision mission by Electriciens sans Frontières association is financed. To reach out to teenagers and young adults, a complicated audience due to their relationship with the environment that is full of contradictions, ecosystem created its own TikTok account in 2022. The series "Appareils Story", specifically designed with them in mind, is an enjoyable saga whose style is suited to the way in which this group consume information. The results of this first year are very satisfactory and the next chapter of the saga is planned for 2023.



Flash this QR code to see the presentation of the Challenge



The Challenge's 2022 figures



4,500 classes

took part, from 6-11 year olds




3 projects

for the provision of electricity and access to water by Electriciens sans Frontières in Togo, Rwanda and Burkina-Faso


Raising awareness on donating in order to foster solidarity-focused reuse

For the last few years, making donations is losing ground; items that would have been previously donated are now being sold. This underlying trend disadvantages the solidarity and social aspects when equipment is given a second life. Therefore, ecosystem is boosting its awareness-raising work in order to incite the French population to donate their equipment. In 2022 we spotlighted the “jedonnemontelephone.fr” solution through radio and television sponsorship, before the Tour de France race, a flagship event for ecosystem in terms of rallying the general public. During the 2022 race, a team of twenty ambassadors toured with the Men’s Tour de France and the very first Women’s Tour de France, met spectators, provided support in the collection of old telephones for reuse purposes by the Social and Solidarity Economy sector and raised awareness on the importance of repairing, donating and recycling old electrical appliances.


2022 results




61
towns and local authorities participated in the 2022 major telephone collection operation for solidarity (both the Men’s and Women’s Tour de France)




23,400
telephones in total were collected: 8,900 by towns and local authorities



14,500
telephones collected on jedonnemontelephone.fr in the same time interval



28
associations provided with support



623
telephone collection points



In November 2022, the “Listen to your heart” initiative, launched way back in 2006, gathered together 63 local authority partners with 78 benefiting charities, including Emmaüs. The toys collected are repaired, donated or sold for a modest price in charity shops. Those that cannot be repaired are sent for recycling.

The extension of the “jedonnemonelectromenager.fr” operation that took place in one town in 2021 was rolled out to several new counties (départements) in 2022. Specific information was given to residents of towns concerned and a geolocalised awareness-raising campaign took place on the social networks. This local authority partnership will continue so that this solution can be rolled out to more densely populated urban areas in 2023, particularly in Paris and the Ile-de-France region with advertising in the metro, buses and in-shop collection points. This operation enables appliances in good condition to be collected and integrated into the solidarity-based reuse network.



Spotlight

Innovation and awareness raising

Claire Lemarchand
Communications Director

To more effectively raise the awareness of individuals and professionals alike, we are constantly on the lookout for new ways to do this in addition to those that have already been successfully tried and tested. This was the case for our TikTok initiative, designed to reach out to the young, and owed its success to an original format suited to this target audience. It was also the case for the first Convention on the Prevention of Fire Hazards (Asisses de la Prévention du Risque Incendie), organised by us, to raise sector stakeholder awareness and take action together to prevent these risks. To boost repair and meet the extended responsibilities that we now have, we counted on press relations when the repair fund was launched in November 2022. The media was very responsive and

interested in this issue that concerns both environmental protection and people’s spending power. Thanks to working groups and the interest shown by journalists, nearly 300 types of media coverage were recorded in November, including the major TV news programmes. The positive outcome of this was a rise in visits to both the QualitRepar directory available to the general public and the registration platform for repair operators wishing to be certified. In 2023 we are going to rethink our website, the main point of contact with all our stakeholders, to reflect further on our responsibilities in reuse, repair, recycle and about our contribution to the ecological and social transition.



Providing support sector transitions

The Convention for the Prevention of Fire Hazards caused by lithium-ion batteries, organised by ecosystem along with Ecologic, Screlec and Corepile and held in 2022, brought together the sector’s stakeholders: treatment centres (pollutant removal and recycling), logistic operators, public authorities, local authorities, manufacturers, insurance companies, fire-fighters, etc. Its purpose: to promote shared awareness and co-build an action plan in a context where fires started by lithium-ion batteries are on the rise and the frequency and intensity of heat waves is growing.

During this 2022 edition a film was made and screened during the Convention giving a voice to local operators who are the first to be affected by these fires. Short-listed for the 2023 Deauville Green Awards it shows the concrete consequences of these fires and enabled the real-life experiences and difficulties of local operating teams to be heard.

2022 results



120 participants

Flash this QRcode and find the “Appareils Story” saga published on TikTok and Instagram

2022 HIGHLIGHTS.

A look back at an eventful year



January

- ecosystem campaign for the recycling of household appliances on the Bon Coin



February

- “Bulbs” TV film
- The end of the OPERA project: logistics are now pooled and optimised among the 4 sectors



March

- 4 March: ecosystem’s authority approval is renewed to 2027 for household, professional equipment and lamps



April

- QualiRépar certification opened to repair operators
- The SSE stakeholder referencing platform goes live in order to benefit from the Redeployment/Reuse funds
- Radio campaign on recycling electrical appliances



May

- Request for proposals to create an industrial hot water tank treatment process in confined spaces



June

- 1st Convention on the Prevention of Fire Hazards (Assises sur la prévention du risque incendie) caused by lithium-ion batteries in the WEEE sector.



July

- For the 3rd year running, participation of ecosystem in the Tour de France



September

- Launch of the 10th ecosystem Challenge for school children between the ages of 6 and 11
- Household appliance recycling campaign (TV sponsored by the TV programmes: Meilleur Pâtissier, l’Amour est dans le pré, Scènes de ménage and Star Academy)



October

- “Bulbs” campaign poster



November

- The Mission Committee is held for the 1st time
- Beginning of the charity toy collection operation “Listen to your heart”



December

- 15: consumers can start to benefit from the Repair Bonus for 31 different appliances
- 22: ecosystem’s authority approval for small fire extinguishers is renewed to 2024



ACHIEVING OUR OBJECTIVES BY TRANSFORMING AND SUPPORTING THE WORKFORCE

• Marie-Agnès Lenquette
*ecosistem Human Resources
and Internal Communications Director*

2022 was a pivotal year that saw our hybrid in-office and remote working system become stable while still welcoming new employees. During the Covid period our teams proved that they were able to work effectively at a distance, including in project mode. This is why we finalised the remote working agreement established with representatives of our personnel, providing genuine flexibility for our employees (up to ten days of remote working per month and three per week).

In 2022, we also recruited more than 26 employees, a significant number for us especially as the posts are in very different professional domains, some of which are new professions for ecosystem related, for example, to the Repair and Reuse Funds. This growth phase will continue and we are working on our employee brand. In 2022 we created pages on LinkedIn and Welcome to the Jungle to increase our visibility and our community of followers, a determining factor in a tight labour market especially in terms of management jobs.

Even if we are generally very proactive in training because the business, technology and regulations-related knowledge of our employees needs to be continually updated, the new employees who joined us in 2022

also needed to be trained because there are very few people on the labour market who can manage our complex activities. We therefore supported those who wanted to take up the challenge! We are also rolling a 3-day internal training courses in project management for all employees.

In all companies, managing the workforce is essential in order for individual and global goals to be achieved but this is certainly even more the case here at ecosystem, where added-value is first and foremost human. We therefore organised a major company-wide seminar for our employees in September 2022 to share the challenges set by our new authority approval and to prepare ourselves for the new challenges to be faced in our circular economy-focused company project.

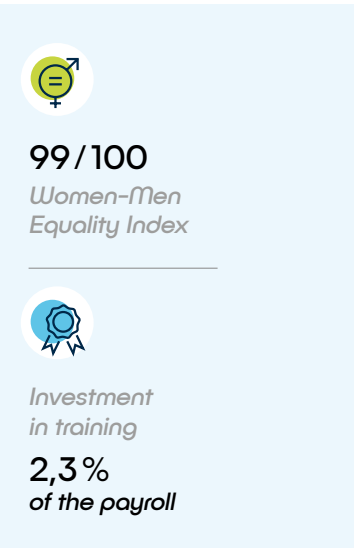
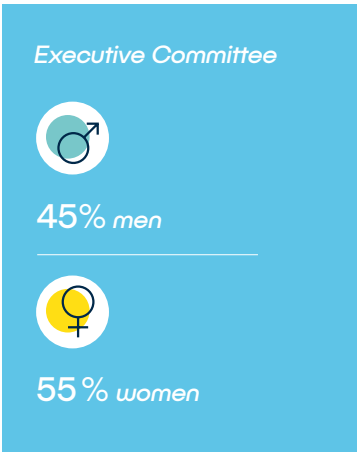
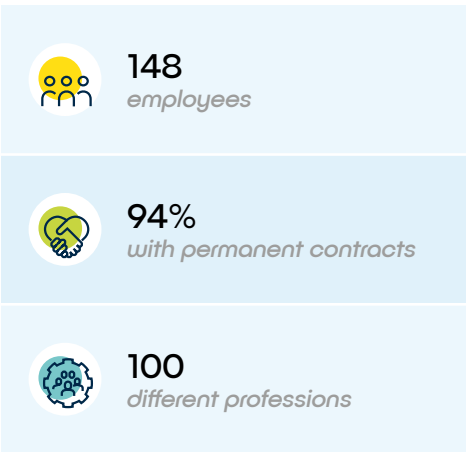
In regards to our purpose as a company, we are lucky to be able to benefit from a workforce that is conscientious and proud of our meaningful work. We also watch out for each other's well-being in terms of personal time, work organisation, etc. We regularly provide our employees with information on projects and the latest company news during internal information meetings held throughout the year. Major social teambuilding events are also organised to create and boost working rela-

tions. In June 2022, during Work Life Quality Week we also organised awareness-raising workshops on, for example, optimism at work or on good email management practices for an efficient organisation.

This year, we are proud to have successfully completed ongoing projects and have started to transform the workforce so that it can take on new projects, can welcome new talents, can widen our horizons, can share a solid strategy and our journey towards 2030. Our teams are now ready to manage the future.

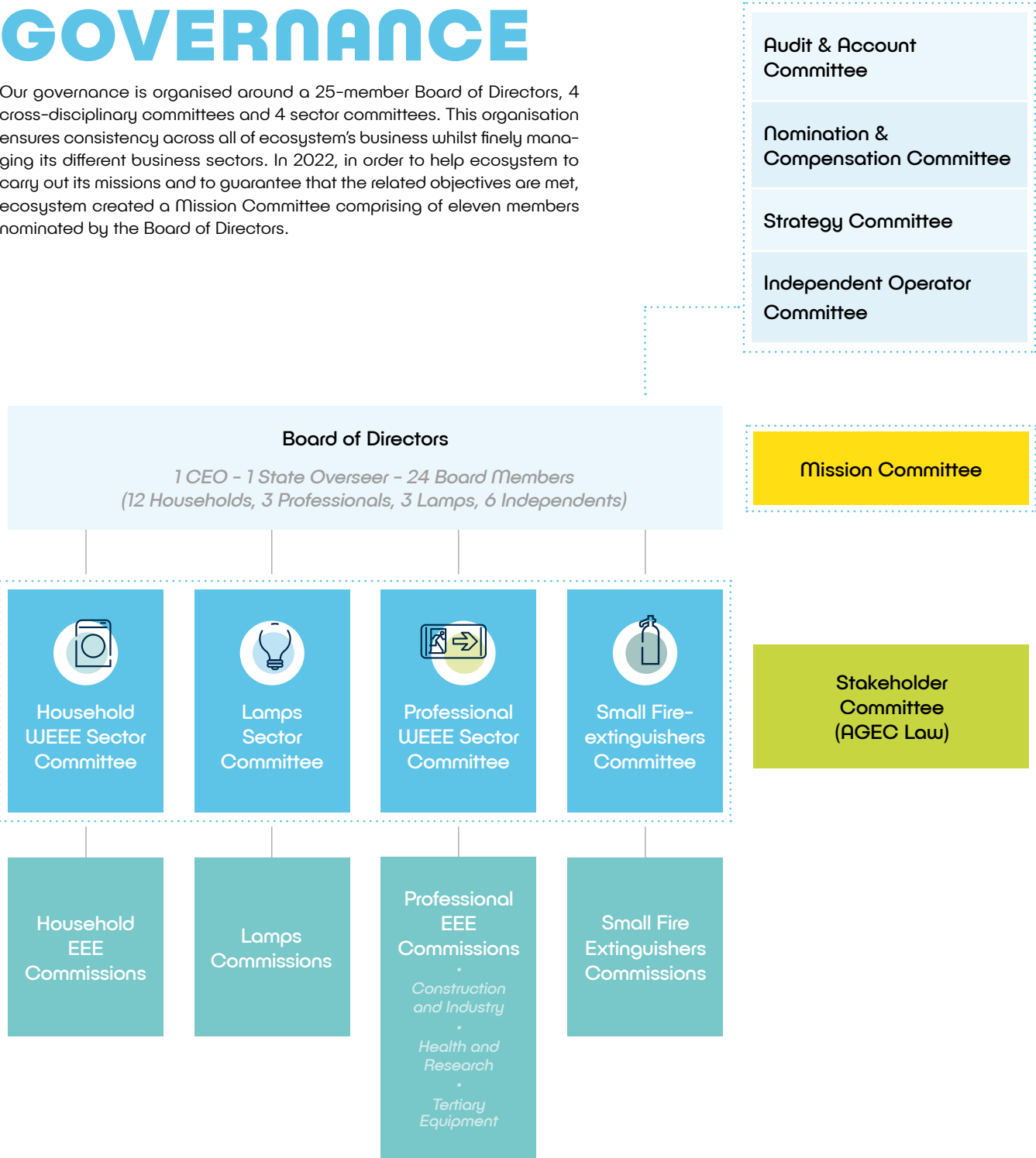


2022 social results



OUR GOVERNANCE

Our governance is organised around a 25-member Board of Directors, 4 cross-disciplinary committees and 4 sector committees. This organisation ensures consistency across all of ecosystem's business whilst finely managing its different business sectors. In 2022, in order to help ecosystem to carry out its missions and to guarantee that the related objectives are met, ecosystem created a Mission Committee comprising of eleven members nominated by the Board of Directors.



2022 KEY FIGURES

Producer members



5,301
membership contracts

2,596
Household EEE

782
Lamps

1,899
Professional EEE

24
Small fire extinguishers



272.5 million euros
net eco-fees paid

€238,983k
Household EEE

€14,326k
Lamps

€18,405k
Professional EEE

€786k
Small fire extinguishers

Breakdown (at 30 March 2023)



1,189
QualiRépar sites

4,500
technicians

2,150
mobile technicians

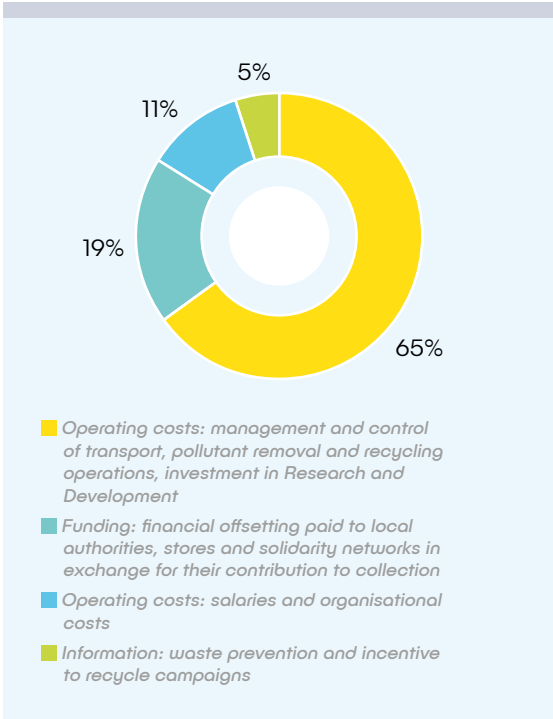


18,685
repairs having benefited from the Bonus

450,170
euros paid

€24
average amount per bonus

Eco-fee breakdown



Reuse



252
Social and Solidarity Economy Organisations funded

9,464
tonnes reused

498,272
appliances reused

€7.35
million of funding paid

Collection



697, 413
tonnes collected

625,563
Household WEEE

4,608
Lamps

66,854
Professional WEEE

388
Small fire
extinguishers

Active collection points



29,905
active collection points

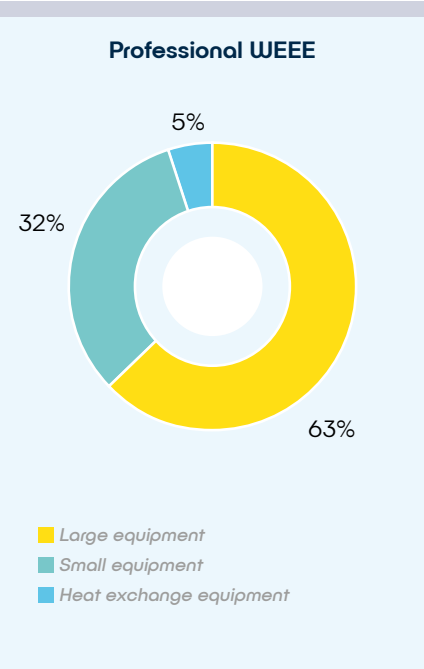
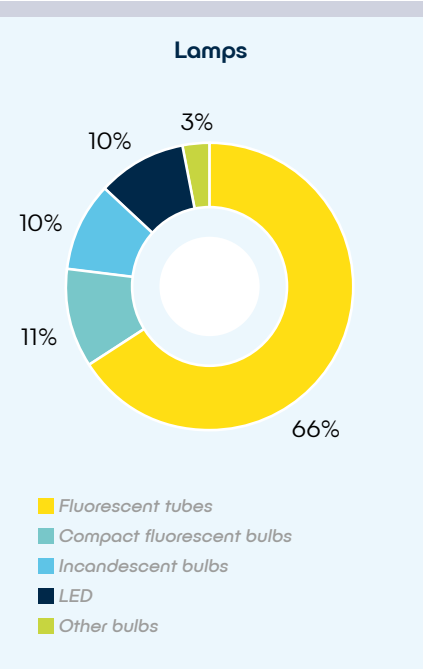
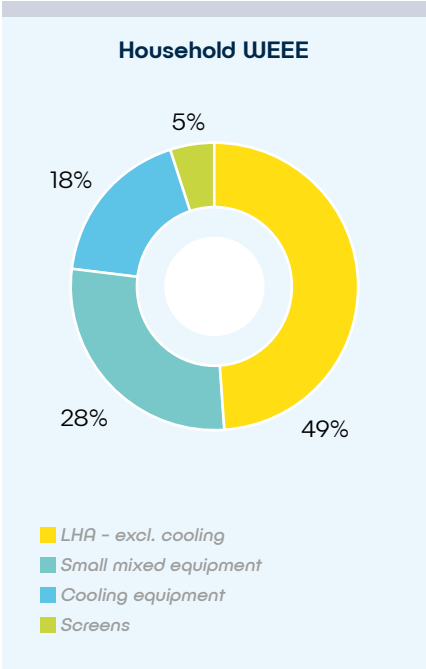
11,909
Household WEEE

12,980
Lamps

4,792
Professional WEEE

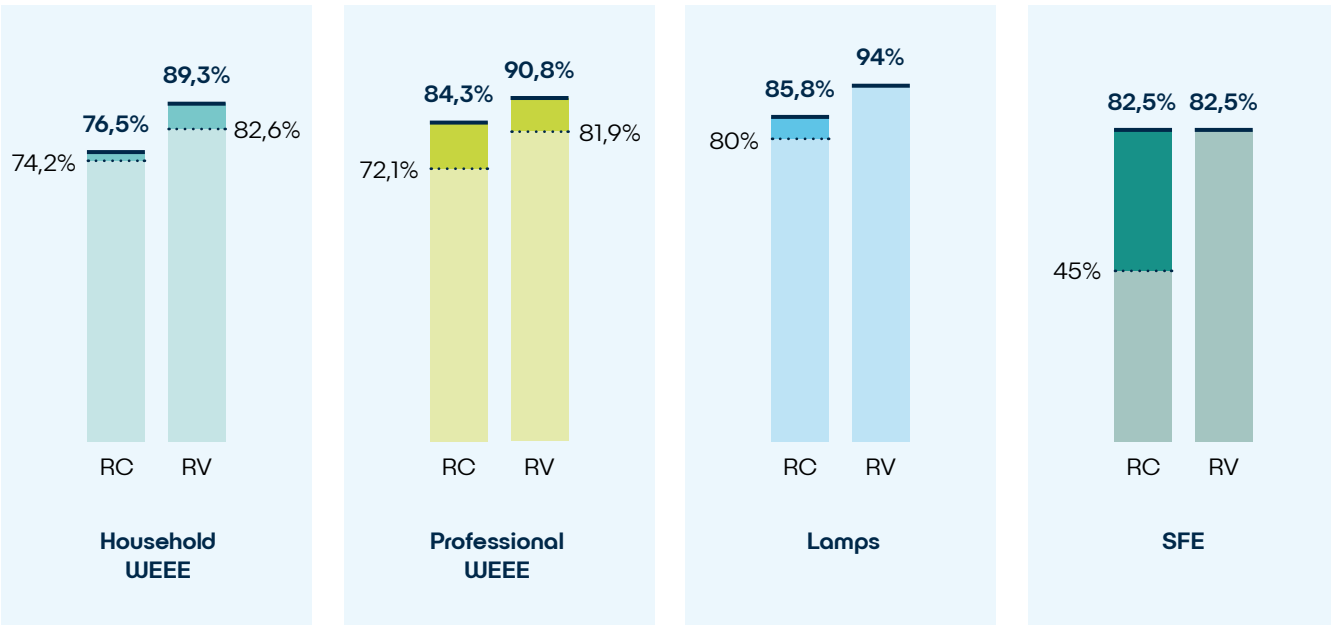
224
Small fire
extinguishers

Breakdown of collection per stream

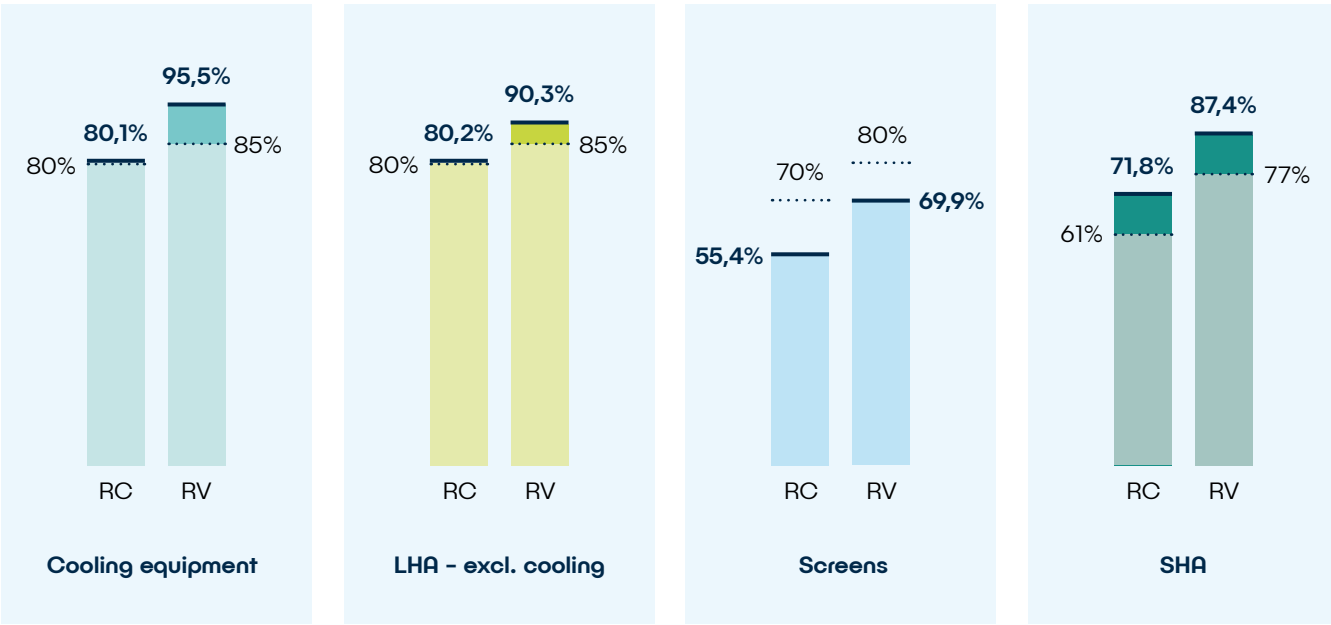


Recycling

2022 recycling and recovery rates per sector






2022 recycling and recovery rates for Household WEEE per stream



In regard to the glass from cathode ray tubes, there are currently no suitable treatment centres in France. In Europe suitable treatment centres exist for sorting and recycling the different types of glass (containing barium or lead) but exporting these is prohibited.

Mass balance per sector, in tonnes

 Recycled materials	 Other recovered materials (energy recovery, insulation products, etc.)	 Materials disposed of in special treatment facilities
465,737 <i>Household WEEE</i>	77,589 <i>Household WEEE</i>	64,954 <i>Household WEEE</i>
3,692 <i>Lamps</i>	353 <i>Lamps</i>	259 <i>Lamps</i>
52,960 <i>Professional WEEE</i>	4,092 <i>Professional WEEE</i>	5,885 <i>Professional WEEE</i>
275 <i>Small fire extinguishers</i>	– <i>Small fire extinguishers</i>	58 <i>Small fire extinguishers</i>
<i>Total</i> 522,664	<i>Total</i> 82,034	<i>Total</i> 71,156

Environmental assessment of ecosystem’s activities

In 2022, collection, pollutant removal and recycling enabled the following:

Combating global warming	517,905 tonnes of CO ₂ emissions to be avoided, i.e. the equivalent of 4,665,811,033 km travelled by car (4,661,150 journeys from Lille to Marseille).	1,273,620 tonnes of CO ₂ emissions to be deleted, i.e. the equivalent of CO ₂ absorbed by 106,135,025 trees in a year.
Combating the depletion of natural resources	to save 3,754,829 tonnes of raw materials, i.e. the equivalent of mineral resources required to produce 9,357,077 of IT equipment.	to save 1,717,167,025 KWh, i.e. the equivalent to the energy consumption of 372,363 people in France for heating for a year.
Combating other forms of pollution	to delete the equivalent 220,520 kg tonnes of gas responsible for the depletion of the ozone layer to be removed (CFC-11 equivalent).	to avoid the emission of molecules responsible for peaks in ozone pollution, equivalent to those released by 4,032,184 cars per year.
		to avoid the emission of molecules which would have generated the equivalent of one year's worth of acid rain on a surface area of 556,495,261 m ² .





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Design/creation/editing
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Printing company Sprint, Imprim'vert
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