



TOGETHER WE CLOSE THE LOOP

Annual Report 2019

annualreport.recupel.be



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THE CIRCULAR ECONOMY

Our impacts and results

HUB IN THE CIRCULAR ECONOMY

The economy of the future is circular, and Recupel wants to accelerate this transition.

One of the fundamental principles of the circular economy is not seeing broken products as waste but as a source of raw materials that we can reuse. But it is about much more than just recycling.

The circular approach starts at the source, such as smart design so that products will last longer, are easier to recycle, and have reusable components. By investing in artificial intelligence now, Recupel is taking concrete steps towards playing a pioneering role in the circular economy of the future.

DISCOVER HOW ARTIFICIAL INTELLIGENCE HELPS TO CLOSE THE LOOPS

Three reasons to switch to a circular economy

1 Recycle valuable materials

Our primary raw materials will not last forever. Furthermore, the world's population is growing, putting further pressure on our natural reserves. So, the message is to put as many materials back into circulation as possible. And that is possible because **at Recupel we already reuse some 90 % of the materials from the appliances we collect.**



2 Climate change

We need a lot of energy to extract and transport raw materials, and then process them into products, meaning a lot of CO₂ emissions. By closing the loops and **focusing on urban mining,** we can also stop climate change.

3 Local economy

The circular economy also boosts local employment. Workers are needed to repair, sort, transport, and process end-of-life goods. Recupel only works with certified processors, which are almost all located in Belgium. Furthermore, the circular economy offers many opportunities for social employment. **Through its extensive network, Recupel has created 1,119 indirect jobs, 414 of which in Belgium's sheltered workshops.**



E-WASTE AS A NEW RAW MATERIALS MINE

Our impact and results

E-WASTE: THE MINE OF THE FUTURE

Did you know that your smartphone consists of 40 different elements that can be reused? Processors can extract valuable materials such as gold, cobalt and copper from end-of-life mobile phones and other electronic devices. At Recupel, we want to convince everyone to get rid of their old devices, as this will have a positive impact on our environment and society.

Most of us will have broken or unused devices gathering dust at home. There are an estimated 46 million of them, all of which contain components and materials that can be reused. If we were to collect all of these phones, we would create our own urban mine in Belgium.



© Umicore

Four reasons for urban mining



Fewer reserves, more people

Experts agree that our **raw material reserves are dwindling**. The mines are being depleted, yet the demand for precious metals, indium, lead, etc., is not decreasing. To keep up with this growing demand, we need as many materials from end-of-life devices as possible.

Cheaper

Some metals can now be produced more cheaply through urban mining than conventional mining. Already, urban mining is costing much less energy per kilo of metal produced than primary production.



Monopoly and conflict minerals

Electrical and electronic equipment contains cobalt, palladium and rare earth metals. Europe regards these materials as 'critical'. There are two reasons for this:

- We are entirely dependent on countries that have the largest reserves.
- Sometimes the ores come from countries where there are conflicts, such as the Democratic Republic of Congo.

Preventing e-waste dumping

Sometimes, old devices disappear abroad through illegal channels and are dumped in enormous landfills. Young children remove the metals from the garbage and sell them to earn some money. This is dangerous, as electronic appliances contain hazardous materials that must be disposed of correctly. Some countries, such as China, have already banned waste imports from abroad. To cut off these channels entirely, urban mining in our own countries must become the norm.



Still not convinced? Then check our impressive figures:

90k^{ton}

In 2019, 90,000 tonnes of recycled raw materials were used for the production of new devices.

48k^{ton}

Ferrous metals, such as iron, are 100 % recyclable. In 2019, 48,000 tonnes of recycled ferrous metals were reused.

50k

Recycling 50,000 of mobile phones =

- 158 tonnes less CO₂
- 6,300 tonnes less toxic waste

50x

The concentration of valuable metals and minerals in electronic waste is up to 50 times higher than in the ores from mines.

“The proportion of electrical and electronic waste in the waste stream is growing, despite the opportunities to collect and recycle it correctly. E-waste and mobile phones in particular contain valuable, scarce materials. These materials can be recovered and recycled in a sustainable way using high-tech recycling processes, such as at Umicore in Hoboken. They can then be reused in the production of new devices or new applications such as clean mobility. Recycling has enormous advantages for the environment, economy, employment, and technology. Together, these advantages are the perfect stimulus to redouble efforts in terms of collection and recycling of e-waste for a sustainable future.”

Thierry Van Kerckhoven, Head of Supply Recyclables,
Umicore Precious Metals Refining

ACTIONS TO INCREASE OUR IMPACT

Our impact and results

“As far as I know, no other countries are using artificial intelligence to analyse e-waste”

AUTOMATIC RECOGNITION OF E-WASTE WITH ARTIFICIAL INTELLIGENCE

Analysing samples of transported e-waste is time-consuming. We hope that artificial intelligence can take over this task in the future. This will not only make the work quicker but will also help to close the loops.

Since 2018, Recupel has been collaborating with IDLab, an imec research group at the University of Antwerp, on a method to automate e-waste sampling. **Lorenzo Glorie** of Recupel explains how this works: “We carry out regular random checks to be able to calculate the contributions that manufacturers must pay for the transport and processing of electronic appliances. Laptops, mobile phones, radios, DVD players, and so on are collected in recycling parks. To be able to carry out proper random checks, you need to analyse a lot of appliances. As this is a time-consuming process, we want to automate the sampling.”

Self-learning algorithm

“Employees at sheltered workshops that carry out the analyses take appliances from a skip or pallet and place them on the scales. At the same time, six cameras take photos which are uploaded to a software programme. The self-learning algorithm uses these photographs to determine the type of appliance by cross-checking with a database containing hundreds of thousands of photos. The employee of this or another sheltered workshop will then check whether the algorithm has made the right choice.”

“The algorithm is already working well, but it still has a lot to learn. If it can be made to work flawlessly, we want to use it on a large scale in the future. That does not mean we would no longer need the sheltered workshops as the appliances would still have to be placed on and removed from the scales. This cannot be automated since the appliances often have cables that can get caught up.”

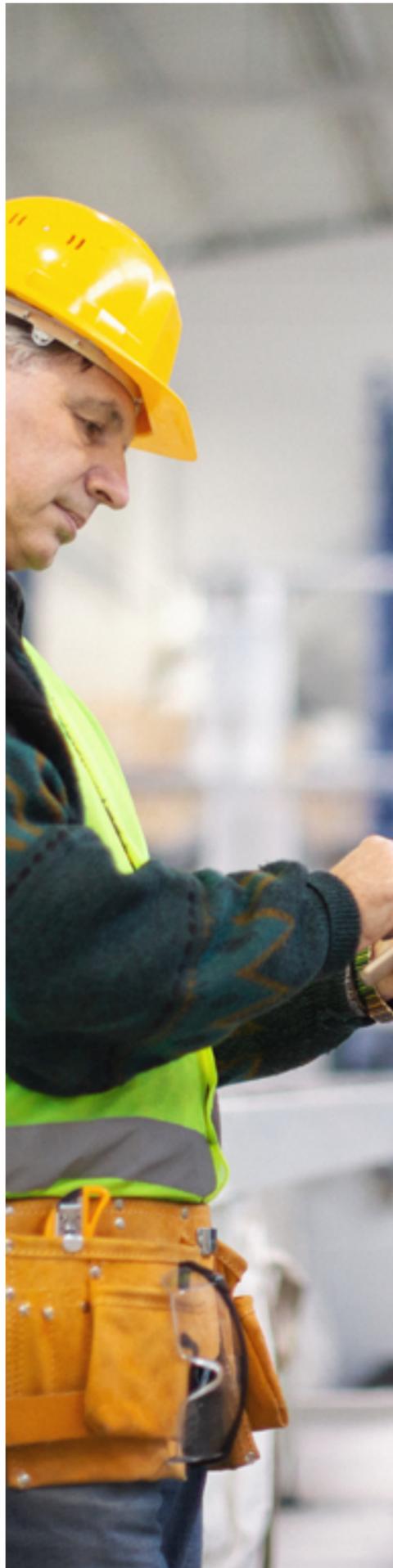
QR Code

“Eventually, artificial intelligence can be used in recycling firms, for instance, to identify appliances that contain valuable materials. We can then sort these even more accurately.”

“We are also looking at whether we can teach the algorithm to recognise the brand of an appliance using a QR code or a brand logo. We want to develop a database containing all the information about a product such as its year of manufacture and whether it is a hazardous product. This will give us a more complete picture of what appliances are being discarded. We can then share this information with manufacturers, who want information about how many of their appliances are collected every year and how long they were used for. They too have to look for ways to make their products more sustainable, not only because it is an EU requirement but also because consumers are demanding it. They can use this information to improve their designs or choose materials that extend the service life of their products. So this is another way that artificial intelligence can close the loops.”

First for e-waste

“The technology that we are using is certainly not new. Artificial intelligence is already used in biology and agriculture. For example, scientists in Sweden have taught a device to recognise various species of fish. The same technology is used to sort batteries. But as far as I know, no other countries are using artificial intelligence to analyse e-waste, so what we are doing is pioneering. In the future, we would like to collaborate with other countries to automate their sampling systems as well. This means that we not only help them but at the same time, also improve our database so that the algorithm can learn even faster.”



BeWeee tool: Quick and easy reporting for everyone

The EU objective is for 65 % of the average weight of electrical and electronic equipment that had been placed on the Belgian market in the preceding three years to be collected. Belgium has not achieved this yet, as e-waste too often remains under the radar. According to a study by Deloitte, 30 % of the electrical and electronic equipment placed on the Belgian market is currently untraceable.

That is why all the various actors in the chain must disclose precisely how much e-waste they place on the market, collect, and the volumes they process or repurpose. However, not everyone is reporting this information to Recupel, so we have no guarantees that all equipment is being processed correctly. Reporting is crucial if we want to determine how far we are from reaching the European collection target. Correct and complete results are also necessary to achieve the collection percentages that the EU has set for its Member States.

65,000 tonnes missing

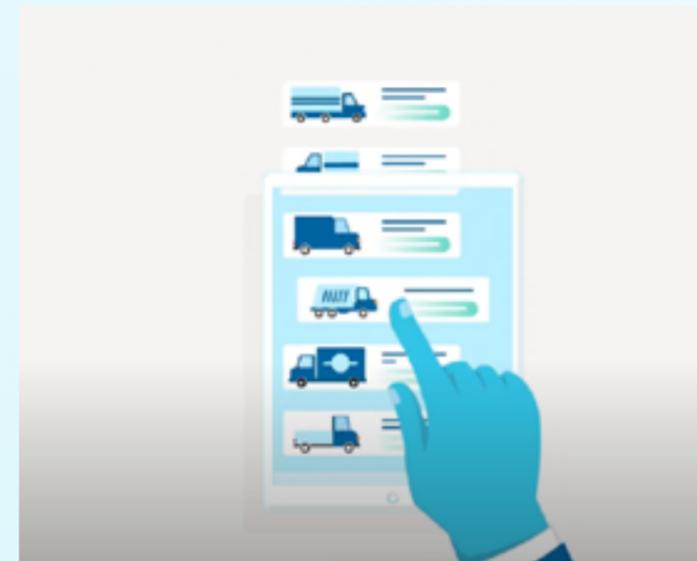
In 2018, together with seven partners (non-profit organisations), we developed the **BeWeee tool**, which is a simple reporting tool for companies. The data collected does not come to us but is sent directly to the Flemish, Walloon and Brussels governments.

In 2018, this tool was used to report around 20,000 tonnes. This is three times more than in 2017 when 6,662 tonnes were reported via BeWeee. However, this is still not enough to achieve the collection objectives that the EU has set. To do so, some 85,000 tonnes of e-waste should be reported via the BeWeee tool, which is 65,000 tonnes more than is currently the case. That may sound like a large increase, but it is possible if all players meet their obligations and report correctly. In 2018, only 25 % of the companies that do not report to Recupel used the BeWeee tool. So, in the coming years, there is plenty of room for growth, which makes us optimistic.

Smartloop: Digital marketplace for end-of-life electrical and electronic equipment

Old or broken appliances have been piling up in businesses, schools, and healthcare institutions. In 2019, Recupel launched a digital marketplace for end-of-life electrical and electronic equipment to ensure that these appliances can also be collected and recycled.

It is estimated that an average organisation will have 200 kilograms of unused PCs, fridges, coffee machines, and other electrical and electronic equipment somewhere in its storage spaces. Although these can be repaired or recycled, organisations are often put off by the administrative and logistical hassle involved.



Approved collectors

That is why we launched the **digital marketplace Smartloop**. Companies and organisations can offer their old electronic appliances, whether broken or still working, to approved collectors. Between them, they agree on the price and the time and location of the collection. This is the quickest way to ensure proper processing.

The tool also benefits the approved collectors as they gain access to additional e-waste that would otherwise have stayed under the radar. Moreover, they get new customers. So it's a win-win situation for both parties and the circular economy, with more appliances being processed properly.

ACTIONS TO INCREASE OUR IMPACT

Our impact and results

Tackling leakage: The hunt for the 'Missing Fridges'

Every year, over 200,000 end-of-life fridges and freezers are not collected by certified processors. If those appliances are not processed properly, harmful substances may be released. In 2019, we set up an extensive awareness campaign for consumers and businesses. And it was a success!

Fridges and freezers contain harmful refrigerants and blowing agents. If these are not removed carefully, they may be released into the atmosphere, which is dangerous as they deplete the ozone layer and contribute to global warming. As a comparison: one incorrectly processed fridge emits the same amount of CO₂ as a car driving 7,500km. For 226,524 'missing' fridges that means CO₂ emissions equal to driving 1,698,930,000 kilometres in a diesel car, which is no less than 42,394 times around the world.

Furthermore, fridges contain very valuable materials, such as copper. At Recupel, we can recycle 98 % of the materials in fridges using innovative recycling techniques. So, fridges are important urban mines.



Quality label and tracking

To persuade electrical and electronics goods retailers and kitchen fitters to collaborate with us, we launched the 'We recycle properly' quality label. This label identifies traders with which consumers can safely leave their old fridges.

We also came up with a 'track & win' competition to test the recycling circuit: anyone with an end-of-life fridge could register it on the website vermistekoelkasten.be. A tracker was then installed in the fridge to follow its entire journey, from collection to processing. Steps could be taken if it turned out that fridges ended up with parties without the required permits.

More refrigerators collected

The collection figures show that the campaign has not missed its effect. In 2018 there were approximately 226 524 missing fridges, in 2019 there are still about 190 000 missing fridges.

The collection results of cooling and freezing appliances are on the rise: in 2019 Recupel and its partners collected 9% more appliances. Meanwhile, 249 kitchen builders and electro dealers signed the Recupel quality pact. In total, this represents 630 points of sales.

“A few years ago, the concept of the circular economy was still relatively unknown among the general public in this country. That is changing. During the Hunt for Raw Materials workshops, our education staff tell secondary school students the circular story of raw materials instead of a linear waste story. Thanks to the interactive game format, and by letting the youngsters use their smartphones, they really get into it.”

Peter Hulpiau, GoodPlanet

Light-hearted campaigns to persuade consumers

Everyone can contribute to the circular economy, including consumers. That is why, every year, we run light-hearted campaigns to persuade people to take their old or broken devices to Recupel collection points. We then give these appliances a second life.



Hidden gems

In 2018, Belgians brought no less than 9,633,793 light bulbs and fittings to Recupel collection points. To show our thanks, we launched the 'Verborgen Parels' ('Hidden Gems') campaign that offered everyone the opportunity to nominate a hidden gem. In total, we put 10 beautiful but underrated places in Belgium in the spotlight. Discover them at verborgenparels.recupel.be.

Café Recupel

Since 2016, we have been running Café Recupel to encourage people to drop off their old electrical and electronic equipment for reuse or recycling. The principle is simple: bring one or more old appliances to our pop-up café, and you will be treated to a bowl of soup, a fresh juice or a local beer. Visitors are also given more information about the importance of reusing and recycling electrical and electronic equipment. In 2019, Café Recupel opened its doors in Ghent, Brussels and Louvain-la-Neuve.



Phone funeral

It is estimated that in Belgium, there are 3.2 million mobile phones discarded in drawers and cupboards. This is a real waste because highly valuable material can be extracted from them. But mobiles often contain memories and photos, so it is difficult for some people, especially young people, to say goodbye to them. To make this process easier, we organised a fun funeral. Led by master of ceremonies Bert Kruismans, several people, including some influencers, gave their precious phones a fitting send-off.

Hunt for Raw Materials

Together with GoodPlanet (an organisation that delivers workshops and campaigns about sustainable development), we came up with an interactive game for young people aged 14-18 in secondary education. The 'Hunt for Raw Materials' ('Grondstoffenjacht') shows players where electrical and electronic appliances are made, what materials they contain, and why it is essential to bring broken appliances to collection points. They also learn about the concepts 'circular economy' and 'urban mining' during the workshop because, after all, it is best to "catch them young".



Recupel organises the workshops in conjunction with GoodPlanet.

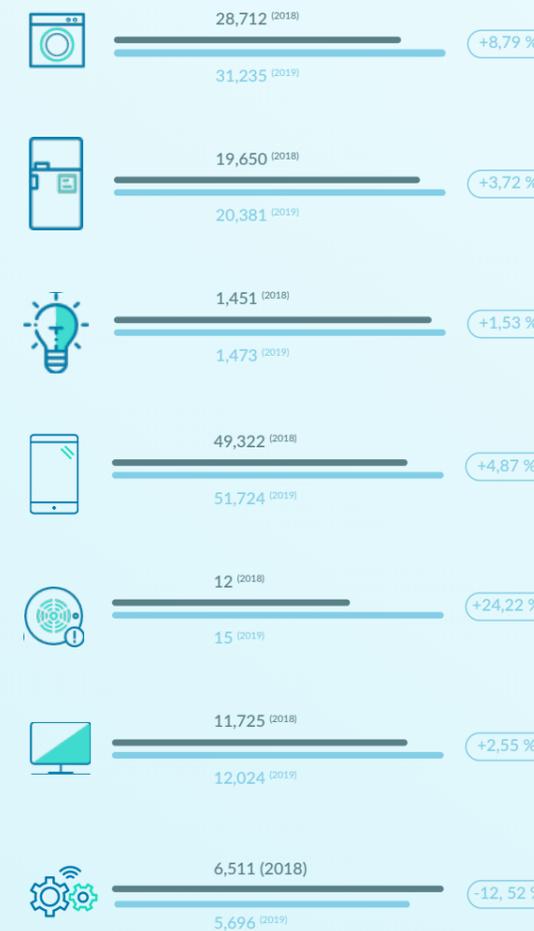
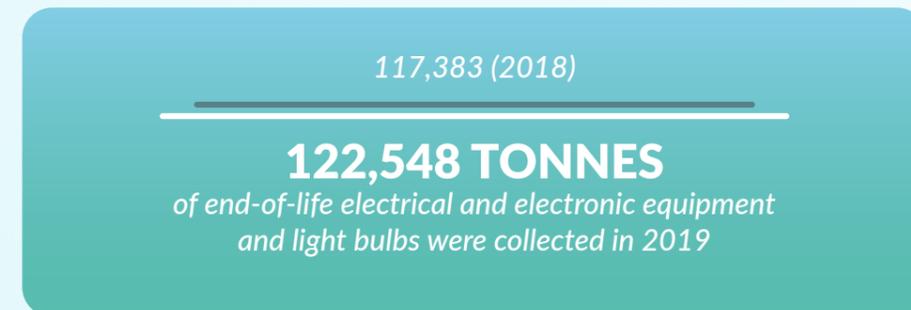
COLLECTION RESULTS

Our impact and results

Record numbers of electrical and electronic equipment and light bulbs collected

In 2019, a record number of electrical and electronic equipment and light bulbs were collected. Our awareness-raising campaigns and investments in the collection network are clearly paying off.

The volumes (in tonnes) per category are as follows:



44 million appliances

Not only the total weight increased, but also the number of appliances collected. In 2019, Belgians discarded a total of 44 million appliances.

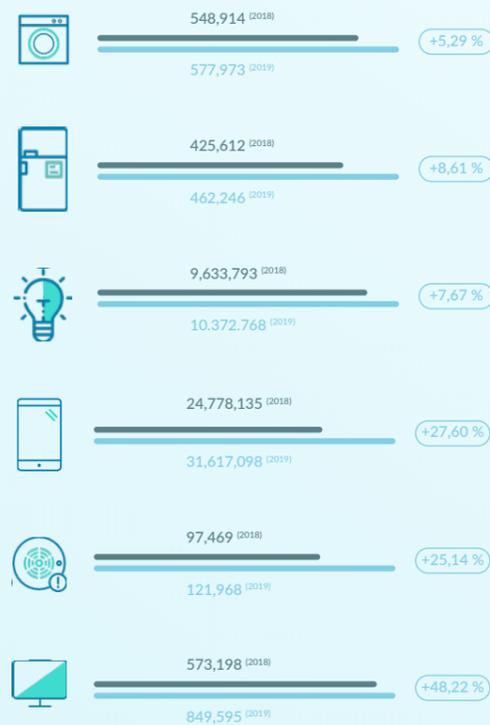
36,057,121 ⁽²⁰¹⁸⁾

44,001,648 APPLIANCES

collected in 2019

This is an increase of 22.03%

Per category (in units), the numbers are as follows:



Especially striking is the substantial increase in small electrical and electronic equipment in the 'other' category. The number of mobile phones, computers, and electric toothbrushes rose by 27.6 %: from 24 million appliances in 2018 to 31 million in 2019. The number of fridges and freezers also increased, namely by 8.61 %. Together with our partners, we collected 7.7 % more light bulbs in 2019. That means that for the first time, we collected more than 10 million light bulbs and fittings.

All these results show that our awareness-raising campaigns about the collection of mobiles, fridges, and light bulbs are having an effect.

[DISCOVER THE 2019 CAMPAIGNS](#)

COLLECTION CHANNELS

Recupel's collection points are also becoming increasingly popular. We collected 8,65 % more e-waste via the retail sector. This came from the one-for-one take-back obligation (leave your old appliance in the store before you buy a new, similar appliance) and the RecyclePoints for small electrical and electronic appliances in supermarkets, DIY stores, etc.

	2019	2018	Evolution
Recupel collection points in shops	28,462 tonnes	26,197 tonnes	+8,65 %
Recycling park	63,919 tonnes	60,898 tonnes	+4,96 %
Second-hand shops	8,890 tonnes	8,747 tonnes	+1,63 %
Charter partners	15,582 tonnes	15,030 tonnes	+3,67 %

[GO TO THE COLLECTION NETWORK](#)

EUROPEAN COLLECTION OBJECTIVES NOT MET

The collection figures are breaking records, but Recupel and its partners are not the only organisations in Belgium collecting and processing e-waste. It is not known how many end-of-life appliances the other actors on the market are collecting and processing. This is one of the reasons why Belgium, like almost all other Member States, has fallen short of Europe's collection objectives. The EU stipulated that by 2019, all Member States have to collect at least 65 % of the average weight of what had been placed on the market in the preceding three years or 85 % of what was discarded.

Recupel and its partners are doing all they can to achieve these objectives by, among other things, raising awareness, further expanding the collection network, and working closely with other partners in the network. Moreover, correct reporting is crucial. In 2018, we developed the **BeWeee-tool** together with seven partner organisations to provide all actors with a simple reporting tool. In the same year, 20,000 tonnes of e-waste was reported with this tool. Furthermore, we are working hard to find the electrical and electronic appliances that have escaped us and are often not processed properly.

Our 'Missing Fridges' campaign is an excellent illustration of that!

[GO TO THE BEWEEE TOOL](#)

[GO TO THE 'MISSING FRIDGES'](#)

PROCESSING RESULTS

Our impact and results

PROCESSING RESULTS

90 % of e-waste put to good use

Recupel works exclusively with certified e-waste processors. This means that we can guarantee that the appliances we collect are recycled correctly and that raw materials are wasted as little as possible.

Some 90.6 % of the e-waste that cannot be repaired is put to good use. The certified processors we work with recycle on average 79.3 % of the waste and incinerate about 10.7 %. The heat generated is recovered and used as an energy or heat source.

PER CATEGORY, THE RESULTS ARE AS FOLLOWS:

PROCESSING RESULTS	FERROUS MATERIALS	NON-FERROUS MATERIALS	PLASTICS	OTHER MATERIALS	CATEGORY RESULTS	LEGAL OBJECTIVE
LARGE WHITE GOODS (for example washing machines)	100 %	100 %	95.85 %	62.34 %	90.11 %	85 %
FRIDGES (freezers)	100 %	100 %	99.44 %	95.70 %	99.56 %	85 %
LIGHT BULBS	100 %	98.74 %	100 %	95.36 %	95.62 %	80 %
OTHER (for example mobile phones)	99.97 %	99.98 %	92.97 %	61.05 %	89.54 %	80 %
TVM (televisions and monitors)	100 %	100 %	95.58 %	64.68 %	80.39 %	80 %
RESULTS PER MATERIAL STREAM	99.99 %	99.98 %	95.47 %	65.71 %		
LEGAL OBJECTIVES	95 %	95 %	80 %			

For years, our recycling results have far exceeded the legal objectives set by the EU. And we are raising the bar even higher. At Recupel, for example, we are investigating how we can use artificial intelligence to further close the loops.

[GO TO THE COLLECTION NETWORK](#)

Collection network

543

543 RECYCLING PARKS

The recycling parks remain the driving forces of our e-waste collection. Our network has no less than 543 recycling parks spread across the country.



8,093

8,093 COLLECTION POINTS IN SHOPS

Shops that sell electrical and electronic appliances are legally obliged to take back the old, comparable appliances from their customers for processing. Retailers can register as collection points. Our network now has 4,862 collection points in the distribution sector, which is 223 more than in 2018.

For small electrical goods, we have a solution tailored for consumers: the RecyclePoint. In 2019, we added no less than 616 RecyclePoints to our network, bringing the total number to 3,231.



25

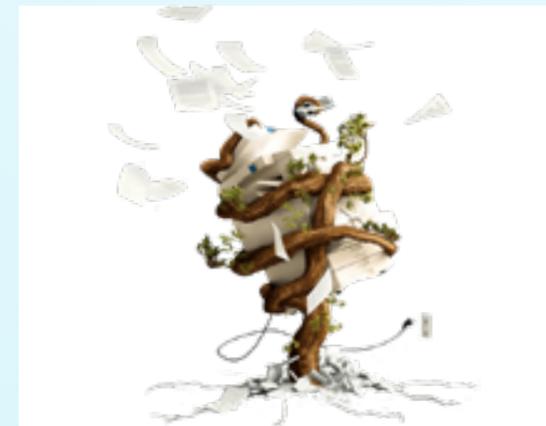
25 REUSE CENTRES

Unwanted appliances that are still working are sent to reuse centres. In Belgium, Recupel works together with 25 of these centres. They make the necessary repairs and prepare appliances for reuse. These appliances are then taken to one of the many second-hand shops, where they can start a second life.

91

91 CHARTER COLLECTORS
OR CHARTER RECYCLERS

To ensure the correct disposal of old electric and electronic appliances, businesses can work directly with Recupel's charter collectors or charter recyclers. There are now 91 partners in our network.



SMARTLOOP

In 2019, we launched a brand new collection channel for businesses: Smartloop. It is fully digital, quick and simple!

[Read all about it here.](#)

HIGHLIGHTS 2019

The broader picture



**122,548
TON**

of end-of-life electrical and electronic equipment and light bulbs collected in 2019

COLLECTION RESULTS



**90 %
E-WASTE**

e-waste put to good use

PROCESSING RESULTS



SMARTLOOP

digital marketplace for end-of-life electrical and electronic equipment in the workplace

OUR IMPACT



LARGE-SCALE HUNT FOR MISSING FRIDGES

missing fridges

OUR IMPACT



Recupel and Bert Kruismans organise

PHONE FUNERAL

OUR IMPACT

PROJECT AROUND ARTIFICIAL INTELLIGENCE AT FULL SPEED

actions to increase our impact

OUR IMPACT



INTERVIEW WITH THE CHAIRMAN

The broader picture

Bruno Vermoesen: “We want to make a difference in every stage of the circular economy”

For Recupel, 2019 was a record year in terms of collecting e-waste. “We are reaping the rewards of the efforts we made in recent years,” says Bruno Vermoesen, Chairman of the Board of Directors. “But we remain ambitious: Recupel must become a hub in the circular economy.”



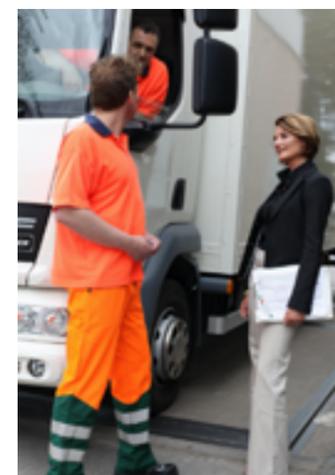
Are you satisfied with 2019's results?

Last year, Recupel collected a record amount of e-waste. No less than 122,548 tonnes were dropped off at RecyclePoints, recycling parks, or one of our partners. That is an increase of 4.4 % compared to 2018. I am satisfied that the substantial investments in the collection network and communication campaigns are having an effect.”

Nevertheless, at a national level, there is still work to be done. After all, Recupel is not the only organisation in Belgium that collects e-waste. Belgium, like many other Member States, is still not meeting the collection target of the European Directive [which stipulated that by 2019, all Member States have to collect at least 65 % of the average weight of what had been placed on the market in the preceding three years or 85 % of what was discarded]. In this regard, we must all shift up a gear.”

We are achieving the targets for recycling and useful applications.

That's right. Indeed, at Recupel, we have been well above the European average for years. This is because we only work with certified processors that have a WEEELABEX certificate or equivalent, which means that they must respect the minimum targets. But this is not the case for many collectors and processors. We are therefore calling on the EU to introduce the targets for everyone.”



Reporting must increase

How can Belgium increase its collection figures?

There are still too many old or broken appliances left in cupboards or simply thrown in the bin. That's why, year after year, we continue to invest in awareness-raising campaigns to persuade consumers to bring their appliances to Recupel collection points. Besides, some appliances end up in the hands of collectors and processors that are bending the rules. This issue can be tackled with thorough government controls.”

We are strongly committed to reporting. All collection and processing businesses must publish their collection and recycling results, but not all are prepared to do so. To persuade them to report their results, we have set up an accessible platform in collaboration with the sector federations and regional governments. With the BeWeee tool, collectors, processors, manufacturers, retailers, and exporters can report their results to the Flemish, Brussels and Walloon authorities. In 2018, around 20,000 tonnes of e-waste were reported via BeWeee, which would otherwise have remained under the radar. This is a success, although the numbers still have to go up considerably.”

INTERVIEW WITH THE CHAIRMAN

The broader picture

Artificial Intelligence

Your ambition is that Recupel will play a pioneering role in Belgium's circular economy. How will you achieve this?

We are focusing on two pillars: extending the service life of appliances and closing the material loops. We have already come a long way with the latter. By collecting end-of-life appliances and working with state-of-the-art processors, we ensure that as few raw materials as possible are lost. In the future, we want to improve our results even further by using artificial intelligence, for example."

To extend the service life of the appliances, we are working closely with our partners in the recycling sector. For example, we regularly consult with the umbrella organisations – Herwin for Flanders and Ressources for Wallonia and Brussels. We are also considering setting up a platform where consumers and repairers can come into contact with each other."



Right to repair

What impact does the Green Deal have on the recycling of e-waste?

For us, the Green Deal and the accompanying plan for the circular economy are significant. The plan is also exciting because it aims to stimulate the market for secondary raw materials. For example, it looks at how manufacturers can be encouraged to use recycled raw materials in their products and, in particular, the rights afforded to consumers to have their appliances repaired. That means, for example, that manufacturers must have enough spare parts when they sell a product and that software updates will become the new norm. The EU has not specified exactly how this 'right to repair' should work. That's how the free market can play its part, which I think is a good thing."

COLLECTION RESULTS

New jobs in the circular economy

What challenges do you see for the coming years?

Our 20th anniversary is in 2020, which is a good time for reflection. We are already playing a key role in terms of collection and processing of e-waste. Looking towards the future, we are reflecting on how we can bring added value to all the stages of the circular economy.

Our ambition is to become a hub in the circular economy in Belgium. I see that as an opportunity rather than a challenge. The circular economy of the future is good for both people and the planet. By closing the material loops, fewer primary raw materials need to be used, which also reduces CO₂ emissions. Furthermore, the collection, reuse, and processing of end-of-life electronic equipment is good for employment. It also offers great opportunities for the social economy. By working together with sheltered workshops, we have created work for 414 long-term unemployed people, people with disabilities and those aged over 55. This is another area where we can make a difference.



"Our ambition is to become a hub in the circular economy in Belgium. I see that as an opportunity rather than a challenge."

A LOOK AT 2020

WHAT OUR PARTNERS ARE SAYING

The broader picture

PASCAL LEROY OF WEEE FORUM

“Recupel is leading the way in Europe”

Europe can count on the expertise of the WEEE Forum to tackle the issue of e-waste. Pascal Leroy, the forum’s Director-General, explains the role of Recupel, which is one of the driving forces behind his organisation.



Recupel was one of the founding members of the WEEE Forum. Why was it involved from the start?

Belgium already had e-waste legislation before the European Directive was established. As Recupel believed it was important to share knowledge with its counterparts abroad, it set up the WEEE Forum together with organisations from Austria, Switzerland, Sweden, Norway and the Netherlands. A year later, Europe introduced a directive on end-of-life equipment, and collection organisations from all other EU Member States joined the forum. Today, the WEEE Forum has 40 members: mostly from European countries, but also from Canada, India, Nigeria and Australia.

There is now a European standard for the collection and processing of e-waste. How have you contributed to this?

In 2012, we took the initiative to develop a European standard called WEEELABEX, which stands for WEEE LABoratory of EXcellence. In this standard, we describe how waste must be collected, stored, transported, prepared and processed. The WEEELABEX principles have since been formulated into an official European standard, that has subsequently been recognised in EU law. When you work with companies that have been awarded the WEEELABEX label, you know that they respect the European rules on e-waste. All processors that work with Recupel have this label.

By 2019, all EU Member States had to achieve a minimum collection rate of 65 % of the average weight of what had been placed on the market in the preceding three years or 85 % of what was discarded. Why is it that almost none of the Member States manage to meet this target?

Estonia was actually the only EU Member State that met the 65 % target. One of the explanations is that Recupel and its foreign counterparts have no control over what happens to a large proportion of the end-of-life electronics. Our laptops, light bulbs, mobile phones, and electric toothbrushes still too often end up in residual waste. Besides, there are some cowboys out there. Washing machines and fridges are ending up at scrap merchants or are being illegally exported. Sometimes the e-waste completely disappears from the radar. We are working closely with the UN to tackle these illicit international channels. Later this year, we will publish the outcomes of our reflections.

Recupel is often said to be a pioneer in terms of reporting. Why?

Recupel came up with the idea of breaking down the recycling percentages by categories: plastics, ferrous metals, non-ferrous metals, etc. This detailed reporting allows for more extensive analysis and better interpretation. In this way, a quick glance will tell you which streams are easier to recycle.

What is the WEEE Forum, and what does it do?

WEEE stands for Waste Electrical and Electronic Equipment. The WEEE Forum, established in 2002, brings together 40 organisations that are responsible for collecting e-waste both in and outside Europe. The experts in this organisation develop international standards, highlight good practices and facilitate exchange.

WEEE FORUM

WHAT OUR PARTNERS ARE SAYING

The broader picture

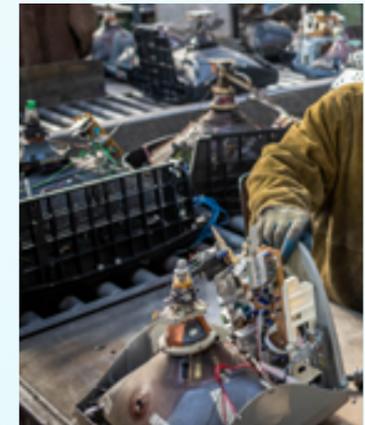
MARK ADRIAENSSENS FROM OUT OF USE

“All equipment we collect is recycled in Belgium”

Did you know that there are also private companies that collect and process end-of-life electronic appliances? One of our partners is Out of Use in Beringen. This company collects old IT equipment from companies and takes care of the optimal processing. It also sends its collection and recycling figures to Recupel.

What exactly does Out Of Use do?

We only collect end-of-life appliances from companies and give them a second life. If possible, we reuse them; otherwise, we recycle them. First, we check whether the collected devices can be reused. If so, we erase all data and make the device ready for reuse. In this way, we act at the source and keep materials in the loop with minimal intervention and energy consumption. Appliances we cannot reuse are recycled. First, we remove substances that are harmful to the environment, such as oil, asbestos, or printer cartridges, and then dismantle the appliances. The depolluted e-waste and components are then taken to partner businesses, where they are further recycled mechanically. Our goal is to provide businesses and organisations with a total solution for recycling their end-of-life IT equipment while focusing on sustainable entrepreneurship and creating social employment.



How do you know that the e-waste is processed sustainably?

As part of our sustainability objectives, we only work with processors that are WEEELABEX-certified. This means that they conform to strict European standards for e-waste recycling and report in accordance with Recupel's requirements. This certificate offers Recupel and us the certainty that the recycled material will end up back in the loop. In 2018, we became the first Belgium B2B organisation to be WEEELABEX-certified. Through the WEEELABEX organisation – which Recupel also belongs to via the WEEE Forum – we can benchmark with the best practices in our sector, which keeps us on our toes. Additionally, we have signed the Recupel charter, which means we are committed to collecting e-waste and processing it in accordance with the legislation. We are regularly audited by Recupel, which gives potential customers extra reassurance that we respect the rules.

How do you limit your CO₂ emissions?

For us, the environment is the most important thing, which is why we prefer to work with Belgian recyclers. It makes no sense to first ship the appliances to low-wage countries and at the same time, import new primary raw materials. This would only mean higher CO₂ emissions. We also allow our customers to make their own contributions to the climate. They can donate the compensation they receive for their appliances to Natuurpunt, which will then buy a piece of land to plant trees. This scheme is catching on, and we hope to exceed one hectare of woods this year.

Out of Use strongly believes in corporate social responsibility. How is this reflected in your operations?

We focus on the groups in our society that are struggling. For example, the majority of our staff has been long-term unemployed or is over 55 years of age. Just like Recupel, we work with sheltered workshops that perform simple tasks for us, such as removing CDs from cases. For larger jobs, we also collaborate with Leuven prison, which allows the prisoners to earn money and reintegrate more quickly into society. Finally, we are working on solutions to close the digital gap. Disadvantaged families can visit our non-profit organisation (vzw) Brussel.Circular in Tour&Taxi in Brussels to buy second-hand devices very cheaply.

OUT OF USE

WHAT OUR PARTNERS ARE SAYING

The broader picture

OLIVIER VANDEN EYNDE FROM CLOSE THE GAP

“For Africans, refurbished ICT is a stepping stone to a better situation”

What started as Olivier Vanden Eynde’s graduation project in 2003 has grown into an organisation that is active in over 50 countries. Close the Gap wants to close the digital gap in Belgium and abroad and find a sustainable solution for e-waste in developing countries, using the Recupel model. Recupel and Close the Gap’s collaboration has been recognised with the Sustainable Partnership Award.

How does Close the Gap work exactly?

We collect end-of-life laptops and mobile phones from businesses and organisations in Belgium and the Netherlands. These devices are repaired and then shipped to Africa or South America, where they are used in schools or public institutions. To reach people in isolated areas, we have built Digitrucks, which are classrooms on wheels where, among other things, ICT workshops are held. But it’s not just a charity project, it’s more about empowerment. We want to give vulnerable groups access to the right information. Using the internet, they can find out how to protect themselves properly against diseases or learn about concepts such as democracy. Or, by using the internet, they can start their own small businesses. For many Africans, ICT is a stepping stone towards improving their situation.



You also want to tackle the e-waste mountain in developing countries. How do you do that?

In many developing countries there is no intricate e-waste collection network similar to that which Recupel has set up in Belgium. Furthermore, there is no awareness amongst local populations about collecting end-of-life equipment. To prevent broken laptops and mobile phones from being dumped or burned, we set up a collection system in 2009. Worldloop is currently active in five African countries, namely Kenya, Tanzania, the DRC, Uganda and Rwanda. The principle is simple: if we send 20,000 end-of-life laptops to Kenya for sustainable education projects, we ensure that 20,000 end-of-life laptops are collected and processed in the same country. When we started Worldloop, we consulted Recupel. They made their extensive expertise available to us, supported us in carrying out a feasibility study, and gave us financial help to set up an African e-waste organisation. For two years now, Worldloop has been working completely independently, integrated into the operations of Close the Gap. With our success story, we want to convince local governments to set up large-scale e-waste collection systems. They would be local ‘Recupels’, where ‘importers’ would be obliged to pay a contribution for the transport and recycling of the appliances they place on the market.

What happens to the African e-waste? Where is it processed?

We opt for a best-of-both-worlds approach. The appliances are taken apart completely in Africa. This is done manually, which is a very efficient way to recover the materials that can be reused and the components that can be recycled. The components go to local recycling plants. For example, we recently opened a new recycling plant in Kenya. We send the complex and harmful parts back to Belgium. Here they are processed by top companies that use the best available techniques and have a wealth of experience in this field. Recupel still helps us with the smaller waste streams that come from Africa by getting them recycled at the recycling companies they work with.

In terms of managing e-waste, Belgium ranks among the world leaders. But is the problem of the digital gap also under control?

“Yes. Many disadvantaged families in Belgium also have no access to the internet or ICT. The coronavirus crisis has increased awareness of this issue. I fear that after the coronavirus crisis, there will be an economic crisis which will further widen the gap between rich and poor. That’s why we are expanding our non-profit organisation (vzw) DigitalForYouth, founded in 2019 by Close the Gap vzw and DNS.be vzw. We try to make as much refurbished ICT material as possible available to vulnerable young people. In April 2020, we collected 15,000 laptops for disadvantaged pupils in secondary schools across Belgium, so they too can receive lessons remotely.

CLOSE THE GAP



BEHIND THE SCENES AT RECUEPEL

Organisation & figures

ABOUT RECUEPEL

Recupel organises the collection and processing of end-of-life electrical and electronic equipment and light bulbs in Belgium.

Manufacturers and importers of electrical and electronic appliances are legally responsible for the collection and processing of the end-of-life equipment (e-waste). Recupel ensures that e-waste is collected and processed in a sustainable and cost-efficient way.

WHAT DOES RECUEPEL COLLECT?

For collection, we work together with retailers, municipalities, second-hand shops, regional authorities and inter-municipal cooperative societies. For transport and recycling, we partner with certified companies that comply with the strictest European standards.

With our campaigns, we raise awareness among consumers and businesses to bring their old or broken appliances to recycling parks or second-hand shops.

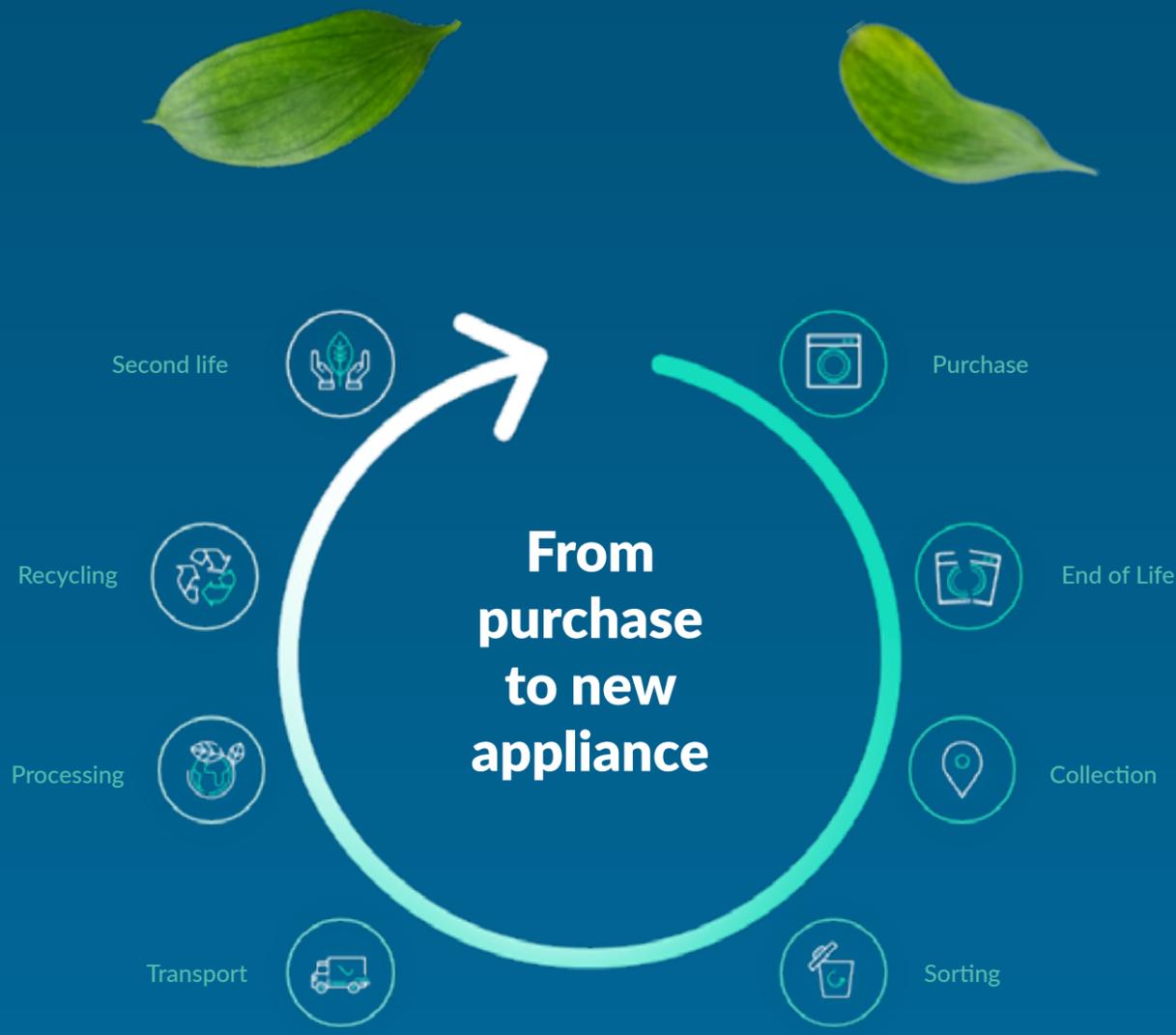
Recupel helps to close the material loop by collecting end-of-life electrical and electronic equipment and offering them to the recycling sector. If the appliances cannot be repaired, they are dismantled, and the materials reused. In this way, we contribute to the circular economy.

RECUEPEL AS A HUB IN THE CIRCULAR ECONOMY

Environmental protection. By collecting e-waste, we prevent harmful substances in electrical and electronic equipment ending up in the environment. We work with certified companies to remove these substances professionally.



RECUPEL'S MODEL



"By closing the loop we eliminate harmful substances and we protect the natural resources of our planet"

When appliances reach the end of their service life, consumers can take them to one of Recupel's collection points. Recupel then takes all these appliances to a central location where they are sorted and separated into six categories, according to the processing procedures:

-  **Large white goods (such as washing machines)**
-  **Televisions and monitors**
-  **Smoke alarms**
-  **Fridges and freezers**
-  **Light bulbs**
-  **Other appliances**

Anything that can be reused will go to second-hand shops. Broken appliances go to approved processing facilities, where harmful substances are removed, the appliances are disassembled and then recycled. Any reclaimed raw materials can then be reused. This is how we close the loop, and the appliances get a second life.

FINANCING

Recupel's members – the manufacturers and importers of electrical appliances and light bulbs – pay a contribution for each product that they place on the market. This contribution depends, among other things, on:

- The average weight
- The components in the device
- The collection percentage
- The processing technique
- The service life of the product

Manufacturers pass on this contribution to consumers. So, when a consumer purchases a mobile phone or a toaster, they will immediately pay for its collection, sorting, transport and processing after its use.

These contributions allow Recupel to organise and finance all its activities, as described above.

BOARD OF DIRECTORS

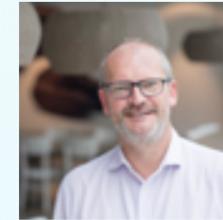
Organisation & figures

BW-REC



Dirk Van Assche
Chairman
BW-REC

AV



Bruno Vermoesen
Vice-Chairman
BW-REC



Kris Den Haese
Chairman
Recupel AV



Henri Peeters
Vice-Chairman
Recupel AV

SDA



Terence Vanstals
Chairman
Recupel SDA



Bart Quispel
Vice-Chairman
Recupel SDA



Werner Donckers
Chairman
Recupel ICT



Patrick Lens
Vice-Chairman
Recupel ICT

ICT

ET&G



Jean-Pierre Van Keer
Chairman
Recupel ET&G



Johan Surkyn
Vice-Chairman
Recupel ET&G

LIGHTREC



Hendrik Vermeire
Chairman
LightRec

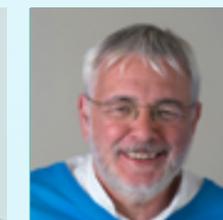


Derek McMillan
Vice-Chairman
LightRec

MELAREC



Luc Meert
Chairman
MeLaRec



Koen Bruylant
Vice-Chairman
MeLaRec

Federations



Baudouin Corluy
Director
AGORIA



Peter Binnemans
Director & Secretary
FEE

FINANCIAL RESULTS

Organisation & figures

Annual Balance Sheet

Assets	2019	2018
Intangible fixed assets	874.13	2,374.49
Tangible fixed assets	1,632,129.11	2,189,417.65
Financial fixed assets	140.00	140.00
Fixed assets	1,633,143.24	2,191,932.14
Accounts receivable within one year	5,107,772.71	3,015,093.15
Cash	4,947,325.27	2,899,005.79
Deferrals and accruals	89,772.80	109,448.60
Current assets	10,144,870.78	6,023,547.54
TOTAL ASSETS	11,778,014.02	8,215,479.68

Liabilities	2019	2018
Accruals for risks and costs	0.00	0.00
Accruals	0.00	0.00
Accounts payable within one year	11,778,014.02	8,215,479.68
Current liabilities	11,778,014.02	8,215,479.68
TOTAL LIABILITIES	11,778,014.02	8,215,479.68

Result of the year	2019	2018
Turnover	41,201,843.24	38,387,133.50
Operating income	41,201,843.24	38,387,133.50
Services and other	-37,256,246.06	-34,663,328.77
Remunerations and direct social securities	-3,078,657.38	-2,765,511.26
Depreciations, provisions	-840,164.25	-928,764.97
Accruals for risks and costs	0.00	0.00
Other operating charges	-44,870.54	-41,360.65
Operating charges	-41,219,938.23	-38,398,965.65
OPERATING PROFIT/LOSS	-18,094.99	-11,832.15
Financial income	33,759.83	31,702.68
Financial charges	-16,058.13	-18,741.05
Financial results	17,701.70	12,961.63
Exceptional results	393.29	-1,129.48
RESULT TO BE CARRIED FORWARD	0.00	0.00

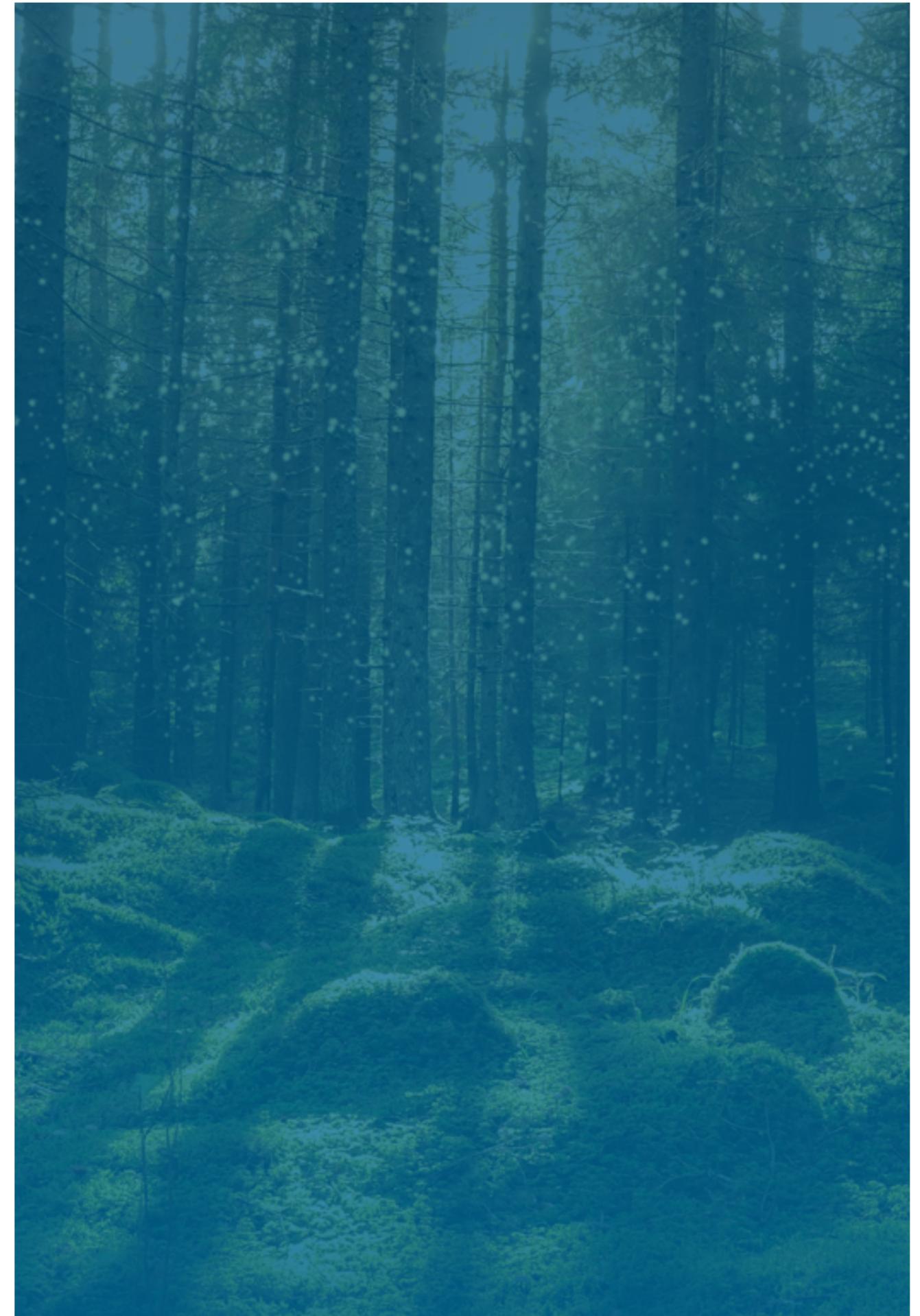
Financial balance sheet sectors

ASSETS	BW-REC	RECUPEL AV	RECUPEL SDA	RECUPEL ICT	RECUPEL ET&G	LightRec	MeLaRec
Accounts receivable within one year	2,326,726.72	2,136,671.07	311,581.48	542,789.33	77,040.84	1,157,807.25	714,542.23
Cash	58,009,779.95	19,346,324.78	16,008,635.27	11,708,587.54	10,299,904.14	36,331,693.32	4,020,501.87
Deferrals and accruals	3,418.53	1,110.85	635.31	443.82	759.95	1,677.43	695.91
CURRENT ASSETS	60,339,925.20	21,484,106.70	16,320,852.06	12,251,820.69	10,377,704.93	37,491,178.00	4,735,740.01
TOTAL ASSETS	60,339,925.20	21,484,106.70	16,320,852.06	12,251,820.69	10,377,704.93	37,491,178.00	4,735,740.01

LIABILITIES							
Allocated funds	21,977,562.69	9,164,763.00	4,822,844.00	5,394,970.00	2,311,097.00	6,278,061.00	1,055,835.00
Profit carried forward	1,247,921.94	11,695,883.70	11,177,468.85	5,982,867.88	7,417,082.02	21,510,851.88	3,132,469.52
CAPITAL AND RESERVES	23,225,484.63	20,860,646.70	16,000,312.85	11,377,837.88	9,728,179.02	27,788,912.88	4,188,304.52
Accruals for risks and costs	36,620,231.66	240,704.26	0.00	0.00	193,333.13	9,196,204.28	0.00
ACCRUALS	36,620,231.66	240,704.26	0.00	0.00	193,333.13	9,196,204.28	0.00
Accounts payable within one year	494,204.88	382,751.71	320,535.18	873,978.78	456,182.53	506,056.81	547,431.46
Deferrals and accruals	4.03	4.03	4.03	4.03	10.25	4.03	4.03
CURRENT LIABILITIES	494,208.91	382,755.74	320,539.21	873,982.81	456,192.78	506,060.84	547,435.49
TOTAL LIABILITIES	60,339,925.20	21,484,106.70	16,320,852.06	12,251,820.69	10,377,704.93	37,491,178.00	4,735,740.01

Results account (31 December 2019)

Turnover	9,007,209.72	4,600,775.68	921,911.10	1,682,375.68	415,304.70	2,626,847.09	1,767,211.03
Other operating income	0.00	0.00	23.33	0.00	0.00	191,521.02	0.00
OPERATING INCOME	9,007,209.72	4,600,775.68	921,934.43	1,682,375.68	415,304.70	2,818,368.11	1,767,211.03
Purchases	-13,434,317.91	-4,998,369.61	-1,999,324.92	-2,976,412.95	-947,350.81	-2,933,360.43	-834,842.78
Services and other	-1,581,018.48	-1,046,366.95	-927,731.81	-1,434,838.82	-1,000,977.28	-2,373,521.05	-1,241,417.04
Depreciation	-1,071.47	-2,598.21	-56,504.18	9,825.75	9.99	-3,038.04	222.77
Accruals for risks and costs	8,993,510.84	658,641.24	24,871.37	0.00	165,248.03	2,184,310.98	1,231.48
Other operating costs	-356,209.02	-353,022.64	-314,986.51	-352,964.99	-327,487.54	-387,683.06	-351,798.03
OPERATING CHARGES	-6,379,106.04	-5,741,716.17	-3,273,676.05	-4,754,391.01	-2,110,557.61	-3,513,291.60	-2,426,603.60
OPERATING PROFIT/LOSS	2,628,103.68	-1,140,940.49	-2,351,741.62	-3,072,015.33	-1,695,252.91	-694,923.49	-659,392.57
Financial income	41,860.05	44,234.32	39,090.03	33,716.69	24,677.85	54,864.99	11,542.20
Financial charges	-1,409.85	-720.27	-1,013.28	-630.68	-885.34	-1,220.13	-440.95
FINANCIAL RESULTS	40,450.20	43,514.05	38,076.75	33,086.01	23,792.51	53,644.86	11,101.25
Extraordinary income	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXTRAORDINARY RESULTS	0.00						
RESULT TO BE CARRIED FORWARD	2,668,553.88	-1,097,426.44	-2,313,664.87	-3,038,929.32	-1,671,460.40	-641,278.63	-648,291.32



PROJECTS AND ACTIONS

A look at 2020

2020 will be a year to remember. Despite the coronavirus crisis, we are ploughing ahead with our plans for the future. Our main objective is to continue working on a circular economy.

1

CLOSING THE LOOP FURTHER

Recupel is making further inroads with its artificial intelligence project. We are refining the algorithm to better recognise types of appliances. We are also researching how we can use artificial intelligence to identify brand names or logos on appliances.

In 2020, reuse is an important focal point. We are running various pilot projects in close collaboration with Herwin and Ressources to get more reusable appliances into the recycling loop in a qualitative way. For example, to prevent repairable appliances from being damaged in the recycling park, we are starting a pilot project with a recycling container in which consumers can place appliances that may be repairable.



2

COMMITTING TO MEANINGFUL PARTNERSHIPS

Partnerships are the key to success, as they increase the impact. That is why we are keen to establish smart partnerships to put the circular economy into practice. For instance, in 2020, we will be working with Belgian Scrap Terminal and the artist Alessandro Tardioli. Together with secondary school students, Tardioli will build the cultural-historical Gyronef (known from the adventures of Spike and Suzy) using recycled materials and end-of-life electrical and electronic equipment. The overall project is called W.A.S.T.E. (Will Art Save The Ecosystem?). Apart from the Gyronef, this project focuses on educating and raising awareness among young people about urban mining and the circular economy.

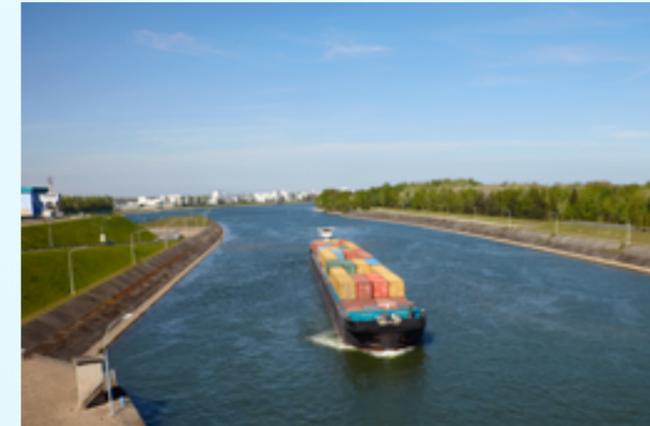


PROJECTS AND ACTIONS

A look at 2020

3 REDUCING OUR ECOLOGICAL FOOTPRINT

The transport in the different stages of our chain has a negative impact on our carbon footprint. That is why we are trying to limit our mileage. Furthermore, in 2020, we have started a pilot project with the Flanders Institute for Logistics so that, in the future, containers with end-of-life electrical and electronic equipment can be transported by inland waterways.



4 NEW AWARENESS-RAISING CAMPAIGNS

Old and broken power tools also contain a lot of valuable material. That is why we are launching an awareness-raising campaign in 2020 to call on everyone to collect such tools as well.

Using some fresh injections of creativity, we will be continuing our campaigns about missing fridges and collecting light bulbs and fittings.



Recupel 