15 years ago, in 2002, the EU legislators adopted Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE). The same year, a group of producer responsibility organisations, mandated by producers to help them comply with the Directive, set up the WEEE Forum. Their principal motivations were an ambition to be the best compliance schemes in Europe and the need to find a forum for knowledge exchange.

In those 15 years, we have witnessed significant changes in the WEEE market. This paper, “The WEEE Forum, 15 Years On”, seeks to zoom in on what the WEEE Forum and its producer responsibility organisations have done to manage these new market dynamics and what difference they have made.
WEEE is a complex mixture of materials; it is a source of secondary raw materials, including precious metals, but, at the same time, it also contains hazardous substances that give rise to environmental and health problems if not adequately managed. Electrical and electronic equipment also constantly evolve and the resultant WEEE follows this evolution, which affects the whole WEEE value chain.

This, coupled with regulatory changes, make collection and recycling of WEEE a challenging business. A bold European approach is required to achieve a level playing field in the WEEE sector. In addition, the transition to a circular, resource efficient economy and the achievement of WEEE targets require committed actors to work together.

To address these challenges, six not-for-profit e-waste producer responsibility organisations (PROs) founded the WEEE Forum in 2002. The WEEE Forum provide a unique platform fostering benchmarking and knowledge exchange to strengthen our members’ role in the WEEE sector. As a hub of e-waste competence, we bring the voice of WEEE PROs to the debate on e-waste policy matters and we assist our members in defining better strategies to lead the way in the WEEE management field.

We are committed to advancing the cause of the circular economy in the WEEE sector.

The EU was a pioneer in regulating that producers should, in accordance with the Extended Producer Responsibility (EPR) principle, organise and/or finance the collection, treatment, and recycling of their electrical and electronic products at end-of-life. The producer responsibility organisations of the WEEE Forum have been at the forefront of putting EPR legislation into practice. They have adapted their business models to the different national transpositions of the Directive, meaning our platform is rich in diversity and knowledge.

Over the past 15 years WEEE Forum members have proved to be a crucial player in the WEEE market by:

- Building bridges between producers, authorities, recyclers and citizens;
- Becoming a partner with authorities to meet reporting requirements and counter illegal practices;
- Addressing a global risk of supply of certain secondary raw materials by creating economic opportunities and economies of scale through the supply of volumes of WEEE for recovery of secondary (and critical) raw materials.

The WEEE Forum represent a range of business models across Europe and years of experience and knowledge. Our ambition is to spread globally what we’ve already achieved in Europe, to be a source of inspiration and ideas and to remain a pioneer in our field of work.

Our members have a combined 405 years of experience in e-waste management.

“From our experience in the United Kingdom, we know that making producers responsible without giving them authority is a recipe for disaster.”

Philip Morton, Vice President of the WEEE Forum, Repic, United Kingdom.

15 years after the 2002 Directive, Europe counts within its borders more than 160 WEEE compliance schemes.

The producer responsibility organisations of the WEEE Forum have been at the forefront of putting EPR legislation into practice. They have adapted their business models to the different national transpositions of the Directive, meaning our platform is rich in diversity and knowledge.

Over the past 15 years WEEE Forum members have proved to be a crucial player in the WEEE market by:

- Ensuring WEEE collection regardless of the volatility of prices of raw materials and energy;
- Protecting producers against legal action and litigation;
- Providing intelligence on the value chain;
- Applying high standards in health, safety, and environment for WEEE collection and treatment, supported by the WEEE Forum’s own standards and years of research;
15 years ago, producers set up PROs and mandated them to act on their behalf as specialist organisations dealing with and taking on their legal responsibilities in this area. In 2017, the PROs of the WEEE Forum represent 31,000 producers of electrical and electronic appliances, which is most of the world’s leading technology companies and household appliance manufacturers that are liable parties under EPR legislation.

In the past 15 years, PROs have designed business models to manage WEEE efficiently and cost-effectively in compliance with applicable legislation. PROs have put in place collection infrastructure and networks, provided for thousands of collection services across the continent and participated in building coordination centres and clearing houses to ensure fairness in the distribution of producers’ financial responsibilities.

We estimate that in the past 15 years over 90,000 producers (our members represent 36% of this number) registered with national WEEE registers across Europe. Clearing houses and coordination centres have been established in Austria, France, Germany, Italy, Spain, United Kingdom, Ireland and the Netherlands.

PROs have undertaken numerous initiatives to enable them to continuously improve the service they offer. They have led on many major research projects aimed at enhancing their management strategies and operational efficiency through a better understanding of the WEEE value chain and stakeholders involved. PROs have also invested in state of the art IT platforms to support producers in their reporting responsibilities and to facilitate communication with producers, collection points, recyclers, authorities and citizens.

PROs have undertaken and supported country-wide communication campaigns aimed at increasing collection, raising environmental awareness, and improving end users’ knowledge of their responsibilities. Importantly, they also facilitated stakeholder discussions on issues enabling these to be addressed collectively. Finally, PROs have been leading communication campaigns to inform producers about their responsibilities and to seek a level playing field for all producers.

One relatively new challenge for the sector is how to deal with free-riders associated with e-commerce. Internet sellers, using either the well-known specialist internet sales platforms or their own internet channels, are often unaware of EPR obligations or deliberately choose not to join a PRO and therefore escape their liability under WEEE law.

Number of producers represented by PROs in the WEEE Forum:

31,015 (2016)

“Free-riding in e-commerce is rampant. Specific legislative measures are required.”

Pedro Nazareth, Amb3E, Portugal.

15 years ago, in most of Europe, there was no specialist WEEE de-pollution and recycling industry to speak of, there were few WEEE designated collection facilities, citizens were not aware of the hazards associated with discarding WEEE and no targets, or well defined responsibilities, were in place. Directive 2002/96/EC on WEEE addressed these issues and PROs took on the challenge, with an environmentally responsible vision, excited to be actors in an emerging market.

Over the past 15 years, the operating environment has been challenging for WEEE Forum members because of the continued complexity of the WEEE market, significant changes in legislation and the gradual increase in collection targets.

Members of the WEEE Forum have risen to these challenges by being flexible and adaptable and by committing themselves to a pathway of continual improvement.
For example, they have increased WEEE collection by engaging with stakeholders and relevant waste market players. By building agreements with local authorities, retailers and other types of collection points, PROs have managed to increase the number of collection points and, at the same time, made them more accessible and visible to end users. Development of distribution channels is providing creative collection opportunities for WEEE; one example of this is the use of reverse logistics. Looking for new types of stakeholders to participate in collection and develop new collection points is an exercise in innovation that requires extensive knowledge of the WEEE market.

PROs have designed and continually upgraded IT platforms to monitor the logistics of WEEE collection. Traceability of the waste has been improved by initiatives that have enhanced communication between all actors in the WEEE value chain and through other more technical solutions such as tagging of containers. PROs have also participated in the design and distribution of specific containers for WEEE with particular interest in small household appliances and lamps.

In many EU member states, items or valuable components of WEEE are stolen from collection facilities [CWIT, Countering WEEE Illegal Trade]. The consequences of such practices are:

• Decrease in the value of the waste received at official treatment plants;
• Increase in the uncontrolled release of hazardous substances, such as CFC gases, to the environment;
• Higher WEEE damage rate, reducing compliance with de-pollution regulations and reducing opportunities to prepare the WEEE items for re-use;
• Lower collection rates, resulting in difficulties to reach collection targets set by law; and
• Support of irregular economic activities, which results in infringement of several laws, tax evasion and unfair competition for authorised actors, amongst others.

WEEE Forum members have participated in initiatives to reduce WEEE thefts at collection points by supporting the development of specific containers and by improving the infrastructure of collection points and using safer collection channels. They have also engaged with enforcement authorities in training sessions to improve the understanding of WEEE flows and the functioning of the market. The PROs have also contributed to a better understanding of the WEEE market by sponsoring research studies on WEEE flows.

Studies providing in-depth knowledge of WEEE country flows in the Netherlands, Belgium, Italy, France and Romania have helped our members to shape their strategies and improve the efficiency of their performance.

An important piece of research is Countering WEEE Illegal Trade (CWIT), an EU funded project (2013-2015) to which the WEEE Forum and its members made an important contribution. The project describes the (dynamics of the) WEEE market in the EU and makes a set of recommendations to counter illegal WEEE flows and practices. CWIT also created a platform that allowed the WEEE community to liaise with policymakers and enforcement agencies. The online directories, LibraWEEE and WEEE Directory, that were created as part of the project, are valuable outcomes of the CWIT project that the WEEE Forum continues to maintain beyond the end of the project.

The PROs of the WEEE Forum have also supported studies on the collection of WEEE. Countless WEEE sampling campaigns have been carried out during the last 15 years to better understand, for example, the types of appliances that are collected, how the weight and life span of such appliances are evolving and the state of the waste items and whether there are parts missing. All this information has helped PROs adapt their collection strategies and operational activities and maintain an excellent knowledge of their market.

The WEEE Forum is a unique platform in which operation managers brainstorm and exchange views on the best strategies to increase collection and to better adapt to changes in the market and the regulatory framework. Thanks to our members’ initiative, we developed the Key Figures portal, which allows member organisations to benchmark their performance and to provide robust and comparable data to stakeholders.

Federico Magalini, co-author of the 2008 United Nations University study on the review of Directive 2002/96/EC on WEEE, commissioned by the European Commission, has noted that: “The WEEE Forum’s Key Figures on e-waste are Europe’s most reliable, solid, coherent, and timely set of statistics on the market. The Key Figures have proved to be an excellent source of information, especially as they are validated by key experts and authorities in the field.”
Despite the efforts of the WEEE Forum and its members over the past 15 years, there is still a significant challenge facing them. Research undertaken by CWIT found that in Europe only one-third (3.3 million tonnes) of all the e-waste discarded in 2012 ended up in the figures officially reported by collection and recycling systems. The other two-thirds (6.15 million tonnes) was either exported (1.5 million tonnes), recycled under non-compliant conditions in Europe (3.15 million tonnes), scavenged for valuable parts (0.75 million tonnes) or simply thrown in residual waste bins (0.75 million tonnes). This is clearly one of the areas on which the whole WEEE value chain must focus its efforts. We must continue to engage with consumers, collection points, logistics companies and recyclers, and, in so doing, improve the performance of the system, not only from a business point of view but also with an environmentally responsible vision.

Quantities of WEEE collected by the PROs of the WEEE Forum and reported to the authorities rose from 292,550 tonnes in 2002 to 2.1 million tonnes in 2016.

“"It’s hard to imagine how the level of more than 2 million tonnes yearly of WEEE collection in Europe would be possible without sharing the knowledge, views and experience among WEEE Forum members. We cannot forget that despite the great jubilee, our activity is in many respects innovative. It seems that the combination of knowledge, experience, the social responsibility of the association’s members and their special environmental, economic and educational mission is nowadays a basis for the increasing efficiency of WEEE collection in Europe.”

Grzegorz Skrzypczak, ElektroEko, Poland.

“The key issue is to set equal legal conditions for collection for all take-back participants.”

Roman Tvrzník, ELEKTROWIN, Czech Republic.

“WEEE Ireland led the WEEE Forum’s collections project, where members detailed their collection programs for all categories of WEEE. This working document has become a guide to all schemes on the various ways WEEE can be collected. The study details what collection receptacles to use, what volume they will collect, their dimensions and materials, and so forth. The document has become an invaluable tool on providing cost effective and efficient collections of WEEE.”

Leo Donovan, WEEE Ireland, Ireland.
In all European countries, the first link in the WEEE chain is the end users, both in households and in businesses. Being the first part of the WEEE value chain, end users play a decisive role channeling WEEE to the correct destination. An illustration of the important role of consumers is provided by research carried out in some EU member states showing, for example, that the stock of electrical and electronic equipment per inhabitant in France is 244 kg, 215 kg in Italy and 72 kg in Romania [UNU country studies, Magalini et al, 2012, 2015, and Monier et al, 2013].

15 years ago, citizens were ill-informed regarding the hazards associated with e-waste, the benefits of repair and recycling, or how to dispose adequately of their end-of-life appliances.

Nowadays, PROs have dedicated communication departments in their business structure, with committed budgets and annual planning. They collaborate with authorities in raising awareness and improving citizens’ involvement in the collection of WEEE. For PROs, it is important that correct information reaches citizens. In the past 15 years, PROs have undertaken behavioural studies to better understand the motivation that drives consumers’ actions when disposing of WEEE. A lack of information on what needs to be done, the authorized collection channels, a lack of practical channels to dispose of WEEE, and lack of environmental awareness were all factors identified.

PROs have also investigated potential target audiences and what the most suitable messages to convey should be. Campaigns targeting children through schools and recreational events are now taking place across Europe. Other specific WEEE collection events are also now being delivered all year round to involve and educate consumers in WEEE recycling. These are often run in partnership with retailers, local independent shops, and fire departments. In addition, information regarding WEEE collection, its benefits and how it is delivered is available to the wider public through countless sources. Furthermore, tools and apps mapping the nearest collection point have been developed that are available to citizens in almost all EU member states.

Education of households is key because the disposal of small household appliances is particularly challenging for PROs as these have a higher rate of disposal in the residual waste bin, as illustrated below:

The French EEE stock in households was quantified at 244 kg/inhabitant. Analysis of consumer habits in Italy revealed that around 10% in weight of current household EEE stock (in total equal to 215 kg/inhabitant) comprises products no longer in use (but some still in working order). These hibernated quantities account for more than 20 kg/inhabitant.

“We consider it one of our main tasks to educate, raise awareness and foster a sense of responsibility. With the help of modern technologies, social media, consulting and seminars, we can achieve fine results. For the past couple of years, EGIO has been organising a national environmental project “Mes rūšiuojam”. The aim of this project is not only to teach the public how to sort waste properly but also to create an effective waste management system. This project is a great platform to reach Lithuanian science and education institutes, communities and the corporate world.”

Alfredas Skinulis, EGIO, Lithuania.

“We believe that the role of PROs in educating citizens is critical, especially in countries that have no environmental tradition to speak of.”

Valentin Negoita, ECOTIC, Romania.
During the last 15 years, the WEEE Forum has become a vital player in the WEEE community. PROs know the intricacies of the sector, and the actors and drivers involved. Thus, they become the link between users, producers and policymakers. This puts PROs, and producers of electrical and electronic appliances by extension, in a privileged position to create synergies between stakeholders, support policies in place and be a source of useful information for policymakers. This collective knowledge and experience combines to make the WEEE Forum a prominent and respected voice in the WEEE community. In addition, WEEE Forum members participating in EU funded projects use the WEEE Forum network for dissemination purposes and as a source of information and collaboration.

The CWIT project reinforced the importance of a strong and well-connected WEEE community, concluding that building multi-stakeholder platforms and connections is the best approach to tackle WEEE illegal trade.

During the past 15 years, the WEEE Forum has participated in hundreds of workshops and conferences in which we have shared our views and knowledge with the global community. We make our voice heard in Europe and participate in defining the WEEE scenario:

- With WEEELABEX, a project that was recognised in 2014 as ‘LIFE Best of Best’ project, the WEEE Forum actively engaged in the production of a set of WEEE treatment, collection and logistic standards based on the EU regulatory framework;
- Through providing an overview of the WEEE market and actors in the EU thanks to CWIT, another project that the European Commission has recently identified as a ‘success story’; and
- As project leaders of Prospecting Secondary Raw Materials in the Urban Mine and Mining Wastes (ProSUM), funded by the Horizon 2020 programme, we and our members contribute to the creation of an EU Urban Mine Knowledge Data Platform, with data and intelligence on WEEE, batteries, end of life vehicles and mining wastes.

In the past 15 years, we have invited the global WEEE community to join us during the WEEE Forum conferences in Malta (2017), London (2012), Zurich (2010), Vienna (2008) and Dublin (2006).

“Switzerland has a long tradition in successfully collecting and recycling WEEE. More than two decades of experience have resulted in collection rates of nearly 95%. By engaging with the WEEE Forum we not only share our expertise but also gain valuable insights in developments outside of our own country.”

Jean-Marc Hensch, Swico, Switzerland.
15 years ago, the WEEE recycling market was embedded in the scrap and waste industry. The calculation of WEEE recovery rates was subject to different interpretations and results were anything but comparable. Practices to de-pollute WEEE were not standardised and often disregarded. Tools and resources, tailor made for the European sector, were necessary to level the playing field.

At the same time, the composition, complexity and life time of products as well as material prices have changed and continue to change rapidly. Recyclers must now be able to recycle and de-pollute the latest electronic gadgets and flat panel displays as well as decades old TVs and handle pentane in refrigerators that has replaced the use of CFCs and HFCs. Recycling technologies and infrastructure have had to adapt to meet these challenges. To add to this, scavenging is rampant in some parts of Europe. The CWIT project estimated that one-third of end-of-life cooling and freezing appliances collected in Europe contain no compressor.

The WEEE Forum’s WEEELABEX project obtained the Best of the Best LIFE Project Award in 2014.

At the same time, the composition, complexity and life time of products as well as material prices have changed and continue to change rapidly. Recyclers must now be able to recycle and de-pollute the latest electronic gadgets and flat panel displays as well as decades old TVs and handle pentane in refrigerators that has replaced the use of CFCs and HFCs. Recycling technologies and infrastructure have had to adapt to meet these challenges. To add to this, scavenging is rampant in some parts of Europe. The CWIT project estimated that one-third of end-of-life cooling and freezing appliances collected in Europe contain no compressor.

The PROs of the WEEE Forum have helped structure a cleaner, more effective and more transparent WEEE treatment market. They have done so by placing the highest importance on recycling processes and workplace health and safety, working only with recyclers that meet exacting standards. As part of this approach the WEEELABEX project (2009-2012) introduced a unique set of ambitious harmonised standards of excellence for collection, handling, transport, recycling and preparation for the re-use of WEEE. These standards were the seed of the latest series of 50625 EN standards currently under preparation. In 2013 producer responsibility organisations in the WEEE Forum set up the WEEELABEX Organisation to train and certify auditors of WEEE processing sites. This was a great success and in 2016 the WEEELABEX Organisation obtained accreditation under ISO 17024 and 17065 to certify auditors and WEEE treatment facilities against the WEEELABEX certification scheme.

In 2005, the WEEE Forum also developed the first version of WF-RepTool, an online database application to determine WEEE treatment and de-pollution results in a transparent and traceable manner. WF-RepTool seeks to make recycling rates, calculated in accordance with legal requirements, comparable with one another. The tool is available to all PROs and the WEEE recycling industry in general. It makes the full WEEE value chain accountable for the calculation of recycling and recovery rates. In the past 15 years, WEEE Forum PROs have deepened their knowledge of best practice in recycling and de-pollution as well as methods for monitoring compliance. This has been achieved through collaboration with the WEEE recycling industry and by running sampling campaigns and research studies.

In the past 15 years, WEEE Forum PROs have deepened their knowledge of best practice in recycling and de-pollution as well as methods for monitoring compliance. This has been achieved through collaboration with the WEEE recycling industry and by running sampling campaigns and research studies.
In 2016, the WEEE Forum ran a survey of treatment operators and PROs to assess the impact of the implementation of the WEEELABEX standards. The main advantages of the overall WEEELABEX programme identified by respondents were:

- Better de-pollution results due to the high specifications set by the WEEELABEX (or EN 50625) standard (PROs);
- Better traceability of waste (PROs);
- A uniform set of standards for all WEEE treatment plants (PROs and treatment operators);
- Better compliance of regulations by operators (treatment operators);
- Being part of the programme is conducive to creating the image of an environmentally responsible corporation (PROs);
- Detailed set of requirements (PROs).

Although it has had an extremely positive impact, the WEEELABEX programme is not yet perfect and we are continually striving to improve it.

In 2014, CENELEC, an EU standards body, published general WEEE treatment standard EN 50625, which was based on the general requirements in the WEEELABEX standards. Some pioneer countries such as Ireland, the Netherlands, Belgium and France have made conformity with these standards compulsory. Jointly with our partners in the manufacturing and recycling industry, we will continue to call on the EU and member states to require legal conformity with the standards.
Members of
WEEELABEX Organisation

32

WEEELABEX facilities

154

WEEELABEX audited streams

220

WEEELABEX auditors

67

SECURING ACCESS TO SECONDARY AND CRITICAL RAW MATERIALS

Over the past 15 years recycling rates for most critical raw materials (CRMs) have remained very low. Today the European Union seeks to promote the circular economy as an alternative to the traditional linear economy so that society keeps resources in use for as long as possible, extracting the maximum value from them whilst in use, then recovering and reusing products and materials [WRAP].

The recycling rate for CRMs such as rare earth elements is currently estimated at less than 1%. The unrecovered materials do not become available for European industry because the actors within the system have approached the recycling of WEEE through a material-centric lens rather than a product-centric approach. The product-centric approach is based on long term expertise of minerals and metallurgical processing, in which systems are designed to recover the maximum of materials rather than just those that occur in the highest quantity or for which the largest market exists. The approach is analogous to processing complex minerals from geology, i.e. the tools used in minerals processing are used in the analysis of the recycling of end-of-life goods and the innovation lies in developing these tools for recycling.

Added to this, prices of CRMs are typically volatile due to uncertainty in the supplier markets. The Strategic Implementation Plan of the European Innovation Partnership on Raw Materials will be a valuable tool in addressing these issues.

Two initiatives that the WEEE Forum are involved with are also important. Firstly, we are the originator and leader of ‘WEEE 2020’, a formally recognised Raw Materials Commitment under the Commission’s European Innovation Partnership on Raw Materials. WEEE 2020 seeks to promote or co-ordinate initiatives aimed at making the WEEE value chain circular or more resource efficient.

Secondly, through ProSUM the WEEE Forum contribute to developing a centralised database of all available data and information on arisings, stocks, flows and treatment of WEEE, end-of-life vehicles, batteries and mining wastes. Primary and secondary raw materials data will be easily accessible in one platform and it will provide the foundation for improving Europe’s position on raw material supply, with the ability to accommodate

“We are in a unique position to bring recyclers and producers together to close the loop and reuse materials in a circular economy.”

Bjørn Arild Thon, RENAS, Norway.
During the past 15 years, WEEE Forum members have collected information about recovery of secondary raw materials and are now a powerful voice for explaining the need for and relevance of WEEE recycling. This information has also become important in understanding the key drivers of the recycling industry.

“Wecycle is among the top-5 ‘producers’ of mercury in the Netherlands, thanks to its recovery of mercury from end-of-life appliances.”
Jan Vlak, President of the WEEE Forum, Wecycle, the Netherlands.

On average, household appliances contain the following percentages of ferrous and non-ferrous metals:

- 63% in large household appliances
- 60% in small household appliances
- 65% in cooling and freezing appliances

Source: Eco-systèmes

WEENE MANAGEMENT, A MINE OF BUSINESS MODELS AND GREEN JOBS

15 years ago, WEEE recycling was an indistinguishable activity in the waste sector. After the publication and transposition of the Directive, PROs started building networks and the infrastructure that would support the whole WEEE value chain. The number of WEEE specific treatment plants increased in all EU member states, logistic companies and collection points started to create WEEE specific lines of activity, more PROs were created, WEEE registers and coordination centers emerged and indirect businesses such as consultancies and legal advisers specialised in WEEE matters.

Companies preparing WEEE for re-use also benefited from the PROs’ activities and, nowadays, over 16 WEEE Forum members collaborated with such organisations, some of which are social enterprises. Standards and regulatory instruments, such as registers and specific legislation, have been issued during the past 15 years to control and support such activities.

In addition, the WEEE sector, and PROs in particular, are important and proud supporters of the green economy growth in Europe. WEEE Forum PROs have implemented processes to select high quality service providers and, by doing this, they support the improvement of the quality in the WEEE sector and regulated practices.

Some estimates show that for 10,000 tonnes of waste products and materials, 1 job can be created if those 10,000 tonnes are incinerated, 6 jobs if landfilled, 36 jobs if recycled, and up to 296 jobs if refurbished and re-used [US EPA]. In France, it has been calculated that for each additional thousand tonnes managed by the industry today, 7-8 new jobs are created [OCAD3E]. In 2012, French industry collected 471,000 tonnes of e-waste, and 3,500 full-time equivalents were estimated to be employed, of whom around 1,450 were re-entering the labour market. In 2015, OCAD3E conducted a new study and concluded that around 7,000 people are employed in the household WEEE sector. With collected volumes forecast to double by 2020, more than 3,000 new jobs are expected to be created in this market.

“‘Recupel has created 1,200 green jobs.’”
Peter Sabbe, Treasurer at the WEEE Forum, Recupel, Belgium.

“‘Aware of our social responsibility, we create new jobs in sheltered workshops, we help to develop preparation for re-use activities and we support research and development in new technologies.’”
Jan Vrba, ASEKOL, Czech Republic.

“Wecycle connects the circular and the social economy. End-of-life electrical equipment returned to the municipalities and to stores is sorted and dismantled by people struggling to find a job on the labour market.”
Jan Vlak, President of the WEEE Forum, Wecycle, the Netherlands.

WEENE Forum members have contracts with more than 500 WEENE treatment operators and half of them collaborate with preparing for re-use organisations.

On average, household appliances contain the following percentages of ferrous and non-ferrous metals:

- 63% in large household appliances
- 60% in small household appliances
- 65% in cooling and freezing appliances

Source: Eco-systèmes

WEENE MANAGEMENT, A MINE OF BUSINESS MODELS AND GREEN JOBS

15 years ago, WEEE recycling was an indistinguishable activity in the waste sector. After the publication and transposition of the Directive, PROs started building networks and the infrastructure that would support the whole WEEE value chain. The number of WEEE specific treatment plants increased in all EU member states, logistic companies and collection points started to create WEEE specific lines of activity, more PROs were created, WEEE registers and coordination centers emerged and indirect businesses such as consultancies and legal advisers specialised in WEEE matters.

Companies preparing WEEE for re-use also benefited from the PROs’ activities and, nowadays, over 16 WEEE Forum members collaborated with such organisations, some of which are social enterprises. Standards and regulatory instruments, such as registers and specific legislation, have been issued during the past 15 years to control and support such activities.

In addition, the WEEE sector, and PROs in particular, are important and proud supporters of the green economy growth in Europe. WEEE Forum PROs have implemented processes to select high quality service providers and, by doing this, they support the improvement of the quality in the WEEE sector and regulated practices.

Some estimates show that for 10,000 tonnes of waste products and materials, 1 job can be created if those 10,000 tonnes are incinerated, 6 jobs if landfilled, 36 jobs if recycled, and up to 296 jobs if refurbished and re-used [US EPA]. In France, it has been calculated that for each additional thousand tonnes managed by the industry today, 7-8 new jobs are created [OCAD3E]. In 2012, French industry collected 471,000 tonnes of e-waste, and 3,500 full-time equivalents were estimated to be employed, of whom around 1,450 were re-entering the labour market. In 2015, OCAD3E conducted a new study and concluded that around 7,000 people are employed in the household WEEE sector. With collected volumes forecast to double by 2020, more than 3,000 new jobs are expected to be created in this market.

“‘Recupel has created 1,200 green jobs.’”
Peter Sabbe, Treasurer at the WEEE Forum, Recupel, Belgium.

“‘Aware of our social responsibility, we create new jobs in sheltered workshops, we help to develop preparation for re-use activities and we support research and development in new technologies.’”
Jan Vrba, ASEKOL, Czech Republic.

“Wecycle connects the circular and the social economy. End-of-life electrical equipment returned to the municipalities and to stores is sorted and dismantled by people struggling to find a job on the labour market.”
Jan Vlak, President of the WEEE Forum, Wecycle, the Netherlands.

WEENE Forum members have contracts with more than 500 WEENE treatment operators and half of them collaborate with preparing for re-use organisations.

On average, household appliances contain the following percentages of ferrous and non-ferrous metals:

- 63% in large household appliances
- 60% in small household appliances
- 65% in cooling and freezing appliances

Source: Eco-systèmes

WEENE MANAGEMENT, A MINE OF BUSINESS MODELS AND GREEN JOBS

15 years ago, WEEE recycling was an indistinguishable activity in the waste sector. After the publication and transposition of the Directive, PROs started building networks and the infrastructure that would support the whole WEEE value chain. The number of WEEE specific treatment plants increased in all EU member states, logistic companies and collection points started to create WEEE specific lines of activity, more PROs were created, WEEE registers and coordination centers emerged and indirect businesses such as consultancies and legal advisers specialised in WEEE matters.

Companies preparing WEEE for re-use also benefited from the PROs’ activities and, nowadays, over 16 WEEE Forum members collaborated with such organisations, some of which are social enterprises. Standards and regulatory instruments, such as registers and specific legislation, have been issued during the past 15 years to control and support such activities.

In addition, the WEEE sector, and PROs in particular, are important and proud supporters of the green economy growth in Europe. WEEE Forum PROs have implemented processes to select high quality service providers and, by doing this, they support the improvement of the quality in the WEEE sector and regulated practices.

Some estimates show that for 10,000 tonnes of waste products and materials, 1 job can be created if those 10,000 tonnes are incinerated, 6 jobs if landfilled, 36 jobs if recycled, and up to 296 jobs if refurbished and re-used [US EPA]. In France, it has been calculated that for each additional thousand tonnes managed by the industry today, 7-8 new jobs are created [OCAD3E]. In 2012, French industry collected 471,000 tonnes of e-waste, and 3,500 full-time equivalents were estimated to be employed, of whom around 1,450 were re-entering the labour market. In 2015, OCAD3E conducted a new study and concluded that around 7,000 people are employed in the household WEEE sector. With collected volumes forecast to double by 2020, more than 3,000 new jobs are expected to be created in this market.

“‘Recupel has created 1,200 green jobs.’”
Peter Sabbe, Treasurer at the WEEE Forum, Recupel, Belgium.

“‘Aware of our social responsibility, we create new jobs in sheltered workshops, we help to develop preparation for re-use activities and we support research and development in new technologies.’”
Jan Vrba, ASEKOL, Czech Republic.

“Wecycle connects the circular and the social economy. End-of-life electrical equipment returned to the municipalities and to stores is sorted and dismantled by people struggling to find a job on the labour market.”
Jan Vlak, President of the WEEE Forum, Wecycle, the Netherlands.

WEENE Forum members have contracts with more than 500 WEENE treatment operators and half of them collaborate with preparing for re-use organisations.
JOIN THE WEEE FORUM

Can you afford not to be a member of the WEEE Forum? Membership allows you to tap into more than 15 years’ experience of do's and don'ts, to help you avoid making mistakes along the way, give you a series of good models to choose from and avoid valuable time learning the trade.

WEEE competence centre
- Meet the experts
- Learn from your peers
- Tap into our knowledge base
- Monitor recycling with WF-RepTool, our bespoke reporting tool

Raising the bar
- Achieve mandatory recovery and collection rates
- Implement continuous improvement
- Become a front runner
- Help make European economy resource efficient and circular
- Be part of a reputable hub for forward-looking WEEE value chain projects

Have your voice heard
- Meet EU stakeholders
- Argue your case with Brussels policymakers

Level the playing field
- Engage in standardisation through CENELEC Technical Committee TC111X
- Support roll-out of WEEELABEX and EN 50625
The WEEE Forum is a European, Brussels-based not-for-profit association speaking for 31 electrical and electronic equipment waste (WEEE) producer compliance schemes – alternatively referred to as ‘producer responsibility organisations’ (PRO). It was set up in 2002. The 31 PROs are based in Australia, Austria, Belgium, Czechia, Denmark, Estonia, Italy, Greece, France, Ireland, Lithuania, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

It is the biggest organisation of its kind in the world. In 2016, its member organisations reported collection and proper de-pollution and recycling of 2,100,000 tonnes of WEEE. Members in 2016: Amb3E, Appliances Recycling, ASEM, Australia New Zealand Recycling Platform, EÅF, Ecodom, Eco-systèmes, Ecotic, ECOTIC, EES-Ringlus, EGIO, ElektroEko, Elektrowni, El-Kretsen, el retur, Environ, Fotokiklosi, Norsirk, Recupel, Remedia, RENAS, Repic, Retela, RoRec, SENS e-Recycling, SWICO, UFH, Wecycle, WEEE Ireland, WEEE Malta and Zeos.

CONTACT

Email info@weee-forum.org
Website www.weee-forum.org
Members of the Board

Jan Vlak (President)
Philip Morton (Vice President)
Peter Sabbe (Treasurer)
Giorgio Arienti
Pedro Nazareth
Valentin Negoita

Secretary General Pascal Leroy

Address WEEE Forum a.i.s.b.l.,
BluePoint Conference and Business Centre,
Boulevard Auguste Reyerslaan 80, B-1030
Brussels

Telephone +32 2 706 87 01
Transparency register ID 702397445-73