

erion

Producer Responsibility

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# Sustainability Report 2022

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# LETTER TO STAKEHOLDERS



We are pleased to present to you this 2022 Sustainability Report with the confidence that we have kept our promise. We told you that standing still, for us at Erion, was not an option, that we would continue to move forward, staying true to the building blocks of our DNA: concreteness, evolution, authoritativeness and determination. And so it has been.

In our third year of existence we have continued to grow, together, as a System, establishing a new Collective Scheme, strengthening the union of the original ones, employing new professionals, expanding our range of services and network of stakeholders. We have gone beyond what are the tasks of an Extended Producer Responsibility Organization by investing in high quality environmental training, information and awareness initiatives, enthusiastically supported by our 2,505 Member Companies and by an increasingly large public of citizens.

Having achieved these results, and others that you will discover in the following pages, was an important milestone. Having done so in 2022, represented an added value to the commitment with which we do our work. The year that we all expected to be the one of the great recovery after the Covid-19 pandemic, fell short of expectations from its very first months. The outbreak of the Russia-Ukraine conflict and the resulting increase in energy prices, have stifled industries and increased the level of uncertainty in the global economy, already marked by phenomena such as the raw materials crisis, widespread inflation and climate change.

All difficulties that we at Erion have taken up as new challenges, moving with the strength of our experience and the authority of a System capable of looking to the future with vision and constructive spirit. We have never limited ourselves to passively witnessing the transformations of society. Rather, we have chosen to measure ourselves against them, interpret them and try to steer them on the path towards ecological transition and the preservation of resources for the next generations. We have invested time and ideas in this direction, in a year that has seen our participation in various institutional working tables, public events, conventions, meetings in schools and European research projects. We have launched nationwide communication campaigns to spread a culture of sustainability and raise awareness among citizens – especially the younger ones – about virtuous practices for the protection of the environment and the development of the circular economy, such as the proper disposal and recycling of waste. Together with prestigious consulting firms, we have carried out high-level studies and surveys on challenging issues which have a direct bearing on all production

sectors, such as the supply of Critical Raw Materials, the impacts of the new European Regulation on batteries, the level of Italians' knowledge about WEEE and WBA.

A deep understanding of the economic environment in which we found ourselves operating in 2022 enabled us to make strategic choices that led to decidedly positive results for all stakeholders. During the year, we managed 257,705 tonnes of waste, of which 246,246 tonnes was Household WEEE. Their proper management generated considerable environmental benefits, which allowed us to avoid emissions of 1.8 million tonnes of CO<sub>2</sub> equivalent (corresponding to those produced by a car that travels about 200 thousand laps around the equator), save more than 380 million kWh of energy (equal to the average electricity consumption of about 140 thousand Italian households in a year), and reintroduce more than 220 thousand tonnes of Secondary Raw Materials (89.4% of Household WEEE managed) into the production cycles.

These, as always, are the numbers that we care most about, the result of a year that has made us even more aware that we are a multiple Collective Schemes System capable of creating connections, inspiring people, reflecting on small and big changes. We can do this because we have the opportunity, and the certainty, of being guided by five structured organizations. Five industry Collective Schemes that act and operate on different sectors, but that share, together with ECO, a common goal: to represent excellence in the landscape of Extended Producer Responsibility Organizations for all their stakeholders. That is why, this year, we have chosen to entrust this thought, and this Report, to the theme of constellations, to remind you (and us) how the ideas and actions of individuals gain more strength if placed in a master plan.

This is the case for the Erion System and the five Collective Schemes that make it up: Erion WEEE, Erion Professional, Erion Energy, Erion Packaging and Erion Care. In the chapters dedicated to them, you will be able to learn about the operational performance achieved during the year and the high value of the services and initiatives they have implemented by best interpreting the commitment to sustainability of the Producers they represent. You will discover, in the cases of Erion Packaging and Erion Care, the process that led the first to be officially accredited by the Ministry of the Environment and Energy Security as an autonomous system for the collection, recovery and recycling of Packaging Waste, and the second to become the first EPR Organization in Italy committed to combating the littering of cigarettes butts and the improper disposal of tobacco product Waste in the environment.



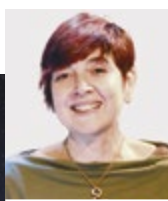
These are results we are proud of and that we have achieved thanks to the implementation of a winning and shared strategic vision, which has led us to become a reference player in Italy and an important presence on the European scene.

Strengthened by three years of excellent results, but certain that there is still a long way to go, we will continue to work with the same dedication and passion to improve further and, above all, to continue to do good to the world.



**Gianpaolo  
Platto**

President – Erion WEEE



**Daniela  
Valterio**

President – Erion Professional



**Andrea  
Sanvito**

President – Erion Energy



**Claudio  
Formisano**

President – Erion Packaging



**Enrico  
Ziino**

President – Erion Care



**Andrea  
Fluttero**

President - Erion  
Compliance Organization

A point in the sky is just  
one among many others  
until we place it in a constellation  
turning it into a precise point.

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**CREATING SYSTEMS  
IS OUR WAY OF ORIENTING  
OURSELVES WHEN WE LOOK  
AT THE STARRY SKY,  
AND IT IS THE WAY THAT STARS  
HAVE OF NOT REMAINING,  
TO OUR EYES, ONE AMONG MANY.**

# **1. ERION SYSTEM**

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# 1.1 ERION'S DEVELOPMENT PATH IN FIVE STEPS



Erion is a System consisting of five sector-specific Collective Schemes (**Erion WEEE, Erion Professional, Erion Energy, Erion Packaging, and Erion Care**) for the management of Household and Professional Waste Electrical and Electronic Equipment (WEEE), Waste Batteries and Accumulators (WBA), Packaging Waste from EEE and BA, and, from 2022, also tobacco product Waste.

The 5 Collective Schemes are supported by the consortium company **Erion Compliance Organization S.c.a r.l. (ECO)**, the common platform designed to provide them with shared services by harmonizing operational strategies and coordinating all activities of the Erion System.

Erion was created to provide strategic content and operational excellence for effective implementation of Extended Producer Responsibility (EPR), a core value of European environmental policy. The EPR principle requires Producers to take financial and/or organizational responsibility for the products they put on the market when they become waste, including – in sectors where this is already regulated – the operations of take-back, reuse, recycling and final disposal. Erion works alongside Producers to support them in the direct management of their waste from both an operational and administrative point of view, ensuring full compliance with the rapidly evolving national and EU regulatory framework of reference. Erion accompanies Producers on a virtuous and sustainable path, enabling them not only to fulfil their obligations in terms of waste management, but also supporting them in innovative projects to rethink their products and production processes with a view to higher environmental quality and

thus improve the whole chain.

Since its inception, Erion has faced small and large challenges, further compounded by the Covid-19 pandemic of the past three years and the Russian-Ukrainian conflict that began in February 2022. Erion, however, has resolutely pursued its path of growth with awareness and care, progressively building a System capable of generating important benefits for communities and to public health. Erion is able to bring together and combine, in one single System, many features: respect for the environment, quality of work, continuous innovation to make a concrete contribution to the circular economy, commitment to community awareness, transparency, loyalty in its relations with partners, and collaboration with institutions.

Erion operates within a context in which proper waste management makes it possible to limit the dispersion of critical substances into the environment, transforming waste into resources to give a concrete boost to the circular economy. The good progress of each Collective Scheme is characterized by its commitment to five different areas, which contribute to its development and growth and that, in this Sustainability Report, are identified as the **"5 steps"**:

- **regulatory framework:** the Collective Schemes participate in all the most important institutional roundtables to express and give voice to their values and the interests of their Members, always in a constructive and balanced way to ensure that the institutions promote the spread of the circular economy. Through these discussion forums, the Collective Schemes establish collaborations and synergies with

stakeholders, sector associations and institutions, positively influencing their decisions and proactively contributing to the definition and development of the national and international regulatory framework;

- **operational efficiency:** a cornerstone of the Collective Schemes' path of growth and development, operational capability translates into the ability to carry out day-to-day activities effectively, ensuring full regulatory compliance for Producers. The management of waste collection, transportation and treatment processes is gradually implemented with due care and commitment by each Collective Scheme. Coordination of activities lays its foundation on a capable and robust internal structure, enabling it to offer Producer Members effective and efficient services, carefully choosing its suppliers, establishing close relationships with Producers and stakeholders, and acting proactively to address and resolve critical issues;

- **standards and quality:** once fully operational, the Collective Schemes' efforts to enhance and optimize the activities of each individual area do not stop, but continue day by day with the aim of providing increasingly efficient and quality services. For example, mature Collective Schemes focus on optimizing the management of operational processes and related costs by improving the network of treatment plants or internalizing the management process of suppliers who become, for the Collective Schemes, strategic partners to all effects. Quality also comes through the development and participation in

projects focused on innovation, but it is above all attention to the environment that provides the stimulus to continue growing and improving the quality of the services offered;

- **Europe and innovation:** the Collective Schemes move within a dynamic network with an international reach, which is a source of inspiration and innovation. At the same time, they play an active role within this network, as they provide their expertise and experience to help develop positive dynamics for environmental protection. Often it is the Collective Schemes themselves that hold the position of innovation leader,

developing projects that inspire other European collective systems. The Collective Schemes also participate in research projects in the areas of circular economy and technological innovation and funded by the European Union;

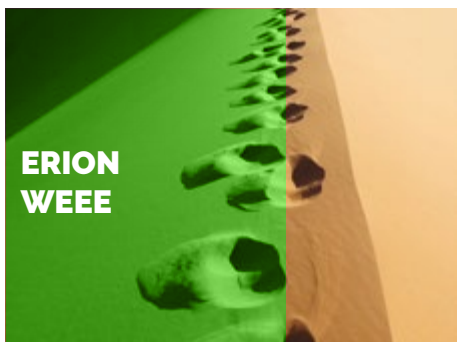
- **circular economy initiatives:** for Producers, membership in the Collective Schemes is not only the means by which they exclusively fulfil their end-of-life waste management obligations. More and more Members are taking advantage of Erion's experience and innovative drive to introduce circular economy principles in their production facilities, with the aim of implementing

new business models, reducing waste production and designing products with recycled materials. At the same time, the Collective Schemes contribute to public information and awareness raising activities to improve the quality of collection, maximizing recycling opportunities and, more generally, contribute to the development of 'environmental awareness', with the knowledge that cooperation from citizens is essential to give a boost to waste collection and thus enable the recovery of valuable raw materials.

## THE FIVE STEPS







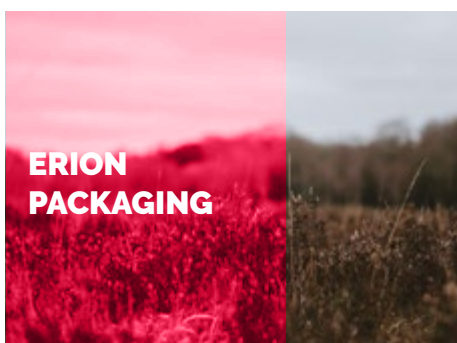
The reference System in Italy and Europe, which operates within a consolidated and well-established network in the territory. It can count on a solid organizational structure that allows it to focus on the continuous improvement of its operational processes, on the reduction of its environmental impacts, on citizens' awareness initiatives to stimulate them to adopt virtuous behaviours, such as the maxi-communication program DireFareRAEE and on assisting Members in circular economy projects.



The reference System of Professional Electrical and Electronic Equipment Producers, committed to improving the collection rate of B2B WEEE to make a concrete contribution to the transition to the circular economy. The Collective Scheme has launched in Italy the Exceed voluntary collection program, active for the A/C, Printing and Food sectors.



One of the most important Collective Schemes on the national scene, is preparing for the changes and effects from the new Regulation on the management of batteries and accumulators expected in 2023, establishing a constant dialogue and confrontation with institutions and other collective systems. In order to improve the quality and quantity of collection, it has implemented the project "Energia al Cubo", an intensive voluntary collection and awareness-raising activity among citizens.



The Collective Scheme has achieved, in December 2022, accreditation by the Ministry of Environment and Energy Security as the first autonomous system in Italy for the management of EEE and BA Packaging Waste to be fully compliant with the current and future legislative framework. In parallel, it supports its Members in eco-design activities and is in the process of activating innovative systems for the management of Packaging Waste.



Established in 2022, its mission is to contribute to the reduction of littering and environmental impact of cigarette butts and other tobacco product Waste. The Collective Scheme, which was the first in Italy to launch an information campaign aimed at consumers, is working with stakeholders to define a Program Agreement to address with a systemic approach the challenges generated by this particular type of waste.





# 1.2 ERION'S MISSION

Every day Erion strives with determination to fulfil its mission: to contribute to the construction of a sustainable future for the Planet through the diffusion and achievement of a sustainable production and consumption model. To do this, Erion can count on a system of Collective Schemes that guarantee the collection, recovery and recycling of Electrical, Electronic, Batteries and Accumulators Waste and their Packaging, as well as the management of tobacco product Waste. The green transition requires new ways of thinking and acting, starting from changing the daily behaviours of consumers and citizens, and passing through technological innovation, scientific research and continuous dialogue with stakeholders. Erion bases its Mission on a set of strong and unique values, which have always characterized the approach, choices and strategic direction of the System:

- **quality and efficiency:** punctuality, reliability, responsiveness, are just some of the aspects on which Erion works on daily to ensure high standards in the entire waste management process of the different sectors, with a view to continuous improvement;
- **transparency:** the traceability of all managed activities represents a fundamental aspect for the System. In fact, Erion annually publishes its economic and operational performance and also shares – the only one in Italy in the segments in which it operates – its financing models and eco-contributions;
- **social commitment and innovation:** for Erion, the affirmation of a circular, regenerative and low greenhouse gas emission economic model must include a change of mentality at all levels, starting from citizens, and passing

through companies and up to institutions. Consumers and professional users (such as installers, distributors, and companies) play a key role in ensuring that waste is sent to recycling and, thus, properly managed, and it is to them that Erion addresses communication and awareness campaigns using various media and channels, with the aim of informing and increasing their awareness. In addition, Erion supports Members and treatment plants in innovative initiatives related to the issue of circular economy to implement innovative solutions that can transform the business model of companies in order to reduce their environmental impact and increase their competitiveness.

In this Report, Erion aims to tell how sustainability, in all its economic, social and environmental aspects, is strongly rooted in the operational capacity and long-term strategy of the multiple Collective Schemes system. Through the operational activities of the Collective Schemes, WEEE, WBA, and Packaging Waste become a real resource that Erion is committed to transform and reintroduce into the supply chain, breaking away from the old 'linear' model, which does not provide for the recovery or reuse of goods that have become waste. Instead, the economic and cultural model that Erion pursues is 'circular' and is based on three key concepts such as prevention, recycling and reuse. Erion believes in involving citizens and consumers who will benefit from innovative product sales models that can promote circular consumption and the proper disposal of waste. Erion is committed to implementing a quality waste treatment process. The reuse of

materials from recovery and recycling, such as iron, aluminium, and glass, saves considerable energy and resources as it reduces the need to produce goods from virgin raw material. Thus, through the collection and proper recycling of waste, the Collective Schemes contribute to limiting the negative impacts associated with climate-changing gas emissions, as described in Chapter 3. With this in mind, Erion aims even higher than albeit important waste material recovery and recycling target by investing to improve the overall performance of its network in terms of environmental and process efficiency. The Erion System strongly believes in involving its suppliers to make their processes less impactful, valuing the environmental commitment of the entire chain. The System intervenes on logistics and operators by promoting the use of means of transportation with lower environmental impact, and on processing plants by encouraging the use of energy from renewable sources. In this way, it pursues the goal of reducing its own and the chains' direct and indirect emissions, in line with the overall objectives for combating climate change.

Erion is committed to ensuring that its Members respect and comply with all EU and national regulations of the sectors in which it is involved. Although it is a non-profit organization, through its Collective Schemes' activities Erion intends to generate value for its Members and all their partners and, in general, for the entire Italian economic system. Erion strives to ensure that all actors involved in waste collection management have an adequate economic return to make the strengthening of existing waste chains and the creation of new attractive value chains.

This will help strengthen Italy's competitiveness in terms of the circular use of resources, while bringing positive change and opportunities in employment through the creation of new sustainability-related

occupations in technical areas (plant management, design, research and development) and in the areas of marketing and environmental communication. For its employees, Erion ensures an inclusive

professional environment based on full respect for gender equality, that fosters concrete opportunities for growth and a good work-life balance.

# 1.3 2022 ERION STRUCTURE

The Erion System consists of five sector-specific Collective Schemes, flanked by **Erion Compliance Organization**, the Extended Producer Responsibility (EPR) service company owned by the Collective

Schemes themselves. Thanks to this organization, Erion is able to design and implement highly performing EPR systems in terms of efficiency and quality, guaranteeing Producers optimal management

of operational processes, customized services, and strategic support for the development of circular and sustainable models.



# 1.4 GOVERNANCE: STRUCTURE, STRATEGIES, COMMITMENTS

## General governance structure:

Erion multiple Collective Schemes system is the expression of the Producers and operates on a non-profit basis to achieve the targets set by European and national environmental directives. The five sector-specific Collective Schemes and the ECO service company, owned by the Collective Schemes themselves, are governed by the following bodies:

- the **Members' Assembly**, which ap-

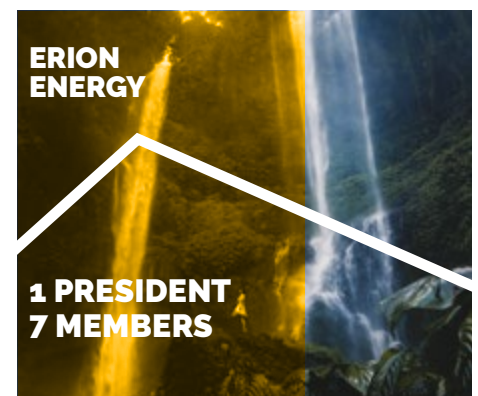
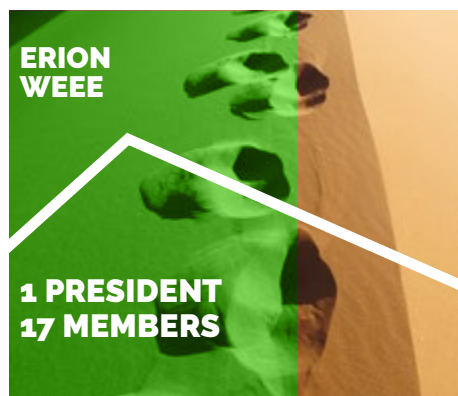
proves the financial statements, appoints the Board of Directors and supervises its work;

- the **Board of Directors (BoD)**, which sets the strategy and makes management decisions;
- the **President**, who serves as the legal representative and coordinates the work of the BoD;
- the **Board of Statutory Auditors**, which monitors observance of the

law and bylaws, compliance with the principles of proper administration and, in particular, the adequacy of the organizational, administrative and accounting structure adopted.

They are joined by the General Manager, who, according to the delegated powers assigned to him/her by the BoD, is in charge of day-to-day management and the implementation of established operational plans

## THE BOARDS OF DIRECTORS OF THE COLLECTIVE SCHEMES AND OF ECO



The **Board of Directors and Presidents** of the Collective Schemes are the expression of member companies, in effect the key players in decision-making activities and fully involved in setting goals and strategies. The President of ECO, on the other hand, is chosen from among people not related to the Members and is elected on the basis of criteria of independence, professionalism, competence and integrity.

The **General Managers**, appointed by their BoD on the basis of criteria of proven experience and managerial competence, develop the Collective Schemes' specific operational plans, which are then discussed, defined and approved first by the BoD and then at the Members' Assembly. In the definition of the proposals and in the consequent implementation of the provisions of the Operational Plans, extensive involvement is provided by the ECO Management Team, which is also actively involved in the preparation and drafting of the Sustainability Report.

### **Erion's commitment to ethical and responsible business conduct**

As the leading Italian multiple Collective Scheme System of Extended Producer Responsibility, Erion has decided to adopt a Code of Ethics and Conduct that defines the inspiring principles that must be respected by all those who work on behalf of the System. This is intended to spread good behavioural practices and be of inspiration for all collaborators and stakeholders in the chain. For an ethical

and responsible conduct of activities based on the values of legality, fairness and transparency, in addition to the Code of Ethics, ECO and all Collective Schemes have adopted and effectively implemented an Organization, Management and Control Model (or Organizational Model 231) in accordance with Legislative Decree 231/2001, which identifies, through risk analysis, which Collective Scheme activities are most exposed to the offenses envisaged by the law and possible corrective and control actions. The effectiveness of the control is strengthened by the whistleblowing procedure, through which personnel and stakeholders have a direct access channel with the Supervisory Board to submit, under conditions of confidentiality, reports related to potential offenses being committed. In order to better manage potential risks and impacts arising from operational activities, in addition to the Organizational Models 231 of the individual Collective Schemes, the System has adopted a Business Continuity Plan, a shared document of procedures useful for ensuring adequate levels of service following the occurrence of potential critical situations. The Business Continuity Plan was constructed through an analysis of the impacts on the System, to study the potential effects of a vulnerable situation on existing activities, with a focus on some more concrete possible risk scenarios: critical situations such as violations of legal requirements, possible reputational damage, unavailability of suppliers, their services or internal personnel. Due to the organizational change in the

management of Interzero Italy Srl, which involves Erion directly managing suppliers, the Plan was updated in 2022 taking into consideration the new potential risks. The Plan also defines each phase of Business Continuity management, establishes the existence of a team dedicated to mitigating negative impacts, and a related internal and external communication plan. The guidelines dictated by the Business Continuity Plan integrate with both ordinary administrative procedures and those aimed at ensuring safety in the workplace in emergency situations. On a general level, the Erion System guarantees its Members high levels of quality and efficiency in terms of management and environment, as it complies with UNI EN ISO 9001:2015 and 14001:2015 standards; this involves each Collective Scheme and each business function periodically engaging in risk and opportunity analysis to study the impacts, critical issues, and activities of the current year and developing improvement plans for the future FY. Consistent with ethical and responsible management, the investigation launched in May 2021 by the Italian Competition Authority (AGCM) against ERION WEEE was closed during 2022. The Authority accepted the commitments submitted in response to the critical issues raised at the start of the procedure. The suitability of these initiatives meant that the investigation was finally closed, without a finding of the infringement for which it had been opened, but with periodic verifications by the Authority for the next two years.

# 1.5 STAKEHOLDERS: CATEGORIES, CENTRALITY AND ENGAGEMENT

Over time, Erion has forged strong relationships with a network of stakeholders that enables it to carry out its activities efficiently and with high quality standards, but also to engage into fruitful dialogue about existing technologies, ideas for

improvement, and needs to be addressed. Not only that, the relationship with stakeholders allows Erion to take an active part in legislative developments and to be constantly updated, seeking to ensure that decisions made are consistent with

the peculiarities and needs of the system in which Erion operates. The stakeholder categories with which Erion interfaces are identified below.





## Collaboration with stakeholders

Collaboration with stakeholders takes place on different occasions and in different ways, such as the development of the materiality analysis, explained in detail in the following section. Indeed, this activity involves engaging stakeholders in order to assess what are the main impacts generated by Erion's activities so as to provide a useful external and independent perspective on the Collective Scheme's operations. In order to gather as diverse and representative opinion as possible, Erion selects a sample of stakeholders for each of the above categories and for each sector of the different Collective Schemes, to whom a questionnaire is sent. To supplement the responses obtained, some particularly significant stakeholders are then identified with whom more in-depth interviews are conducted. This is an important discussion in which to address additional issues with respect to the materiality analysis and establish a direct dialogue

aimed at an in-depth examination of the topics deemed relevant.

Other valuable tools ensure ongoing communication of relevant information for all stakeholders involved in the Collective Schemes' activities. These include the numerous events organized by Erion, Erion's websites and social networks, as well as the magazine dedicated to the circular economy ([economiecircolare.com](http://economiecircolare.com)), and this Sustainability Report, the contents of which are not only created thanks in part to the results of the dialogue engaged with stakeholders, but also represent an important dissemination tool about the activities carried out and the results achieved during the year. More details about the different communication tools used by Erion can be found in section 1.8. A significant moment of stakeholder involvement is also the projects in which Erion takes part, including at the international level, thanks to which it is able to

actively contribute to the development of the sectors in which it operates. These projects are described in more detail in Chapter 1.7 and in the chapters dedicated to the Collective Schemes. Also playing a key role in stimulating discussion and research on the circular economy are the many bodies and associations that at the Italian and European level bring together institutions, research centres, companies and other organizations, such as the Foundation for Sustainable Development, the Circular Economy Network (ICESP), the Observatory for the Protection of the Electronics Market in Italy (OPTIME), and the Agency for the Promotion of European Research (APRE). There is also no shortage of educational projects in which students and other categories of citizens are involved, with the aim of increasing awareness about the importance of proper waste disposal, recovery of raw materials, and the circular economy in general.

## Interzero and the organization of operational services

Among the stakeholders, of particular importance is Interzero Italy, a leading company in circular economy solutions, which manages some operational processes for the Erion System. In 2022, Erion confirmed its collaboration with Interzero,

but with a different organizational mode than in previous years, which aims to enhance the distinctive competencies of the two entities. The new operating model has enabled Erion not only to strengthen direct relationships with some of its

key stakeholders, but also to improve its supplier selection process, with the aim of increasing quality levels and the ability to generate positive environmental and social impacts.



## The supplier selection process

During 2022, a new supplier selection procedure was developed, which combines economic evaluation criteria with elements of merit aimed at preferring operators who are particularly sensitive to environmental results and able to meet precise quality standards. This selection process has been applied to the suppliers of Erion WEEE Collective Scheme, while for Erion Energy Collective Scheme the previous suppliers have been confirmed pending the approval of the new European Batteries Regulation which, by

regulating various aspects related to their management and disposal, will necessarily affect the operational aspects and therefore the criteria that Erion will use in selecting its suppliers. Erion's goal is to foster healthy competition among potential suppliers and create conditions that allow them to invest in continuous improvement of the quality of services offered, with interventions such as increasing the quantity and type of materials processed and new solutions for the recovery of secondary raw materials, espe-

cially critical ones. Among the innovations introduced by the new supplier selection and contracting system is the introduction of a payment indexing system based on changes in fuel, energy and secondary raw materials prices. In response to the significant and sudden, often speculative fluctuations experienced in recent months, Erion decided to improve its existing indexing system, making it more responsive to market and price trends, thereby reducing the likelihood of economic setbacks to suppliers.

# 1.6 GENERAL MEDIUM - TO LONG - TERM STRATEGIES: MATERIALITY ANALYSIS



Erion has chosen to update the materiality analysis carried out in the previous year so as to check whether the changes that characterized its internal structure and the context in which it operates had affected the topics considered material, i.e., topics that deserve to be addressed in this Report as they are particularly relevant to the System. The analysis was therefore performed using a new methodology in response to the changes introduced by the new GRI Standards, which became mandatory as of January 2023<sup>1</sup>, and which put the focus on identifying what are the main impacts generated by an organization's activities. To do this, the entire management team was involved as well as some stakeholders who contributed, through their experiences, to enrich these analyses also from an external point of view useful to complement the assessment and to ensure that no relevant aspects were overlooked. The process adopted for carrying out the new materiality analysis was structured in three phases:

## A) Internal materiality analysis

In this phase, the management was involved in order to identify the information needed to understand what were the main impacts generated by the organization's activities and what was the extent of these impacts. To facilitate this activity, all the different types of impacts that an organization can generate were grouped

into the topics analyzed by the specific GRI Standards, and for each topic Erion answered some useful questions to stimulate a reflection on the type of impact generated and the actions taken about it. To be able to assess the relevance of the impact topics, a numerical index was assigned to each response. The final score for each topic and a ranking of relevance was then obtained from the average. The results obtained were re-discussed internally by Erion on several occasions and with key figures representing different company roles to ensure maximum sharing and that they reflected the actual situation in the organization. These discussions led in some cases to changes in the relevance given to different topics.

## B) Stakeholder engagement

Erion identified a sample of stakeholders relevant to its activities, ranging from consumer associations to trade associations and universities. Through a questionnaire, stakeholders were given the opportunity to express their assessment regarding the impact generated by Erion for each of the topics analyzed in the internal analysis phase. In order to supplement the information gathered through the questionnaire, it was finally decided to select some stakeholders to conduct individual interviews useful for gathering more details that would allow reconstructing how Erion's work is perceived and interpreted outside the organization.

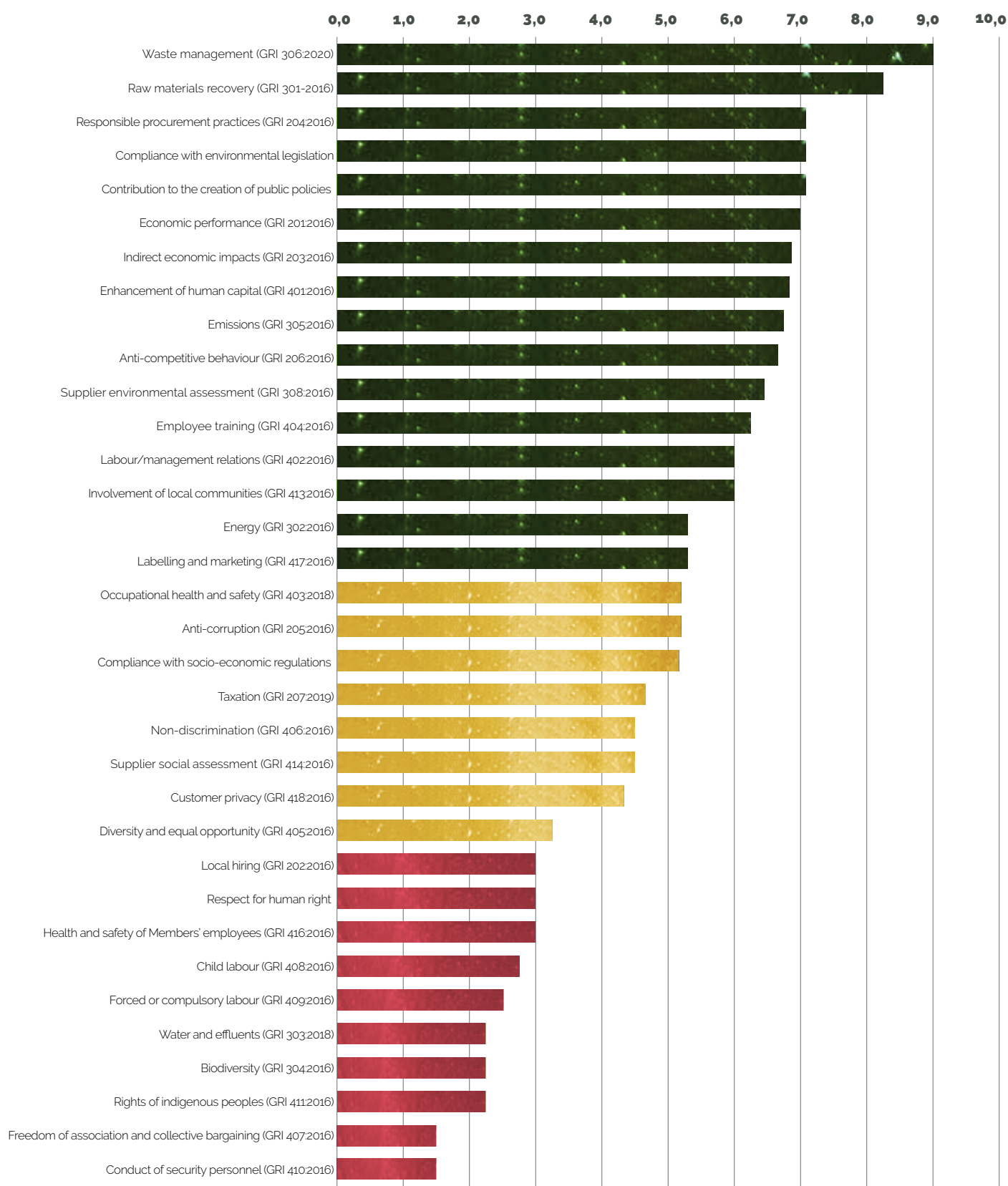
## C) Merging the results of the previous phases, setting the threshold and selecting the material topics.

The results obtained from stakeholder engagement were integrated with those recorded in the first phase by averaging the scores obtained by each topic in the two phases, and thus ranking the final scores of the impact topics. As indicated by GRI 3: Material Topics 2021, in order to identify material impacts it is necessary for the organization to set a threshold which, in the ranking, distinguishes them from those with no material impacts. Thus, it was possible to derive the material topics for Erion in 2022, shown in green in the graph below, while the topics just below the materiality threshold are highlighted in yellow, and the topics far below the threshold are highlighted in red, which therefore do not represent a significant impact generated by Erion. Material topics are shown in association with the GRI Standards used for their reporting. In some cases no standard is indicated as the reporting is not done following the GRI guidelines.

<sup>1</sup> In 2023 the GRI Standards developed in 2021 became mandatory, specifically: GRI 1: Fundamental Principles 2021; GRI 2: General Disclosures 2021; GRI 3: Material Topics 2021.

## RANKING OF MATERIAL AND NON-MATERIAL TOPICS FOR ERION IN 2022

### Materiality score



Most of the topics that were already regarded as material in 2021 have been confirmed, while five new topics have been added to the materiality matrix of Erion:

- monitoring of anti-competitive behaviour;
- responsible procurement practices;
- contribution to the creation of public policies;
- marketing and labelling;
- labour/management relations.

Some of these topics were assessed as material during the discussion of the results of the materiality analysis carried out with the managers of the various

Collective Schemes that make up the Erion System. For example, the 'Labelling and Marketing' and 'Labour/management relations' topics had originally scored just below the materiality threshold, but taking into account the activities carried out by Erion during the year and the effort that was placed into these areas (as will be set out in more detail in the following sections of this Report) it was decided to re-evaluate these topics and regard them as material. As for the 'Anti-corruption' and 'Occupational health and safety' topics, they were downgraded from the previous year, and thus not appearing as material topics. With reference to anti-

corruption, it was agreed in discussion of the results with the Collective Schemes managers that – even though this is a topic constantly under scrutiny by Erion – no criticalities have emerged to that effect. With regard to 'Employee health and safety', Erion monitors the issue by implementing all legal provisions in this regard, but for the type of activity carried out by Erion's direct employees, which does not include any type of production process and is exclusively office work, the risk of accidents is not assessed as high and therefore the topic can be regarded as non-material.

Lastly, the following table lists the material topics and the main impacts associated with them as identified by Erion.

TOPICS	IMPACTS
<b>Waste management</b>	Waste management represents for Erion an opportunity, given the environmental benefits that can be obtained from its proper management. Inaction by Erion on this issue could generate negative impacts such as inefficiencies at the Collection Centres. This activity is supervised by the Operations Team, which in 2022 started the direct management of contracts with suppliers.
<b>Raw materials recovery</b>	The recovery of secondary raw materials from waste is seen as an opportunity to contribute to the circular economy by meeting recycling targets and to ensure the economic sustainability of treatment activities. Recovery and recycling performances are monitored through audit activities and analysis of the reports provided by the facilities.
<b>Responsible procurement practices</b>	The impacts generated by the use of responsible procurement practices of logistics and treatment providers represent an opportunity for Erion to ensure work continuity for all facilities active in the treatment of WEEE, provided they meet minimum quality requirements. The activity is constantly supervised by the Operations Team.
<b>Compliance with environmental legislation</b>	Failure to comply with environmental legislation would cause negative impacts for Erion. Such risk is continuously mitigated, prevented, and monitored by all departments within the organization
<b>Contribution to the creation of public policies</b>	Given the different level of maturity of the regulations governing the five sectors overseen by Erion, it is an important opportunity to contribute constructively to the creation of public policies, from the future battery regulation to the ministerial round table for Critical Raw Materials. The activity is supervised by the management of the individual Collective Schemes and ECO.

TOPIC	IMPACTS
Economic performance	Negative economic performance could lead to loss of competitiveness of the Collective Schemes against potential competitors. The activity is constantly monitored and there are ad hoc policies and procedures for measuring economic performance.
Indirect economic impacts	Indirect economic impacts represent an opportunity. Benefiting from Erion's activity are, first and foremost, the municipalities that no longer bear the cost of waste management, since this cost is passed on to consumers through the payment of eco-contributions.
Enhancement of human capital	Human capital is Erion's main resource, and its enhancement is an important opportunity to ensure the highest levels of service and environmental protection. Personnel management and development is overseen by the People & Welfare Team.
Emissions	Monitoring of emissions represents an opportunity, given the environmental benefit gained from proper waste management. A decrease in quality levels of the treatment would lead to negative environmental consequences and, therefore, the activity is supervised by the Operations Team during the supplier qualification and verification phase.
Anti-competitive behaviour	The adoption of forms of anti-competitive behaviours represents a risk, given that Erion is the leading EPR system in Italy and given the reporting of the Collective Scheme to the Italian Competition Authority (AGCM), which took place in 2021 and concluded with a positive outcome in 2022. The activity is supervised by the Corporate & Compliance Services Team.
Supplier environmental assessment	The environmental assessment of suppliers represents an opportunity to ensure treatment quality standards. The activity is supervised by the Operations Team through the monitoring and qualification of suppliers.
Employee training	Employee training represents an opportunity for Erion, both for the achievement of pre-set results and for the professional growth of human resources. This issue is overseen by the People & Welfare department.
Labour/management relations	The relationship between management and employees is a topic of interest, given the rapid growth of the organization and its evolution. The issue of organizational change is overseen by the Manager of ECO and the People & Welfare Team and is monitored through periodic internal climate surveys.
Involvement of local communities	Involvement of local communities is increasingly an opportunity, given that citizens are the primary source of generation of waste that the Erion system manages. An informed community that positively changes its habits will enable Erion to achieve the challenging collection targets set by current regulations.
Energy	Energy consumption, and the energy consumption avoided through recycling of secondary raw materials, represents an opportunity to reduce the impacts of energy-intensive and mining activities, and it is an area monitored by the Operations Team.
Labelling and marketing	Marketing activities, along with communication programmes, are an important opportunity for Erion to inform citizens of proper waste management practices and to increase collection results. This activity is supervised by the Marketing & Communications Team.



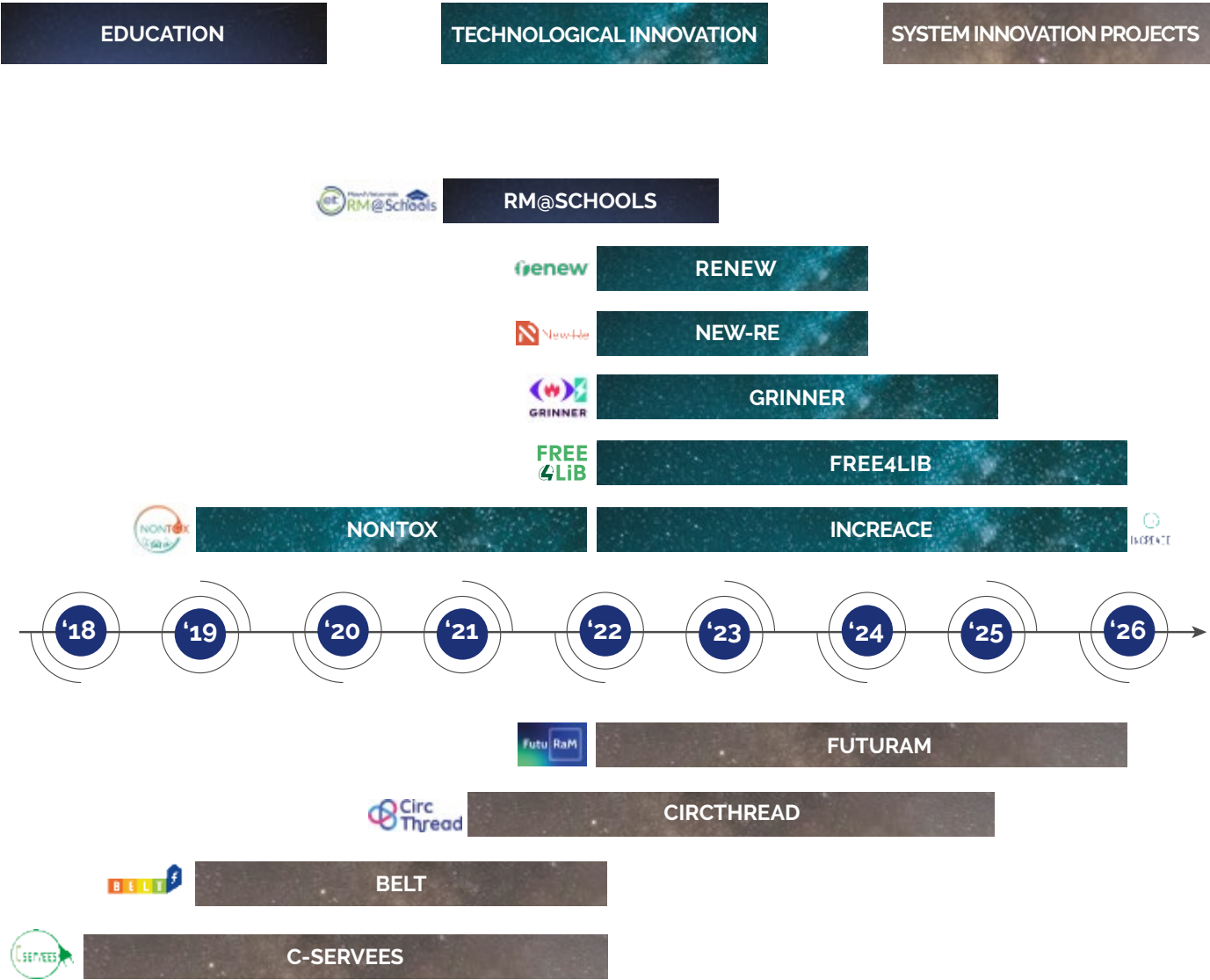
# 1.7 INNOVATION



The innovative character of Erion takes concrete expression through the research, training and communication projects initiated in 2022, including through participation in European Union-funded programmes. The possibility of relating with European partnerships is a stimulating opportunity for discussion regarding regulatory issues, EU strategies for the circular economy, and innovative technologies and solutions. For this, the Erion System is supported by the Strategic Development

and Innovation Team, which is engaged – in addition to participating in funded projects – also in coordinating innovative studies and research of interest to the Collective Schemes such as, for example, the study on the impacts of the forthcoming Battery Regulation or the recycling potential of critical raw materials. Projects of a European nature enable Erion to acquire frontier skills to be transferred to its Members, thus helping to improve knowledge on innovative business models and pro-

cesses to meet the environmental challenges of different sectors. In addition, the operational context of the projects fosters the personal and technical growth of all people involved, enhancing internal skills. The diagram below shows the funded projects currently implemented by the Erion System, followed by a description of the projects initiated during 2022.





## Technological innovation

**NEW-RE (2022-2024)**, funded by EIT RawMaterials: the goal of the project is to increment the collection of rare earth-containing wastes (permanent magnets), improve their pre-treatment phase and obtain, at the end, secondary rare earths. This will be pursued through the setting-up of a pilot plant for the hydrometallurgical process that will treat permanent magnets from decommissioned electric motors and hard drives. Concurrently, a process for the automated extraction of permanent magnets from WEEE and decommissioned electric motors will be developed. Erion participates as the coordinator of the Collective Scheme by also dedicating itself to mapping the available magnet streams and to the communication and dissemination activities of project results.

**Grinner (2022-2025)**, funded by the Horizon Europe programme: the initiative focuses on the development of a technology, based on AI systems and X-rays detection, to locate batteries in the WEEE stream entering treatment plants to facilitate removal prior to shredding and thus avoid fires and accidents. The Grinner solution involves the use of a robotic system for the automated and safe removal of batteries prior to the WEEE shredding stages. Erion, in cooperation with WEEE treatment plants, will study the composition of current waste streams to determine the quantity and quality of batteries. In addition, Erion will engage with operators to verify replicability by

assessing improvements, benefits, and commercialization opportunities.

**FREE4LIB (2022-2026)**, funded by the Horizon Europe programme: the objective is the design, development and validation of innovative processes for the recovery of raw materials from lithium-ion batteries to minimize the environmental impacts of recycling processes. Erion contributes to the study and analysis of the current value chain, taking into account the evolution of the sector in the short-medium term. Erion System makes its knowledge available for the development of material recycling and reuse processes and evaluates best practices regarding packaging, safety, and transportation of batteries. In addition, Erion Energy will collect and send partners end-of-life batteries that will be used by researchers in their project studies, while also providing guidance for optimizing the disassembly of batteries to promote their reuse and second life.

**INCREACE (2022-2026)**, funded by the Horizon Europe programme: the project evaluates innovative and interdisciplinary solutions along the entire value chain of recycled plastics, developing material sorting technologies based on data collection and sharing by combining different methodologies (chemical and mechanical recycling) to increase plastic recycling efficiency and the quality of recycled materials. New digital technologies (blockchain) will be developed in order to increase the transparency throughout the entire value chain and thus increase pro-

ducers' confidence in the use of recycled materials. Five case studies (including the application of recycled plastics in electro-medical equipment and food-contact components) are planned by the project to evaluate the proposed innovations. Erion will actively contribute to the project in defining and testing methods for the timely sorting of materials and will cooperate to develop and standardize procedures for the traceability of recycled plastics in end products. In addition, Erion will closely work with project partners in designing effective collection solutions.

**Renew (2022-2024)**, funded by EIT RawMaterials: aims to study, develop, and validate technological solutions able of separating epoxy resins (and the flame retardants they contain) from printed circuit boards during WEEE pre-treatment, enabling the improvement of the recycling system of metal components, the valorization of the plastic part, and the reduction of polluting emissions. The goal of the RENEW project is also to boost the collection of small WEEE. For this, Erion will create an eco-point, an innovative and informative collection point open to citizens and dedicated to the collection of small waste such as smartphones and laptops, in which the circuit boards are contained. Moreover, Erion will develop guidelines on eco-design addressed to producers and manage communication and dissemination activities related to the project.

## System innovation projects

**FutuRaM (2022-2026)**, funded by the Horizon Europe programme: the project aims to map stocks and streams of Secondary Critical Raw Materials to facilitate their exploitation. In the project, a methodology will be created for the reorganization, updating and enhancement of cur-

rent raw materials knowledge. FutuRaM focuses on the study of six different waste streams: Waste Batteries and Accumulators, WEEE, End-of-life Vehicles, Mining waste, Slag and Ashes, and Construction and demolition waste. Erion's contribution will involve the definition of an approach

for the development of datasets related to Critical Raw Materials. In addition, Erion will help in the characterization and quantification activities of Critical Raw Materials in case studies related to WEEE and batteries, sharing its knowledge and experience in the field.

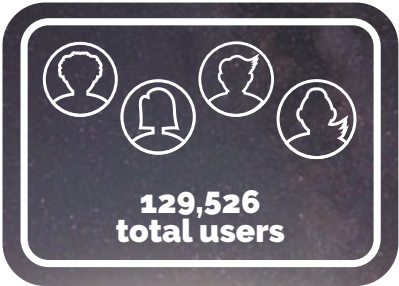
# 1.8 COMMUNICATION

Being part of, and more importantly a promoter of, the ongoing ecological transition is a commitment that Erion passionately pursues every day. As an agent for change, the System knows how important it is to contribute to the spreading of a circular culture also through communication projects and awareness-raising initiatives aimed at the community. For this

reason, Erion constantly communicates with its Members, the media, Institutions, citizens and the different stakeholders in the chain with the aim of contributing to the improvement of the sectors in which it operates, promoting the initiatives carried out by the Erion System, informing about the most important issues related to its activities (e.g. regulatory evolution,

technological innovation, circular economy), raising awareness about proper waste management and disseminating knowledge about the circular economy. To this end, Erion relies on multiple means of communication, from traditional media to the web and social channels and events.

## WEBSITES



Given the undisputed and growing relevance of communication via the web and via social media, Erion's institutional website, as well as the websites dedicated to the individual Collective Scheme, are constantly populated with news, press releases, updates on the activities of the System and its Collective Schemes, in addition to information dedicated to citizens, Producer Members and all Erion's stakeholders.



**6 institutional websites**

<https://erion.it/>  
<https://erionweee.it/>  
<https://erionenergy.it/>  
<https://erionprofessional.it/>  
<https://erionpackaging.it/>  
<https://erioncare.it/>

Which represent the most direct and complete source for discovering the world of Erion and its Collective Schemes.



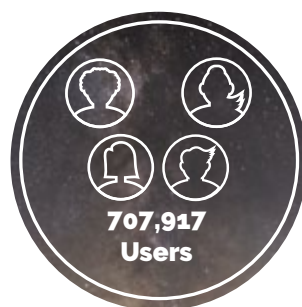
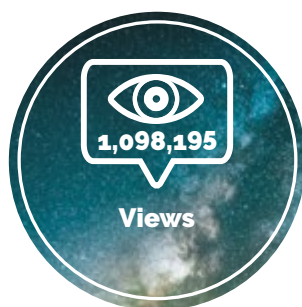
**2 Websites platforms for dissemination purposes**

<https://erionpervoi.it/it/>  
addressed to citizens with the aim of personally involving them through the dissemination of best practices for proper waste management. The website also collects initiatives and events of interest promoted or reported by Erion.

<https://erionessereresostenibili.org/it/>  
portal dedicated to the dissemination of the System's operational, environmental and economic performance.

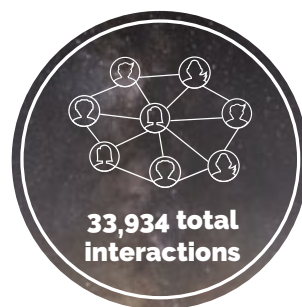
Created for circulating knowledge and offering analysis and in-depth content to Erion's stakeholders (but not exclusively).

## economiacircolare.com WEB MAGAZINE



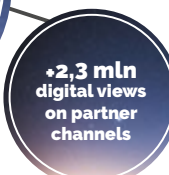
The web magazine promoted by Erion together with the Environmental Conflict Documentation Centre and focused on the issues of green transition and circular economy. It is inspired by the principles of constructive journalism and features daily technical and scientific content, from news and special sections to trainings courses and workshops  
<https://economiacircolare.com/>

## SOCIAL CHANNELS



Facebook, LinkedIn, Instagram, Twitter and YouTube. There are several social platforms that Erion has chosen to communicate about its activities and achievements. Through these channels, Erion promotes its initiatives, collects video material and news, creates live streaming events, and offers users a 360-degree view of its world.

## PRESS OFFICE



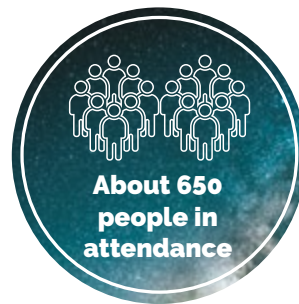
Erion's Press Office is responsible for broadcasting communications and information to the mass media, such as Radio, TV, and major newspapers, through press releases and PR activities. In 2022, Erion's media relations focused, in particular, on consolidating and increasing the brand awareness of the Erion System and enhancing the activities of individual Collective Schemes. For this reason, efforts have been concentrated on an intense activity of editorial partnerships, focusing on specific topics such as the operational and environmental achievements of the Erion System and its Collective Schemes, research carried out in partnership with authoritative parties in the sector, proposals for improvement of the WEEE system, awareness-raising activities, and much more.

## ERIONEWS NEWSLETTER



Columns, news and insights so that Erion's stakeholders can be kept up-to-date on all the news concerning the Collective Schemes' activities and, more generally, the Erion System's commitment to the circular economy. Four ErioNews were sent out in 2022, one per quarter plus one "Special Report".

## EVENTS



It is also through the organization of events that the image and positioning of the Erion System are consolidated nationally and internationally. Among these, two events in particular, which are described in detail below, had great prominence.

**Critical Raw Materials. The end of life of technological products as a strategic sector for Italy**



**Greenwashing, things have got to change**





### RethinkPack!

83 guests  
attended the  
venue



Over 200 in live  
streaming

### Circular economy: the strategic importance of WEEE

78 guests  
attended the  
venue



Over 1,200 in  
live streaming

### WEEE, the b2b sector. European targets and the Exceed response

71 guests  
attended the  
venue



Nearly 400 in  
live streaming

### Batteries, the European Regulation and the challenges for the entire sector

About 150 guests  
attended  
the venue



Over 100 in live  
streaming

## **2. COLLECTIVE SCHEMES AND ECO**

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# INTRODUCTION

This chapter provides some insights related to ECO and the five Collective Schemes of the Erion System, specifically describing their origins, mission, value

chain and initiatives implemented in 2022. Future challenges and the views of key stakeholders are also introduced. The evolution of the Collective Schemes is

described through a 'five-step' approach, i.e., the main focus areas that contribute to the development of the Erion System.

## THE FIVE STEPS

- **Regulatory framework:** working and round tables with institutions; participation in the development of national and EU Directives;
- **Operational efficiency:** activities related to operational processes, such as the management of collection, transport and treatment of waste to be used as a resource;
- **Standards and Quality:** commitment to optimize and certify the activities of each individual area with the aim of providing increasingly efficient and quality services;
- **Europe and Innovation:** dialogue and active role in community dynamics; EU-funded research projects in the areas of circular economy and technological innovation;
- **Circular economy initiatives:** services to Members introducing the principles of circular economy and eco-design; information and training activities for consumers to contribute to the development of a sound 'environmental awareness'.



A footprint in the sand  
is just a mark on the ground,  
when lined up with others,  
it becomes a path.

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**CONNECTING POINTS  
IS OUR WAY OF FINDING A PATH,  
AND IT IS THE WAY  
THAT SIGNS HAVE  
OF FINDING MEANING.**

A full-page background image showing a person walking away from the viewer across vast, rolling sand dunes. The entire image is monochromatic with a green tint. The person is a small silhouette on the left side of the frame, walking towards the horizon. The dunes are smooth and undulating, creating a sense of vastness and solitude.

# 2.1 ERION WEEE

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Household and Professional WEEE

## 2.1 ERION WEEE

*"We want EEE Producers to choose Erion WEEE to manage the end of life of their products. We constantly strive to offer services that best meet our Members' needs and add value to their choice to stay with us."*

Giorgio Arienti, Erion WEEE General Manager

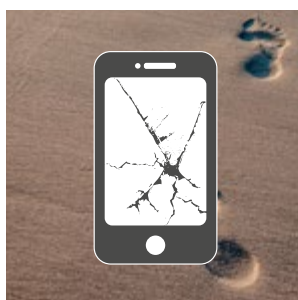
## THE NUMBERS OF THE WEEE EMERGENCY IN ITALY<sup>2</sup>



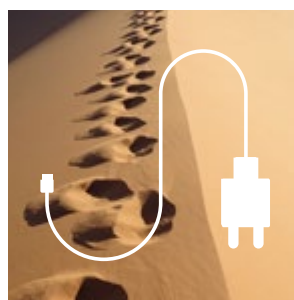
**1 in 2 Italians** still do not know the meaning of the word WEEE.



**81%** of Italians say they have at least one electrical or electronic device they no longer use.



**61%** do not throw away an electrical or electronic device even when it is broken.



Generation Z is among the least informed when it comes to WEEE: **40%** of those who throw away their phone charger do so in the trash bag or the container for the plastic.

<sup>2</sup>Source: "WEEE and WBA Report. Levels of knowledge, opinions and behaviours. What are Italians hiding in their cupboards?" developed as part of the research conducted by IPSOS on behalf of Erion "WEEE, Circular Economy and Climate Change. A survey of citizens' levels of knowledge, opinions and behaviours".

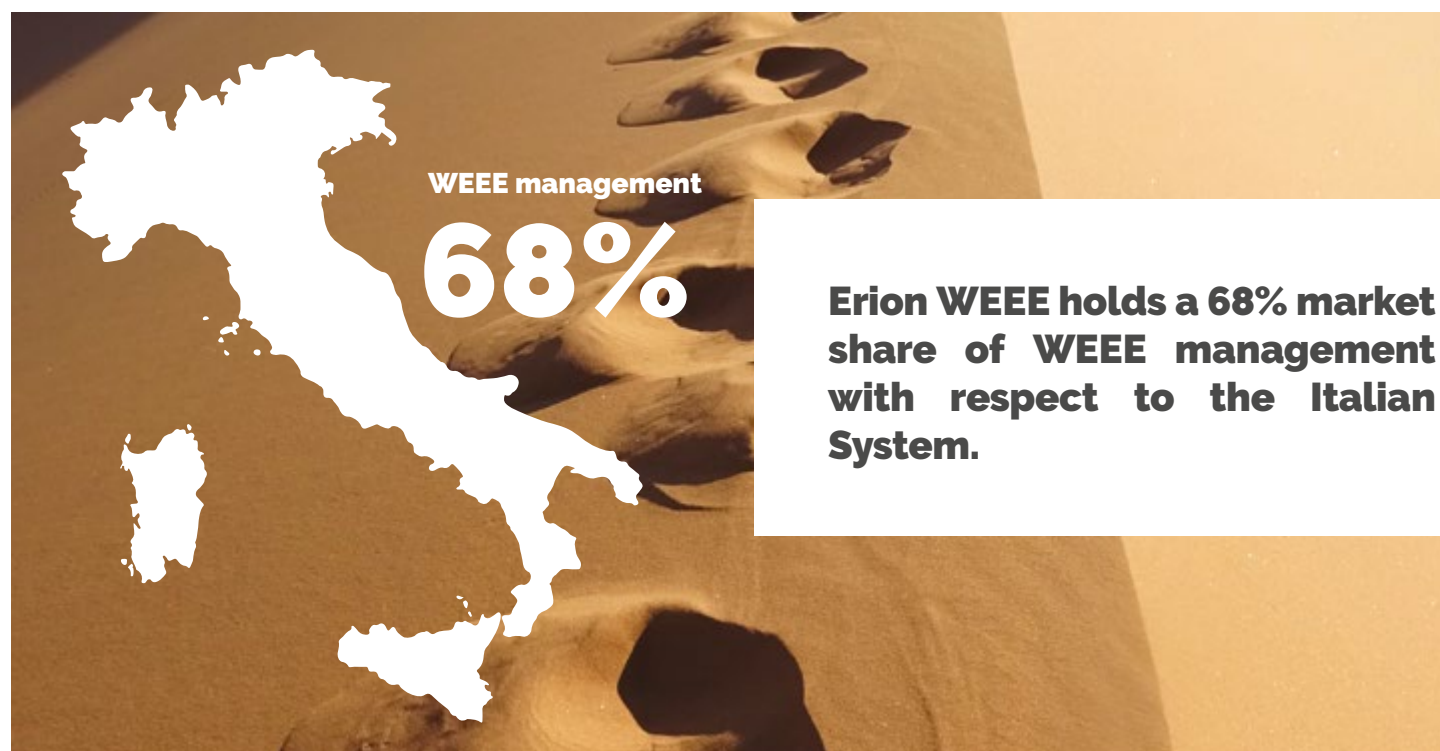


## 2.1.1 THE ORIGINS AND MISSION OF ERION WEEE

Erion WEEE was established the 1st October 2020, as a result of the merger between Ecodom and Remedia, as a national Collective Scheme dedicated to the management of Waste Electrical and Electronic Equipment (WEEE) in accordance with the Extended Producer Responsibility (EPR) requirements described in Legislative Decree 49/2014 implementing European Directive 2012/19/EU. As at 31 December 2022, the Collective Scheme can count on 2,148 Members, and holds by far the leading WEEE management market share nationwide

amounting to 68%. Erion WEEE pursues a waste management model that is as sustainable and efficient as possible, both environmentally and economically, and which will allow to achieve the recycling and recovery targets set by the legislation. The best practices that Erion WEEE adopts to improve its waste management performance span the entire value chain:

- carries out information and awareness-raising activities aimed at citizens and consumers to communicate to them the importance of proper separate collection of WEEE;
- actively participates in national and international working groups to contribute to the evolution of reference regulations and in general to the improvement of EPR systems in Italy and Europe;
- relies on external suppliers whose environmental and social policies meet the qualification criteria defined by the Erion System;
- involves its Members in research and innovation projects on circular economy solutions.





Legislative Decree 49/2014 stems from the transposition of European Directive 2012/19/EU on Waste Electrical and Electronic Equipment and regulates the management of WEEE on Italian territory. The Decree establishes measures and procedures aimed at protecting the environment and preventing or reducing the environmental impacts of all those who play an active role in the life cycle of electrical and electronic products: from Producers to consumers, passing through actors in the distribution sector, to recycling operators. The Decree, moreover, identifies the collection target that Italy and all other European countries must reach: starting from 1 January 2019, the target is set at 65% by weight of the quantities put on the market in the previous three years, or, alternatively, 85% of the weight of WEEE generated in the national territory. In order to complete the regulatory framework of the WEEE system and give full operation to Legislative Decree 49/2014, additional ministerial implementing Decrees have been published. The most important ones include:

- **MINISTERIAL DECREE 185/2007:** it establishes the management bodies of the WEEE system and defines the WEEE groups;
- **MINISTERIAL DECREE 65/2010:** it provides guidance regarding the modalities for the take-back, by retailers of Household WEEE, with the obligation to purchase an equivalent product ("one-to-one" Decree);
- **MINISTERIAL DECREE 121/2016:** it defines the simplified modalities for the take-back by retailers of small Household WEEE, free of charge and with no obligation to purchase an equivalent type of EEE ("one-to-zero" Decree);
- **MINISTERIAL DECREE of 17 June 2016:** it establishes the fees and payment modalities for covering the operating costs of the Supervisory and Control Committee and the WEEE Steering Committee, and the monitoring of WEEE collection rates and recovery targets by ISPRA (Italian National Institute for Environmental Protection and Research), as well as the keeping of the WEEE register and the inspection activities of the Guardia di Finanza (Italian law enforcement agency);
- **MINISTERIAL DECREE 68/2017:** it defines the modalities with which EEE Producers must provide financial guarantees (for WEEE from households only). Professional WEEE, however, is not subject to the measure.

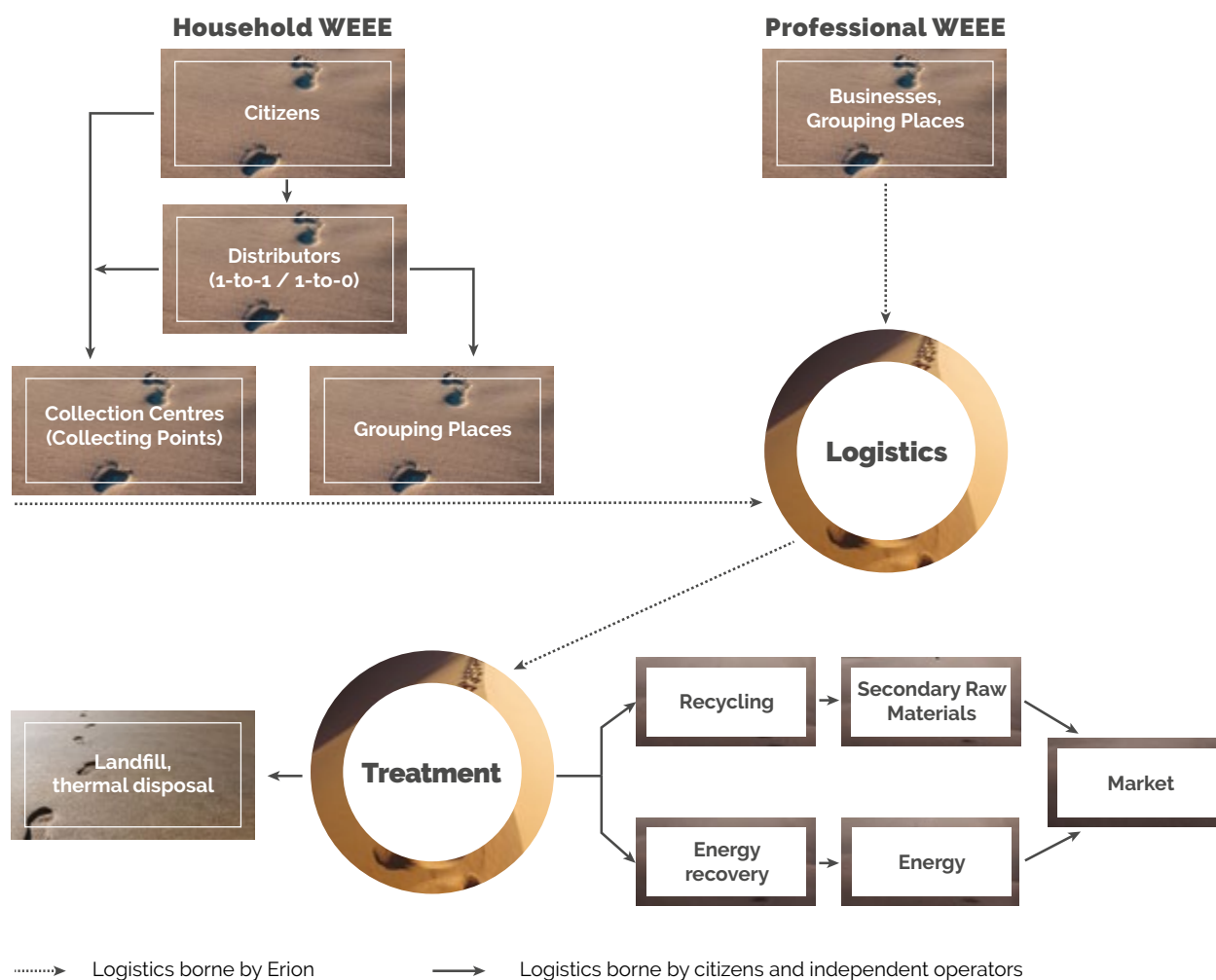
## 2.1.2 THE VALUE CHAIN

The management process of Household WEEE is divided into several stages. The chain begins when citizens generate the waste and dispose of it properly. Household WEEE can be delivered free of charge to their municipal Collection Centre or taken back to the point of sale on a "one-to-one" or "one-to-zero" basis. If the citizen decides to use the take-back service made available by retailers, the collected WEEE is taken to the so-called 'Grouping Places' set up by the points of sale, awaiting transport to the Collection Centres or authorized facilities.

At the Collection Centres and the Grouping Places, the different types of WEEE are stored separately for each individual Grouping. Erion WEEE is a member of the WEEE clearing house and is responsible for managing the collection of Household WEEE throughout the national territory. The Collective Scheme serves both the Collection Centres and the Grouping Places, relying on qualified outside companies for transportation operations. Downstream of the chain, in the final stage, the treatment of Household WEEE is carried out in facilities authorized by the CdC RAEE.

Erion WEEE also deals with Professional WEEE whose sector is described in the section dedicated to the Erion Professional Collective Scheme.

**Treatment activities are carried out in disassembly and shredding lines that remove pollutants and extract secondary raw materials (e.g., metals, glass, plastics, etc.), which are then reintroduced into new production processes in accordance with circular economy principles.** Non-recyclable waste materials are instead destined for landfill or energy recovery.



## THE 3 OPTIONS FOR THE SEPARATE COLLECTION OF WEEE IN ITALY

Legislative Decree 49/2014 establishes the modalities for the proper management of WEEE by citizens. Consumers

can take advantage of three different free services for returning their no longer functioning or obsolete Electrical and

Electronic Equipment:



**1** Return it free of charge to their municipal Collection Centres (or home collection in areas that provide it)



**2** "One-to-One": return of electronic waste of any size against an equivalent purchase at both physical stores and online retailers



**3** "One-to-Zero": return of WEEE with maximum size of 25 cm to any retailer with a sales area relating to EEE of at least 400 m2, with no obligation to buy

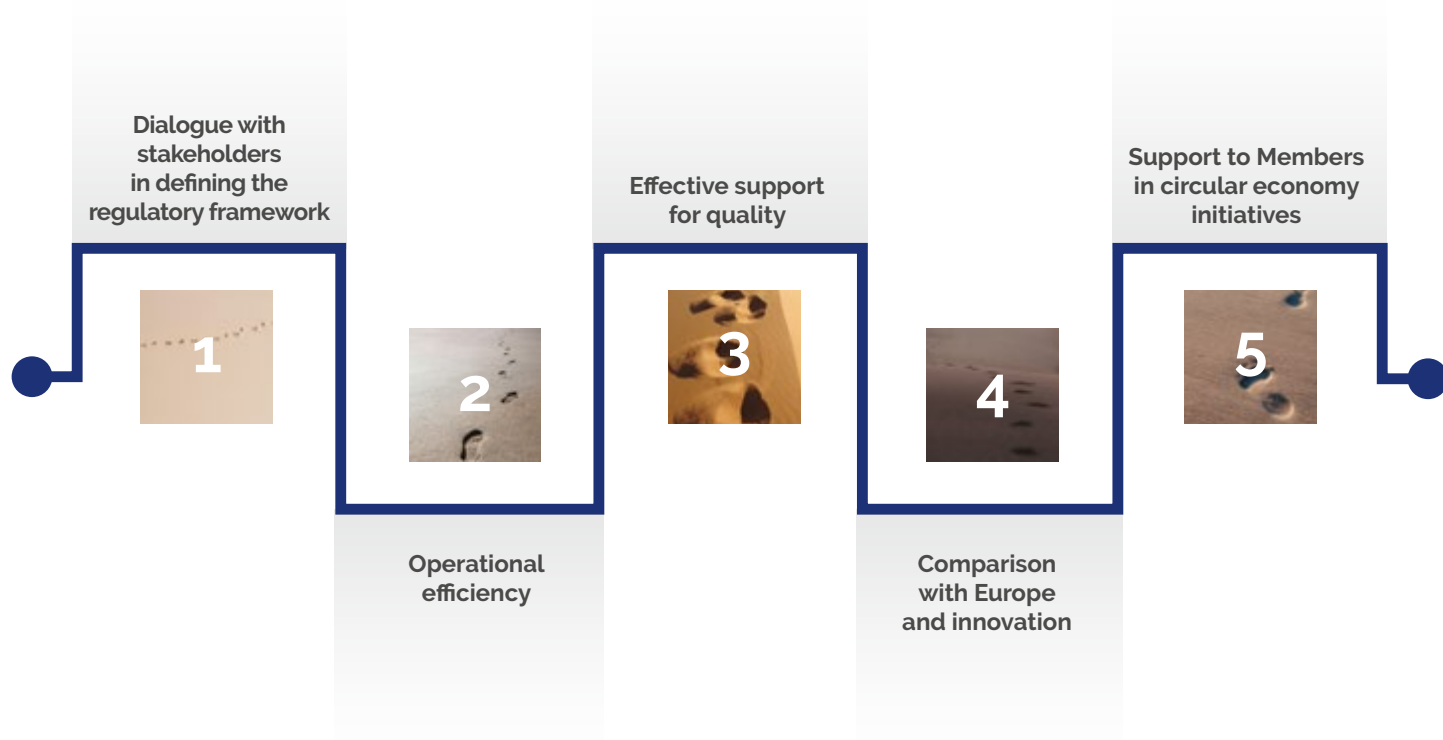
## 2.1.3

# THE FIVE STEPS OF ERION WEEE

The 'five steps' described in this section represent the milestones reached by Erion WEEE, from its inception to the present, achieving both operational and financial stability. Over the years, the Collective Scheme has adopted an efficient, trans-

parent, and quality waste management model that has allowed it to successfully establish itself on the Italian and international scene as the collective system of choice for major EEE Producers. Despite the stability and solidity of its organiza-

tional structure, every year Erion WEEE retraces its so-called 'five steps' by critically analyzing its work in relation to each of them, always aiming at continuous improvement.



### Dialogue with stakeholders in defining the regulatory framework

The last three years have seen no changes in the relevant WEEE regulations at national and EU level. Erion WEEE has therefore put all its energy into improving the existing WEEE sector from both a regulatory and organizational point of view. **The Collective Scheme, together with the main players in the WEEE sector in Italy, has drawn up a series of proposals for regulatory and organizational evolution for the development of the national WEEE sector, which have been collected in a document called "Libro Bianco sui RAEE", described in detail in**

**the dedicated section. This is a forceful call to the institutions with the aim of urging concrete actions: from the reduction and simplification of bureaucracy, to control and sanction measures to counter parallel flows of WEEE, from lines of intervention on specific sectors such as home collection and micro-collections, to communication and information initiatives for citizens and users.** Erion WEEE is also working toward a recasting of the regulation that requires Collective Schemes to use any operating surplus from one year in the

following year: greater flexibility would in fact allow for greater stability of the WEEE Eco-contributions paid by Producers. As will be discussed in more detail in the 'Transparency objective' section, a further regulatory change requested by the Collective Scheme concerns the obligation for all collective systems to publish on their website the WEEE Eco-contributions applied to their Members, as Erion WEEE has already been doing since its establishment.

## Operational efficiency

Erion WEEE acts in synergy with logistics and treatment suppliers within a well-established operational network to ensure its Producers regulatory compliance combined with high standards of quality, efficiency and timeliness of logistics and treatment operations. Suppliers play a strategic role within the processing chain, contributing concretely to the Collective Scheme's core business.

**During 2022, Erion WEEE handled 246,246 tonnes of Household WEEE and 60 tonnes of Professional WEEE, with a service level, relating to household waste alone, of 96.3%. 42% of the Household WEEE collection comes from Grouping R2, large white goods, followed by: 31% R1 (refrigeration appliances), 18% R3 (monitors and screens), 8% R4 (miscellaneous electronics, small**

**WEEE), 1% R5 (light sources). Of the 246,246 tonnes of Household WEEE collected, about 89% of the total was sent for recycling, enabling the recovery of valuable secondary raw materials, such as iron, various plastics, and glass, which can be reintroduced into production processes, saving resources and energy. As at 31 December 2022, Erion WEEE served 12,153 Collecting Points distributed throughout the country, carrying out 122,268 transports, of which 94% with Euro 5 and Euro 6 vehicles.**

The Collective Scheme relies on qualified specialized companies, making sure they comply with current regulations and that they offer guarantees of efficiency and environmental protection. Thanks to the incentives that Erion WEEE provides, more and more suppliers are using less pollut-

ing means of transportation or resorting to green energy sources. In 2022, the share of Euro 6 vehicles in the entire fleet used to transport waste increased by 19% compared to 2021. With reference to treatment plants, also the share of electricity from renewable sources in the total quantity consumed increased by 12% in 2022 compared to 2021. As of 2022, the strategic activity of selecting and contracting suppliers, entrusted in previous years to Interzero, is being carried out in-house, with the aim of improving the quality of services that Erion WEEE offers to its Members. The process of evaluating and monitoring the selected suppliers and the new structure of the partnership with Interzero are described in detail in the section dedicated to Erion's stakeholders.

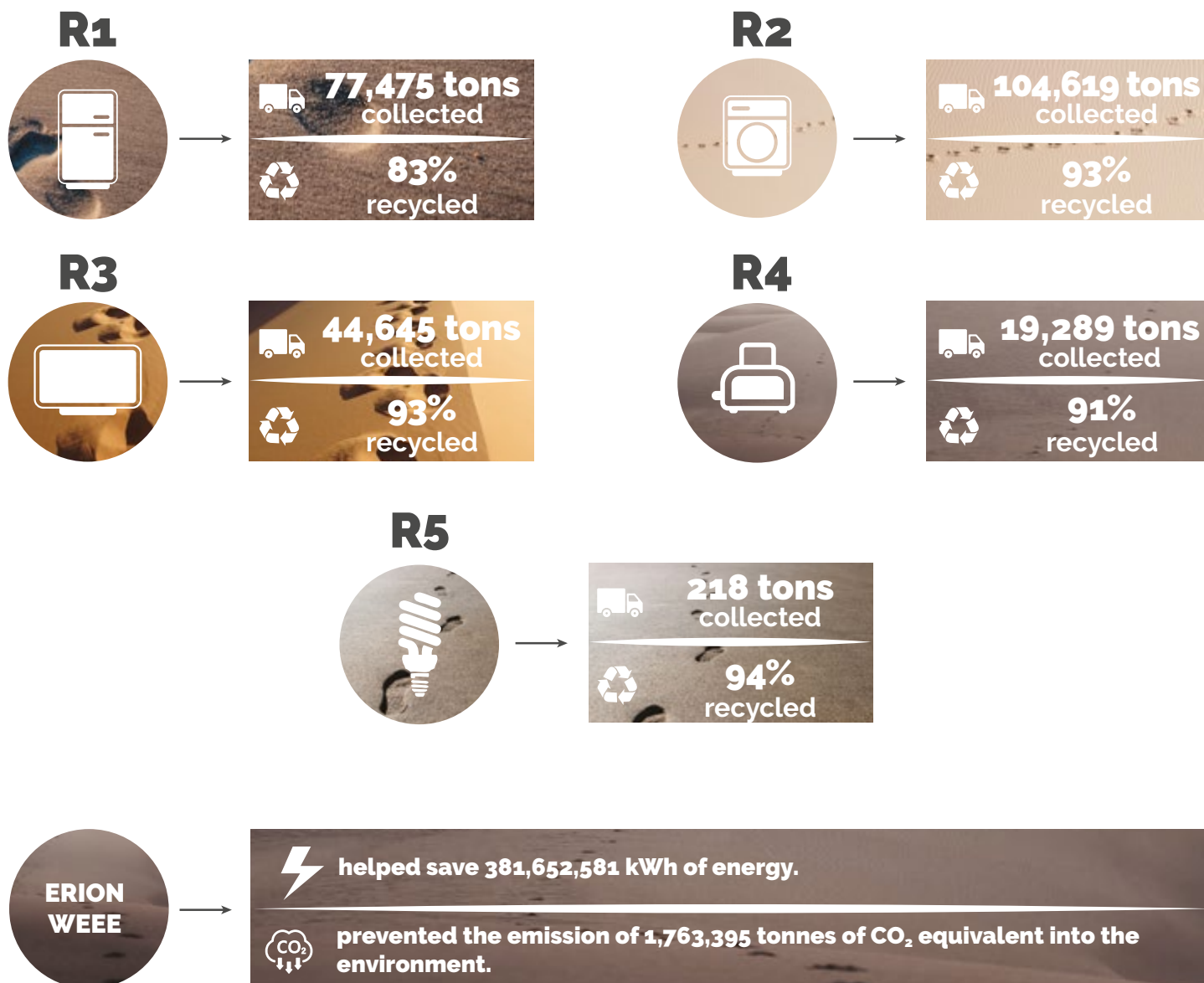
## Effective support for quality

Over the past three years, the prolonged Covid-19 health emergency and subsequently the Russian-Ukrainian conflict have severely destabilized all players in the sector, including, in particular, logistics and processing providers. **In the face of such critical issues, Erion WEEE responded by strengthening the partnership with its suppliers, not only by taking charge of the strategic and contractual management of the network,**

**but also by developing an economic support plan which was evaluated as very positive. In this way, the Collective Scheme ensures the satisfaction of suppliers by motivating them to cooperate, and, at the same time, dictates the quality standards for logistics activities by acting directly on the first stages of the processing chain and maximizing the environmental benefits and operational efficiency of the system.** Instead,

downstream of the logistics processes, it is the WEEE clearing house that defines the quality standards that must be met by WEEE treatment plants. Erion WEEE, consequently, does not directly conduct in-plant checks, but establishes an ongoing dialogue with the WEEE clearing house to make its own contribution in the development of the criteria that regulate the last stages of the value chain.

## IN 2022, ERION WEEE ACHIEVED THE FOLLOWING RECOVERY AND RECYCLING RESULTS:



### Comparison with Europe and innovation

Since its inception, Erion WEEE has moved its steps within an international scenario, forging partnerships with important associations and organizations. Erion WEEE is a member of the **WEEE Forum**, the international association of collective WEEE management systems. The Collective Scheme plays an active role within the WEEE Forum: in addition to being part of the Board, it makes its know-how available by participating in funded research and innovation projects and sharing initiatives that are followed by the other collective systems members

of the association. Among the many, the survey carried out in 2022 with the support of IPSOS to investigate the levels of knowledge and behaviours of Italians in relation to WEEE and WBA. Conducted on a sample of 1,400 Italians aged between 18 and 75 using the CAWI (Computer Assisted Web Interviewing) method, the study highlighted the lack of awareness of Italians as regards the proper disposal of WEEE. Erion WEEE is also part of the **WEEElabex Organization**, a non-profit legal entity that deals with the training of auditors responsible for verifying the ef-

fective compliance of the suppliers used by collective systems with the European standards on the collection, transport and treatment of WEEE. **Erion WEEE looks to Europe with interest regarding the issue of preparing for re-use Electrical and Electronic Equipment; a key theme for the Collective Scheme which promotes its benefits in response to the growing generation of WEEE in Italy, Europe and the world. Unfortunately, our country lags far behind Europe, still awaiting a Ministerial Decree that sets the rules for preparing WEEE for re-use.**



## Support to Members in circular economy initiatives

Erion WEEE does not limit itself to ensuring its Members the proper management of WEEE along the entire chain, but actively involves them in circular economy projects. Over the past three years, several Members have participated in innovative projects with the aim of developing

concrete industrial models of circular economy. These include, for example, the 'Circular Housing' initiative, started in 2021 and continued in 2022, which proposed a new business model in the residential sector: furnishings and appliances that are 'circular', i.e., reusable, refurbishable and

recyclable, are offered for rent to tenants in social housing. The role played by Erion WEEE included the project management of the entire initiative and the direct relationship with families interested in learning more about this innovative project.

## 2.1.4 PRESENT AND FUTURE CHALLENGES



### The critical aspects of the collection

During 2022, as described in the section on environmental data, Erion WEEE handled **246,246 tonnes of Household Waste Electrical and Electronic Equipment** throughout Italy, a decrease of about 8% from the previous year. The recorded decrease can be attributed to the increase in 'parallel flows' (i.e., the interception of WEEE by operators not authorized to manage this type of waste), inadequate controls along the chain, and the behaviour and improper practices of citizens who still find it hard to properly dispose their small WEEE, as highlighted in the research 'WEEE, Circular Economy and Climate Change. A survey of citizens' knowledge levels, opinions and behaviours' conducted in September 2022 by IPSOS on behalf of Erion. A great deal of equipment remains in the homes of Italians or thrown away inappropriately in the

trash bag, the street bins or the container for the plastic. The improper procedures adopted by consumers bring out the critical aspects and objective barriers related to the separate collection of WEEE: lack of information on the subject and difficulties in reaching the Collection Centres. **Public awareness is the cornerstone of Erion WEEE strategy to improve WEEE collection results. Conscious consumption and disposal are the main lines of action on which a commitment is needed and with respect to which the Collective Scheme intends to make its contribution. The maxi-communication program "DireFareRAEE", launched by Erion WEEE in July 2022 and described in the dedicated section, consists of a series of initiatives that aim to make citizens aware of correct practices and the benefits of proper treatment of WEEE.**

**In addition, there is the problem related to the so-called 'parallel flows' of WEEE with respect to official channels: a large amount of electrical and electronic waste is intercepted by unauthorized parties and disappears without a trace. Erion WEEE condemns the phenomenon of informal WEEE flows, which in the last three years has been emphasised by the exceptional increase in the value of raw materials.** Parallel flows of WEEE take away tonnes of secondary raw materials from the market that could instead be recirculated, especially in a time when the supply of raw materials is increasingly difficult and their prices tend to rise daily. The Collective Scheme calls for greater state control to prevent and combat this phenomenon that causes damage to the environment and the economy.

### Official data on WEEE collection in Italy in 2022

Every year, the WEEE clearing house publishes its so-called 'Annual Report' that presents official and comprehensive data on the collection of Household WEEE in Italy. Now in its 15th edition, the Annual Report 2022 reveals that during the year, in Italy, the growth in the volumes of Household WEEE sent for recycling suffered a setback for the first time in eight years. The fall is generalized and affects indiscriminately all three Italian macro-areas: North (- 8.6%), Centre (- 6.3%) and South (- 1.1%). According to the report released by the WEEE clearing house, this reduction is attributable to a number of causes:

- WEEE dispersion caused by assigning an incorrect EER code to e-waste;
- the existence of flows parallel to the official channels and the failure to dispose, especially by citizens, small WEEE;
- drop in EEE sales recorded due to the increase in prices compared to the previous two-year period;
- fewer municipal Collecting Points in central and southern regions of Italy.

## Erion WEEE and Epron, one year of partnering

In January 2022, the partnership between Erion WEEE and Epron, the two largest EPR systems for the management of WEEE in Italy and Nigeria, respectively, turned one year old. The partnership was established as part of the **"Twinning Program"**, promoted by WEEE Forum to

foster the exchange of know-how and best practices between the most experienced EPR Systems and newcomers to the sector. Erion WEEE contributes to the enrolment of the Nigerian collective system to WEEE Forum and provides its in-house expertise by contributing to

their development. Through technical and training programs, Erion WEEE experts help EPRON, still in its start-up phase, to build a virtuous model of WEEE management in Nigeria based on Erion WEEE's experience in Italy.

## WEEE is recovered in prisons

In 2022, collaboration continued with some penitentiary administrations to manage WEEE in laboratories inside prisons. The project was created with the aim

of promoting the inclusion and reintegration into working life of people serving sentences by including them in a training course for the recovery of electrical and

electronic waste. The activities took place in the cities of Milan, Bologna and Ferrara.

## The corporate structure

Erion WEEE operates in the interests of its Members, who govern the Collective Scheme through the Assembly and the Board of Directors. In 2022, Erion WEEE's Bylaws were amended, limiting the possibility of membership to Producers who

put Household EEE on the market. This decision led to the migration from Erion WEEE to Erion Professional of all Members who put only Professional Electrical and Electronic Equipment on the market. This move allows offering – through Erion

Professional – a more focused service to the Producers of Professional EEE, who operate within a sector characterized by critical issues and specific problems.

## Competition Authority

The investigation initiated in 2021 by the AGCM (Italian Antitrust Authority) against Erion WEEE was closed in 2022. The

Collective Scheme actively cooperated with the Authority to facilitate and expedite the investigation, submitting a number of

commitments and obtaining the closure of the measure without a finding of infringement or imposition of any sanction.

## Transparency objective

Erion WEEE's financing model provides for equal unit environmental contributions for all Members; in the years in which available economic reserves are to be used, the environmental contributions applied to Members (who benefit from the reserves) are lower than those intended

for Producers who wish to join the Collective Scheme. Both contributions lists (the one for existing Members and the one for new entrants) are published on the Erion WEEE website. Unfortunately, this policy of full transparency is not currently shared by the other collective systems operating

in Italy: for this reason, Erion WEEE is asking the Institutions to issue a measure that would oblige all WEEE Collective Schemes to publish the environmental contributions applied.

## 2.1.5 INITIATIVES AND PROJECTS



### Libro Bianco sui RAEE

On 12 April 2022, Erion WEEE presented in Rome the **"Libro Bianco sui RAEE"**, containing 32 proposals of an organizational and regulatory nature that came about as a result of the constant dialogue among all the actors in the WEEE system: producers, distributors, urban hygiene companies, and treatment plants. The proposals for improving the WEEE

system included in the White Paper cover several topics:

- reduction of bureaucracy through the simplification of authorization and waste management procedures;
- control and sanction mechanism to counter illegal parallel flows of WEEE;
- lines of action on specific sectors such as home collection and micro-collection;

- communication and information initiatives for citizens and users.

**The White Paper is mainly addressed to institutions with the aim of overcoming, through concrete actions, the main obstacles holding back the full development of the Italian WEEE system.**

### DireFareRAEE

**"DireFareRAEE" is the maxi-communication program launched by Erion WEEE in 2022, and which will continue until 2024, to raise awareness among Italian citizens on the issues of proper WEEE disposal and recycling.** An investment of more than four

million Euro that the Collective Scheme's Producers deemed necessary to bridge the information gap that especially affects younger people. **In 2022 alone, 'DireFareRAEE' has given rise to five initiatives with a single goal: reach the streets, homes,**

**and schools through dissemination and educational activities to communicate to all consumers, from the youngest to the not so young, good practices for the proper disposal of WEEE.**

# DireFareRAEE 2022 initiatives



## The "RAEE una volta" campaign

"RAEE una volta" is the claim of the **first print media communication campaign to spread greater knowledge on the issue of WEEE and the free ways available to citizens to dispose of their waste and thus ensure its proper recycling** with important benefits for the environment. The concept, inspired by the world of fairy tales, features some of the characters from the most timeless tales: from fairies and princesses to wicked witches. They are, in fact, entrusted with the task of informing the audience about how their beloved devices and equipment, once they stop working, instead of simply being waste can turn into extraordinary helpers in making the world more sustainable.



## The "Effetto Farfalla" Podcast

"Effetto Farfalla" is the **podcast produced with Chora Media**. It consists of 4 episodes in which Serena Giacomini, climatologist, weather expert and President of the Italian Climate Network, **clarifies the value of e-waste and talks about the possibilities and services available to citizens when it comes to handing over broken or unused electrical or electronic equipment**. The episodes are available for streaming on the free audio platforms: 'Spotify', 'Apple Podcast', 'Spreaker' and 'Google Podcast'.



## "Training for circularity - WEEE Edition"

"Training for Circularity – Scholarships (WEEE Edition)" is a **training to work project** for 10 young graduates to acquire skills in the field of circular economy, with specific reference to the WEEE sector and green marketing. Under this initiative, **10 12-month scholarships hosted at ENEA** (National Agency for New Technologies) **and CDCA** (Centre for Documentation on Environmental Conflicts) were provided.



## The "Smaltirli è un gioco da ragazzi" campaign

The "Smaltirli è un gioco da ragazzi" campaign was **launched together with Amsa** (Environmental Services Company Milan ) **to raise awareness and inform Milanese citizens about WEEE and the good practices for its proper disposal, highlighting the environmental and economic benefits of recycling this waste**. The initiative involved the use of various tools, such as social networks, videos, informational materials and street billboards, and was enriched with educational activities in schools.



## The "Riciclare i RAEE è una bella storia" campaign

The "Riciclare i RAEE è una bella storia" campaign has been **promoted in collaboration with a number of partners throughout Italy** with the aim of **increasing the awareness of citizens, starting with the youngest, about the circular economy and proper WEEE disposal**. The central activities developed as part of this initiative are: city posters, lectures and interesting insights in schools, and extraordinary days of collection of small WEEE.

## 2.1.6

# WHAT DO STAKEHOLDERS THINK ABOUT ERION WEEE?




The stakeholders of Erion WEEE are entities very different from each other, both in nature and role, but united by the goal of improving the performance of the WEEE sector. Among Erion WEEE's key stakeholders is the Association for the Recovery of Electrical and Electronic Equipment (ASSORAE), formed by the companies that manage WEEE treatment plants previously framed in the Recovery section of FISE ASSOAMBIENTE (Italian Association representing companies involved in municipal hygiene services). ASSORAE, whose primary objective is the protection of the category's interests and its development, is in constant discussion with EEE Producers and their collective systems, including Erion WEEE, with the aim of making the

WEEE management system increasingly efficient and effective. Erion WEEE and ASSORAE recognize the same critical issues in the Italian WEEE system, including inadequate controls, the existence of unofficial circuits, the lack of information to citizens, and the lack of sufficient Collecting Points. A view also shared in the White Paper on WEEE, for the drafting of which ASSORAE provided its expertise. The Association recognizes the Collective Scheme's demonstrated commitment to citizen awareness activities to improve collection rates, identifying Erion WEEE as an ally in the battle against parallel flows and against the spread of EU regulations that hinder, rather than encourage, the recycling industry. ASSORAE views

positively Erion's decision to internalize the strategic and contractual management of its logistics and treatment suppliers, hoping that this change will lead to process optimization in the coming years. In a highly competitive market such as the waste market, ASSORAE also emphasizes the need for the development of a tariff system for the integrated waste management cycle, to make the service more transparent and hold the various players involved accountable. On this front, the Association is satisfied with the policy adopted by Erion WEEE, which ensures Producers and stakeholders full and transparent reporting of economic and operational results and makes management contributions known for all.





A bird can fly alone,  
but to make long migrations  
it needs to form a flock.

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**JOINING EFFORTS IS THE WAY  
LIVING BEINGS HAVE  
TO ACCOMPLISH GREAT FEATS.**



# 2.2 ERION PROFESSIONAL

Professional WEEE

## 2.2 ERION PROFESSIONAL

*"Professional WEEE collection systems must change their operating logic if they want to achieve appreciable results"*

*Luciano Teli, General Manager of Erion Professional*

### 2.2.1 THE ORIGINS AND MISSION OF ERION PROFESSIONAL

Erion Professional is the leading national non-profit collective system dedicated solely to the management of Professional Waste Electrical and Electronic Equipment (WEEE). Erion Professional's mission focuses on two key points: ensuring regulatory compliance for Members and acting as a business partner for Producers. Thus, although the Collective Scheme fulfils the legal obligations of Producers in accordance with the WEEE Directive, the ways in which it operates are more relatable to the business industry, given that it does not interface with citizens and municipal Collection Centres.

Acting on the wishes of the Members and Producers who established it and whom it represents, Erion Professional wants to offer a specialized service for the collection and valorisation of Professional WEEE in order to meet in a virtuous, certified and cost-effective way the national and European regulatory requirements. As at 31 December 2022, the number of Collective Scheme Members stands at 295. Erion Professional is an innovative entity capable of seizing market opportunities, interconnecting the different players in the chain and guaranteeing very high standards of treatment, transparency, safety and operational efficiency in full compliance with

environmental regulations in force, creating value for the benefit of stakeholders, society and the environment. Thanks to its governance system entrusted directly to the Producers, Erion Professional guarantees and supports – in the interest and on behalf of its Members – the implementation of all legal requirements for the proper management of Professional WEEE in compliance with the rules laid down in Legislative Decree 49/2014, implementing Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).

#### Who deals with Professional WEEE

Producer responsibility for the end-of-life of professional equipment should be distinguished between:

- **Historic Professional WEEE:** the disposal charges for waste equipment put on the market before 31 December 2010 are borne by the holder of the professional WEEE (Institution/Enterprise). The financial responsibility falls on the Producer only if the latter sells a new equivalent EEE: in this case the Producer is obliged to take back the historic WEEE (of the same type and function);
- **New Professional WEEE:** waste equipment put on the market after 31 December 2010; in this case the financial responsibility falls on the Producer who sold the equipment that becomes waste.

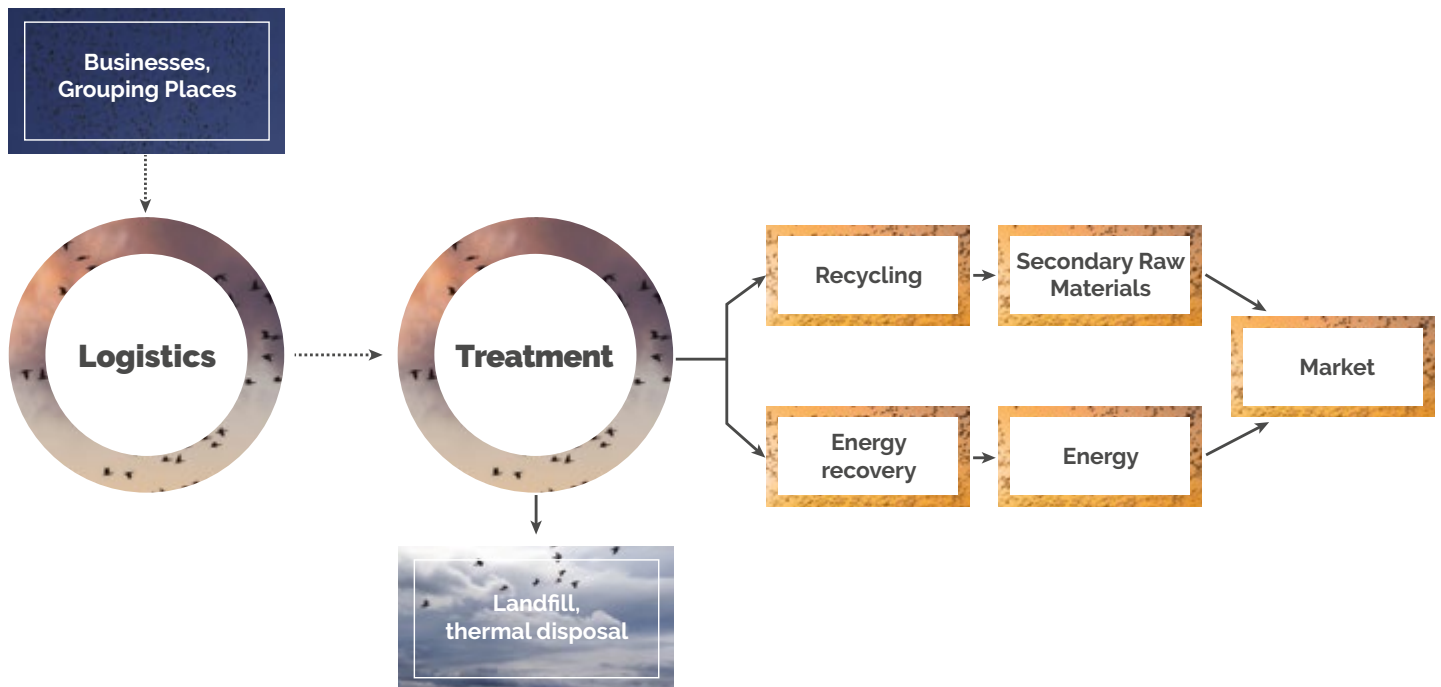
## 2.2.2 THE VALUE CHAIN

The regulations regarding the management of Professional WEEE provides that Producers of the equipment are obliged to guarantee the end user of the good the possibility of returning it when it becomes

waste by financing the related costs. Take backs can be from the Professional EEE Producers' customers or from their resellers/installers, who can bundle together a larger amount of waste, helping

to ensure logistical efficiency. The collected WEEE is then routed to the plants for proper treatment and valorisation of the outgoing fractions.

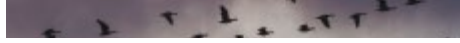
### Professional WEEE



.....> Logistics borne by Erion

——> Logistics borne by citizens and independent operators

## 2.2.3 THE FIVE STEPS OF ERION PROFESSIONAL



Erion Professional, like all cutting-edge organizations, is trying to consolidate its place in an environment that is very competitive and complex to evolve. Precisely

for this reason, the Collective Scheme's main activities focus on operations with a view to increasing collection rates and on raising awareness among its stakeholders,

while dialogue with national and community administrations is deliberately limited to essential issues.



### Dialogue with stakeholders in defining the regulatory framework

Erion Professional ensures proactive collaboration with relevant stakeholders and contribution to the implementation of initiatives for the improvement of EPR systems and development of regulations, actively participating in meetings and work groups of industry associations and companies in the sector, always taking into account different needs and expectations. **Erion Professional hopes that the regulatory framework can evolve considering the complex context of**

**Professional WEEE, dedicating to it a specific legislation that helps to manage streams and responsibilities in a more transparent way.** In fact, the regulations on Professional WEEE provide that each Producer must take charge, through the establishment of an individual system or membership in a collective system, of the management of the waste arising from EEE put on the market by the same. Often, however, because of the time elapsed from the time of purchase to when the

equipment becomes waste or because of the high value of the waste itself, the end user does not involve the Producer, preferring to manage the WEEE on his/her own. This causes that **in the Professional WEEE sector the quantities collected 'officially' are very small. For this reason Erion Professional has implemented an innovative system for managing Professional WEEE, called Exceed, described in more detail in the dedicated section.**



### The Professional WEEE legislation

**Legislative Decree 49/2014** was created to implement European Directive 2012/19/EU and, in order to protect the environment and human health, defines the measures and procedures necessary for the improvement, prevention and reduction of negative impacts resulting from the production of Electrical and Electronic Equipment and related waste (both household and professional). Other Ministerial Decrees are related to Decree 49/2014, which define its implementation framework. Below are listed the most significant ones for Professional WEEE.

**Ministerial Decree No. 65 of 8 March 2010.** Ministerial Decree 65/2010 provides simplified procedures for the management of professional WEEE by distributors, installers, and service centre operators in order to facilitate the organization of adequate separate collection systems for such waste. They may collect Professional WEEE only in the name and on behalf of Professional EEE Producers where formally appointed by them.

## Operational Efficiency

Erion Professional aims to offer an increasingly specialized service and an optimized operating model capable of generating high levels of efficiency and contributing to increasing the collection

rate of Professional WEEE by addressing limitations and critical issues in the Professional WEEE sector, consisting in the significant dispersion of WEEE streams, poor engineering of collection processes,

and borderline behaviour of operators, often resulting from limited information and training on environmental protection policies and regulations.

## Improving Standards and Quality

For Erion Professional, improving standards and quality means adopting an innovative strategy to implement activities that are attractive to Producers and stakeholders from a qualitative-quantitative point of view. **Currently, through the Exceed system, the Collective Scheme manages,**

**on behalf of its Members, relationships with end users and distributors who can directly request from Erion Professional the collection of WEEE, which will then be properly managed in the stages of recovery, treatment and, in the case of air conditioners, regeneration of the**

**refrigerant gases (F-Gas) contained therein. In addition, training initiatives are being developed for Producers and their networks, such as online training courses on environmental issues, made available in apps that they can use free of charge.**

## Comparison with Europe and innovation

In being part of the Erion multiple Collective Schemes System, also Erion Professional cooperates with WEEE Europe, a joint venture between the major European WEEE and WBA collective systems,

which provides its Members with international expertise capable of guiding along the process to sell products and take back their waste in different countries of the European Union. The Collective Scheme

offers Producers comprehensive support, from registration to collection and treatment of such waste

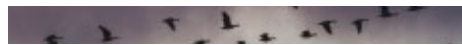
## Supporting Members with circular economy initiatives

As part of the Erion System, Erion Professional can count on a dedicated team that is constantly working on innovation projects, including European and research projects, to identify solutions capable of improving system performance even

further. Engaging with different stakeholder in the chain focusing attentions and resources on wide-ranging strategic programs, is a priority for the Collective Scheme capable of generating added value. In an established and mature world

like that of WEEE, proposing initiatives on the issue of circular economy is a complement to all the other services that the Erion System offers to its Members.

## 2.2.4 INITIATIVES AND PROJECTS



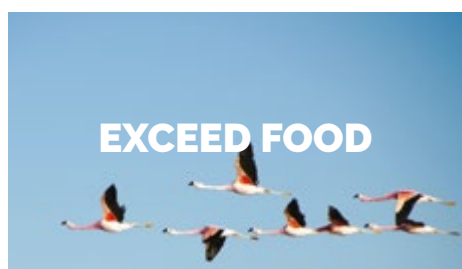
Erion Professional is innovation, not only in the breadth of services offered, but also in its concrete contribution to the transition to the circular economy. In this context, we find **Exceed**, the first voluntary generational system for the collection and recycling of Waste from Professional Electrical and Electronic Equipment, which complements the traditional management based on a 'one-to-zero' logic. The new system provides a different approach to professional waste collection: thanks to Exceed, Producers overcome the old B2B compliance

**paradigm, voluntarily committing to create value for the environment and for their own sales networks, participating in the achievement of the ambitious European targets. The Collective Scheme invests resources made available by Producers to offer easy and extensive services increasing the amount of Professional WEEE collected in the territory.** In addition, the Collective Scheme offers an environmental training service to operators (whether installers, distributors or other professionals), finances their enrolment in the Managers' Register,

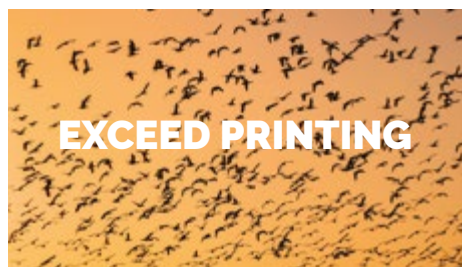
and proposes a whole series of activities that give a sense of solidity to the entire project and that characterize it in a more complete way than the other Collective Schemes present on the national territory. The Collective Scheme's goal for 2023 is to consolidate the Exceed system, which is currently active in the A/C, Food and Printing sectors, and to succeed in the next five years in reproducing the model in new product sectors, which in the meantime Erion Professional is analyzing and considering.



Is Erion Professional's program designed to offer a more efficient collection system for Professional WEEE from the air conditioning sector. With Exceed Clima, Producers and heating and ventilation installers can enjoy significant administrative simplifications and the benefits deriving from the compliant management of WEEE. Erion Professional's goal is to be a single point of contact for companies, which is why in 2022 it wanted to evolve the Exceed Clima project, guaranteeing among its services also the take-back of household WEEE and F-gas, allowing users to turn to a single service provider.



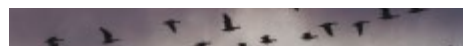
Is dedicated to Professional WEEE belonging to the Ho.re.ca sector, specifically the one dedicated to the 'Slicers and Similar' segment. In 2022, the scope of Exceed Food, which previously included only non-refrigerated equipment, was extended to include refrigerated equipment.



Offers an efficient collection system for Professional WEEE from the 'Printing' sector. As with the other projects, the advantage factor of Exceed Printing is the expanded management of the service. Erion Professional's strong point has always been bureaucratic simplification for Producers and users, which in this case, for example, translates into Erion Professional's willingness to take back not only printers but also all other office equipment.

## 2.2.5


# WHAT DO STAKEHOLDERS THINK ABOUT ERION PROFESSIONAL?



At the start of the Collective Scheme's work, a discussion forum was set up with Producers of professional equipment. The Producers welcomed the new of its kind and anticipator of regulatory obligations service offered by the Collective Scheme to manage greater market complexities in a scenario of open competition. It is also important for Producers to avoid informal and untracked disposal of machines, as their improper management also affects companies who may be sanctioned. Therefore, the role of Erion Professional is crucial for companies to feel supported, flanked and trained to acquire the tools to help them take a holistic view of the system and to identify economic, social benefits and to establish virtuous behaviours.

Given the international situation, stakeholders greatly appreciated Erion's effort to respond to the needs of the industry in a particularly complex time in history. Assoclimate, the Association of Manufacturers of Air Conditioning Systems, federated to ANIMA Confindustria Meccanica Varia (the Italian Mechanical Engineering Industry Association), established in 1964 and with more than 70 member companies, is one of the primary stakeholders of Erion Professional. Assoclimate, confirming its satisfaction with the work of Erion Professional, stresses the need for attention to the issue of refrigerant gases, which from 2024 will undergo a regulatory transition that will force companies to replace them to switch to low-impact gases. This

will be a very sensitive transition for the industry which will have to reconvert and adapt production with major investments, provide training for its personnel and inform the entire chain and end consumers; thus, a strong support from the Collective Scheme is expected. For Assoclimate Members, Erion Professional organized a training course on circular economy issues in 2022, which aroused great interest. In 2023, a similar course is already planned to be implemented for Producers of Asotermica, the Association of industries producing equipment and components for environmental climatic comfort.



A drop falls at the simple end  
of flowing back to the sea,  
but when it falls with many others,  
it becomes a waterfall  
and its natural falling  
becomes spectacular.

**TO FOLLOW AN END TOGETHER  
IS THE WAY DROPS FULFIL THEIR  
NATURE IN A GREAT SHOW  
AND IS ALSO THE WAY FOR PEOPLE  
TO MAKE GREAT THE ACTIONS  
OF INDIVIDUALS.**



## 2.3 ERION ENERGY

Waste Batteries and Accumulators

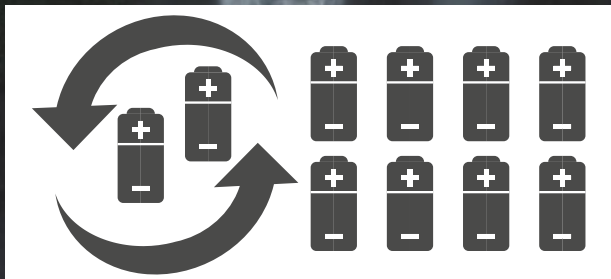


## 2.3 ERION ENERGY

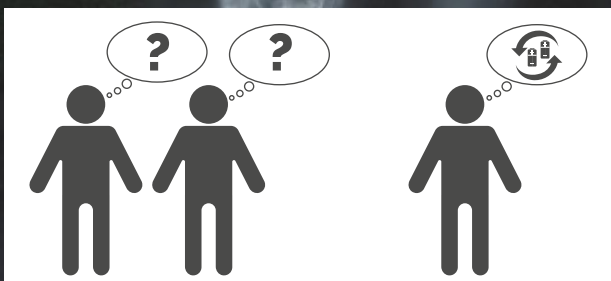
*"Erion Energy is preparing to face, together with its Producers, the challenges arising from the forthcoming European Battery Regulation and posed by the energy revolution we are experiencing."*

Laura Castelli, Erion Energy General Manager

### BATTERIES: KNOWLEDGE AND BEHAVIOUR OF ITALIANS<sup>3</sup>



**Today in Italy, two portable batteries are collected for every ten sold.**



**More than 1 in 2 Italians have batteries or spent batteries at home that just pile up.**

8% of the over 26s and 13% of the very young are unaware of the correct procedure on where and how to dispose of them. 54% of Italians and only 39% of young people (18-26 years old) know the risks associated the incorrect handling of Waste Batteries and Accumulators.

<sup>3</sup>Source: Report on "WEEE and WBA. Levels of knowledge, opinions and behaviours. What are Italians hiding in their drawers?" developed as part of the research conducted by IPSOS on behalf of Erion.

## 2.3.1 THE ORIGINS AND MISSION OF ERION ENERGY

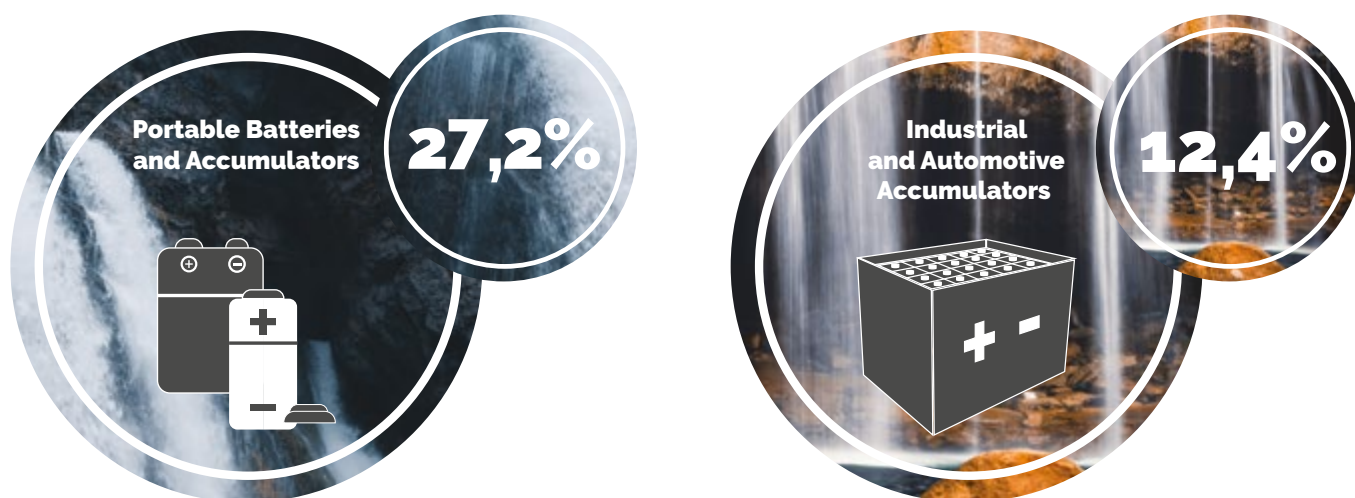


Erion Energy was established on 1 October 2020, coinciding with the creation of the Erion multiple Collective Schemes System of which it is a part. Erion Energy is the non-profit Collective Scheme dedicated to the management of Waste Batteries and Accumulators (WBA) from all over Italy. The primary objective of the collective system is to ensure regulatory compliance for member Producers through the efficient coordination of the collection and treatment of WBA and support in the transition from linear to circular economy. In 2022, Erion Energy accounted for a market share in Italy of 27.2% for portable batteries and accumulators and 12.4% for industrial and automotive accumulators, equalling 19.8% in total. **Meeting the needs and requirements**

**of Producers is the top priority for Erion Energy, both with the development of projects focused on sector innovation and with specialized support on all aspects of regulatory compliance.** Waste Batteries and Accumulators are regulated by Legislative Decree No. 188 of 2008, which implements European Directive 2006/66/EC and defines all aspects related to the placing on the market of these products and subsequent waste management through a system based on Extended Producer Responsibility. The proposed European Battery Regulation was adopted in March 2022 with the goal of comprehensively updating the legislation on the subject with an increasingly systemic approach geared toward the future of mobility, sustainability and

competitiveness of the sector. The revolutionary approach has profoundly shaped Erion Energy's study and design activities during 2022 in order to be able to offer its Producers a service that is always proactive and up-to-date with the challenges of the future in view of its approval expected in 2023. **Great attention is placed by Erion Energy on the activities to increase the collection carried out jointly with the operators working on the territory thanks to national communication campaigns useful for educating, informing and making citizens aware of the importance of the proper disposal of portable batteries and accumulators at the end of their life and make the collection easier, intuitive and informed.**

## QUOTA MANAGED BY ERION ENERGY WITH RESPECT TO THE CDCNPA SYSTEM



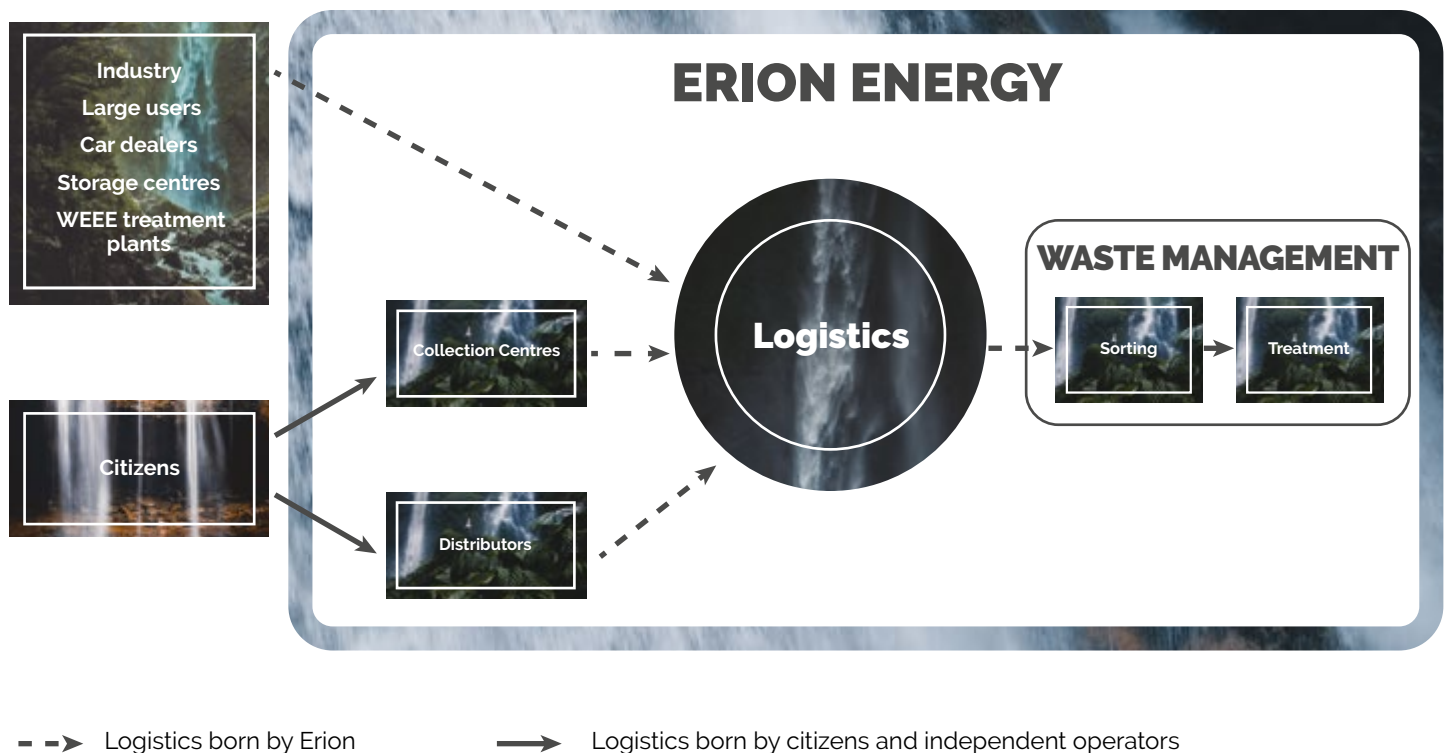
## 2.3.2 THE VALUE CHAIN



Erion Energy is dedicated throughout Italy to managing the entire collection process for Waste Batteries and Accumulators (WBA). For portable WBA, the process begins with citizens delivering their waste to Collection Centres – set up and operated by municipalities for the benefit of their residents or by municipal companies – and large distributors that provide a free collection service in special containers, even without making a purchase. There are many actors involved in the chain, such as, for example, storage centres, WEEE treatment plants, Collection

Centres, tobacconists, distributors and car dealers. The Collective Scheme coordinates the logistics activities of collection requests arriving from the Collecting Points to the National Batteries coordination body (CDCNPA), the national body in charge of optimizing and controlling the activities under the Collective Schemes' responsibility. Erion Energy also oversees the subsequent activities dedicated to the selection and sorting of the materials and finally the treatment of the waste at specialized plants that comply with the most stringent environmental regulations.

In fact, Erion Energy's role in the chain is not only to raise awareness aimed at increasing collection rates, but also to continuously seek to reduce environmental impacts and improve the efficiency of the whole chain. In contrast, the management of industrial and automotive accumulators takes place in a free market environment. Companies that rely on Erion Energy are guaranteed a personalized service with high efficiency and quality and the proper processing of their spent accumulators.



## 2.3.3

# THE 5 STEPS OF ERION ENERGY



Erion Energy's 'five steps' have contributed to the growth of the Collective Scheme to offer an ever better service to

its Producers, and which in the following sections will be retraced as far as possible, also in light of the proposed new

Battery Regulation.



### Dialogue with stakeholders in defining the regulatory framework

Erion Energy plays a role as a competent and qualified partner in developing a constructive dialogue with all stakeholders, from trade associations, to Producer, to municipal companies and Institutions, acting as a reference point in terms of knowledge of political and regulatory

aspects and their possible developments.

**During 2022, in support of the preparatory activity in view of the approval of the new European Regulation, Erion Energy initiated a dialogue with the other collective systems in order to open a discussion on the challenges of**

**regulatory change and the new needs it entails with the goal of developing a functional collaboration for the entire WBA collection system on the Italian territory.**

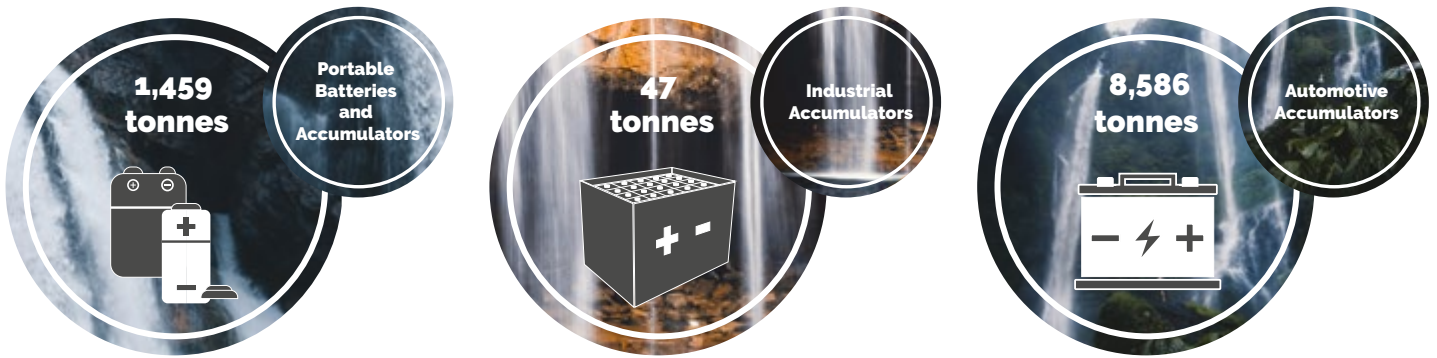
### Operational efficiency

Erion Energy aims to coordinate WBA management activities, carrying out many different activities to support Producers' needs including through services tailored to their needs. **Erion Energy offers a wide range of administrative services**

**dedicated to regulatory and operational fulfilment, such as, for example the Friendly Register service which allows Producers to delegate to the Collective Scheme the annual communications of products put on the market. Assistance**

**is also provided on the issue of batteries and accumulator marking and how to inform end users accordingly. Also appreciated by producers are advisory services on proper waste management.**

## ERION ENERGY COLLECTION FIGURES



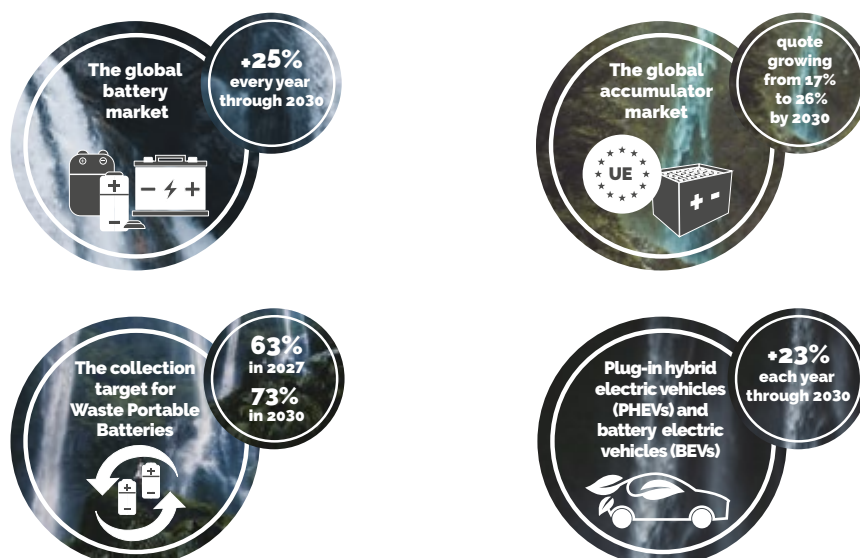
### Improving Standards and Quality

During 2022, Erion Energy collected more than 10 thousand tonnes of Waste Batteries and Accumulators throughout Italy. Significant is the drop in volumes (-57%) compared to 2021, which essentially concerns Automotive Accumulators: the main factor to which this decrease can be attributed is the reduction in the management of volumes of waste lead-acid batteries from the automotive sector due to the closure, caused by the high energy price, of some important national lead recyclers. On the other hand, the management of Industrial Accumulators more than tripled over 2021, standing at 47 tonnes compared to 11 tonnes in the previous year. As for Waste Portable

Batteries and Accumulators, 2022 records a growth in collection, marking a +10% over the previous year with a service level of 96%. This result can be attributed to the inclusion of a major Producer among the Members and to the Collective Scheme's efforts to develop communication initiatives aimed at increasing information and awareness of citizens and making them aware of the importance of the proper disposal of this type of waste. As of 1 January 2022, the rules of the CDCNPA have been changed. The quotas of responsibility for collection and treatment are now calculated differently, while the process of allocating areas in which to carry out the collection and transportation of batteries

from Collecting Points to facilities has remained unchanged. This first difference is the need for those who receive such material to be accredited by the CDCN-PA to demonstrate a high level of quality in the sorting and selection process. The result of this processing is divided by type and chemistry and made available to the CDCNPA which assigns responsibility for the treatment based on the market share of the Collective Scheme's member Producers of that given chemistry. This change allows for greater accountability of Producers on the types of batteries they put on the market. Portable Batteries and Accumulators treated by Erion Energy in 2022 totalled 1,438 tonnes.

## FIGURES ON THE FUTURE OF BATTERIES<sup>4</sup>



<sup>4</sup>Data from the study "The European Battery Regulation and challenges for the value chain" carried out by dss+ for Erion Energy.



## Comparison with Europe and innovation

The proposal for a new European Regulation covering the entire Batteries and Accumulators sector has accelerated discussions between European industry associations (EUCOBAT first and foremost) and the collective systems. The instrument chosen by the European Union, a Regulation and not a Directive, is also new in the world of EPR systems as it is directly applicable throughout Europe and does not require transposition measures by the Member States. Erion

Energy is in continuous contact with the national authorities to offer support in the design of the regulatory instruments that will enable the harmonization of the existing legislation with the new requirements. Like the entire Erion multiple Collective Schemes System, Erion Energy is active as a partner in many projects funded by European Union programmes involving international institutes and companies for the continuous development of research and innovation. For example, since 2022,

Erion Energy has been participating in the FREE4LIB and Grinner projects: the former is dedicated to the development of innovative processes for recycling lithium-ion batteries from the automotive industry; the latter aims to reduce the likelihood of battery fires and explosions in WEEE treatment processes by identifying, separating, and managing small appliances containing a battery in a different way thanks to X-ray technology.

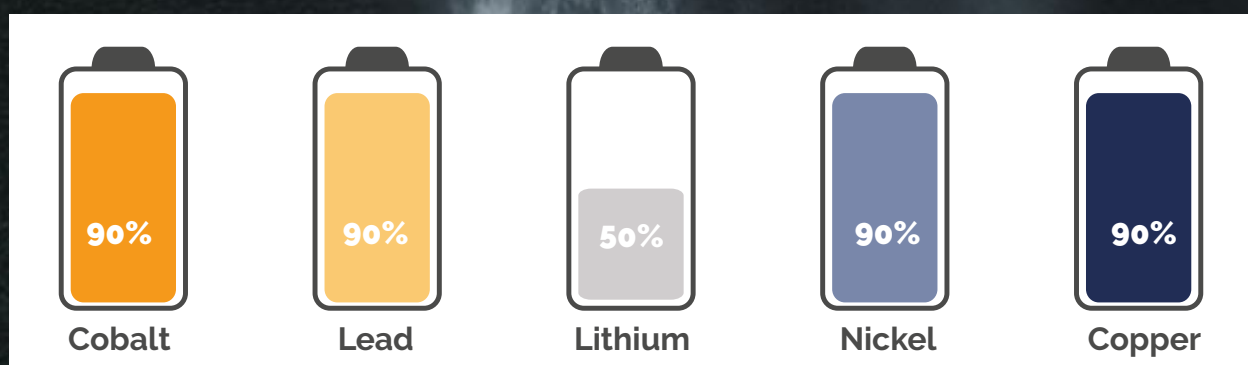
## Supporting Members with circular economy initiatives

The forthcoming European Regulation is strongly oriented towards the circular economy and has already stimulated and will continue to stimulate discussions, com-

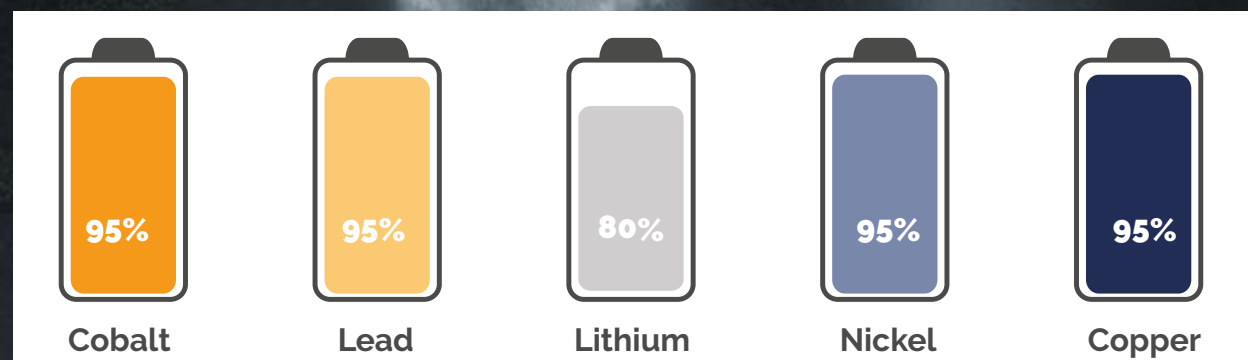
parisons and collaborations among Producers, collective systems and recyclers. Indeed, the proposal sets challenging targets for recycling rates and for the use

of secondary raw materials within the production processes of new batteries.

## MINIMUM MATERIAL RECOVERY TARGETS INTRODUCED BY THE NEW REGULATION<sup>5</sup>



### Minimum material recycling targets by 31 December 2027



### Minimum material recycling targets by 31 December 2031

<sup>5</sup>Data from the study "The European Battery Regulation and challenges for the value chain" carried out by dss+ for Erion Energy.

## 2.3.4 PRESENT AND FUTURE CHALLENGES



The year 2022 was, for Erion Energy, a year of study, organizational and operational preparation in relation to the proposed European Regulation.

### THE NEW EUROPEAN BATTERY REGULATION

In Italy, Europe, and beyond, the world of batteries is undergoing a major change, with significant future growth in demand and production, especially related to the spread of electric mobility and energy storage linked to power generation from renewable sources. This revolution will necessarily have to involve an innovative and more sustainable management of waste batteries, from their treatment to the reintroduction of secondary raw materials into the production system, in an increasingly circular economic model. With this in mind, the proposed Battery Regulation aims to manage three interrelated areas:

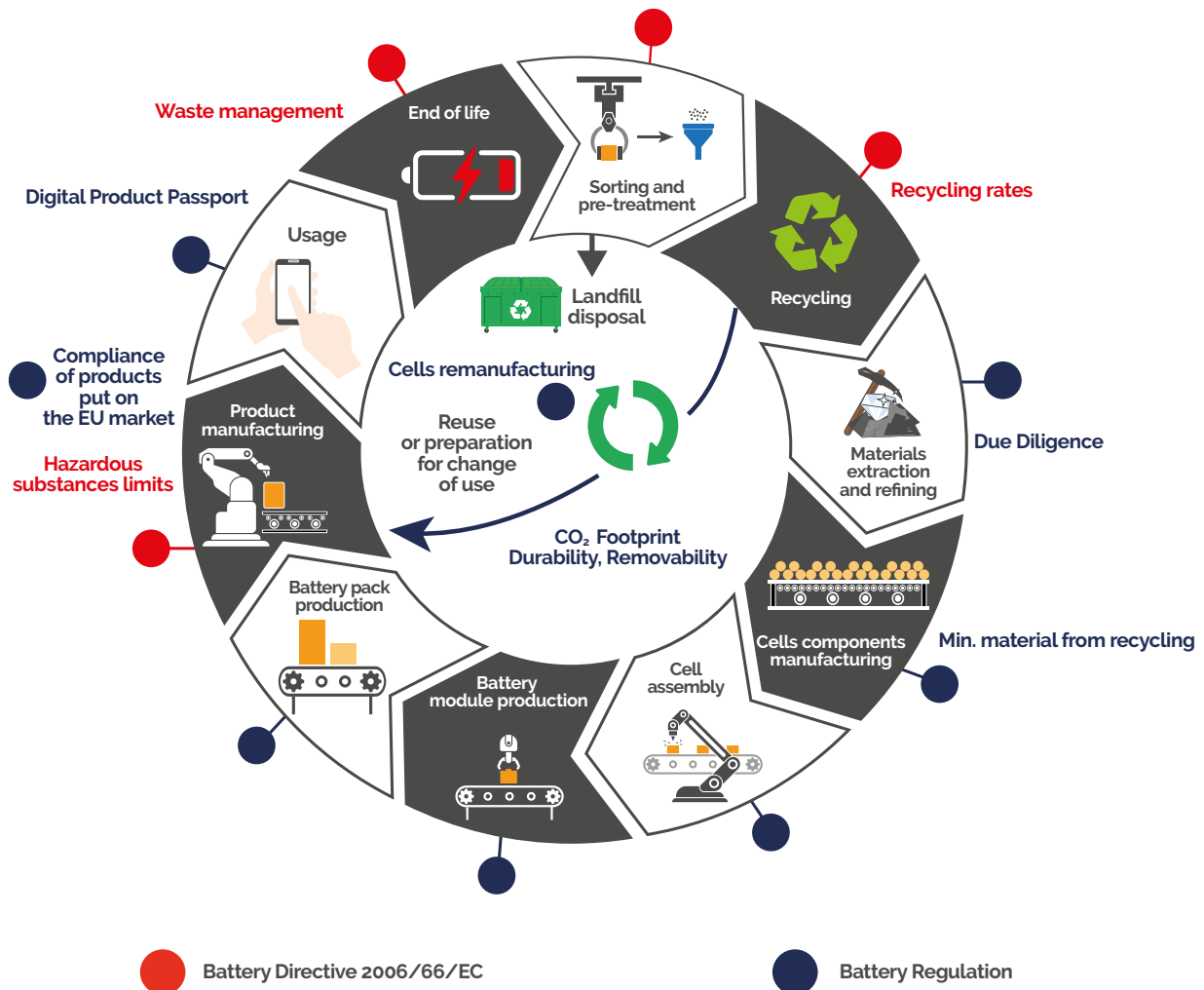
- **increase the internal European production of batteries** and even out the differences in interpretation and implementation by the Member States regarding the application of the European Directive 2006/66/EC currently in force;
- **encourage and promote the reuse of materials present in new products**, including ensuring the supply of secondary raw materials for the European production market;
- **limit the social and environmental impacts and risks** related to the production and end-of-life treatment of batteries, from raw material sourcing to hazardous substances management.

The first significant change in the proposed Regulation is the scope. The boundaries of the current Directive (focused on end-of-life) are expanded by going to regulate the life of the product from "cradle to cradle". The new Regulation also proposes a new classification of batteries in response to the technological evolution of the industry and electric mobility. In fact, it moves from the 3 categories of the current Directive (portable, industrial and automotive) to 5 (portable, industrial, automotive, electric vehicles and light transport vehicles). In addition, the Regulation defines the introduction of very impactful requirements (fully or partially or not applicable depending on the products put on the market):

- **sustainability:** Producers will be required to declare the carbon footprint related to the entire life cycle of the batteries. In fact, it will be necessary to monitor and reduce environmental impacts along the entire chain, also in light of the expected increase in the use of these products at the European and global level. In addition, Producers will have to declare the amount of recycled content present, the removability, durability and replaceability of batteries in order to promote material recovery and foster the efficiency of process performance;
- **labelling:** Producers will have to comply with precise labelling requirements for effective information sharing with the end user and the entire downstream chain. Batteries will have to carry a QR Code that makes available to the user all the information needed to identify the product and key features;
- **Raw material supply chain due diligence:** Producers will be required to ensure, through independent third-party certification, a responsible raw material supply chain to reduce social and environmental impacts related to resource extraction;
- **end-of-life management:** the new Regulation extends obligations related to Extended Producer Responsibility to most existing batteries and all forms of supply, including distance selling.

The Regulation will introduce a novelty that is already part of the European Sustainable Products Initiative adopted by the Commission in March 2022: the creation of the Digital Product Passport (DPP) to report information, including sustainability information, on all products put on the EU market and on compliance with certain quality standards from the standpoint of efficiency, durability, and reparability of products. The battery sector will be the first to develop this tool.

# MAIN CHANGES INTRODUCED BY THE NEW BATTERY REGULATION COMPARED TO DIRECTIVE 2006/66/EC



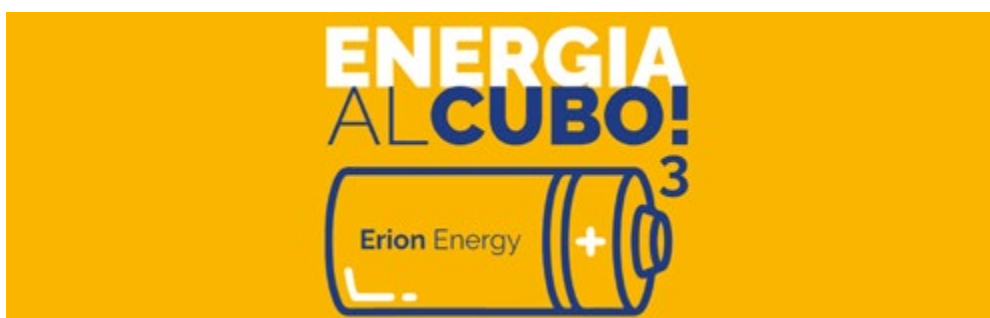
## 2.3.5 INITIATIVES AND PROJECTS



In 2022, the communication initiative **'Energia al Cubo'** was launched with the aim of raising awareness, informing and educating citizens, especially the very young, about the importance of proper WBA disposal and increase the collection of spent portable batteries. The project was promoted in collaboration with municipal companies that operate in different areas of the country for the collection of municipal waste: Iren, Hera, Terre delle Sirene and

Alia Environmental Service. The initiative included the distribution of small boxes to facilitate collection inside the home. In addition, in the territory of the municipalities involved, small columns were placed inside stores, electrical appliance retailers and schools for delivering batteries collected from homes. This activity was complemented by an educational campaign in the schools of the municipalities involved with moments of meeting, training, game

playing and prize challenges among institutions to promote collection. The 'Energia al Cubo' project was presented at Ecomondo 2022, the international event on technologies and services in the circular economy and sustainability sectors, with a space dedicated to the distribution to visitors of small boxes for home collection, information material on proper waste management, and an event to talk about the results of the project.



Also at the Ecomondo event, the study "Batteries, the European Regulation and the challenges of the entire sector" carried out in collaboration with DSS+ was presented to inform stakeholders and interested parties about the new

European Regulation. October 2022 saw the launch of **"Ecodesign the Future: Batteries Edition"**, the advanced training course sponsored by Erion Energy in collaboration with Economiacircular.com and aimed at promoting the

practice and culture of battery eco-design. The project, which involved 30 students, was supported by the ADI Design Museum, ISIA Roma Design, and Polarte Academy of Fine Arts and Design and will end in 2023.



## 2.3.6

# WHAT DO STAKEHOLDERS THINK ABOUT ERION ENERGY?



The challenges of the new Regulation affect the entire sector, from production to management of spent batteries and accumulators. S.e.val., a sorting, grading, and treatment plant partner of Erion Energy, is also attentive to the evolving regulatory framework and appreciates the Collective Scheme's effort

for its preparatory work, study, and active involvement in the entire chain. In particular, it points out that the future challenges on secondary raw material recovery rates that the European Union will introduce will require great collaboration from all players in the sector in developing the necessary technological

innovation. Campaigns to communicate to the population the importance of proper disposal in order to increase the volumes collected were highlighted as noteworthy, as this would also support major investments to improve the process of sorting and treating WBA.



A blade of grass is forced to follow the wind,  
but when it does so together  
with thousands of others,  
it creates a perfect choreography.

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**FOLLOWING A DIRECTION  
TOGETHER IS THE WAY BLADES  
OF GRASS TURN  
WHAT THEY HAVE TO DO INTO  
SOMETHING BEAUTIFUL  
AND THE WAY FOR PEOPLE  
TO MAKE A COMMON NEED  
STRIKING AND POETIC.**



## 2.4 ERION PACKAGING

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Packaging Waste

## 2.4 ERION PACKAGING

*"Erion Packaging stands by its Producers to achieve their goals in the packaging sector with a focus on circular economy development and environmental sustainability."*

*Roberto Magnaghi, Erion Packaging General Manager*

### 2.4.1 THE ORIGIN AND MISSION OF ERION PACKAGING

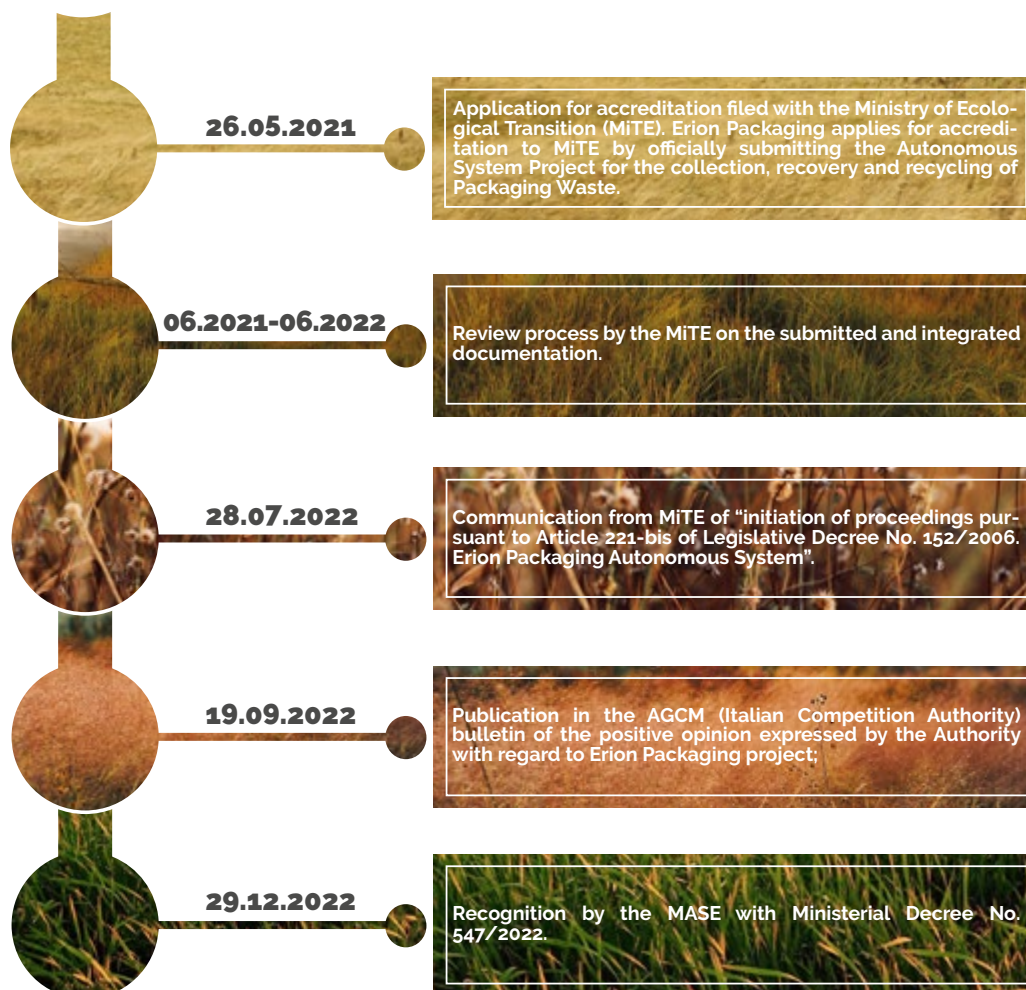
Erion Packaging is an autonomous system in collective form established for the collection, recovery and recycling of Packaging Waste in fulfilment of the obligations under the Extended Producer Responsibility legislation (hereinafter "EPR"). As is well known, according to the EPR principle, the responsibility of the producer of a given product does not stop at the moment when that product is released for consumption, but continues (extends) until the moment when said product enters the final stage of its life, the one in which recovery, recycling or disposal of the same occurs. An economic mechanism is thus introduced to make the entity that first puts a product on the market responsible not only for the initial production costs but also for the costs that must be incurred in the final phase of the product's life, the phase in which it exerts its greatest impact on the environment. Such economic mechanism is able to steer the producer towards a non-polluting and recyclable product from the design stage (eco-design), thereby incentivizing the application of the waste hierarchy and contributing to the broader

scope of the circular economy objectives. In fact, the material value chain is realized by ensuring material recovery through the final treatment of the waste, resulting in economic efficiency as well since the secondary raw material will be sold in the market and reintroduced into the production circuit. Since its inception in July 2020, Erion Packaging intended to qualify as a national Collective Scheme specialized in the management of **Packaging Waste for Producers and Importers of Electrical and Electronic Equipment (EEE) and Batteries and Accumulators (BA) and their accessories and spare parts**. The Collective Scheme stems from the vision of EEE and BA Producers who have joined the Erion System to make a quantum leap in the way they organize and finance the extended responsibility model that covers the 'packaging' component of their products. Products put on the market by EEE Producers are, in fact, almost always accompanied by packaging. Thus, thanks to the integration of Erion Packaging into the Erion System, member Producers can turn to a single partner for the complete end-of-life management of their products.

**Erion Packaging's mission is to support its Members in achieving regulatory compliance and, at the same time, offer high quality and efficient services in line with their needs by introducing innovative collection and recycling models, simplifying the management of legal requirements and contributing to the achievement of European and national recovery and recycling targets.** With Ministerial Decree No. 547 of 29 December 2022, Erion Packaging has been recognized by the Ministry of Environment and Energy Security (MASE) as an Autonomous System for the collection, recovery and recycling of Packaging Waste, pursuant to and in accordance with Article 221-bis of Legislative Decree 152/06. The Autonomous System is required to carry out its activities aimed at the proper management of paper, plastic and wood packaging from the industrial/commercial channel and the household channel. With this recognition, Erion Packaging thus represents the first multi-material autonomous Collective Scheme operating on the national territory.



# THE HIGHLIGHTS OF THE ACCREDITATION PROCESS



## 2.4.2 THE VALUE CHAIN



In order to achieve the recycling and recovery targets set by regulations at European and national levels, Erion Packaging is undertaking specific initiatives aimed particularly at the collection, recovery and recycling of Packaging Waste from Electrical and Electronic Equipment (EEE) and Batteries and Accumulators (BA) and their accessories and spare parts. As regards, in particular, the streams of Packaging Waste from the industrial/commercial channel, which represent the overwhelming share of packaging put on the market by the companies that to date have joined

the Collective Scheme, these are managed directly by Erion Packaging through a network of dedicated operators coordinated by the provider and partner of the initiative Interzero Italia, a leading company operating in waste management at national and international level through the Group of the same name. **The collection system, which is currently being developed, will involve industrial production sites, logistics warehouses for handling goods, distributors, installers and Household and Professional EEE technical assistance centres as well**

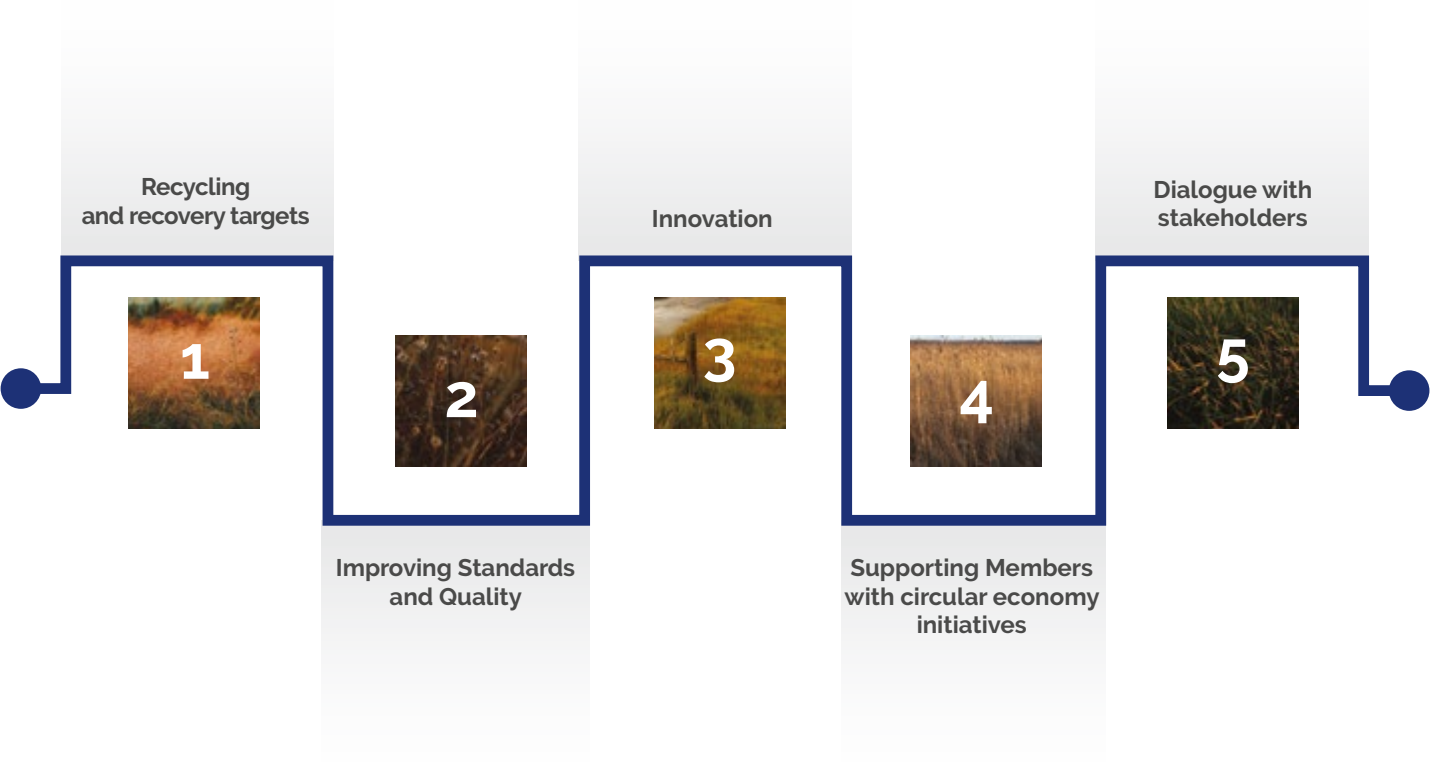
**as points of sale of specialized and/or large-scale retail trade chains.** The collected paper, wood and plastic Packaging Waste, will subsequently be sent for recycling/recovery, after sorting and selection, if necessary. Finally, with regard to the portion of packaging that are classified as waste on municipal areas, Erion Packaging will ensure full compliance with the required regulatory obligations, including through participation in the sector framework programme agreement with the relevant stakeholders.

# 2.4.3

## THE FIVE STEPS OF ERION PACKAGING



Erion Packaging, also as a result of the recent ministerial recognition, is working to simultaneously implement the core components of its mission, linked primarily to the start of operations aimed at the recycling/recovery of packaging and developing, at the same time, projects to support member Producers, as well as initiatives to participate in shared discussion groups and in general contact and awareness-raising activities for the various stakeholders.



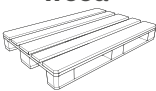



### Recycling and recovery targets

In the coming years, Erion Packaging will be committed to achieving the recycling and recovery targets, in terms of weight, defined by the regulations in force and set out in the Ministerial Decree of recognition No. 547 of 29 December 2022. Specifically, with regard to recovery and recycling targets, national and EU regulations on Packaging Waste provide both an overall target and targets for each type of material. For each of the packaging chains managed by Erion Packaging (plastic, wood, paper), targets are shown in the table below.



# RECYCLING AND RECOVERY TARGETS

	Current targets	2025	2030
<b>Overall target</b> 	<b>Recovery 60%</b> <b>Recycling:</b> <b>at least 55%</b> <b>and up to 80%</b>	<b>Recycling</b> <b>65%</b>	<b>Recycling</b> <b>70%</b>
<b>Plastic</b> 	<b>26%</b>	<b>50%</b>	<b>55%</b>
<b>Wood</b> 	<b>35%</b>	<b>25%</b>	<b>30%</b>
<b>Paper and cardboard</b> 	<b>60%</b>	<b>75%</b>	<b>85%</b>

Erion Packaging aims to achieve recovery and recycling targets in relation to the amount of packaging put on the Italian market by member companies through an efficient and coordinated collection plan for packaging from both the industrial/commercial and household channels. The Legislator has established the National Register where Producers subject to EPR requirements will have to declare

annually the amounts put on the market (as, for example, is the case for the WEEE and WBA regimes), in order to improve the quality of the data made available, Erion Packaging has launched, as early as 2022, a voluntary project aimed at the validation, by a specialized third party certification body, of the procedures currently used to determine the data on packaging released for consumption and

subsequently sent to recycling. This validation plays a central role in ensuring the achievement of measurable and verifiable quantitative targets. The activity includes the involvement of a third party (DNV Business Assurance Italy Srl), which, in relation to the specific waste streams, will identify and validate the results obtained.

## Improving Standards and Quality

Already from the first months of operation, the Collective Scheme had among its objectives the development of standards and progressively improving quality. Erion Packaging will aim to constantly optimize its organizational and operational model, with the goal of ensuring compliance with

high levels of quality, efficiency and generating value for all partners in the chain. Specific focus will be given to the development of closed loop circuits in the field of packaging collection and recycling, optimizing quality at every stage of the stream, up to the final product.

At the same time, Erion Packaging intends to strive to improve the recycling process of packaging under its management also through eco-design activities and recyclability performance, to be proposed to its Members and stakeholders.

## Innovation

Erion Packaging makes organizational and technological innovation its strong point. One of the examples in this area is the initiative, already launched in previous years, to implement a semi-automatic conversion mechanism between EEE product and its packaging. By entering

the data relating to the EEE product into the dedicated software system, it is also possible to view by type and material the amount of packaging that had to be used and put on the Italian market. This methodology and software, developed by Erion Packaging in collaboration with SDA

Bocconi School of Management, represent an innovative tool that will be further refined over the coming months, concurrently with the associative development of the Collective Scheme.

## Supporting Members with circular economy initiatives

Erion Packaging intends to represent for its Members a qualified and attentive partner able to provide expertise and assistance not only on regulatory compliance issues but also in the planning and implementation of scientific research activities applied to ecodesign, with a focus

on packaging sustainability, as well as in the study of innovative waste management systems, with great attention paid to eco-sustainability solutions. In addition, as per the accreditation Decree, the Collective Scheme will have the task of implementing information, communication,

training and awareness-raising activities aimed at users and stakeholders, guiding them towards virtuous and sustainable behaviours and adequately informing them on how the system works.

## Dialogue with stakeholders

During 2022, Erion Packaging established an intensive dialogue with the Ministry of Environment and Energy Security (MASE) as part of the process for obtaining accreditation as an autonomous system for the management of Packaging Waste. Over the next two years, the Collective Scheme will be subject to audit by ISPRA (Higher Institute for Environmental Protection and Research) as a support to

MASE, in checking compliance with the requirements established in the Decree. In this startup phase of the Collective Scheme and in the coming years, Erion Packaging work will be focused on compliance with the regulatory requirements, provisions and recommendations contained in the accreditation Decree, in a constantly proactive logic also with a view to possible future European and national

developments of legislative and regulatory frameworks. In this regard, Erion Packaging will be able to be an attentive and proactive partner, starting with the discussion regarding the draft of the new EU Regulation on Packaging and Packaging Waste, published in November 2022, also with a view to continuous information and support to its Member.

# 2.4.4 PRESENT AND FUTURE CHALLENGES



Erion Packaging was established as a Collective Scheme with voluntary membership and this is why it pursues the objective of guaranteeing advantage, support and satisfaction for its Members, in full compliance with regulatory requirements and with a view to constant contribution to the results of recycling and recovery of packaging nationwide. With this in mind, Erion Packaging increasingly wants to become the national benchmark for the sector, leveraging its innovative and anticipatory nature to ensure that its Members can always count on a proactive and fundamental partner for their eco-sustainability

and development. Among the initiatives, we report what has been proposed on the labelling and ecodesign of products. **In late 2021, the Collective Scheme published the "Sectoral Guidelines for the Environmental Labelling of Packaging of Electrical and Electronic Equipment (EEE)", updated in December 2022.** The guidelines dedicated to the packaging of Electrical and Electronic Equipment (EEE) were prepared by Erion Packaging in view of the introduction of mandatory environmental labelling of packaging released for consumption in Italy. The document, updated to December 2022, provides in

the first part a general overview of the new obligation and, in the second part, insights of specific interest to the EEE Producers sector, as well as practical examples of possible solutions. The publication of this document aims to provide Erion member Producers with a useful tool for decoding the legal obligations related to the labelling of packaging, while at the same time proposing operational solutions for immediate compliance with these obligations, taking into account the specific needs of the sector.



The Collective Scheme attention to issues related to eco-sustainability also continued in 2022 with the completion of the project "Ecodesign the Future: Packaging Edition", a high-level training course created in partnership with [Economiacircolare.com](https://www.economiacircolare.com) and sponsored by ISIA (Italian Institute of Design) and Politecnico di Milano Academy of Fine Arts and Design of

Ancona, aimed at the practice and culture of ecodesign from a circular economy perspective with a focus on packaging. The training and design course, after an educational section, involved the implementation by the participants of project proposals and prototypes on the subject of packaging, with the aim of identifying good practices capable

of accompanying production activities, particularly of electrical and electronic equipment (EEE), towards goals of design excellence and full circularity. On 26 March 2022 at the ADI Design Museum in Milan, Erion Packaging organized the "Rethink Pack!" event to award the winning proposals of the project.

## 2.4.5 WHAT DO STAKEHOLDERS THINK ABOUT ERION PACKAGING?



As also reported above, in the last two years, throughout the accreditation process, there have been numerous contacts and in-depth discussions with different stakeholders and in particular with the Ministry of Environment and Energy Security (MASE) and with other institutional bodies (e.g. AGCM and ISPRA) as well as with the associated and corporate entities that have enabled the establishment and development of the Collective Scheme. In 2022, moreover, the discussion forum with CONAI continued and further expanded to include the presence of the Comieco, Corepla and Rilegno Consortia, with the aim of defining and detailing the possible methods of collaboration and achieving a harmonization of Erion

Packaging's operating methods with the activities carried out by the CONAI consortia system in the area of municipal waste collection in particular. Also with a view to a proactive and collaborative approach, in advance of obtaining accreditation, in 2022 Erion Packaging also started an initial discussion with ANCI (National Association of Italian Municipalities), which is having its development during 2023, to define the management modalities and an operating agreement for the quotas of packaging under Erion Packaging's responsibility that could potentially enter the municipal waste circuit, identifying these quotas in the quantities of separate collection for each type of material. Erion Packaging's stakeholders also include, as

mentioned above, national associations and among them, in particular, AIRES (Italian Association of Specialized Appliance Retailers) which brings together five consumer electronics chains: Euronics, Expert, Unieuro, Trony and Mediaworld. In collaboration with AIRES, the Collective Scheme wants to develop a memorandum of understanding to organize a system for collecting Packaging Waste at points of sale. Always attentive to environmental issues, AIRES hopes for a gradual process towards continuous improvement of its sustainability, recognizing to Erion Packaging an important supporting role with the professionalism with which it has immediately distinguished itself.



The continuous movement  
of water transforms,  
breaks and releases energy.

---

**THUS OUR ACTIONS  
BECOME MEANINGFUL  
WHEN THEY ARE FOLLOWED  
BY THOSE OF OTHERS  
IN A CONTINUOUS STRIVING  
TOWARD IMPROVEMENT.**



# 2.5 ERION CARE

Tobacco product Waste



## 2.5 ERION CARE

*"It is important to start leading by example, consistently demonstrating that small gesture, if repeated indefinitely, can save the Planet."*

*Letizia Nepi, Erion Care General Manager*

### FIGURES ON THE LITTERING AND DISPERSION OF CIGARETTE BUTTS IN THE ENVIRONMENT

**6,000,000,000,000  
(6 trillion)  
cigarettes consumed  
annually worldwide.**

**4,500,000,000,000  
(4,5 trillion)  
butts are littered around  
the world every year.**

**64% of cigarettes smoked in  
public places are disposed of  
by abandoning the waste.**

### 2.5.1 THE ORIGINS AND MISSION OF ERION CARE

In 2022, Legislative Decree 196/2021 came into force, implementing European Directive 2019/904, known as the Single Use Plastics (SUP) Directive, on reducing the impact of certain plastic products on the environment. **Within this Directive, great attention is also given to filters of tobacco products containing plastic, listed as the second most frequently found single-use plastic item on Union beaches.** The Directive calls on member states to promote a wide range of measures aimed at reducing their dispersion in the environment. It is in this context that British American Tobacco, Imperial

Brands, JT International and Philip Morris established **Erion Care, the fifth Collective Scheme of the Erion System and the first Italian Extended Producer Responsibility organization dedicated to combating the abandonment of tobacco product Waste in the environment and ensuring its proper management.** In accordance with the provisions of **Legislative Decree No. 196 of 8 November 2021 (SUP Decree)**, the Collective Scheme is committed on behalf of its Members to:

- prevent littering of tobacco products with filters and filters marketed for use in combination with tobacco products

("REFILLS"), including through public information and awareness campaigns;

- contribute to financing the activities of removal of REFILLS, i.e. collection, transportation, and treatment, in accordance with the provisions of the Decree;
- carry out the collection of data on the operation of the EPR system and report them to the relevant institutions.

Erion Care Producers account for about 90% of the tobacco industry in terms of products put on the market. The Collective Scheme is open to the participation of all Producers in the sector.

The important **innovation** introduced by the establishment of the Collective Scheme will be to move from actions on a voluntary basis, carried out individually or jointly by Producers, environmental associations and municipalities, to **a centrally coordinated system, which will make it possible to harmonize awareness cam-**

**paigns and different local initiatives.** This will help to combat littering, especially in areas with the highest risk of butts being scattered, with the objective of enhancing environmental conservation and safeguarding nature, wildlife, and urban spaces. In addition, **Erion Care will contribute to the costs of removal, trans-**

**portation and treatment of tobacco product Waste incurred by Local Authorities, and will develop a system that allows transparency and control both from an administrative and data perspective and on the effectiveness of the results achieved.**

### WHAT IS LITTERING?

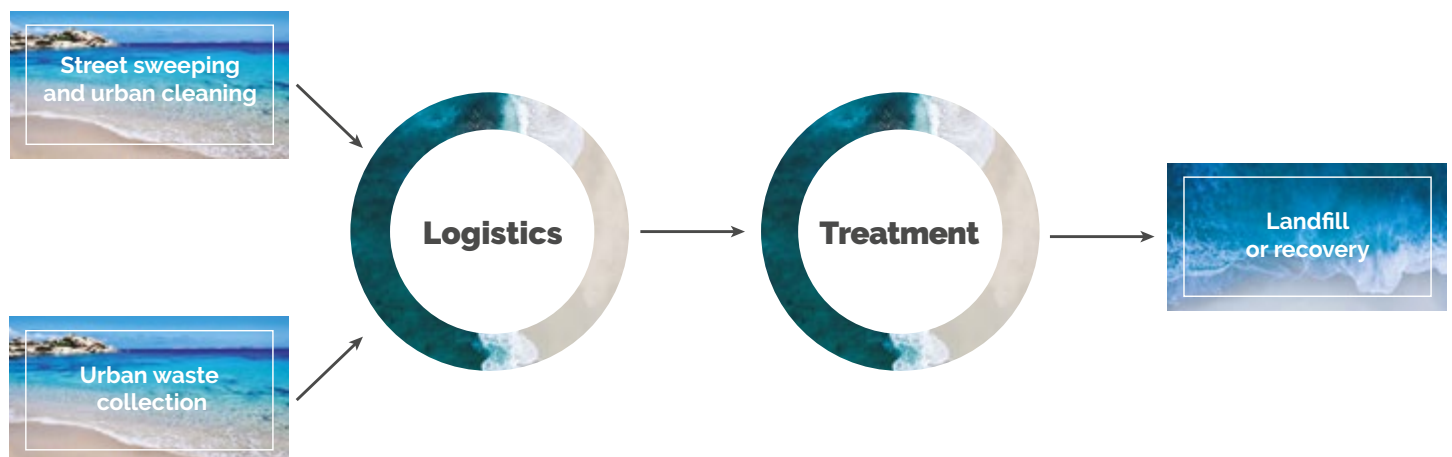
Littering is the deliberate or unintentional abandonment of small waste in public areas or spaces open to public use such as streets, parks, beaches and forests. The littering of waste like plastic caps, straws, glass fragments, cigarette butts and filters, causes environmental pollution, increasing the risk to wildlife and urban decay, at the expense of urban hygiene, public spending and quality of life for the community.

## 2.5.2 THE VALUE CHAIN

The stage in the chain in which Erion Care's actions will focus will be the sweeping, cleaning and collection of tobacco product Waste by municipal administrations

at places where the waste is usually discarded. The resulting logistics tasks relate to the transportation of the waste to treatment plants, which, to date, are limited to

disposal processes (landfill), energy recovery and, in some cases, material recovery from street sweeping soil.



## 2.5.3

# THE FIVE STEPS OF ERION CARE



In the first six months of 2022, Erion Care completed part of the activities for the start-up of the Collective Scheme, with a view to concentrating on operational aspects in 2023. Therefore, in the five steps

path, activities focused on the establishment and fine-tuning of the Collective Scheme's organization, dialogue with national institutions and stakeholders, and are developing toward operational

projects. Attention is still paid to continuous improvement and development of support to Members with respect to regulatory compliance activities and projects with a view to sustainability.



### Dialogue with stakeholders

Erion Care was created to implement the EU Directive dedicated to combating pollution from the dispersion of single-use plastic products. The SUP Directive states that, in order to achieve the set objectives, it is the public authorities that first have to set an example. This can be done, on the part of local authorities, by enhancing the territory and the quality of urban spaces and providing the necessary infrastructure for collection. With the extended Producer Responsibility requirements, provided for in the Directive for certain products including tobacco products with filters (and filters to be used in combination with them), Producers also become key players in the end-of-life management of their

products and are required to contribute to the related costs, as well as to those of preventive measures to combat the improper disposal of butts. Therefore, a negotiating table was set up in November 2022 for establishing a Program Agreement that will define how the new system, as a whole and each actor according to its tasks, should attain the objectives described. The working group involves Erion Care together with the National Association of Italian Municipalities (ANCI) and representatives of environmental service managers (Assoambiente and Utilitalia). Legislative Decree 196/2021 provides that Producers shall bear, in proportion to the plastic component of the product and

according to their quantity put on the market, the costs for cleaning up and removing cigarette butts from public spaces and installing specific collection containers placed in certain critical hot-spots. To date, the regulations define the activities covered by the Producer's extended responsibility, but they do not define either the amount of the contribution to be paid, or the support or awareness measures, or the ways for monitoring the results and incentivizing the achievement of the objectives. The key aim of the Agreement will therefore be to define the scope of the Producers' responsibility, i.e. the specific activities covered in relation to the purpose and objectives of the SUP Directive,

clarifying the extent of its actual implementation. Also important will be the involvement of civil society, particularly citizens, consumers and related associations,

in the communication initiatives that will be promoted within the framework of the Agreement. Erion Care will be an attentive partner in collecting everyone's needs

and proactive in identifying solutions in this process.

#### ADMINISTRATIVE SANCTIONS IN ITALY

- In Italy, **Article 40 of Law 221/2015** governs administrative sanctions related to the littering of tobacco Waste and very small waste.
- According to specific surveys, unfortunately **40%** of citizens are unaware of legislation against the abandonment of small waste.
- Fines range from **EUR 30 to EUR 150** for those who abandon small and very small waste on the ground, in water and drains.
- The fine is doubled to **EUR 300** if cigarette butts and filters are thrown on the ground.
- Proceeds from administrative fines are allocated **50% to the State and the remaining 50% to municipalities**.

## Operational efficiency

Through the Program Agreement, which will see work continue through much of 2023, the application terms of Producer Responsibility and thus the operational model to be implemented will be defined

Within this framework, Erion Care plans to participate in the process towards sustainability by focusing in particular on prevention and the collecting phase, **contributing financially, upstream, to**

**awareness-raising initiatives and, downstream, to the reduction of dispersed butts and the increase in the quantities of butts collected.**

## Improving Standards and Quality

Erion Care will aim to develop an optimized operating model that can ensure that the desired levels of quality, compliance and efficiency are met and generate value for all partners in the chain. The Collective Scheme, through ECO, will engage

in the implementation of an integrated Quality and Environmental Management System during 2023. In order to ensure a common and synergistic approach, the single Quality and Environmental Management System already applicable to

both ECO and other Collective Schemes in the Erion System and the related ISO 9001 and ISO 14001 Group certifications will be extended also to Erion Care.

## Comparison with Europe and innovation

At present, there is no separate collection for tobacco product Waste since, as the European Directive points out, this is not necessary to ensure proper treatment in line with the waste hierarchy for tobacco

products with filters containing plastic, wet wipes and balloons. In fact, large-scale technologies and an industrial chain are not currently available to produce from such waste a material for reuse in

production processes, which would justify its recycling and, therefore, the need for separate collection.

## Supporting members with initiatives aimed at greater sustainability

At a time when the preservation of natural resources is an important plus for companies wishing to implement or strengthen their sustainability strategies and at the same time consolidate their green image, Erion Care offers specific services and customized advice to support Members in the transition to an Extended

Producer Responsibility model that can combine environmental protection and economic efficiency. In addition to the primary activities provided by the Collective Scheme, Erion Care will thus be able to support its Members in fulfilling specific regulatory obligations through the production of information materials,

meetings and webinars, as well as the creation and development of communication projects aimed at enhancing the environmental commitment of Producers towards their reference stakeholders and the community.

## 2.5.4 INITIATIVES AND PROJECTS



The year 2023 is the year that sees Erion Care enter full operation, with a program of initiatives that will have for the first time the consequence of being coordinated at the national level. On this, in fact, the Collective Scheme has already started during 2022 the planning of an **information campaign on the effects of littering and scheduled an event with the aim of presenting the Collective Scheme to the public and stakeholders and telling them about its commitment**. Through the **Study "Littering and accumulation**

**of butts in the environment. Strategies and solutions to avoid it"** carried out by the consulting firm dss+ for Erion Care and presented on 4 April 2023, a number of interesting cases of best practices were analyzed and put in place to counter the littering of butts at all levels. As a first concrete step, moreover, Erion Care decided to start immediately an awareness ("Filter-free") campaign in major national magazine titles, aimed at spreading awareness of the issue of littering and its environmental and social impacts. In early

2023, Erion Care developed an information package to explain what membership in the Collective Scheme entails, with the aim of attracting new members. These potential partners were identified as small to medium-sized companies, both foreign and Italian and operating in the domestic market as Producers/Importers as defined in the SUP Decree. At the same time, Erion Care will work with environmental and consumer associations interested in the issue to evaluate joint communication and awareness initiatives.

### THE IMPACTS OF LITTERING AND ACCUMULATION OF BUTTS IN THE ENVIRONMENT

**Environmental impacts.** Cigarette butts, when they are thrown on the floor, cause serious damage to the ecosystem on a global scale. In fact, the butt filter, being made mostly of cellulose acetate or polylactic acid, can take even years to degrade. A single butt can contaminate up to 1,000 litres of water or reduce the success of seed germination and plant development.

**Impacts on wildlife.** Small objects, such as cigarette filters, can be mistaken by aquatic animals and birds for food, causing suffocation or direct toxic effects due to the substances they contain. Many substances in butts were found in 30% of the turtles and 70% in the birds analyzed.

**Social and economic impacts.** Abandoned tobacco product Waste in urban and non-urban areas causes environmental degradation and associated impacts on urban cleanliness and landscape, which translate into economic impacts for the community related to collection and cleanup costs and lost revenue due to lower tourists flow.



## 2.5.5

# WHAT DO STAKEHOLDERS THINK ABOUT ERION CARE?



Utilitalia, the Federation which brings together utilities operating in the Water, Environment, Electricity and Gas sectors, is one of the stakeholders that Erion Care involved in the design phase. Utilitalia expressed its appreciation for the fact that,

on this issue, Italy started earlier than other European countries and that a dialogue was established with all the actors involved early in the Collective Scheme's start-up phase. Utilitalia believes that the key element for the success of the

activities will be a widespread communication action on the need to avoid the dispersion of butts into the environment. Furthermore, it considers the need for data on the phenomenon and its effects crucial.

If we look away,  
the system shows  
itself in its,  
albeit complex, simplicity.

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**LOOKING FROM ABOVE  
WE CAN GRASP THE PATTERN  
THAT GOVERNS SYSTEMS  
AND UNDERSTAND  
HOW THEY WORK.**




## 2.6 **ERION COMPLIANCE ORGANIZATION**

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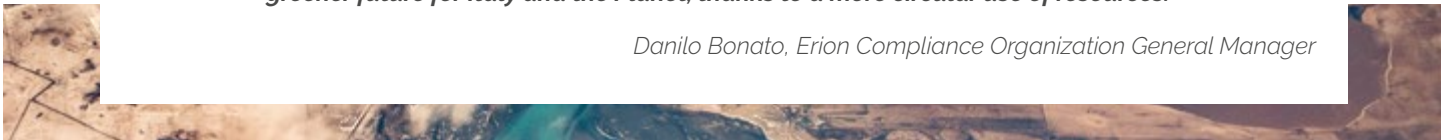
Collective Schemes' integrated services

## 2.6 ERION COMPLIANCE ORGANIZATION (ECO)



*"ECO's primary goal is to build an excellent system that generates value by bringing innovation to all the actors involved in the different waste management systems. ECO aims to offer efficient and quality support to Producers to strengthen their sustainability strategies and at the same time contribute to building a greener future for Italy and the Planet, thanks to a more circular use of resources."*

*Danilo Bonato, Erion Compliance Organization General Manager*




*"Through its work, Erion enables full compliance with European environmental regulations on waste management. The decision to create a multiple Collective Schemes structure, operating on different waste streams, constitutes a model of European best practice and a source of inspiration for other EU countries."*

*Mattia Pellegrini, Head of Unit DG ENV*



### 2.6.1 ECO'S MODEL: MISSION AND VALUES



Erion Compliance Organization (ECO) represents the operational core of the Erion System, a service platform for harmonizing the strategies of individual Collective Schemes towards a single group direction. Its added value and uniqueness lies in being dedicated to serving Erion Collective Schemes to support them on a daily basis in achieving their goals. Thanks to ECO, all Collective Schemes are involved in a single, shared system of rules and responsibilities. In fact, the sector-specific Collective Schemes have entrusted ECO with all the administrative and

operational services, necessary to be able to ensure full compliance with environmental regulations to their member Producers, **guaranteeing efficiency, quality and transparency in management. The management model adopted by ECO integrates the three dimensions of sustainable development: Economic, Environmental and Social.** The Collective Schemes ability to be competitive in their own sector and provide service excellence comes through the work of the eight Teams that make up ECO, led by competent managers who are committed to and passionate about their

work. ECO carefully chooses its suppliers based on specific criteria that include environmental performance, thereby promoting the sharing of best practices within the different sectors. It also plays an active role in coordinating and participating in innovative projects for the development of advanced technologies and the creation of more sustainable business models in a circular economy. **Since its inception in 2020, ECO has defined its strategic objectives that describe the company's mission in the medium term**, which can be grouped into 4 thematic areas.



## IDENTITY AND REPUTATION

Develop and consolidate the image and reputation of the Erion System through the dissemination of its founding values: efficiency, quality, transparency and innovation.

## REGULATORY COMPLIANCE AND EVOLUTION

Support the Collective Schemes in achieving their regulatory compliance goals, contributing to the virtuous evolution of sector regulations.

## QUALITY OF SERVICES

Enhance staff skills to provide the Collective Schemes with efficient and flexible operational, administrative and IT services.

## DEVELOPMENT AND INNOVATION

Ensure effective coordination of innovation and development processes.

## THE EIGHT FUNCTIONAL TEAMS<sup>6</sup>



## 2.6.2 CHANGES AND CHALLENGES FACED IN 2022

The year 2022 introduced complex challenges for Producers and their Collective Schemes, which had to face a new and alarming reality. In a global and market scenario still strongly characterized by the Covid-19 pandemic, the critical issues to be faced were further

complicated with the onset of the Russian-Ukrainian conflict in early 2022. Reduced availability of raw materials and rising costs of materials and energy, partly due to financial speculation, created great pressure on member Producers, consequently affecting the

Collective Schemes' priorities. Faced with such a scenario, ECO promptly responded by strengthening its organizational model, choosing to invest in personnel and new specialized areas to offer even more efficient and high-quality services.

<sup>6</sup> List updated to 2023



## ECO'S CHALLENGES IN 2022

### Organizational strengthening

As of the end of 2022, ECO's Operations Team took over the direct management of logistics and treatment providers on behalf of the Erion WEEE and Erion Energy Collective Schemes. This change has led to the need to include new professional figures, capable of helping to ensure the Collective Schemes' efficient management of suppliers through specific technical and relationship skills. The Operations Team is the driving force behind the logistics and waste treatment activities managed by Erion Collective Schemes throughout the national territory.

### Strategic development

ECO has created a team specialized in researching innovative waste management solutions and defining green strategies. The Strategic Development and Innovation Team conducts cutting-edge studies and research projects dealing with:

- cooperation with scientific organizations, industrial enterprises and universities;
- actively participating in funded European research projects;
- investigating potential new sectors for the application of Extended Producer Responsibility;
- conducting innovative studies and research for the Collective Schemes (such as the study on the impacts of the future Battery Regulation).

### Corporate welfare

The People and Welfare Team has dedicated itself with great passion to taking care of people's welfare at work and beyond. The 'Agile Future' project, launched in 2022, is part of ECO's overall strategy to improve the ability to achieve goals by increasing employee satisfaction through greater empowerment.

The initiative also led to the creation of a 'Goal Development Plan', which enables the company to rely on a more qualified and motivated team. Taking care of people's personal and professional development is among the primary goals of ECO, which is attentive to developing skills and building an environment in which people feel appreciated and valued. Both of these initiatives will be described in detail in the chapter on the organization's social impacts.

In the past year, the introduction of the Erion Care system and the evolution of the existing Collective Schemes have required a great deal of effort on the part of ECO, which promptly responded with an expansion of its workforce. In fact, despite

uncertainties due to geopolitical conditions, in 2022, ECO recorded a 26% increase in the number of employees compared to 2021. ECO invested in training and economic resources to create a competent, motivated, and cohesive team.

Each newly hired employee has been taken through a structured mentoring and induction program, which for ECO represents an investment in the long-term success of the company.

## 2.6.3 ECO'S GOALS



Annually, ECO defines short-term operational objectives, which in turn are broken down into intermediate targets and concrete commitments assigned to the different corporate teams. Throughout the year, the progress of operational objectives is regularly shared with management.

The operational objectives defined for 2022 have almost all been achieved. For some of them the set targets were exceeded, while for one in particular the outcome was deemed unsatisfactory, with the need to implement further improvement actions. Below is a brief

description of some of ECO's operational objectives for 2022, broken down by theme areas: Certifications, Regulatory compliance, Member satisfaction, Image and Positioning, Research and Innovation Projects, and Development of new EPR systems.

*Note: Operational objectives for 2022 that are strictly linked to Erion's strategic priorities or related to activities that require further development were reintroduced in 2023. See section 2.1.4 for the list of operational objectives defined by ECO for the year 2023.*

### Certifications

ECO oversaw the renewal of the integrated quality and environmental management system certification in accordance with ISO 9001 and 14001 for

the "Erion WEEE", "Erion Energy" and "Erion Professional" Collective Schemes. These certifications ensure adherence to the highest environmental and quality

standards and are a prerequisite for operating nationwide. ECO's goals for 2023 include extending both certifications to "Erion Packaging" and "Erion Care".

### Regulatory compliance

In 2022, ECO worked on several fronts to support the Collective Schemes in terms of measures implemented and accreditation. ECO supported the Erion Packaging Collective Scheme in the accreditation process as an autonomous packaging waste management system with the

Ministry of Environment and Energy Security, and also supported it in ongoing dialogue with institutions. The Collective Scheme's accreditation was granted on 13 January 2023 after a process that began in May 2021 and ended in December 2022 with the publication of Decree No.

547. In 2022, ECO cooperated in obtaining approval of the Erion WEEE Collective Scheme's bylaws, which regulate the management of the Collective Scheme in accordance with industry regulations.

### Member satisfaction

Erion Collective Schemes confirm themselves as an efficient and reliable partner for member Producers. According to a survey conducted in 2022, more

than 90% of Members are satisfied with ECO's operations and the services it offers through sector-specific Collective Schemes. This is an important milestone

for ECO, which strives daily to offer services that meet the expectations and needs of its Members as much as possible.

### Image and positioning

ECO has consolidated the image and positioning of the Erion System nationally and internationally through an integrated multi-level communication plan, the

organization of events and other local visibility initiatives. Among these, great prominence was given to the event held in Rome on 15 June 2022 in the splendid

setting of the Casino dell'Aurora Pallavicini Rospigliosi palace where, among other activities, the 2021 Sustainability Report was presented.

### **CRITICAL RAW MATERIALS. THE END OF LIFE OF TECHNOLOGICAL PRODUCTS AS A STRATEGIC SECTOR FOR ITALY**

The June 2022 event held in Rome was an important moment where stakeholders and institutional representatives had the opportunity to discuss the strategic issue of safe and sustainable access to critical raw materials. The event was enriched by the presentation of the study carried out for Erion by the consulting firm "The European House –Ambrosetti" on the topic of the recycling of technological products as a strategic lever to reduce the risks of competitive procurement of critical raw materials in Italy.

### **GREENWASHING. THINGS HAVE GOT TO CHANGE**

On 14 October 2022, Erion celebrated International E-Waste Day with a special event titled 'Greenwashing. Things have got to change'. An opportunity to reflect together with operators involved in technological waste management and representatives of the business world on one of the most widespread and debated phenomena of recent times, so-called 'greenwashing', or inflated sustainability credentials.

The event was held at the Milanese temple of music, the Blue Note, and was also streamed live on Erion's YouTube channel. The occasion marked Erion's second birthday and that of EconomiaCircolare.com, the web magazine promoted by Erion and focused on the issues of green transition and circular economy. Among the scheduled activities, there was also the presentation of the results of the analysis carried out by Ipsos as part of the 'WEEE Knowledge Observatory' commissioned by Erion and created by the research company to monitor citizens' awareness levels, opinions and behaviour.

In the same afternoon, two projects of the "DireFareRAEE" program of the Erion WEEE Collective Scheme were presented: 'Effetto Farfalla', the podcast produced together with Chora Media on the world of WEEE that tells about the impact of our choices on the environment, and 'Training for Circularity - WEEE Edition', the initiative promoted in partnership with ENEA and CDCA (Centre for Documentation on Environmental Conflicts) that has allocated funds for ten scholarships aimed at developing skills in the field of circular economy, with specific reference to the WEEE sector and green marketing.

## Research and innovation projects

**In 2022, the Strategic Development and Innovation (SDI) Team participated in several European research projects,**

described in the section on innovation in chapter 1. These are projects centred on eco-innovation of products and production processes from a circular economy

perspective. The objective of participating in European projects is to generate with the network of national and international partners a mutual exchange of information and support the innovative activities of research centres. The SDI Team specialists provide their experience in waste

management and at the same time draw inspiration from the many relevant collaborations by bringing their acquired know-how to the service of the Collective Schemes and Producers.

## Development of new EPR systems

**The establishment of the Erion Care Collective Scheme in June 2022 confirmed ECO's key role in the study and implementation of new EPR systems for proper waste management.**

By developing surveys and feasibility studies

together with Producers for the identification and emergence of new sector systems, ECO promotes the circular economy model by contributing to the construction of a sustainable future for the Planet. ECO provides industrial sectors subject to the

extended responsibility of the producer with more than 15 years of experience in designing EPR systems based on strong ethical values and unparalleled operational efficiency.



## 2.6.4

# 2023 OPERATIONAL OBJECTIVES



The operational objectives defined by ECO for FY 2023 are shown in the summary table, grouped by areas of interest. For each of them are described the actions that ECO intends to implement to achieve them.

**TABLE 2.6.4.1**  
**SHORT-TERM OPERATIONAL OBJECTIVES FOR FY 2023 - AREAS OF INTEREST AND SPECIFIC ACTIONS**

Areas of improvement	Actions	Operational objective
Professional growth of staff	Implementation of staff training and development courses aimed at enhancing and strengthening skills	Ensure the quality, efficiency and stability of personnel management processes
		Ensure high quality services to Members
		Support the Collective Schemes in achieving their respective collection targets
Sustainability on the job and at the workplace	Finalization of the implementation of the 'Agile' organizational model	Protecting people's well-being at work, as well as ensuring work-life balance
Implementation of new services and enhancement of existing ones	Development of the portfolio of services in the circular economy	Representing a point of reference for Members by expanding the portfolio of services and expertise
	Development of a corporate system of "customer relationship management"	
	Strengthening the area dedicated to supporting Producers and the Members portal	
Explore other value chains	Establishment of at least one new EPR system and detailed study of at least two other EPR systems for future implementation	Continue the "horizontal" extension of the Erion System through the emergence of new sector systems
Monitoring and reduction of the impacts of the services provided	Maintenance of the integrated quality and environmental management system for Erion WEEE, Erion Energy and Erion Professional, and extension to Erion Packaging and Erion Care	All Collective Schemes certified ISO 14001 and ISO 9001
Regulatory compliance	Adoption of the Antitrust Compliance Program model by Erion WEEE	Ensure full compliance with competition law
Efficiency	Organization of activities and individual exercises aimed at ensuring the continuity of management	Ensure effective implementation of the Business Continuity plan
Image and reputation	Presentation of the 2022 Sustainability Report, promotion of stakeholder outreach initiatives	Promote the reputation and positioning of the Erion System, strengthen partnerships and dialogue with institutions
Supplier management	Operational management of contracts and coordination of activities with Interzero Italy	Ensure efficiency and high quality of services, in line with stakeholders' needs and expectations
Cross-cutting objectives	Implementation of an effective management control system	Ensure reliable and quality administrative and management reporting services to the Erion Collective Schemes in line with their needs
	Fine-tuning information systems released during 2022	Making available to the Erion Collective Schemes reliable technological infrastructure and information systems that best meet their management needs

## 2.6.5

# WHAT DO STAKEHOLDERS THINK ABOUT ERION?



For the European Commission Environment's Directorate-General (DG ENV), responsible for EU environmental policy, Erion represents a winning model of Extended Producer Responsibility. Mattia Pellegrini, Head of Unit DG ENV, welcomed the decision to create new EPR schemes, which now include EEE and BA packaging and tobacco product waste, "a decision that goes in the right direction for the achievement of EU objectives as

it allows maximizing efficiency in waste management". To accelerate the diffusion of the concept of sustainability and circularity applied to products, DG ENV would like to see a reshaping of the eco-contributions at European level, which, from an environmental point of view, should be higher for less sustainable products and instead reward the best performing products. On this front, DG ENV acknowledges Erion's contribution to initiatives created

to test the real applicability of eco-modulation. Finally, through its participation in numerous funded European educational and research projects on eco-innovation of products and processes, Erion demonstrates that its mission does not stop at Producers' regulatory compliance alone, but intends to contribute in a concrete way to the innovation of the entire EU context in the areas of critical raw materials and the circular economy.

A stone is just a stone  
until it is ordered  
respectively to another,  
then they will have a meaning  
that exists only as long as they remain  
in the reciprocal position.

---

**CREATING MEANING  
IS THE OPERATION OF MUTUALLY  
ARRANGING ELEMENTS  
THAT INDIVIDUALLY LACK IT,  
IT IS THE WAY TO GIVE SIGNIFICANCE  
TO WHAT PEOPLE DO.**



# 3. CONCLUSIONS

The results



# 3.1 ENVIRONMENTAL DATA

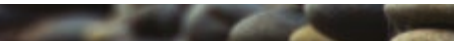


The operational activity of the Erion multiple Collective Schemes System associated with the logistics and treatment processes, while considering the environmental impacts of transport and processing, allows for the securing of environmentally critical fractions and the recovery of primary and secondary materials, generating environmental benefits in terms of savings of natural resources, energy consumption and greenhouse gas emissions into the atmosphere. The following chapter aims

to report on the performance, in terms of volumes of waste managed by Erion Collective Schemes operating in the three-year period 2020-2022. For the newly established Erion Care and Erion Packaging Collective Schemes that have recently started their activity, no relevant data are available. In particular, sections 3.1.2, 3.1.3, and 3.1.4 propose a dedicated focus on the Household WEEE sector for which Erion WEEE is responsible, and for which data on the consumption of energy and recovered materials are to date available

and calculable thanks to a methodology that Erion has developed together with the WEEE Forum. The tool for calculating environmental impacts associated with this methodology is fed by data on the performance of logistics and treatment providers and of those upstream and downstream of them. The methodology was developed specifically for the Household WEEE sector, and therefore Professional WEEE and Waste Batteries and Accumulators (WBA) are currently excluded from the calculation.

## 3.1.1 THE OPERATIONAL WASTE MANAGEMENT OF THE ERION SYSTEM



During 2022, the Erion System managed 257,705 tonnes of waste, an 11% decrease from 2021. The majority of the volumes managed came from the Household WEEE sector (95%), followed by waste streams from the WBA sector

(4%) and Professional WEEE sector (1%). Compared to the previous year, the recorded decrease is mainly in Household WEEE (-8%) and WBA (-57%), while there is an increase in the amount of Professional WEEE (+94%) managed by Erion

Professional and Erion WEEE. These trends, already included in the Collective Schemes chapters, are further detailed in this section

TABLE 3.1.1  
TOTAL WASTE MANAGED BY THE ERION SYSTEM OVER THE THREE-YEAR PERIOD 2020-2022

Sector	Unit of measure	2020	2021	2022
Household WEEE	t	262,351	266,614	246,246
Professional WEEE and Special Wastes*	t	9,378	705	1,367
Waste Batteries and Accumulators	t	30,537	23,561	10,092
Total Waste managed	t	302,266	290,880	257,705

\* Special Wastes were only managed in 2020, prior to the establishment of the Erion System

## Hazardous waste managed

During 2022, Erion WEEE managed 126,349 tonnes of hazardous waste, about 51% of the total, classified under the following European Waste Codes (EWC): 20.01.23, 20.01.35, and 20.01.21. Due to the presence of hazardous substances, such as heavy metals and climate-changing refrigerant

gases, some WEEE and all WBA are considered hazardous waste and, if improperly managed, can cause harm to human health and the environment. In particular, Groups R1 (Cooling equipment), R3 (Monitors and screens), and R5 (Light sources) pose the highest risk to the environment if

not properly managed. Although the collected tonnes of R5s grew in 2022 (+17%), the volumes of hazardous waste managed by the Collective Scheme decreased by about 5% due to the drop in the collection of R1s and R3s.

**TABLE 3.1.2**  
**TOTAL HAZARDOUS WASTE MANAGED IN THE THREE-YEAR PERIOD 2020-2022**

Type	Unit of measure	2020	2021	2022
Total hazardous Household WEEE	t	128,107	132,933	126,349
Total hazardous Professional WEEE	t	6,659	74	166
Total hazardous WBA	t	30,185	23,067	9,563
Total hazardous waste managed	t	<b>164,951</b>	<b>156,074</b>	<b>136,078</b>

The results of the three sectors (Household WEEE, Professional WEEE and WBA) are

shown below in terms of volumes, highlighting the peculiarities of the different

operating models and providing some insights regarding the historical trend.

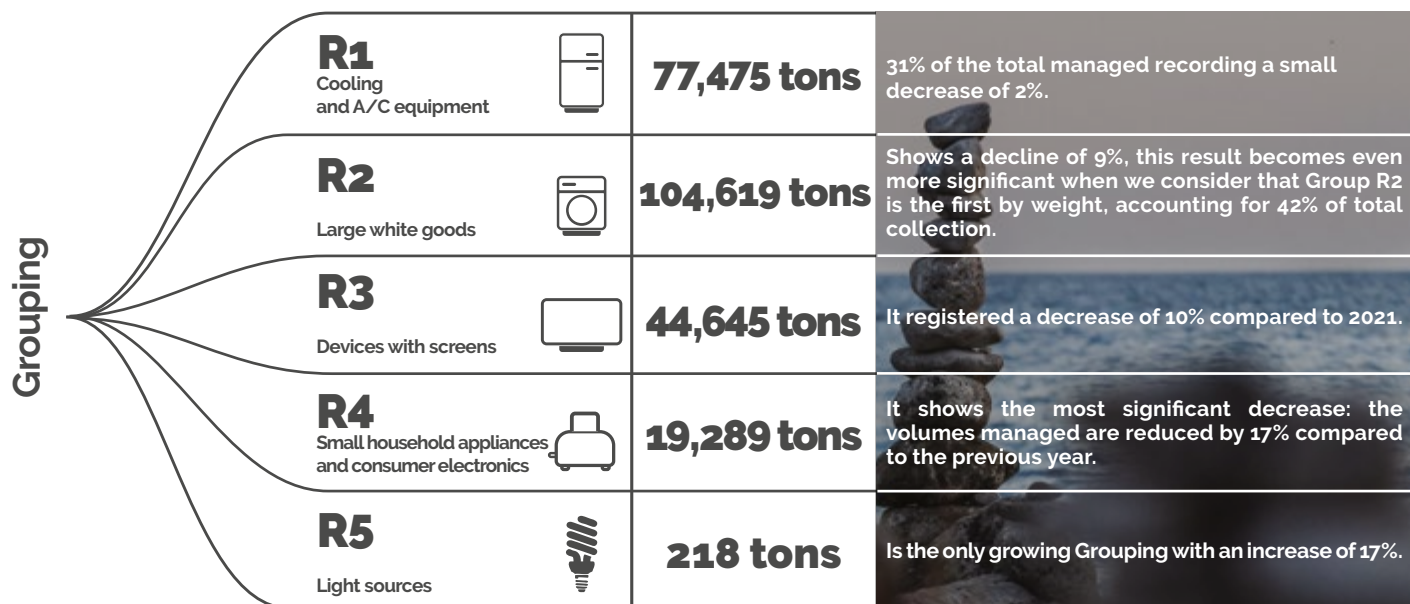
## Household WEEE sector

**In 2022, more than 246,000 tonnes of Household WEEE were managed, about 8% less than in 2021 (year in which volumes had instead increased by 2% over 2020).** In general, in 2022, Groups R1, R2,

R3, and R4 recorded a decline, while light sources (R5) show an increase. Contributing to this evident reduction in the propensity of citizens to properly dispose of their electrical and electronic waste,

especially small WEEE (R4), is the development of parallel channels that take substantial volumes of Household WEEE away from the national management system that report to the CdC RAEE.

# HOUSEHOLD WEEE, THE COLLECTION RESULTS OF ERION WEEE IN 2022



These figures are in line with the national trend reported by the CdC RAEE with the exception of R4s, where Erion's collection decreased by 17% compared to a national reduction of 8%, and R5s where collection

increased compared to a national reduction of 10%. For R4s, Erion WEEE's quota of responsibility decreased in 2022 and consequently less small WEEE was managed in the second half of the year. For

R5s, given the low quantities, there was an increase in the collection which, although not significant in absolute value, amounted to 36 tonnes.

**TABLE 3.1.3**  
**HOUSEHOLD WEEE MANAGED BY ERION WEEE IN THE THREE-YEAR PERIOD 2020-2022, BROKEN DOWN BY GROUP**

Group	Unit of measure	2020	2021	2022	22/21 percentage change
R1	t	79,403	78,688	77,475	- 2%
R2	t	112,482	114,721	104,619	- 9%
R3	t	44,273	49,662	44,645	- 10%
R4	t	26,041	23,357	19,289	- 17%
R5	t	153	186	218	+ 17%
Total	t	262,351	266,614	246,246	- 8%

## Collection Centres for Household WEEE

As at 31 December 2022, 12,153 Collecting Points (CP) were active, an increase of about 6% from the previous year. The allocation of the Collecting Points, whose activity is essential in order to properly process Household WEEE for recycling and recovery, is done annually by the CdC RAEE so as to ensure a fair distribution of management obligations proportional to

the market share represented by each collective system. The Collecting Points served by Erion WEEE are distributed throughout the country, most of which are located in Northern Italy (56%), followed by Southern Italy and Islands with 29%, and Central Italy with 15%. Unfortunately, the disparity in the presence of Collecting Points remains evident, confirming

that the collection network in the Islands, Central and Southern Italy needs to be strengthened. Approximately 10% of the Collecting Points are located within the Grouping Places (GP) organized by distributors as required by Legislative Decree 65/2010, while the remainder are in municipal Collecting Centres(CC).

**TABLE 3.1.4**  
**HOUSEHOLD WEEE AND COLLECTING POINTS (CP) MANAGED BY ERION WEEE IN 2022,**  
**BROKEN DOWN BY REGION**



## Transportation of Household WEEE

In 2022, 122,266 transports were carried out for the collection of Household WEEE, approximately 7% less than in 2021, in line with the decrease in volumes managed. Moreover, a decrease of 10% was noted in the average distance between the Collecting Points and the treatment plants, mainly attributable to an expansion of the

operating network following the activation of new treatment plants which in 2022 – also thanks to the support of Erion WEEE – were accredited by the CdC RAEE for the processing of Household WEEE. Erion WEEE assured these plants access to volumes of WEEE to be treated even before their accreditation so that they could

gain adequate experience, and, as of November 2022, the Collective Scheme has implemented a logistics optimization process prioritizing the principle of proximity of the Collecting Points to the treatment plant, which requires that the WEEE collected by the allocated CP be sent to the closest plants.



**TABELLA 3.1.5**  
**TRANSPORTS CARRIED OUT IN THE THREE-YEAR PERIOD 2020-2022 FOR THE COLLECTION OF HOUSEHOLD WEEE**

Transport details	Unit of measure	2020	2021	2022
Trips	No.	125,412	131,797	122,266
Average distance (one way)	km/trip	127	142	127
Average load	t/trip	2.1	2.0	2.0

In 2022, 97% of the means of transport used by Erion WEEE suppliers to transport Household WEEE from CP to treatment plants was made up of Euro 4 class vehicles or higher (the Euro classes of vehicles are defined on the basis of polluting gases such as carbon monoxide,

nitrogen oxides and particulates). The share of Euro 6 vehicles out of the total number of vehicles used to transport waste has increased by 19% over 2021, partly due to the incentives that the Collective Scheme makes available to suppliers for the use of more sustainable

means. The incentives are provided on the basis of the Grouping and vehicle category through a percentage adjustment of the rate. In this way, Erion WEEE reduces pollutant emissions from transportation activities while supporting suppliers toward the green transition.

**TABELLA 3.1.6**  
**VEHICLE FLEET IN 2022, CLASSIFICATION BY POLLUTANT EMISSION STANDARD**

Classe Euro	2020	2021	2022
EURO 0	0.4%	0.0%	0.2%
EURO 1	0.0%	0.0%	0.1%
EURO 2	0.8%	0.5%	0.3%
EURO 3	8.7%	4.3%	2.9%
EURO 4	6.9%	4.8%	2.8%
EURO 5	43.5%	43.0%	37.4%
EURO 6	39.7%	47.4%	56.3%

## Professional WEEE sector

**In 2022, the amount of Professional WEEE managed by Erion Professional and Erion WEEE stands at 1,367 tonnes, about twice as much as in 2021. The trend for the three-year period 2020-2022 is up and down, moving between -83% recorded in 2021 compared to 2020 and the positive peak (+85%) recorded in 2022 compared to 2021.** The positive result of 2022 can be attributed to a combination of factors that favoured the collection of this waste. In 2022, Erion Professional assumed

direct responsibility for the '1:1' contracts of its Members and broadened the Exceed Program, extending the service already active for the air conditioning and HoReCa equipment sector (specifically slicers and similar) to the professional printers sector, with the aim of creating value for the environment and actively participating in the achievement of the EU collection targets. **In 2022, 4,562 transports were carried out for collecting Professional WEEE, a figure three times higher than in 2021.**

While the number of tonnes collected in 2022 doubled over 2021, the figure relating to the number of transports, which tripled compared to the previous year, is not a reason for concern. In fact, the Professional WEEE collection activity managed by the Collective Scheme is based on an optimized micro-collection model which allows waste to be collected directly from end users in a round-trip manner, collecting small quantities at each collection location.

**TABLE 3.1.7**  
**TOTAL PROFESSIONAL WEEE MANAGED IN THE THREE-YEAR PERIOD 2020-2022**

Sector	Unit of measure	2020	2021	2022	22/21 percentage change
Professional WEEE	t	4,171	705	1,367	+ 85%

## Waste Batteries and Accumulators sector

In 2022, Erion Energy's overall collection of Waste Batteries and Accumulators (WBA) decreased by 57% over 2021, totalling more than 10,000 tonnes. Thus, the three-year period 2020-2022 records a negative collection trend, characterized by a strong decrease in 2022, which, however, concerns only a particular type of WBA: Waste Automotive Accumulators. On the contrary, the trend in the collection of Waste Portable Batteries and Accumulators increased by 10% and Industrial WBA

about 300%. In 2022, Erion Energy managed 1,459 tonnes of Waste Portable Batteries and Accumulators, an increase of 10% over 2021. The figure is in contrast with the national collection of portable WBA, which, after several years of growth, decreased by about 7.5% to 10,250 tonnes. Erion Energy's results can be attributed to a number of a major Producer joining the Collective Scheme and to initiatives aimed at disseminating information and awareness among citizens implemented by

Erion Energy in 2022. With global demand for batteries set to grow in the coming years, Erion Energy is aware of the need to do more to increase the volumes of WBA collected, investing in particular on consumer involvement and awareness. As described in the Erion Energy chapter, after the changes introduced to the CDCNPA system, in 2022 Erion Energy has treated 1,438 tons of portable WBA. In the following table are reported the volumes treated sorted by chemistry.

**TABLE 3.1.8**  
**PORTABLE BATTERIES TREATED IN 2022 BY ERION ENERGY DIVIDED BY CHEMISTRY**

Type of Portable Batteries quantity	t
Alkaline	886
Lithium Ion	222
Lithium Cells	61
Button Cell Lithium	45
Nickel-Cadmium	167
Nickel-Metal Hydride	57
<b>Total</b>	<b>1,438</b>

The quantity of **Waste Industrial Accumulator more than tripled** compared to 2021, reaching a total of 47 tonnes, while **Waste Automotive Accumulator**

**recorded a 61% decrease over 2021, totalling 8,586 tonnes.** There are many factors affecting this decrease, first and foremost the reduction in the managed

volumes of lead-acid battery waste from vehicles, due to the closure, caused by the high energy price, of some major recycling plants throughout the country.

**TABLE 3.1.9**  
**TOTAL WASTE MANAGED BY ERION ENERGY OVER THE THREE-YEAR PERIOD 2020-2022, BROKEN DOWN BY CATEGORY**

Category	Unit of measure	2020	2021	2022	22/21 percentage change
Waste Portable Batteries and Accumulators	t	1,038	1,325	1,459	+ 10%
Waste Industrial Accumulators	t	453	11	47	+ 327%
Waste Automotive Accumulators	t	29,046	22,225	8,586	-61%
<b>Total WBA</b>	<b>t</b>	<b>30,537</b>	<b>23,561</b>	<b>10,092</b>	<b>- 57%</b>

WBA collection

The collection of portable WBA is carried out by six different entities that can request the free pickup service to CDCNPA:

- Municipal Collection Centres: facilities where citizens can dispose for free of Waste Portable Batteries and Accumulators;
- Large Distributors: commercial activities that sell portable batteries and accumulators to end users where WBA can be handed over free of charge in special containers;
- WEEE Treatment Plants: facilities dedicated to the treatment of WEEE from which portable batteries and accumulators left in equipment arriving at the

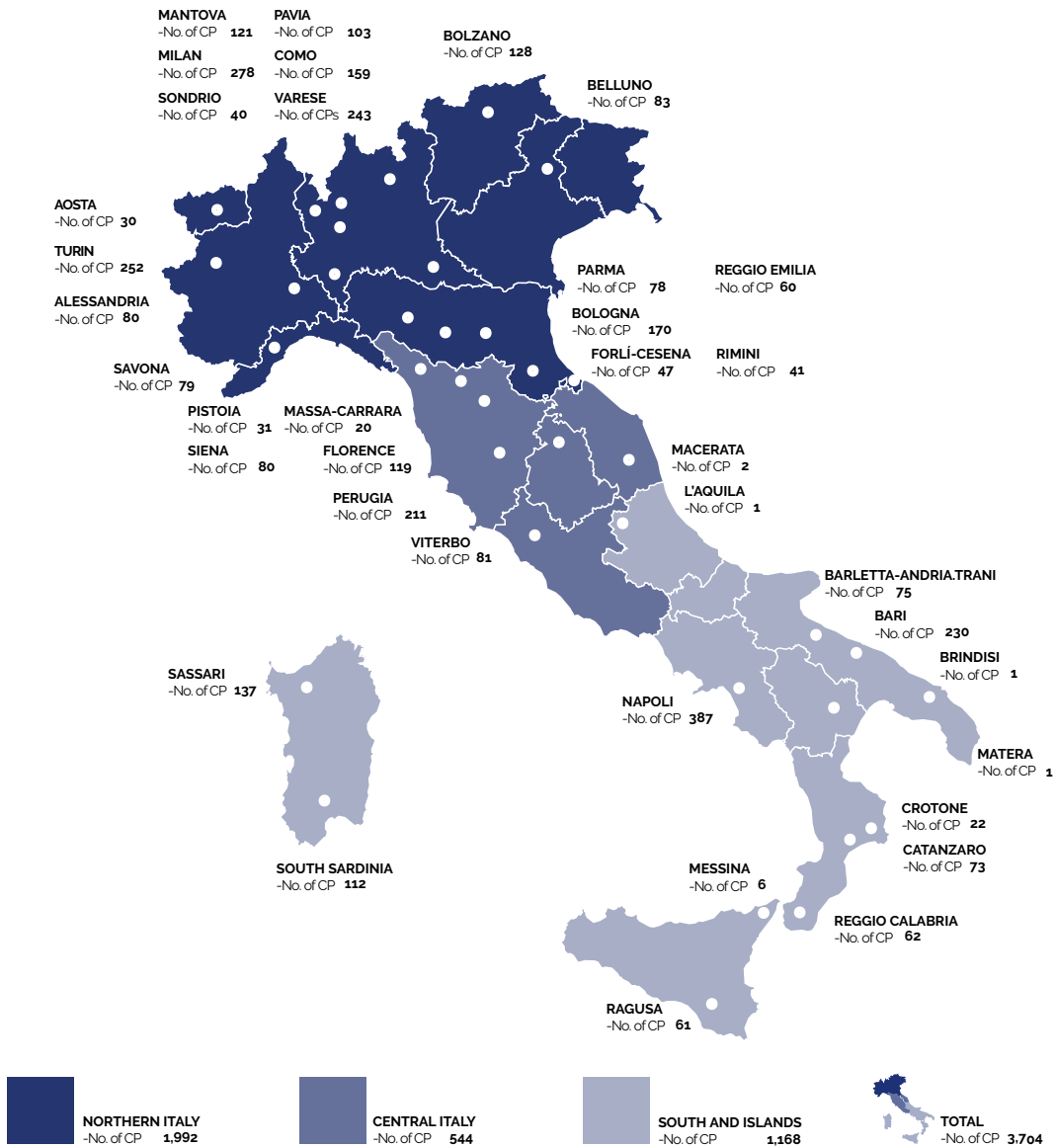
plant are extracted;

- Storage Centres: waste storage (or in storage pending treatment) facilities authorized under Legislative Decree 152/2006 managed by professional operators capable of receiving spent portable batteries and accumulators, storing them, and making them available for collection by the collective and individual systems of the CDCNPA;
- Large Users: end users who as part of their professional activity produce WBA in quantities of at least 400 kg per year;
- Technical Service Centres: providers of repair, maintenance, and after-sales installation services who as part of their

business replace batteries and accumulators in consumer electronics and small appliances.

Every two years, the National WBA Centro di Coordinamento (CDCNPA) makes the allocation of provinces to the collective systems so as to ensure a distribution of management obligations proportional to the quota of responsibility represented by each individual Collective Scheme. As at 31 December 2022, there were 3,704 Collection Centres served by Erion Energy in 37 provinces with a 10% increase over the previous year, due to the rise in the market share represented by Erion Energy's Producers.

TABLE 3.1.10  
COLLECTING POINTS (CP) MANAGED BY ERION ENERGY IN 2022, BROKEN DOWN BY PROVINCE



The management of industrial and automotive lead-acid accumulators is carried out following free-market criteria, as the materials they contain generate sufficient

value to cover the costs of collection and subsequent delivery to recycling plants. This waste comes mainly from business activities such as, for example, auto

electricians and large users, who contract directly with Collective Schemes (or individual systems) to entrust them with spent accumulators.

## Transportation of WBA

In 2022, 4,399 transports were made for the collection of Waste Batteries and Accumulators, about 2% less than in 2021. The 2% decrease in transports against a 57% decrease in volumes managed is mainly due to the increase in the collection

of portable WBA (whose average weight per trip is significantly lower than the average weight of industrial and automotive WBA). Indeed, it can be observed that while in the case of Vehicle Batteries, the reduction in transportation (-54%) is in line

with the reduction in the amount handled, in the case of Portable Batteries, the increase in the number of transports (+29%) is three times higher than the increase in the amount handled, due to the more extensive collection of this type of waste.

**TABLE 3.1.11**  
**NUMBER OF TRANSPORTS CONDUCTED BY ERION ENERGY IN 2021-2022, DIVIDED BY CATEGORY**

Category	Unit of measure	2021	2022	22/21 Percentage change
Portable Batteries and Accumulators	Trips number	2,633	3,385	29%
Industrial Accumulators	Trips number	212	266	25%
Vehicle Accumulators	Trips number	1,620	748	-54%
WBA Total	Trips number	4,465	4,399	-2%



### 3.1.2

# HOUSEHOLD WEEE – RECOVERY, RECYCLING AND DISPOSAL OF FRACTIONS



This section presents the results obtained from the treatment of Household WEEE managed by Erion WEEE. The data described below were obtained from self-declarations made by the Collective Scheme's suppliers using the RepTool software, developed by the WEEE Forum and made available internationally to facilitate the tracking of fractions obtained from WEEE processing. **Looking at the data for the three-year period 2020-2022, the**

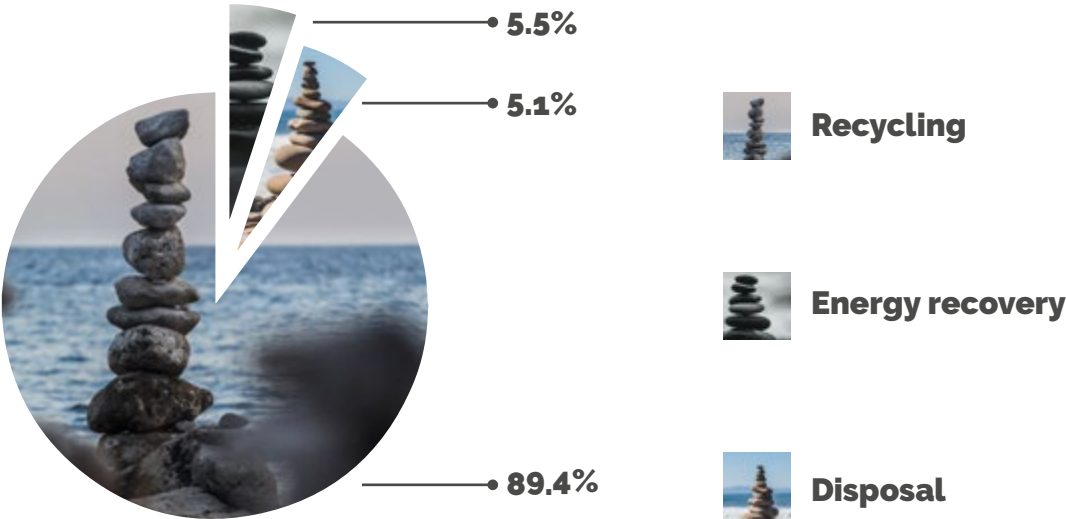
**trend of treatment output fractions sent for recycling, energy recovery or disposal remains almost unchanged. During 2022, 220,224 tonnes were sent for recycling, about 89% of the total Household WEEE managed.** In addition, through energy recovery, it was possible to revalorize 13,697 tonnes in the form of energy and heat, approximately 6% of the total managed. In accordance with the European Union's waste hierarchy, the Collective

Scheme considers prevention and recycling as priorities in waste management. Only where these two options are not viable, waste is sent for energy recovery and disposal, particularly in the case of hazardous and non-hazardous non-recyclable fractions (e.g. ozone-depleting gases, brominated plastics). In 2022, 12,416 tonnes (the remaining 5%) of output fractions were disposed of in landfills or sent for thermal treatment.

**TABLE 3.1.12**  
**RECYCLING, ENERGY RECOVERY, AND DISPOSAL PERFORMANCE OF OUTPUT FRACTIONS FROM THE TREATMENT OF HOUSEHOLD WEEE IN THE THREE-YEAR PERIOD 2020-2022**

Destination	2020		2021		2022	
	Recycling	Pct on the total	Quantity (t)	Pct on the total	Quantity (t)	Pct on the total
Energy recovery	236,056	90.0%	238,315	89.4%	220,224	89.4%
Disposal	10,060	3.8%	11,992	4.5%	13,607	5.5%
Total	16,236	6.2%	16,307	6.1%	12,415	5.1%
Totale	262,351	100%	266,614	100%	246,246	100%

## HOUSEHOLD WASTE RECYCLING SERVICE 2022



**TABLE 3.1.13**  
**RECYCLING, ENERGY RECOVERY AND DISPOSAL PERFORMANCE IN THE THREE-YEAR**  
**PERIOD 2020-2022, BROKEN DOWN BY GROUPS**

Process	R1		R2		R3		R4		R5	
	Quantity (t)	Pct on the total	Quantity (t)	Pct on the total	Quantity (t)	Pct on the total	Quantity (t)	Pct on the total	Quantity (t)	Pct on the total
Recycling	63,995	82.6%	97,295	93.0%	41,117	92.1%	17,611	91.3%	206	94.3%
Energy recovery	10,459	13.5%	1,047	1.0%	1,250	2.8%	849	4.4%	2	0.7%
Disposal	3,021	3.9%	6,277	6.0%	2,278	5.1%	829	4.3%	10	5.0%
<b>Total</b>	<b>77,475</b>	<b>100%</b>	<b>104,619</b>	<b>100%</b>	<b>44,645</b>	<b>100%</b>	<b>19,289</b>	<b>100%</b>	<b>218</b>	<b>100%</b>

Table 3.1.14 summarizes the composition of the 220,224 tonnes of output fractions recovered and sent for recycling in 2022

as a result of the treatment process at dedicated plants. In line with the 2021 figures, the materials recovered in larger

quantities are iron (50.8%), plastics (13.5%), and glass (9.3%) over the total managed.

**TABLE 3.1.14**  
**OUTPUT FRACTIONS SENT FOR RECYCLING IN 2022**

Type	Recovered materials (percentage by weight)
Iron	50.8%
Plastics	13.5%
Glass	9.3%
Cement	7.9%
Other material	3.5%
Copper	2.3%
Aluminium	2.1%
<b>Total</b>	<b>89.4%</b>

Table 3.1.15 shows the details of the composition of the output fractions from treatment plants. For each fraction, the total output quantity and the fractions destined for recycling, energy recovery, disposal (thermal and landfill) are reported. The same results are also reported by individual Group in the following tables. Ferrous

metals (such as iron, steel, stainless steel etc.) represent the most significant component in output from the treatment of R1s, R2s and R4s. Ferrous materials are totally recovered and reused in steelworks and foundries. Conversely, for R3s and R5s the material recovered in larger quantities is glass, which is recycled in the

glassmaker and ceramics industries. Plastic represents another important fraction resulting from the treatment of Household WEEE. In general, the plastic fraction of WEEE consists mainly of Polystyrene (PS), Polypropylene (PP), High Impact Polystyrene (HIPS), and Acrylonitrile Butadiene Styrene (ABS).

**TABLE 3.1.15**  
**DETAILS OF OUTPUT FRACTIONS SENT FOR RECYCLING, ENERGY RECOVERY AND DISPOSAL IN 2022**

Type	Quantity obtained (t)	Recycling (t)	Energy recovery (t)	Thermal disposal (t)	Landfill disposal (t)
Aluminium	5,164	5,164	0	0	0
Other metals	5,622	5,622	0	0	0
Batteries/accumulators	39	39	0	0	0
Cartridges/Toners	77	77	0	0	0
Cement	19,459	19,459	0	0	0
CFC	387	0	0	387	0
Capacitors	64	0	0	0	64
Wood	2,254	2,254	0	0	0
Ferrous metals	125,501	125,501	0	0	0
Oils	310	310	0	0	0
Plastics	35,571	33,039	2,405	108	19
Polyurethane	11,544	0	10,382	155	1,007
Dusts and mercury	5	0	0	0	5
Copper	5,571	5,571	0	0	0
Non-hazardous waste	11,637	390	820	748	9,679
Hazardous waste	64	0	0	0	64
Glass	14,939	14,939	0	0	0
Cone glass	8,037	7,858	0	0	179
<b>Total</b>	<b>246,246</b>	<b>220,224</b>	<b>13,607</b>	<b>1,398</b>	<b>11,017</b>



**125,501 tonnes**  
of ferrous metals

Equivalent to the amount  
needed to build  
17 Eiffel Towers



**35,571 tonnes**  
of plastic

Equivalent to the amount  
needed to produce over  
13 million garden chairs



**5,571 tonnes**  
of copper

Equivalent to the amount  
needed to clad  
60 Statues of Liberty



**5,164 tonnes**  
of aluminium

Equivalent to the amount  
needed to produce over  
323 million cans

**TABELLA 3.1.16**  
**OUTPUT FRACTIONS FOR GROUP R1 (COOLING AND A/C EQUIPMENT)**

Type	Recycling (%)	Energy recovery (%)	Thermal disposal (%)	Landfill disposal (%)
Aluminium	3.0%	0.0%	0.0%	0.0%
Other metals	0.9%	0.0%	0.0%	0.0%
CFC	0.0%	0.0%	0.5%	0.0%
Capacitors	0.0%	0.0%	0.0%	0.0%
Wood	0.3%	0.0%	0.0%	0.0%
Ferrous metals	59.7%	0.0%	0.0%	0.0%
Oils	0.4%	0.0%	0.0%	0.0%
Plastics	15.0%	0.0%	0.0%	0.0%
Polyurethane	0.0%	13.4%	0.2%	1.3%
Copper	2.2%	0.0%	0.0%	0.0%
Non-hazardous waste	0.0%	0.1%	0.3%	1.6%
Hazardous waste	0.0%	0.0%	0.0%	0.0%
Glass	1.1%	0.0%	0.0%	0.0%
<b>Total</b>	<b>82.6%</b>	<b>13.5%</b>	<b>1.0%</b>	<b>2.9%</b>

**TABLE 3.1.17**  
**OUTPUT FRACTIONS FOR GROUP R2 (LARGE WHITE GOODS)**

Type	Recycling (%)	Energy recovery (%)	Thermal disposal (%)	Landfill disposal (%)
Aluminium	1.6%	0.0%	0.0%	0.0%
Other metals	2.6%	0.0%	0.0%	0.0%
Cement	18.6%	0.0%	0.0%	0.0%
Wood	1.2%	0.0%	0.0%	0.0%
Ferrous metals	59.2%	0.0%	0.0%	0.0%
Plastics	6.7%	0.9%	0.0%	0.0%
Copper	1.5%	0.0%	0.0%	0.0%
Non-hazardous waste	0.2%	0.1%	0.2%	5.8%
Hazardous waste	0.0%	0.0%	0.0%	0.0%
Glass	1.4%	0.0%	0.0%	0.0%
<b>Total</b>	<b>93.0%</b>	<b>1.0%</b>	<b>0.2%</b>	<b>5.8%</b>



**TABLE 3.1.18**  
**OUTPUT FRACTIONS FOR GROUP R<sub>3</sub> (DEVICES WITH SCREENS)**

Type	Recycling (%)	Energy recovery (%)	Thermal disposal (%)	Landfill disposal (%)
Aluminium	1.1%	0.0%	0.0%	0.0%
Other metals	3.5%	0.0%	0.0%	0.0%
Capacitors	0.0%	0.0%	0.0%	0.1%
Wood	1.2%	0.0%	0.0%	0.0%
Ferrous metals	19.1%	0.0%	0.0%	0.0%
Plastics	18.9%	2.5%	0.2%	0.0%
Copper	2.9%	0.0%	0.0%	0.0%
Non-hazardous waste	0.0%	0.3%	0.6%	3.7%
Hazardous waste	0.0%	0.0%	0.0%	0.1%
Glass	27.8%	0.0%	0.0%	0.0%
Cone glass	17.6%	0.0%	0.0%	0.4%
<b>Total</b>	<b>92.1%</b>	<b>2.8%</b>	<b>0.8%</b>	<b>4.3%</b>

**TABLE 3.1.19**  
**OUTPUT FRACTIONS FOR GROUP R<sub>4</sub> (SMALL HOUSEHOLD APPLIANCES AND CONSUMER ELECTRONICS)**

Type	Recycling (%)	Energy recovery (%)	Thermal disposal (%)	Landfill disposal (%)
Aluminium	3.5%	0.0%	0.0%	0.0%
Other metals	3.3%	0.0%	0.0%	0.0%
Batteries/accumulators	0.2%	0.0%	0.0%	0.0%
Cartridges/Toners	0.4%	0.0%	0.0%	0.0%
Capacitors	0.0%	0.0%	0.0%	0.1%
Wood	1.2%	0.0%	0.0%	0.0%
Ferrous metals	45.5%	0.0%	0.0%	0.0%
Plastics	30.9%	1.8%	0.1%	0.1%
Copper	5.2%	0.0%	0.0%	0.0%
Non-hazardous waste	0.9%	2.6%	0.2%	3.7%
Hazardous waste	0.0%	0.0%	0.0%	0.1%
Glass	0.2%	0.0%	0.0%	0.0%
<b>Total</b>	<b>91.2%</b>	<b>4.5%</b>	<b>0.3%</b>	<b>4.0%</b>

**TABLE 3.1.20**  
**OUTPUT FRACTIONS FOR GROUP R<sub>5</sub> (LIGHT SOURCES)**

Type	Recycling (%)	Energy recovery (%)	Thermal disposal (%)	Landfill disposal (%)
Glass	79.9%	0.0%	0.0%	0.0%
Plastics	5.1%	0.0%	0.0%	0.0%
Ferrous metals	3.3%	0.0%	0.0%	0.0%
Non-ferrous metals	2.4%	0.0%	0.0%	0.0%
Other materials (e.g. paper and cardboard)	3.6%	0.0%	0.0%	0.0%
Dusts and mercury	0.0%	0.0%	0.0%	2.5%
Other materials (e.g. paper and cardboard)	0.0%	0.7%	0.0%	2.5%
<b>Total</b>	<b>94.3%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>5.0%</b>

### 3.1.3 HOUSEHOLD WEEE – ENERGY CONSUMPTION

This chapter aims to report on the energy consumption associated with the management of Household WEEE within the Erion organization but also outside it. The calculation of energy consumed within the reporting boundary considers:

- the waste transport operations from the Collection Centres/Grouping Places to the treatment plants;
- the working processes for the treatment of Household WEEE.

Energy consumption occurring outside Erion is generated by those entities that carry out their activities upstream or downstream of the operations for which

Erion WEEE is responsible. These include consumption arising from:

- transportation of Household WEEE from citizens' homes to Collection Centres/Grouping Places;
- transportation of treatment output fractions to recycling, energy recovery, and disposal plants (which include landfills and thermal disposal facilities);
- industrial recycling activities;
- energy recovery and disposal activities.

**The consumption by Erion's offices and staff were considered not significant for the purpose of reporting energy consumption related to the management of Household WEEE and were therefore**

**disregarded, such as for example, consumption resulting from:**

- general services (heating and air conditioning, hot water generation, etc.);
- auxiliary services (ICT utilities, i.e. PCs, printers, etc., and other electric utilities such as coffee machines and other equipment in break rooms);
- staff travel.

Consumption due to the proper management of Household WEEE by Erion WEEE was calculated and processed using the WEEE-CO<sub>2</sub> tool, developed by the WEEE Forum and made available to its members to carry out such assessments.

#### Energy consumption for Household WEEE within the organisation

In 2022, the total energy consumed within Erion WEEE amounted to 367,176 GJ, 10% less than in 2021, due to the 7%

decrease in the quantities managed and the reduction in the average distances between the Collecting Points

and treatment plants, which led to the consequent 10% decrease in diesel fuel consumption.

### Standards, methodologies, assumptions and tools used

Data on the kilometres travelled for the transport of Household WEEE from the Collection Centres/Grouping Places to the treatment plants as well as data on electricity consumption at the plants (both self-produced and from the grid) are primary data that the Collective Scheme monitors and calculates directly. Therefore, it was not necessary to make particular assumptions on consumption except for the parameters of diesel fuel consumption per km travelled.

Of the 367,176 GJ consumed within the organization, diesel fuel used to transport waste by road from the Collection Centres/Grouping Places to the treatment plants represents the main energy carrier and accounts for about 75% of the energy consumption within the organi-

zation. Electricity for processing Household WEEE in treatment plants takes up about 25% of the total. This can come from a variety of sources, depending on the more or less responsible choices of suppliers. Of the 91,876 GJ associated to electricity consumption, 83% comes from

renewable energy sources (photovoltaics and green power from the electricity grid), 9% from non-renewable electricity grid, and 8% from diesel fuel used for power generation.

**TABLE 3.1.21**  
**ENERGY CONSUMPTION WITHIN THE ORGANIZATION OVER THE THREE-YEAR PERIOD 2020-2022, BY SOURCE AND PROCESS**

Activity	Source/Process	Unit of measure	2020	2021	2022
Energy consumption for transportation from Collection Centres/ Grouping Places to treatment plant	Fuel (diesel) used for transporting WEEE from Collection Centres/ Grouping Places to authorized treatment plant	GJ	282,243	331,261	275,301
Energy consumption for WEEE treatment	Non-renewable electricity from the grid	GJ	55,167	18,108	8,429
	Renewable electricity from the grid	GJ	29,148	68,033	65,129
	Diesel fuel (self-generation)	GJ	6,711	6,814	6,975
	Electricity from photovoltaics (renewable self-generation)	GJ	5,998	5,109	11,342
	Total	GJ	379,267	429,326	367,176

Energy intensity within the organization improved from 1.6 GJ/t to 1.5 GJ/t in 2021, a decrease of 7% due to the reduction in average distances travelled during transportation.

**TABLE 3.1.22**  
**ENERGY INTENSITY PER TONNE OF WEEE MANAGED IN THE THREE-YEAR PERIOD 2020-2022**

Activity	Unit of measure	2020	2021	2022
Transportation from Collection Centres/ Grouping Places to treatment plant	GJ/t WEEE	1.08	1.24	1.12
Treatment	GJ/t WEEE	0.37	0.37	0.37
Total	GJ/t WEEE	1.45	1.61	1.49

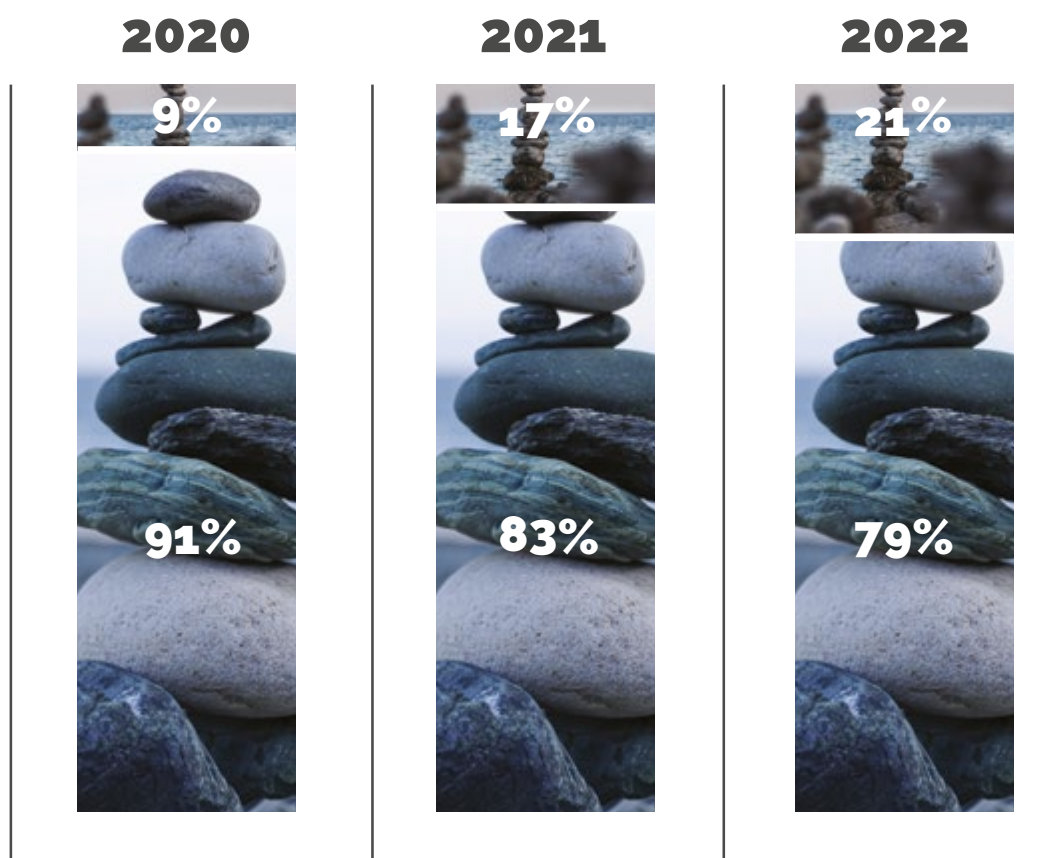
Table 3.1.23 shows a breakdown of the total energy consumed within Erion WEEE divided between 'renewable' and 'non-renewable'. The year 2022 confirms the trend of the previous two years by recording an

increase in the share of energy consumed from renewable sources in relation to the total. This result was certainly influenced by the policy of incentives and bonuses adopted by Erion WEEE for treatment

providers, as, for example, the payment of a higher rate envisaged for those plants that mainly use green energy.

**TABLE 3.1.23  
BREAKDOWN OF RENEWABLE AND NON-RENEWABLE ENERGY CONSUMED WITHIN ERION OVER THE THREE-YEAR PERIOD 2020-2022**

Source	Unit of measure	2020	2021	2022
Energy from non-renewable sources	GJ	344,121	356,183	290,705
Energy from renewable sources	GJ	35,146	73,142	76,471
Total	GJ	379,267	429,326	367,176



Energy from non-renewable sources



Energy from renewable sources



## Energy consumption for Household WEEE outside the organisation

The energy consumed outside the organization refers to all those operations that in the Household WEEE value chain take place upstream or downstream of the activities directly managed by Erion WEEE. In the table below, the energy values referring to energy recovery are shown with a negative sign, in line with

the WEEE Forum methodology, as they relate to the production of energy from the exploitation of the heat generated by the combustion of waste. Industrial recycling is the activity that weighs most heavily on external energy consumption, given that the processes for recycling the fractions obtained from the first treatment

(for example metal foundries and plants for recycling plastics or glass) turn out to be much more energy-intensive than transport activities. **Overall, in 2022, energy consumption outside Erion WEEE amounted to 1,210,369 GJ, down from the previous year (-9%) mainly due to lower volumes managed.**

**TABLE 3.1.24**  
**ENERGY CONSUMPTION OUTSIDE THE ORGANIZATION IN THE THREE-YEAR PERIOD 2020-2022, BY PROCESS**

Activity	Unit of measure	2020	2021	2022
WEEE transport from households to Collection Centres/Grouping Places	GJ	46,226	46,622	39,013
Subsequent transports	GJ	40,205	41,385	39,372
Industrial recycling	GJ	1,385,050	1,405,219	1,319,566
Thermal disposal with energy recovery, thermal disposal, landfill (energy recovery and disposal)	GJ	-136,712	-163,437	-187,582
<b>Total</b>	<b>GJ</b>	<b>1,334,769</b>	<b>1,329,789</b>	<b>1,210,369</b>

## 3.1.4 HOUSEHOLD WEEE - EMISSIONS INTO THE ATMOSPHERE



As with the calculation of energy consumption, emissions were also calculated and processed with the WEEE Forum tool. Emissions are expressed in tonnes of

CO<sub>2</sub> equivalent, the unit of measurement of the carbon footprint, which allows the impact of each greenhouse gas on global warming to be expressed in terms of

quantity of CO<sub>2</sub>. This makes it possible to compare and add up the contributions of greenhouse gases that have different climate-altering effects.

## ERION'S EMISSIONS IN 2022



**101,907**  
**tCO<sub>2</sub>eq**



**1,074**  
**tCO<sub>2</sub>eq**



**148,773**  
**tCO<sub>2</sub>eq**

### Scopes

For greenhouse gases reporting purposes, direct and indirect emissions are classified into three scopes:

- Scope 1: considers greenhouse gas emissions generated directly by the organization, or owned or controlled by the organization;
- Scope 2: considers indirect emissions generated by energy purchased and consumed by the organization (e.g. electricity);
- Scope 3: includes all other indirect emissions that are generated by the organization's value chain.

Emissions in Scope 2 from electricity consumption are further distinguished into location-based and market-based. The market-based method requires determining GHG emissions from electricity purchases by considering specific emission factors reported by suppliers. For electricity purchases from renewable sources, an emission factor of zero is assigned as far as Scope 2 is concerned. The location-based method, on the other hand, uses the national average emission factor of the country where the electricity is purchased to calculate emissions.

### Emissions generated for household WEEE within the organization (Scope 1 and Scope 2).

Emissions that fall under Scope 1 and Scope 2 occur within Erion WEEE and are therefore closely related to the transport and treatment operations for which the Collective Scheme is responsible. Scope 1 includes emissions generated by the following energy carriers:

- Fuel used for the transport of Household WEEE from the Collection Centres/Grouping Places to treatment plants;
- Fuel used for the processing of Household WEEE;

Scope 2 includes the following flows:

- Electricity purchased (from renewable

and non-renewable sources) and consumed in treatment plants;

- Self-generated electricity through photovoltaic systems and consumed in treatment plants;

**The year 2022 recorded a CO<sub>2</sub> emission generation of 102,981 tonnes of CO<sub>2</sub> equivalent within Erion WEEE (Scope 1 + Scope 2), about 18% less than the previous year.** Scope 1 direct emissions are the most significant, accounting for about 99% of the total emissions generated within Erion WEEE, as they result from the consumption of diesel fuel used mainly for vehicle travel. Over the course of 2022,

the lower volumes collected and shorter average distances resulted in a reduction in emissions, which amounted to 101,388 tCO<sub>2</sub>eq. Scope 2 indirect emissions are associated with the generation of purchased electricity used in waste treatment plants. In 2022, they amounted to 1,074 tCO<sub>2</sub>eq and account for about 1% of the total emissions generated within Erion WEEE. As explained in the section on Erion's supplier qualification criteria, the Collective Scheme ensures incentives for logistics and treatment suppliers who invest in less polluting vehicles and ensure supply from renewable sources.

**TABLE 3.1.25**  
**DIRECT AND INDIRECT CO<sub>2</sub>eq EMISSIONS**

Activity	Energy source	Unit of measure	2020	2021	2022	22/21 percentage change
<b>DIRECT CO<sub>2</sub>eq EMISSIONS (SCOPE 1)</b>						
Transport from households to Collection Centres/ Grouping Places	Diesel fuel	tCO <sub>2</sub> eq	104,009	122,113	101,388	- 17%
Treatment	Diesel fuel	tCO <sub>2</sub> eq	499	507	519	-2%
<b>Total Scope 1</b>	-	tCO <sub>2</sub> eq	104,508	122,620	101,907	-17%
<b>INDIRECT CO<sub>2</sub>eq EMISSIONS (SCOPE 2)</b>						
Treatment*	Non-renewable electricity from the grid	tCO <sub>2</sub> eq	6,620	2,307	1,074	- 53%
<b>Total Scope 2</b>	-	tCO <sub>2</sub> eq	6,620	2,307	1,074	- 53%
<b>TOTAL DIRECT AND INDIRECT CO<sub>2</sub>eq EMISSIONS GENERATED WITHIN ERION WEEE (SCOPE 1 AND SCOPE 2)</b>						
<b>Total Scope 1 + Scope 2</b>		<b>tCO<sub>2</sub>eq</b>	<b>111,128</b>	<b>124,927</b>	<b>102,981</b>	<b>- 18%</b>

\* Purchases of electricity from renewable sources have been assigned a zero emission factor as required by the market-based method.

The intensity of direct and indirect emissions, normalized to total waste managed, amounted **0.42 t CO<sub>2</sub>eq / t WEEE**, down from 2021 (-11%).

**TABLE 3.1.26**  
**INTENSITY OF DIRECT AND INDIRECT CO<sub>2</sub>eq EMISSIONS**

Emissions	Unit of measure	2020	2021	2022
Emissions Scope 1	tCO <sub>2</sub> eq / t WEEE	0.39	0.46	0.41
Emissions Scope 2	tCO <sub>2</sub> eq / t WEEE	0.03	0.01	0.004
<b>Total</b>	<b>tCO<sub>2</sub>eq / t WEEE</b>	<b>0.42</b>	<b>0.47</b>	<b>0.42</b>

### Emissions generated for Household WEEE within the organization (Scope 3)

Scope 3 includes emissions that fall outside the organization as they are not directly managed by Erion WEEE:

- transportation of Household WEEE from citizens' homes to Collection Centres/Grouping Places;
- Industrial recycling;
- subsequent transport of treatment output fractions to, recycling, energy recovery and disposal plants (which include landfills and thermal disposal

facilities);

- energy recovery and waste disposal activities.

**The lower volumes collected in 2022 have a direct consequence on Scope 3 emissions, leading to a decrease. In 2022, Scope 3 CO<sub>2</sub> emissions amounted to 148,773 tonnes of CO<sub>2</sub> equivalent, about 4% less than the previous year, a reduction in line with the decrease in managed volumes.** Scope 3 indirect

emissions generated by waste recycling activities are the most significant and account for about 63% of total emissions generated outside Erion WEEE. Of lesser impact, given the smaller amount of waste that is not recycled, are disposal and energy recovery activities, which contribute 20% to the total. Conversely, transportation from the treatment plant to subsequent facilities contributes 17% to indirect emissions.

**TABLE 3.1.27**  
**OTHER INDIRECT CO<sub>2</sub>eq EMISSIONS**

Activity	Unit of measure	2020	2021	2022	22/21 percentage change
Transport from households to Collection Centres/ Grouping Places	tCO <sub>2</sub> eq	6,119	6,166	5,161	- 16%
Subsequent transports	tCO <sub>2</sub> eq	21,735	22,144	21,155	- 4%
Industrial recycling	tCO <sub>2</sub> eq	97,037	98,407	92,256	- 6%
Thermal disposal with energy recovery, thermal disposal, landfill (energy recovery and disposal)	tCO <sub>2</sub> eq	25,785	28,854	30,201	+ 5%
<b>Total</b>	<b>tCO<sub>2</sub>eq</b>	<b>150,677</b>	<b>155,571</b>	<b>148,773</b>	<b>- 4%</b>

## 3.1.5 ENVIRONMENTAL BENEFITS ASSOCIATED WITH THE PROPER MANAGEMENT OF HOUSEHOLD WEEE IN ITALY

This section aims to assess the environmental benefits deriving from the proper management of Household WEEE through the comparison of consumption

and emissions resulting from Erion WEEE operations with those generated in a hypothetical scenario, where it is imagined that the management of Household

WEEE is carried out in the absence of the Collective Scheme and its activities

### IN 2022



**1,8 million tCO<sub>2</sub>eq avoided**

Corresponding to the emissions produced by a car driving about 200 thousand laps around the equator.



**380 million kWh of energy saved**

Corresponding to the average electricity consumption of about 140 thousand Italian households in a year.

**7.2 tCO<sub>2</sub>eq / t WEEE**

emissions avoided per tonne of WEEE managed in 2022

**+ 6% from 2021**

**5.6 GJ / t WEEE**

energy saved per tonne of WEEE managed in 2022

**+ 2% from 2021**



Specifically, the two scenarios compared are:

- **Scenario A – Proper management of Household WEEE:** this is the current scenario in which Erion WEEE operates, and whose consumption and emissions are given in the previous sections;
- **Scenario B – Partial management of Household WEEE:** the same amount of waste managed by Erion WEEE in Scenario A is managed in Scenario B as follows:
  - 50% by parties whose sole aim is to maximize profits from recycling secondary raw materials, without concern for the environmental consequences of their activities. This is the reason why they only recover raw materials with positive economic value (e.g. iron, aluminium, copper).

On the other hand, from a logistical point of view, the assumption is that these entities make use of treatment plants located closer to the Collection Centres/Grouping Places than those used by Erion WEEE.

- 50 percent by the same plants used by Erion WEEE, assuming, however, that they operate with a very low ozone-depleting gases (CFC/HCFC) recovery performance, equal to that measured in the first year of operation of the Collective Schemes (2008). In this case, it is assumed that, without the commitment to continuous quality improvement of treatment required by Erion WEEE in its contracts with its suppliers, the plants will operate with the same initial conditions, without taking efficiency and improvement actions.

It should be noted that for Scenario B, consumption and emissions from the production of some virgin raw materials were also accounted for since treatment plants aiming solely at profit do not recycle these materials (plastic, glass, paper and cardboard, etc.) as they are deemed not economically attractive.

Based on these assumptions and considering the volume of Household WEEE collected by Erion WEEE in 2022 (246,246 tonnes), **the benefit of proper waste management results in energy savings of about 1.4 million GJ and avoidance of atmospheric emissions of 1.7 million tons of CO<sub>2</sub>eq in 2022.** The benefits in terms of energy saved and emissions avoided were calculated by subtracting the results of Scenario A from those of Scenario B.

*SimaPro software and the Ecoinvent 3.8 database were used to estimate emissions from a vehicle, with reference to a small petrol-powered Euro 3 car. For the estimation of the average electricity consumption of a typical household in Italy in one year, reference was made to the data made available by ARERA (Regulatory Authority for Energy Networks and Environment) in the document "The update of the conditions of protection of the first quarter 2023 in detail", published on 29 December 2022*

**TABLE 3.1.28**  
**ENERGY CONSUMPTION AND EMISSIONS COMPARED (SCENARIO A AND B)**

Activity	Scenario A		Scenario B	
	GJ	tCO <sub>2</sub> eq	GJ	tCO <sub>2</sub> eq
WEEE transport from households to Collection Centres/ Grouping Places	39,013	5,159	39,013	5,159
Transport from Collection Centres/ Grouping Places to treatment plan	275,300	101,390	232,792	85,824
Primary treatment	91,876	1,592	81,398	5,313
CFC emissions due to treatment	-	-	-	1,664,419
Subsequent transports	39,371	21,155	25,897	15,088
Industrial recycling	1,319,568	92,256	1,080,297	75,379
Thermal disposal with energy recovery, thermal disposal, landfill	-187,582	30,202	-72,145	49,566
Semi-finished product production due to profit-maximizing plants	-	-	1,564,243	114,401
<b>Total</b>	<b>1,577,546</b>	<b>251,754</b>	<b>2,951,495</b>	<b>2,015,149</b>

**TABLE 3.1.29**  
**ENVIRONMENTAL BENEFITS FROM PROPER MANAGEMENT OF HOUSEHOLD WEEE**

	Energy consumption (GJ)	Emissions (t CO <sub>2</sub> eq)
Scenario A	1,577,546	251,754
Scenario B	2,951,495	2,015,149
Environmental benefits (B-A)	<b>1,373,949</b>	<b>1,763,395</b>

### Alternative national scenarios

As at 31 December 2022, Erion WEEE Collective Scheme holds the highest quota of Household WEEE management responsibility nationwide, equal to 68%. All the rest, except what is managed by other collective systems or remains in the homes of Italian citizens, slips out of the control of the 'official' waste streams, dispersing along untracked, sometimes clandestine and illegal channels, with harmful consequences for the environment, human health and the country's economy. To measure and better understand the extent of the damage caused by this phenomenon and to quantify the benefits that would be achieved if all WEEE generated in Italy was managed with an environmental performance equal to that ensured by Erion WEEE, two models based on the total quantities of WEEE generated in Italy were compared.

• **Model 1 – "Italian WEEE System"** – describes the real situation in which all WEEE generated in Italy is managed:

- for the part declared by the CdC RAEE in 2022 by the plants used by the formal WEEE system, with performance equal to that achieved by Erion WEEE in 2022;
- for the remaining part from the 'parallel' system, in two ways:
  - 50% by 'scrap dealers' whose sole aim is to maximize profit, without concern for the environmental consequences of their activities. That is why they only recover raw materials with positive economic value (iron, aluminium, copper). From a logistical point of view, the assumption is that they use treatment plants located closer to the Collection

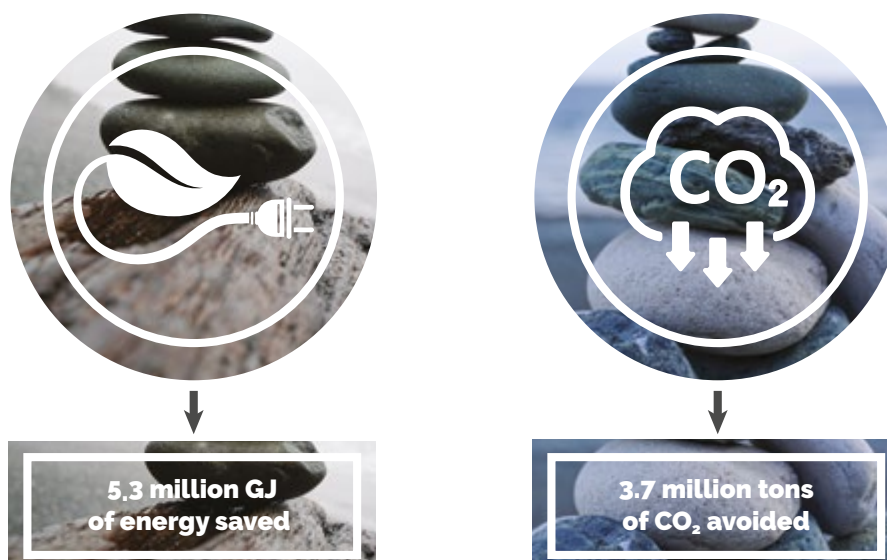
Centres/ Grouping Places than those used by Erion WEEE;

- 50% by the same plants currently used by Erion WEEE, which, however, operate with a very low ozone-depleting gases (CFC/ HCFC) recovery performance.

• **Model 2 – "Italian WEEE System" with Erion performance** – represents the optimal condition in which all Household WEEE generated is managed with performance equal to that achieved by Erion WEEE in 2022.

**Starting from these assumptions, the potential benefits from 'Model 2' describing a situation in which all Italian Household WEEE is properly managed with performance equal to that achieved by Erion WEEE in 2022, can be quantified in energy savings of 5.3 million GJ and 3.7 million tonnes of CO<sub>2</sub> avoided.**

### The benefit that could be obtained from proper management of all Household WEEE in Italy corresponds to



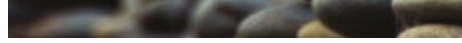
**TABLE 3.1.30**  
**ENERGY CONSUMPTION AND EMISSIONS COMPARED (MODEL 1 AND 2)**

Activity	Model 1 – Italian WEEE System		Model 2 – Italian WEEE system with Erion performance	
	GJ	tCO <sub>2</sub> eq	GJ	tCO <sub>2</sub> eq
Transport	1,357,392	497,211	1,577,028	581,447
Primary treatment	340,830	18,947	363,188	7,438
CFC emissions	-	3,475,827	-	-
Recycling	4,882,228	344,066	5,655,241	399,910
Energy recovery and disposal	- 397,409	181,584	-741,433	119,299
Semi-finished product production	6,026,559	267,913	-	-
<b>Total</b>	<b>12,209,600</b>	<b>4,785,548</b>	<b>6,854,024</b>	<b>1,108,094</b>

**TABLE 3.1.31**  
**POTENTIAL BENEFITS IF ALL HOUSEHOLD WEEE IN ITALY WAS MANAGED WITH ENVIRONMENTAL PERFORMANCE EQUAL TO THAT OF ERION WEEE**

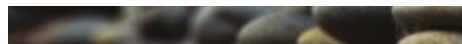
	GJ	tCO <sub>2</sub> eq
Model 1	12,209,600	4,785,548
Model 2	6,854,024	1,108,094
<b>Potential benefits</b>	<b>5,355,576</b>	<b>3,677,454</b>

## 3.2 SOCIAL DATA



### 3.2.1 ERION PEOPLE

(GRI 2-7:2021, GRI 405-1:2016)

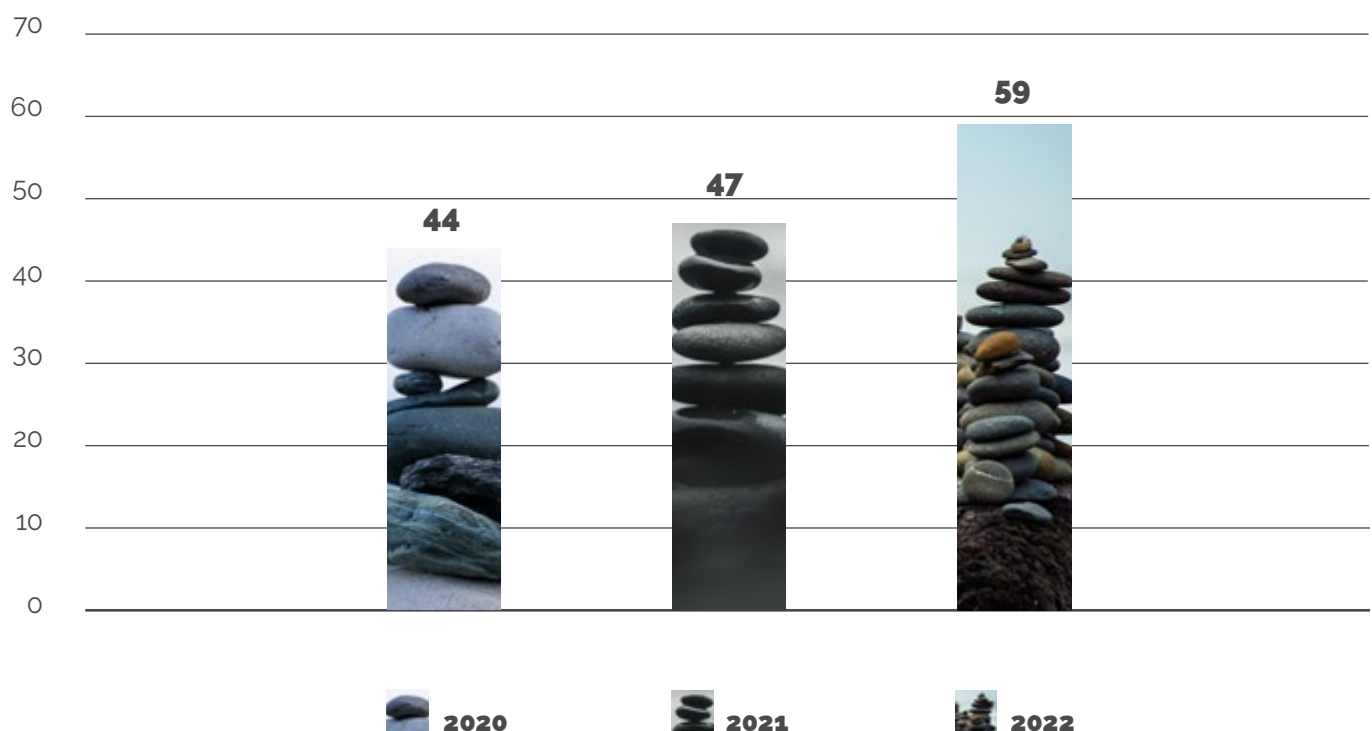


Employees are a key stakeholder for Erion, constituting the resource without which its mission would not be accomplishable. This is also why, over the years, more and more attention has been paid to people's well-being by increasing ad hoc initiatives, encouraging professional

growth and development, and improving workplace health and safety standards. At the end of 2022, Erion had 59 employees (an increase of 26% over the previous year) of whom 73% are women, confirming the predominance of the female gender in the three-year period 2020-2022. Erion is

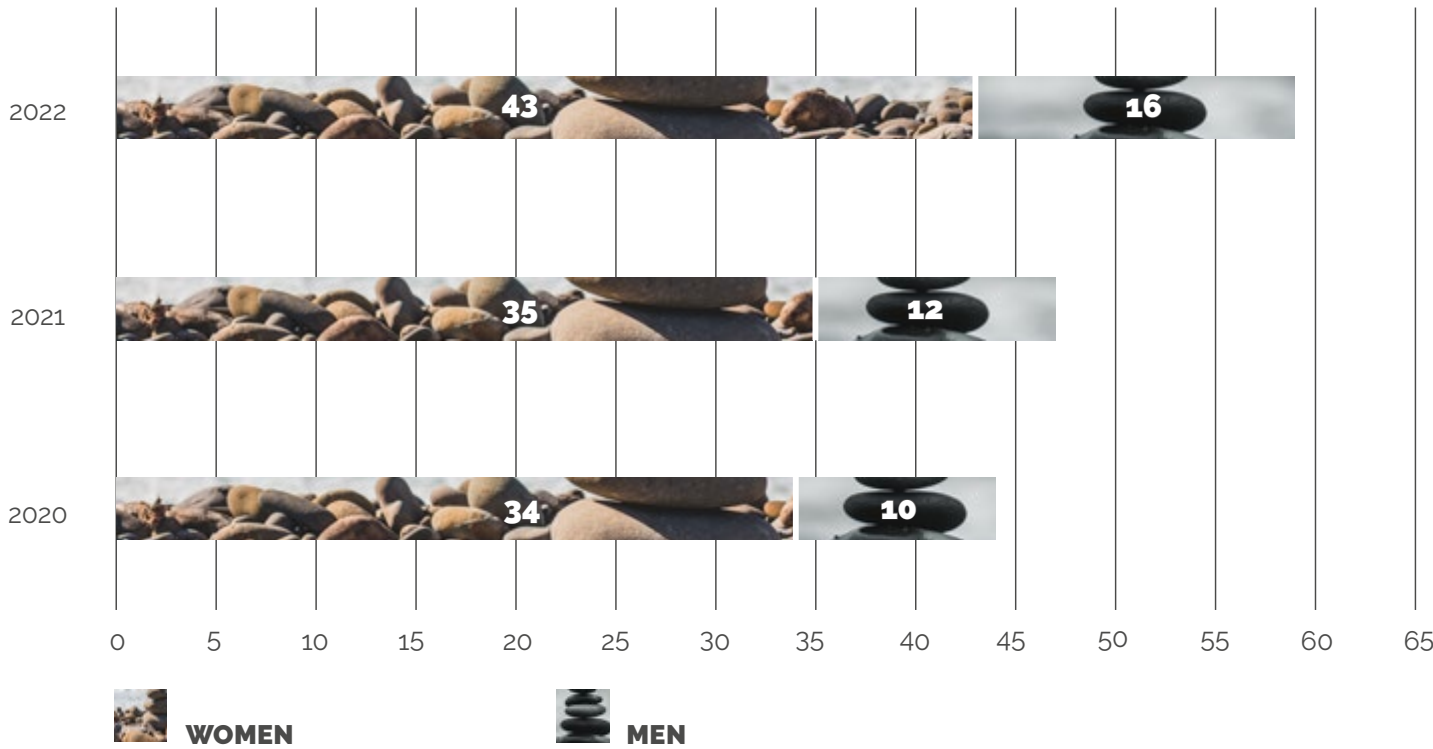
young. In fact, the average age of its employees is 38 years, and stable compared to 2021. The breakdown by age group in 2022 is in line with the previous two years: 23% of employees are under 30 years old, 63% are between 30 and 50 years old, and the remaining 14% are over 50 years old.

**FIGURE 3.2.1.1  
ERION PEOPLE TOTAL NUMBER, 2020-2022**

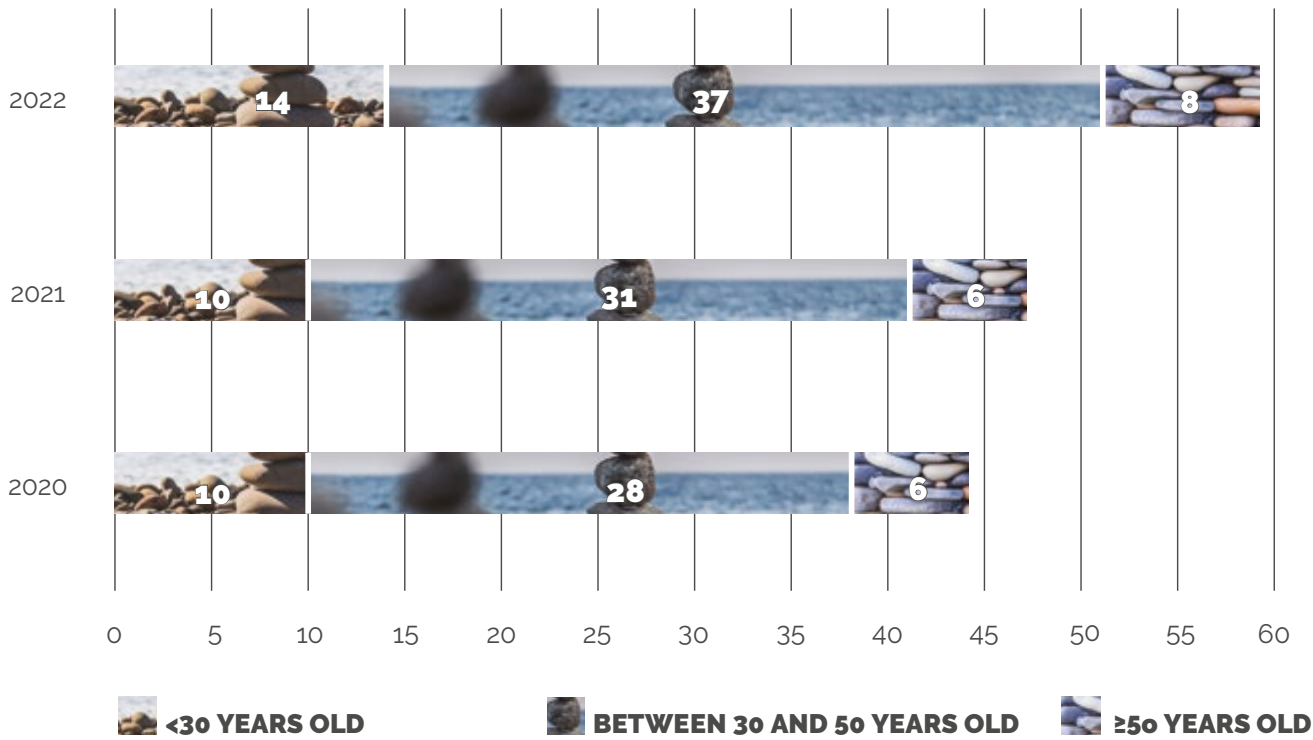




**FIGURE 3.2.1.2**  
**ERION PEOPLE BROKEN DOWN BY GENDER, 2020-2022**



**FIGURE 3.2.1.3**  
**ERION PEOPLE BROKEN DOWN BY AGE GROUP, 2020-2022**



In 2022, 92% of the people have a stable and continuous relationship with a permanent contract, while the remaining 8% have a fixed-term contract (this relates to human resources engaged in research projects and initiatives of limited duration). **The share of fixed-term**

**contracts as a percentage of total active contracts at the end of 2022 has halved compared to 2021, in line with Erion's policy to limit turnover, increase the level of commitment and provide space and opportunities for young talents to emerge and grow.** Part-time

contracts account for about 9% of permanent contracts. In the three-year period 2020-2022, only women took advantage of part-time work, despite the fact that Erion grants the possibility of working part-time without distinction to all employees who indicate this need.

**TABLE 3.2.1.1**  
**TYPE OF CONTRACT AND EMPLOYMENT BY GENDER, 2020-2022**

ERION PEOPLE BY CONTRACT TYPE AND GENDER									
No. of people	2020			2021			2022		
	Women	Men	Total	Women	Men	Total	Women	Men	Total
Fixed-term	1	2	3	5	3	8	4	1	5
Permanent	33	8	41	30	9	39	39	15	54
Total	34	10	44	35	12	47	43	16	59

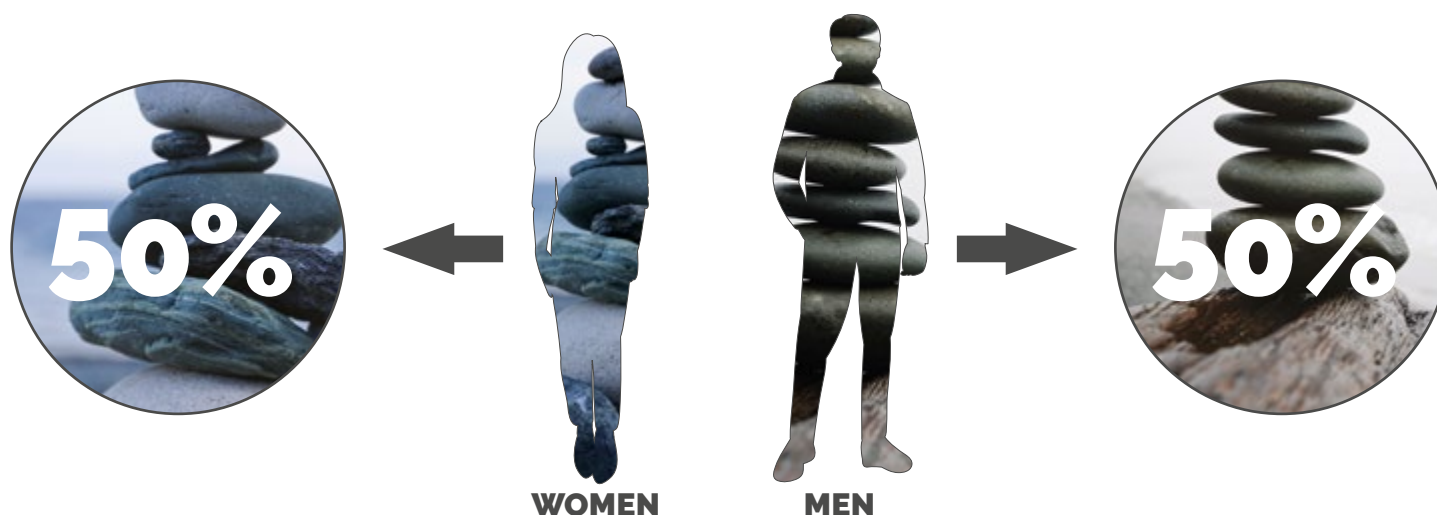
ERION PEOPLE BY TYPE OF EMPLOYMENT AND GENDER									
No. of people	2020			2021			2022		
	Women	Men	Total	Women	Men	Total	Women	Men	Total
Part-time	3	-	3	6	-	6	5	-	5
Full-time	31	10	41	29	12	41	38	16	54
Total	34	10	44	35	12	47	43	16	59

The table below provides information regarding the distribution of employees by role and gender. As regards the breakdown of personnel, it should be noted that **in the three-year period 2020-2022 the increase**

**affects all roles in the organization.** In particular, in 2022, there are the following changes compared to 2021: + 40% among executives, + 25% among managers, + 24% among employees. The gender distribution

among the organization's roles **in 2022 shows a growth of female presence in managerial roles.** Specifically, 43% of executives in 2022 are women, up 23 percentage points from the previous two-year period.

#### **TAKING INTO CONSIDERATION ERION'S MANAGEMENT AND EXECUTIVE BOARD, 7 OUT OF 14 ARE WOMEN**



**TABLE 3.2.1.2**  
**BREAKDOWN OF EMPLOYEES BY ROLE AND GENDER, 2020-2022**

ERION PEOPLE BY ROLE AND GENDER						
No. of people	2020		2021		2022	
	Total	Women	Total	Women	Total	Women
Executives	5	1	5	1	7	3
Managers	7	5	8	5	10	6
Employees	32	28	34	29	42	34

## 3.2.2 ERION COLLABORATORS

(GRI 2-8:2021)



The category of external collaborators includes internship contracts, both curricular and extra-curricular, and other direct collaborative relationships. During 2022, Erion trained 7 interns, 3 more than in 2021, involving them in the initiatives carried out by all areas of the organization, from support for the drafting of the Sustainability

Report, up to support in operational and communication projects. External collaborators were involved for a time-limited activity and to access specialized skills not present in the organization. Erion believes strongly in the development of young people, which is why it provides them with all the appropriate training tools

aimed at capacity building by transmitting them the culture of sustainability and circularity. Erion is committed to recognizing talents who have a positive impact on the organization, offering them job stability and continuity of employment.

### ERION COLLABORATORS IN 2022



**TRAINEES**  
**(6 MEN AND 1 WOMAN)**



**EXTERNAL COLLABORATORS**  
**(1 MAN AND 1 WOMAN)**

## 3.2.3 NEW HIRES AND TERMINATIONS

(GRI 401-1:2016)



The tables below show the entry and exit rates of employees (indicated respectively as 'positive turnover' and 'negative turnover') broken down by gender and age group. In 2022, 17 new people were hired with a recruitment rate of 29% (+ 6% compared to 2021), while 5 people

decided to terminate their employment with Erion, with an outgoing turnover rate of 8%. The outgoing turnover rate in 2022 is half that of 2021 (17% in 2021), highlighting how Erion's policy – which focuses on retention, engagement, and listening – is effective and appreciated by its people.

The turnover rates were respectively obtained by relating newly hired or exited employees during 2022 to the total number of existing employees at the end of 2022. The challenges that Erion had to face between the end of 2021 and the beginning of 2022 are many. However,

in an environment dominated by the pandemic and the Russian-Ukrainian conflict, **Erion has nevertheless decided to react not only by expanding its workforce with the aim of increasing skills and specificity, but also by enhancing**

**the resources already part of the organization. In 2022, its personnel policy took on an even more strategic role with the emergence of new goals: cope with the speed of growth of the Collective Schemes through high-level services,**

**improve its quality and efficiency standards by internalizing the management of its suppliers, and adequately support its Members by proposing innovative solutions and projects.**

**TABLE 3.2.3.1  
POSITIVE TURNOVER RATE BY GENDER AND AGE GROUP IN 2022**

POSITIVE TURNOVER 2022			
No. of people	Women	Men	Total
< 30 years old	6.8%	3.4%	10.2%
Between 30 and 50 years old	8.4%	5.1%	13.6%
> 50 years old	3.4%	1.7%	5.1%
Total	18.6%	10.2%	28.9%

**TABLE 3.2.3.2  
NEGATIVE TURNOVER RATE BY GENDER AND AGE GROUP IN 2022**

TURNOVER NEGATIVO 2022			
NEGATIVE TURNOVER 2022	Donne	Uomini	Totale
No. of people	Women	Men	Total
< 30 years old	3.4%	-	3.4%
Between 30 and 50 years old	1.7%	1.7%	3.4%
> 50 years old	-	1.7%	1.7%
Total	5.1%	3.4%	8.5%

#### ERION'S DEVELOPMENT PLAN AND GOALS

In collaboration with the consulting firm Partners4Innovation, Erion has developed a structured system for setting and measuring goals aimed at the professional growth of its employees. The **Development Plan and Goals** translates into a programme undertaken by each resource with their supervisor and in which, thanks in part to an individual file, the skills needed with respect to the function covered are highlighted and the goals to be achieved in the organization are identified.

Goal setting is done at the beginning of each year. Each employee talks directly with their superior to define the targets to be achieved, both qualitative and quantitative, for their professional development. Any training gaps are filled with specific training activities – often one-to-one coaching – consistent with the targets to be achieved.

The System provides for two interim evaluations during the year to monitor the progress of the programme undertaken. The actual achievement of the set targets is directly assessed in the field. The achievement of a goal is rewarded through the recognition of a variable remuneration.



### 3.2.4

## INITIATIVES FOR EMPLOYEES



Erion also chooses to take care of its employees through a set of activities implemented for the purpose of ensuring well-being in the workplace and a balance between working life and private life. The new organizational model, called Agile Future, is supported by an innovative employment contract in the experimental phase that aims to offer higher levels of flexibility and autonomy to Erion staff in

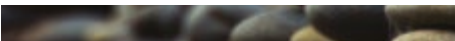
order to ensure the achievement of a better work-life balance, while reducing the environmental impacts of the activities carried out. Among the initiatives included in this project is the launch of the new smart working agreement for employees. Instead, for trainees and new hires, Erion has chosen to favour the face-to-face mode during the first few months to ensure constant coaching and adequate

training and information. In 2022, the People and Welfare department and the Compliance & Corporate Services department coordinated the planning of initiatives to strengthen Erion's new agile organizational model to ensure the best possible working conditions for its people in 2023.

### 3.2.5

## TRAINING STATISTICS

(GRI 404-1:2016, GRI 404-2:2016)



The year 2022 saw the expansion of the training programme designed for Erion employees, with a total of 2,260 hours delivered, representing an annual average per participant of 38 hours. Total hours delivered grew by 10% compared to 2021,

with a marked focus on managerial and relational activities involving all organization roles. The table below shows the average per capita hours of training broken down by role and gender. Managers, with 68 hours of training per capita, are

the professional category that received the highest number of training hours, followed by employees and executives who respectively received 33 and 26 hours of training per capita.

### AVERAGE TRAINING HOURS PER CAPITA BROKEN DOWN BY AREA



**TABLE 3.2.5.1**  
**TRAINING HOURS PER CAPITA BROKEN DOWN BY ROLE AND GENDER, 2020-2022**

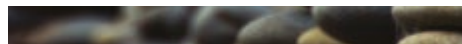
TRAINING HOURS PER CAPITA BROKEN DOWN BY ROLE AND GENDER						
No. of hours	2020		2021		2022	
	Women	Men	Women	Men	Women	Men
Executive	7	4	32	13	47	10
Manager	5	12	55	47	77	56
Employee	16	42	47	37	34	31

For Erion, the training and continuous updating of its people are fundamental elements in the professional growth of its resources within the organization, so that people feel valued and appreciated both as individuals and as professionals. **A tailored training plan is prepared for each employee**, which is developed through seminars, one-to-one coaching, webinars and workshops. In 2022, following the training survey conducted at the end of 2021, all Erion people were engaged on technical/managerial and targeted topics

aimed at achieving certain soft skills (including Project management, Advance problem solving, Agile/smart working) through training activities conducted both remotely and in the classroom, and an individual mentoring programme was initiated in the same year. Erion is committed to providing equal opportunities for all people and has regard for people's aptitudes and preferences by pairing these courses with theoretical content and practical experience, including through the involvement of employees

in defining the educational content. Each person at Erion is encouraged to express their training needs through anonymous surveys that allow the organization to better understand their needs, nurture their desire to learn, and optimize the educational offer. With a view to continuous improvement, Erion takes into account the feedback from participants in the courses with the aim of identifying critical issues for the correct and effective planning of programmes for the following year.

## 3.3 ECONOMIC DATA



### 3.3.1 THE CREATION AND DISTRIBUTION OF VALUE IN THE TERRITORY

(201-1, 203-1, 203-2)



In 2022, the economic value generated by the Erion System, defined as the organization's revenues to which financial income is added, amounts to EUR 106,532,829, a drop of 27% from 2021. This decrease is mainly related to two factors, the first of which is attributable to the extreme volatility of the raw materials market and, consequently, of the secondary raw materials. The second factor is the drastic reduction in eco-contributions paid by member Producers of Erion WEEE Collective Scheme. The economic value distributed represents the economic and social footprint that the organization has on the community and the territory. This includes all costs incurred by the System to sustain operations and offer its services at the highest possible level. Erion's activities contribute to creating wealth and welfare through fees for logistics and treatment providers, wages paid to employees, taxes paid to the public administration, and communication and awareness-raising activities aimed at citizens. In 2022, the economic value distributed by the Erion System amounted to EUR 120,428,968, up 6% from 2021, broken down as follows:

- **Logistics and treatment (about 90%).** It represents the main share, amounting to EUR 109,152,205, and includes the costs incurred by Erion to ensure the logistics and treatment services for

the waste managed. Included in this item are bonuses and incentives paid to logistics and treatment providers to support them in coping with rising fuel and energy costs due to the global energy crisis. The structured system of bonuses and incentives set up by Erion represents an important economic resource for suppliers, who can count on concrete help to conduct their business with satisfaction even in the face of the critical issues that have characterized the last three years. The closure of treatment plants and the cessation of logistics activities would have serious repercussions on the entire value chain, and it is for this reason that Erion is committed and invests in supporting, including financially, its suppliers.

- **staff remuneration (about 4%).** The value distributed to employees amounted to EUR 4,972,533, in constant growth compared to the previous two years and in line with the increase in the number of Erion employees in recent years.
- **other operating costs (about 3%).** The share used to cover operating costs amounts to EUR 3,736,808 and includes all costs necessary to support and guarantee the activities of the Collective Schemes, from IT infrastructure to office maintenance.

- **communication (about 2%).** In 2022, communication and awareness-raising campaigns aimed at citizens led to an investment of EUR 2,072,687, a sharp increase compared to 2021. Erion recognizes the importance of informing citizens about proper waste management and disposal and actively involving them in order to achieve national and EU collection and recycling targets.

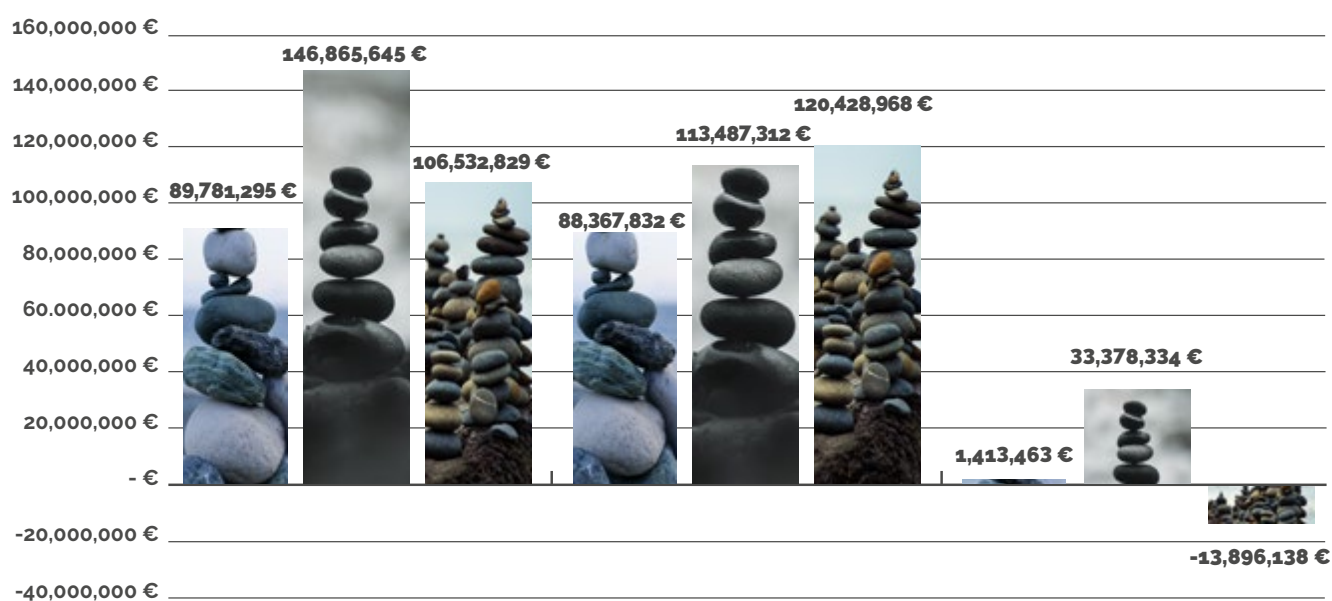
- **Public Administration remuneration (less than 1%).** A smaller share, amounting to EUR 494,735, is allocated to the remuneration of the Public Administration, which includes IRAP and IRES taxes paid in the year 2022 by the Collective Schemes and ECO.

The economic value retained, calculated as the difference between economic value generated and economic value distributed, was minus EUR 13,896,138. This negative result is a consequence of the fact that Erion WEEE, reinvested in 2022 the operating surplus generated in the previous year, amounting to EUR 32,822,531. The following table shows the economic value generated, distributed, and retained as a result of the activity of the Erion System over the three-year period 2020-2022.

**TABLE 3.3.1.1**  
**ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED AS A RESULT OF THE ACTIVITY OF THE ERION SYSTEM OVER THE THREE-YEAR PERIOD 2020-2022.**

	2020	2021	2022
<b>Directly generated economic value</b>	<b>89,781,295</b>	<b>146,865,645</b>	<b>106,532,829</b>
Revenues	89,511,026	146,363,394	106,745,454
Financial Income	270,269	502,251	-212,625
Extraordinary Income (Expenses)	-	-	-
Write-downs	-	-	-
Value adjustments to financial assets	-	-	-
<b>Economic value distributed</b>	<b>88,367,832</b>	<b>113,487,312</b>	<b>120,428,968</b>
Other operating costs	3,996,589	4,660,592	3,736,808
Logistics and treatment	79,674,344	101,933,835	109,152,205
Staff remuneration	3,640,999	4,200,031	4,972,533
Remuneration of credit capital	-	-	-
PA remuneration	516,983	2,215,915	494,735
Communication	538,917	476,939	2,072,687
<b>Economic value retained</b>	<b>1,413,463</b>	<b>33,378,334</b>	<b>-13,896,138.45</b>
Operating profit/loss	664,775	32,822,530,99	-14,688,091.24
Depreciation and amortization	748,687	555,803	781,953
Provision for risks	-	-	10,000

## Economic value generated, distributed and retained (Euro)



**ECONOMIC VALUE  
GENERATED DIRECTLY**

**ECONOMIC VALUE  
DISTRIBUTED**

**ECONOMIC VALUE  
RETAINED**



2020



2021



2022



Below is a breakdown of the economic value generated, distributed and retained by ECO and by the individual Collective Schemes.

**TABLE 3.3.1.2  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ECO IN 2022**

ECO	
Economic value generated directly	7,109,705
Economic value distributed	6,730,178
Economic value retained	379,527

**TABLE 3.3.1.3  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ERION WEEE IN 2022**

Erion WEEE	
Economic value generated directly	99,019,042
Economic value distributed	114,537,604
Economic value retained	-15,518,561

**TABLE 3.3.1.4  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ERION PROFESSIONAL IN 2022**

Erion Professional	
Economic value generated directly	1,568,070
Economic value distributed	991,026
Economic value retained	577,044

**TABLE 3.3.1.5  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ERION ENERGY IN 2022**

Erion Energy	
Economic value generated directly	5,124,034
Economic value distributed	4,319,952
Economic value retained	804,082

**TABLE 3.3.1.6  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ERION PACKAGING IN 2022**

Erion Packaging	
Economic value generated directly	30,069
Economic value distributed	210,148
Economic value retained	-180,080

**TABLE 3.3.1.7  
ECONOMIC VALUE GENERATED, DISTRIBUTED, AND RETAINED BY ERION CARE IN 2022**

Erion Care	
Economic value generated directly	256,909
Economic value distributed	215,059
Economic value retained	41,850

Table 3.3.1.8 analyzes the indirect economic impacts, which, in 2022, consist of efficiency bonuses and reduced charges for local authorities. The decrease in charges to local authorities represents the costs that local authorities did not have to bear because Erion took care of WEEE and WBA management, amounted to EUR 33,399,146, up from 2021. This increase is due to the aforementioned higher logistics and treatment costs incurred

in 2022 and to the increased impact of the 2022 communication campaigns to raise community awareness on the proper disposal of waste. Efficiency bonuses to municipal Collection Centres (CC) and Grouping Places (GP) amount to EUR 15,787,237. Efficiency bonuses represent the economic resources made available to the CPs and GPs. Bonuses are awarded to facilities that comply with the efficiency and rewarding requirements defined

in the Programme Agreement between ANCI, the WEEE and Batteries clearing houses (CdC RAEE/CDCNPA) and the Collective Schemes, with a view to promoting an increase in collection volumes and quality. A percentage of the economic resources that fall under 'efficiency bonuses' is allocated to a fund from which municipal CCs can draw in order to carry out infrastructure modernization activities.

**TABLE 3.3.1.8**  
**INDIRECT ECONOMIC IMPACTS**

	2020	2021	2022
Reduced charges	41,097,948	24,562,272	33,665,539
Efficiency bonuses	17,207,059	16,320,672	15,787,237

# METHODOLOGICAL NOTE



This 2022 Sustainability Report (hereinafter also "Report") is the document through which Erion intends to provide information regarding the significant sustainability aspects and impacts in environmental, social and economic terms of the System. Erion, headquartered at Via Scarsellini 14, Milan - Italy, represents the leading Italian Extended Producer Responsibility Organization for the management of Household and Professional Waste Electrical and Electronic Equipment, Waste Batteries and Accumulators, Waste Packaging relating to EEE and BA, and tobacco product Waste. Erion's Sustainability Report, drawn up annually and now in its third edition, will be disseminated both internally and externally to the organization in order to acquaint employees and all stakeholders with the activities, initiatives, and economic and environmental performance of the sector Collective Schemes. In this document, Erion reports the information and indicators cited in the GRI Content Index for the period 1 January 2022 to 31 December 2022 with reference to the GRI Standards and in accordance with the updates introduced in 2021 regarding the Fundamental Principles (GRI 1), General Disclosures (GRI 2), and Material Topics (GRI 3). In addition, performance referring to calendar year 2022 was compared with that of the previous two-year period (2020-2021) to provide a better view of trends over time. The selection of material topics and their reporting was conducted in accordance with GRI 3 - Material Topics, and the Specific Standards referring to each material topic. As required by the

GRI Standards, Erion followed the core reporting concepts and principles of GRI 1 and applied them at every stage of drafting this document. The core concepts underlying sustainability reporting are: impacts, material topics, due diligence processes, and stakeholders; whereas the core principles are: accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness, and verifiability. In 2022, in response to the changes introduced by the GRI Standards, but also in order to monitor the response of the organization and its stakeholders to the many changes in the context in which it operates, the materiality analysis was updated. This activity confirmed the retention of most of the topics already identified as material in 2021 (11 confirmed out of a total of 13), while five new material topics were identified, confirming how the changes that have characterized Erion's internal structure and the context in which the organization operates are reflected in the process of identifying and prioritizing material topics. For details, see chapter "1.6 General medium to long-term strategies: materiality analysis". Data pertaining to personnel refer to Erion Compliance Organization (ECO). The reporting scope of environmental data with reference to volumes of waste collected and managed includes the Erion WEEE, Erion Professional and Erion Energy Collective Schemes. For the newly established Erion Packaging and Erion Care Collective Schemes, which to date are not yet fully operational, these data are not available. With specific reference to environmental

impacts, computations were carried out using the WEEE Forum CO<sub>2</sub> tool developed by the WEEE Forum and made available to members of the association. The tool is fed by the performance of logistics and treatment providers acting inside and outside the perimeter of Erion WEEE's operations, thus enabling the calculation of direct and indirect environmental impacts. With regard to the quantities of materials recovered, sent for recycling and disposed of downstream of the treatment processes of Household WEEE, estimates were obtained from self-declarations issued by the Collective Scheme's suppliers through the RepTool software, developed by the WEEE Forum and made available internationally to facilitate the tracking of the fractions obtained from the processing of Household WEEE. For other types of waste, no such tools are available to date, so specific assessment methodologies will need to be developed in the coming years. The definition of the contents of this Sustainability Report was entrusted to a dedicated working group that involved the main departments concerned. The Report has been subjected to an internal audit involving the SDI team, the Communication team, the General Manager of ECO and the Managers of the sector Collective Schemes. It is also audited by the independent firm BDO Italia Sp.A., whose report can be found in the "Assurance" section. For additional information and specific requests regarding the content of this Sustainability Report, please contact [progetti@erion.it](mailto:progetti@erion.it).

# GRI CONTENT INDEX

<b>Declaration of use</b>	Erion has reported the information cited in this GRI content index for the period from 1 January 2022 to 31 December 2022 with reference to GRI standards.
<b>GRI 1 used</b>	GRI 1 - Fundamental principles - version 2021
<b>Relevant GRI industry standards</b>	The standards for the industry in which Erion operates are not currently available.

GRI indicator	Sustainability Report		Notes
GRI 2: General Disclosures 2021			
The organization and its reporting practices			
2-1	Organizational details	Methodological note	-
2-2	Entities included in the organization's sustainability reporting	Methodological note	-
2-3	Reporting period, frequency and contact point	Methodological note	-
2-4	Restatements of information	Methodological note	-
2-5	External assurance	Assurance	-
Activities and workers			
2-6	Activities, value chain and other business relationships	1. ERION SYSTEM 1.3 Current Erion structure 2. ERION COLLECTIVE SCHEMES AND ECO	-
2-7	Employees	3. DATA 3.2 Information on employees and other workers	-
2-7	Employees	3. DATA 3.2 Information on employees and other workers	
2-8	Workers who are not employees	3. DATA 3.2 Information on employees and other workers	-
Governance			
2-9	Governance structure and composition	1. ERION SYSTEM 1.4 Governance: structure, strategies, commitments	-
2-10	Nomination and selection of the highest governance body	1. ERION SYSTEM 1.4 Governance: structure, strategies, commitments	-
2-11	Chair of the highest governance body	1. ERION SYSTEM 1.4 Governance: structure, strategies, commitments	
2-14	Role of the highest governance body in sustainability reporting	Methodological note 1. ERION SYSTEM 1.6 General medium- to long-term strategies: materiality analysis	-



2-16	Communication of critical concerns	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments	-
<b>Strategy, policies and practices</b>			
2-22	Statement on sustainable development strategy	Letter to stakeholders	-
2-23	Policy commitments	<b>1. ERION SYSTEM</b> 1.2 Erion mission 1.4 Governance: structure, strategies, commitments <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.2 Household WEEE - Recovery, recycling and disposal of fractions 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
2-24	Embedding policy commitments	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments 1.5 Stakeholders: categories, centrality and engagement <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
2-25	Processes to remediate negative impacts	<b>1. ERION SYSTEM</b> 1.2 Erion mission 1.4 Governance: structure, strategies, commitments 1.5 Stakeholders: categories, centrality and engagement <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
2-26	Mechanisms for seeking advice and raising concerns	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments	-
2-27	Compliance with laws and regulations	GRI Content Index	During 2022, there were no incidents of environmental non-compliance.
2-28	Membership associations	<b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement <b>2. ERION COLLECTIVE SCHEMES AND ECO</b>	-
<b>Stakeholder engagement</b>			
2-29	Approach to stakeholder engagement	<b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement	-

2-30	Collective bargaining agreements	<b>3. DATA</b> 3.2 Information on employees and other workers 3.2.1 Erion people	-
<b>Material Topics</b>			
<b>GRI 3 Material Topics – version 2021</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis	-
<b>GRI 200: Economic Disclosures</b>			
<b>GRI 201: Economic Performance – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.3 ECONOMIC DATA 3.3.1 La creazione e la distribuzione del valore sul territorio	-
201-1	Direct economic value generated and distributed	<b>3. DATA</b> 3.3 ECONOMIC DATA 3.3.1 The creation and distribution of value in the territory	-
<b>GRI 203: Impatti economici indiretti – versione 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.3 ECONOMIC DATA 3.3.1 The creation and distribution of value in the territory	-
203-1	Infrastructure investments and services supported	<b>3. DATA</b> 3.3 ECONOMIC DATA 3.3.1 The creation and distribution of value in the territory	-
203-2	Significant indirect economic impacts	<b>3. DATA</b> 3.3 ECONOMIC DATA 3.3.1 The creation and distribution of value in the territory	-
<b>GRI 205: Anti-corruption – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments 1.6 General medium- to long-term strategies: materiality analysis	-
205-2	Communication and training about anti-corruption policies and procedures	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments	-
205-3	Confirmed incidents of corruption and actions taken	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments GRI Content Index	During 2022, there were no incidents of corruption.

GRI 204: Procurement Practices – version 2016			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement 1.6 General medium- to long-term strategies: materiality analysis	-
204-1	Proportion of spending on local suppliers	<b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement	-
GRI 206: Anticompetitive Behaviour – version 2016			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments 1.6 General medium- to long-term strategies: materiality analysis	-
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	<b>1. ERION SYSTEM</b> 1.4 Governance: structure, strategies, commitments	-
GRI 300: Environmental Disclosures			
GRI 301: Materials – version 2016			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	-
301-1	Materials used by weight or volume	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	The indicator was adapted to the particularities of Erion.
GRI 302: Energy – version 2016			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
302-1	Energy consumption within the organization	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-

302-2	Energy consumption outside of the organization	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
302-3	Energy intensity	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption	-
302-4	Reduction of energy consumption	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
302-5	Reductions in energy requirements of products and services	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.3 Household WEEE – energy consumption 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
<b>GRI 305: Emissions – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
305-1	Direct (Scope 1) GHG emissions	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
305-2	Energy indirect (Scope 2) GHG emissions	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
305-4	Intensità delle emissioni di gas ad effetto serra (GHG)	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere	-



305-3	Other indirect (Scope 3) GHG emissions	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
305-4	GHG emissions intensity	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere	-
305-5	Reduction of GHG emissions	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.4 Household WEEE - emissions into the atmosphere 3.1.5 Environmental benefits associated with the proper management of Household WEEE in Italy	-
<b>GRI 306: Waste – version 2020</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	-
306-1	Waste generation and significant waste-related impacts	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	-
306-2	Management of significant waste-related impacts	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	-
306-3	Waste generated	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	The indicator was adapted to the particularities of Erion.
306-4	Waste diverted from disposal	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	The indicator was adapted to the particularities of Erion.

306-5	Waste directed to disposal	<b>3. DATA</b> 3.1 ENVIRONMENTAL DATA 3.1.1 The operational waste management 3.1.2 Household WEEE – Recovery, recycling and disposal of fractions	The indicator was adapted to the particularities of Erion.
<b>GRI 308: Supplier Environmental Assessment – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement 1.6 General medium- to long-term strategies: materiality analysis	-
308-1	New suppliers that were screened using environmental criteria	<b>1. ERION SYSTEM</b> 1.5 Stakeholders: categories, centrality and engagement	-
<b>GRI 400: Social Disclosures</b>			
<b>GRI 401: Employment – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.2 Information on employees and other workers 3.2.3 New hires and terminations	-
401-1	New employee hires and employee turnover	<b>3. DATA</b> 3.2 Information on employees and other workers 3.2.3 New hires and terminations	-
<b>GRI 402: Labour/Management Relations – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>2. ERION COLLECTIVE SCHEMES AND ECO</b> 2.1 Erion Compliance Organization (ECO) <b>3. DATA</b> 3.2 Information on employees and other workers	-
402-1	Minimum notice periods regarding operational changes	<b>2. ERION COLLECTIVE SCHEMES AND ECO</b> 2.1 Erion Compliance Organization (ECO) <b>3. DATA</b> 3.2 Information on employees and other workers	The disclosure was used as a reference to describe the relationship and dialogue between management and employees and the organization's initiatives regarding staff growth from a hiring and training perspective.
<b>GRI 404: Training and Education – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.2 Information on employees and other workers 3.2.5 Training Statistics	-

404-1	Average hours of training per year per employee	<b>3. DATA</b> 3.2 Information on employees and other workers 3.2.5 Training Statistics	-
<b>GRI 405: Diversity and Equal Opportunity – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis <b>3. DATA</b> 3.2 Information on employees and other workers 3.2.1 Erion people	-
405-1	Diversity of governance bodies and employees	<b>3. DATA</b> 3.2 Information on employees and other workers 3.2.1 Erion people	-
<b>GRI 413: Local Communities – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.6 General medium- to long-term strategies: materiality analysis 1.7 Innovation <b>2. ERION COLLECTIVE SCHEMES AND ECO</b>	-
413-1	Operations with local community engagement, impact assessments, and development programs	<b>1. ERION SYSTEM</b> 1.7 Innovation <b>2. ERION COLLECTIVE SCHEMES AND ECO</b>	-
<b>GRI 415: Public Policy</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.1 Erion's development path in five steps 1.6 General medium- to long-term strategies: materiality analysis <b>2. ERION COLLECTIVE SCHEMES AND ECO</b>	-
415-1	Political contributions	<b>1. ERION SYSTEM</b> 1.1 Erion's development path in five steps <b>2. ERION Collective Schemes and ECO</b>	The disclosure was used as a reference to describe the Collective Schemes' engagement in regulatory compliance activities and dialogue with institutions.
<b>GRI 417: Marketing and Labelling – version 2016</b>			
3-3	Management of material topics	Methodological note <b>1. ERION SYSTEM</b> 1.2 Erion mission 1.6 General medium- to long-term strategies: materiality analysis 1.7 Innovation <b>2. ERION Collective Schemes and ECO</b>	-
417-1	Requirements for product and service information and labelling	<b>1. ERION SYSTEM</b> 1.2 Erion mission 1.7 Innovation <b>2. ERION COLLECTIVE SCHEMES AND ECO</b>	The disclosure was used as a reference to describe the innovative projects and institutional communication activities carried out by the Collective Schemes.

# ASSURANCE

ERION WEEE, ERION PROFESSIONAL, ERION ENERGY, ERION  
PACKAGING, ERION CARE, ERION COMPLIANCE ORGANIZATION  
S.C.A.R.L.  
("SISTEMA ERION")

Relazione della società di revisione  
indipendente sul Bilancio di  
Sostenibilità

Esercizio al 31 dicembre 2022

AMN/AFR/git - RC112372022BD2822







## Independent Auditors' Report on the Sustainability Report 2022

To the Board of Directors of Erion Compliance Organization S.c.a.r.l.

We have been engaged to perform a limited assurance engagement on the Sustainability Report of Erion System for the year ended on December 31st, 2022.

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### Directors' responsibility for the Sustainability Report

The Directors of Erion Compliance Organization S.c.a.r.l. are responsible for the preparation of the Sustainability Report in accordance with the "GRI Sustainability Reporting Standards (GRI Standards)" issued by the GRI - Global Reporting Initiative, as described in the paragraph "Methodology" of the Sustainability Report of Erion System.

The Directors of Erion Compliance Organization S.c.a.r.l. are responsible for that part of the internal control that they consider necessary in order to enable the preparation of a Sustainability Report that is free from material misstatements, whether due to frauds or unintentional behaviors or events.

The Directors of Erion Compliance Organization S.c.a.r.l. are also responsible for the definition of the objectives of Erion System regarding the sustainability performance and the reporting of the achieved results, as well as for the identification of the stakeholders and the significant matters to report.

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### Auditors' independence and quality control

We are independent in accordance with the ethics and independence principles of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, based on fundamental principles of integrity, objectivity, professional competence and diligence, confidentiality and professional behaviour.

Our audit firm applies the International Standards on Quality Control 1 (ISQC Italia 1) and, consequently, maintains a quality control system that includes documented policies and procedures, regarding compliance with ethical requirements, professional standards and applicable laws and regulations.

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### Auditors' responsibility

It is our responsibility to express, on the basis of the procedures performed, a conclusion about the compliance of the Sustainability Report of Erion System with the requirements of the GRI Standards. We conducted our work in accordance with the principles included in the "International Standard on Assurance Engagements 3000 (Revised) - Assurance Engagements other than Audits or Reviews of Historical Financial Information" ("ISAE 3000 Revised"), issued by the International Auditing and Assurance Standards Board (IAASB) for limited assurance engagements. This standard requires the planning and execution of procedures in order to obtain limited assurance that the Sustainability Report is free from material misstatement.

Therefore, the extent of work performed in our examination was lower than that required for a full examination in accordance with ISAE 3000 Revised ("reasonable assurance engagement") and, hence, it does not provide assurance that we have become aware of all significant matters and events that would have been identified during a reasonable assurance engagement.

Bari, Bologna, Brescia, Cagliari, Firenze, Genova, Milano, Napoli, Padova, Palermo, Roma, Torino, Verona

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Iscritta al Registro dei Revisori Legali al n. 167911 con D.M. del 15/03/2013 G.U. n. 26 del 02/04/2013

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The procedures performed on the Sustainability Report of Erion System were based on our professional judgement and included inquiries, primarily with company's personnel responsible for the preparation of the information included in the Sustainability Report, document analysis, recalculations and other procedures in order to obtain evidences considered appropriate.

In particular, we have performed the following procedures:

1. analysis of the process relating to the definition of material aspects included in the Sustainability Report, with reference to the criteria applied to identify priorities for the different stakeholder categories and to the internal validation of the process results;
2. comparison of economic and financial data included in the specific paragraph of the Sustainability Report with those included in the Financial Statements of the Erion System;
3. analysis of processes that support the generation, collection and management of data and information to the department responsible for the preparation of the Sustainability Report. In particular, we have performed interviews and discussions with the management of Erion Compliance Organization S.c.a.r.l. to gather information about the accounting and reporting systems used in preparing the Sustainability Report, as well as on the internal control procedures supporting the gathering, aggregation, processing and transmission of data and information to the department responsible for the preparation of the Sustainability Report of Erion System.

Furthermore, for the most important information, taken into consideration the activities and the characteristics of the Company:

- a) with reference to the qualitative information contained in the Sustainability Report, we carried out interviews and we have acquired supporting documentation to verify their consistency with the available evidence;
- b) with reference to quantitative information, we carried out both analytical procedures and limited checks to ascertain the correct aggregation of data on a sample basis.

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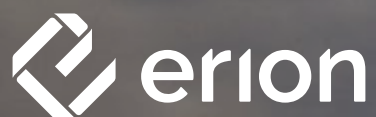
## Conclusion

Based on the work performed, nothing has come to our attention that causes us to believe that the Sustainability Report of Erion System for the period ended on December 31<sup>st</sup>, 2022 is not prepared, in all material respects, in accordance with the "GRI Sustainability Reporting Standards (GRI Standards)" issued by the GRI - Global Reporting Initiative, as stated in the paragraph "Methodology" of the Sustainability Report of Erion System.

Milano, May 30<sup>th</sup>, 2023

BDO Italia S.p.A.

Signed in the original by  
Andrea Meneghel  
Partner



Producer Responsibility

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Design: Ma&Mi Srl

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Methodological support:

LIFE CYCLE ENGINEERING SpA

Photo: Unsplash.com