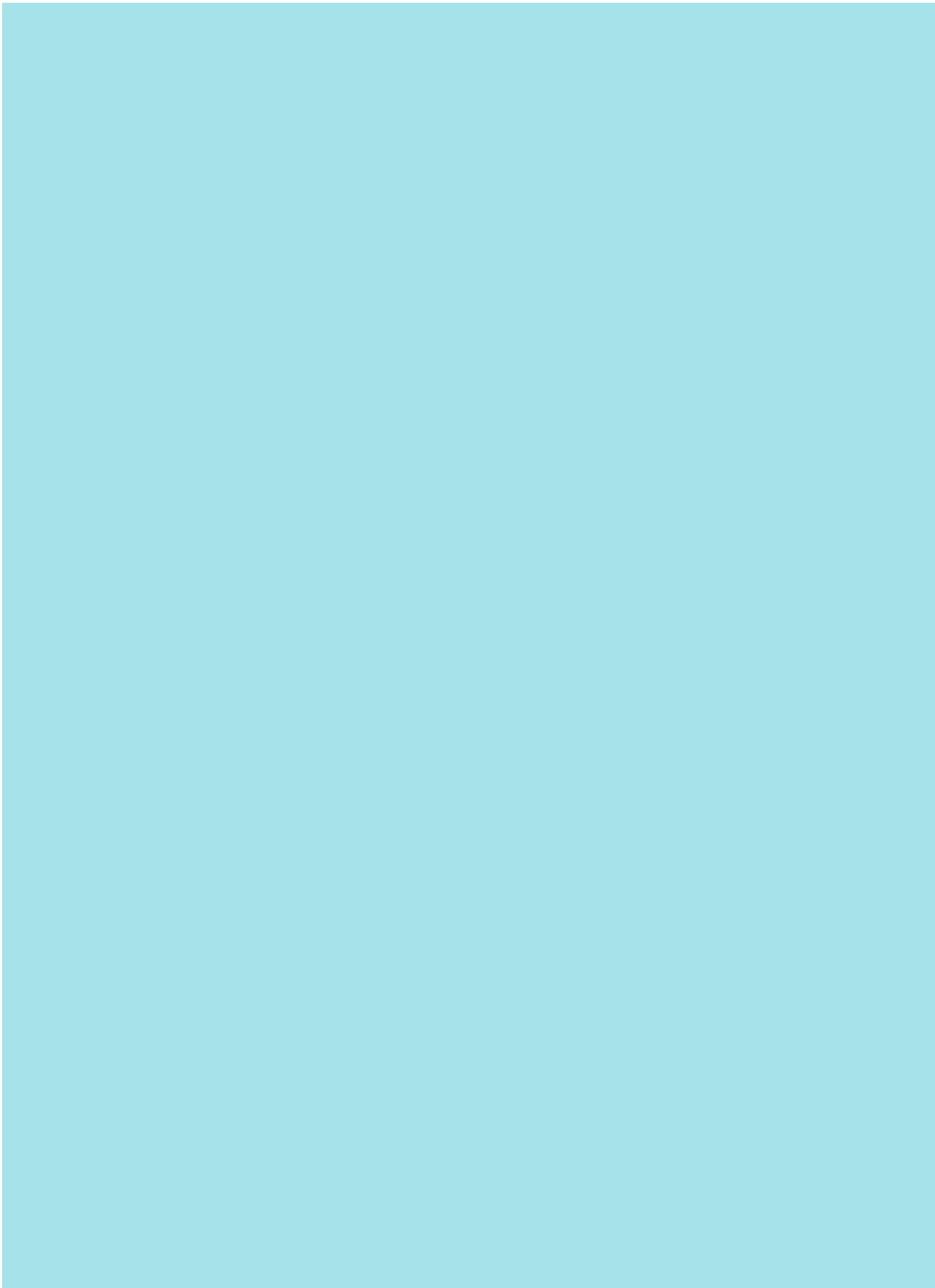




European Standards for Waste Electrical and Electronic Equipment (WEEE)

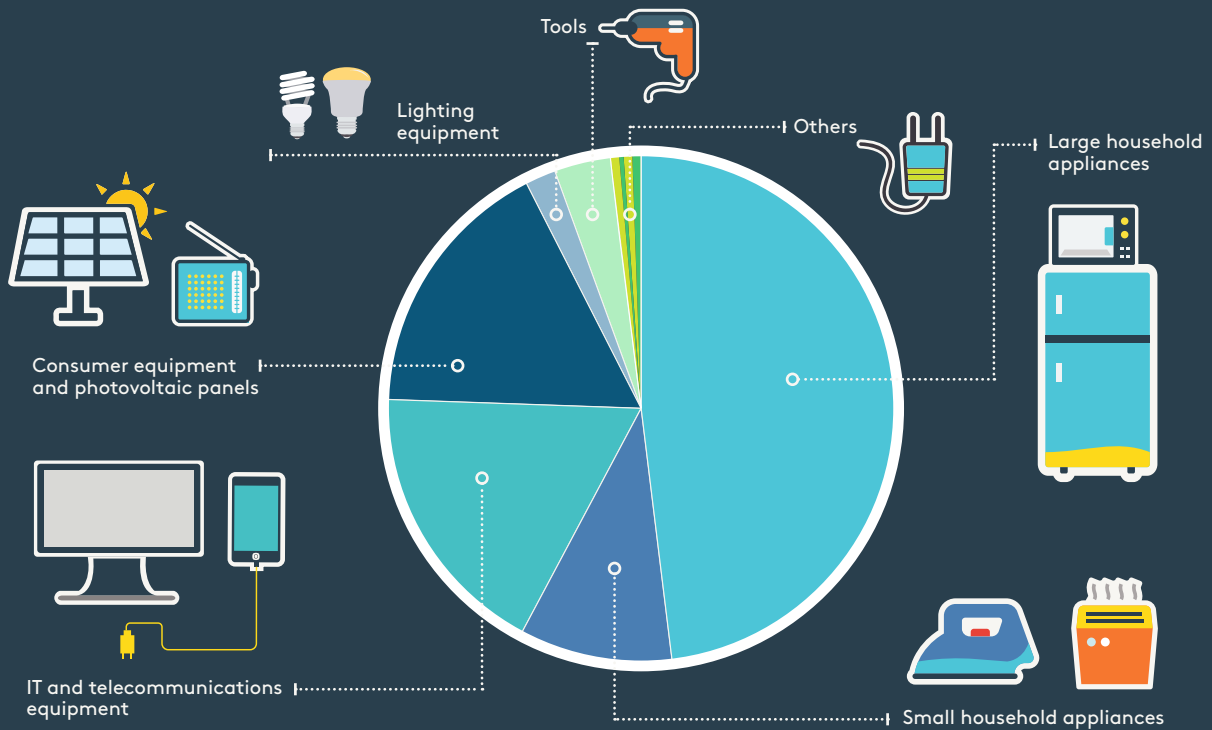
Collection | Transport | Re-use | Treatment



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EEE and WEEE



graphic: collected WEEE

WHAT IS EEE AND WEEE?

EEE stands for Electrical and Electronic Equipment and WEEE for Waste of EEE. The WEEE Directive 2012/19/EU addresses producers and importers of EEE in Europe. It sets requirements and targets for the collection and treatment of WEEE.

An important aspect of the legislation is Extended Producer Responsibility or EPR. In accordance with this, the producer is responsible for the end-of-use treatment of consumer products, the amount and degree of product recovery and the minimization of the environmental impact of waste materials.

Producers and importers report on the amount of EEE which was put on the market, and treatment operators on the amount of WEEE treated. The reported amounts provide information on how targets were met.

In 2014 the officially reported overall EEE volume put on the market was ± 7.5 million tonnes, and the collected WEEE volume was ± 3.1 million tonnes (Eurostat 2014).

The European standards, developed in support of the WEEE Directive, cover all product categories and address the collection, transport and treatment, including preparation for reuse of the WEEE.

Why European Standards for WEEE?



— WHY CENELEC?

In accordance with the requirement in the WEEE directive (article 8.5), the European Commission requested European Standardization Organisations (ESOs) to develop European standards (ENs) for the collection, logistics and treatment, including recovery, recycling and preparing for re-use, of WEEE.

The process of making standards is transparent and consensus-based. The European Standards (ENs) are reviewed every 5 years and the Technical Specifications (TS) every 3 years, thereby reflecting the state-of-the-art of technologies and market needs, and they can be used to support legislation. Standards have a harmonizing effect and can remove trade barriers and enhance economic growth.

The development of the European standards for WEEE was broadly supported by stakeholders working in the field of electronic and electrical equipment.

Experts from national committees participated, as well as producers' federations, take-back systems and the recycling industry. NGOs and independent experts and scientists were also involved in the development of the standards.

The objectives of the standards are to:

- Assist treatment operators in fulfilling the requirements of the WEEE Directive without placing unnecessary administrative burdens on operators of any size, including small and medium sized enterprises (SMEs).
- Give additional guidance to operators.
- Cover the treatment of waste from all products within the extended scope of the WEEE Directive.
- Cover the collection and logistics of WEEE to allow proper treatment.

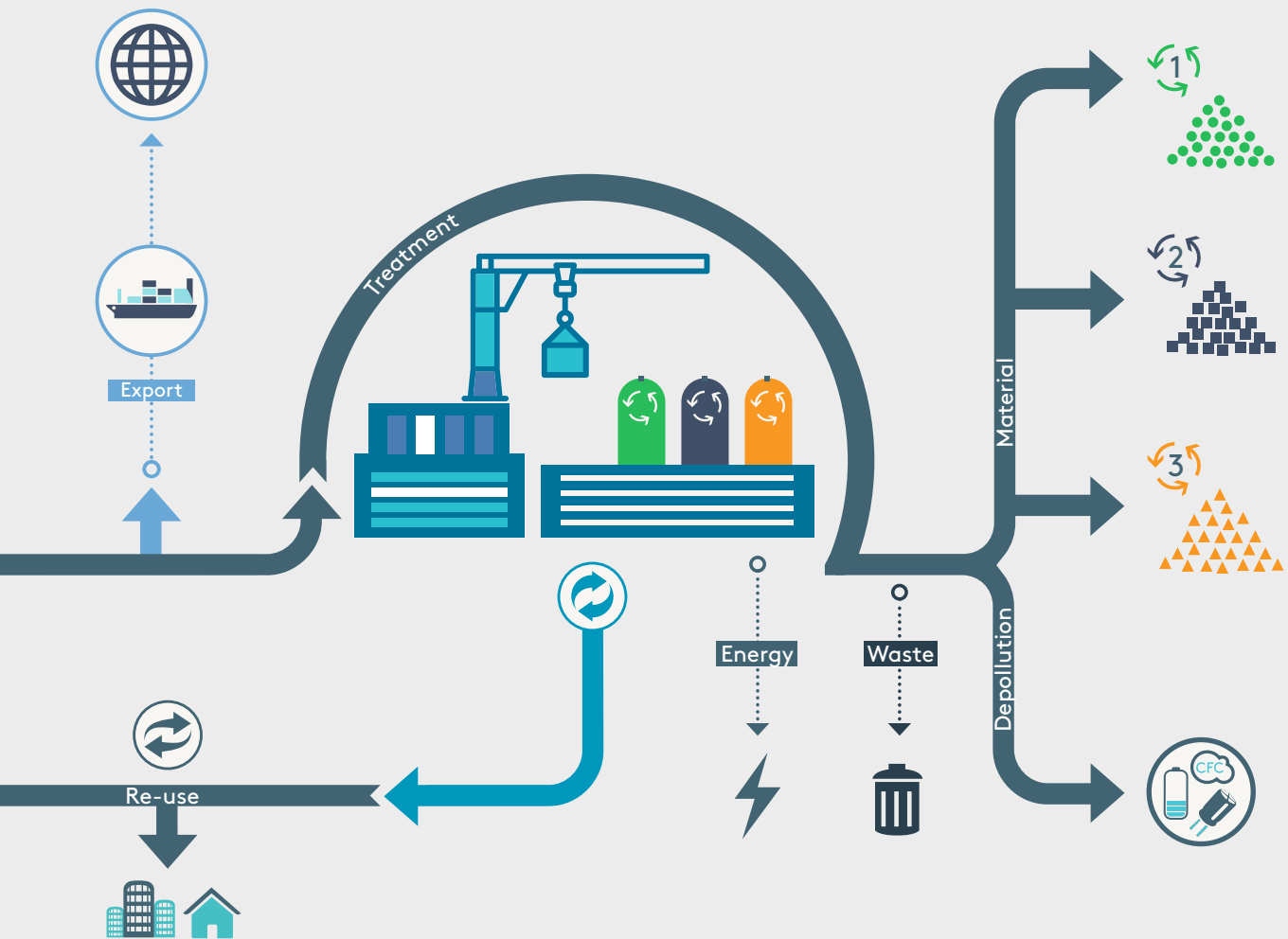
Collection, transport, re-use and treatment



THE PROCESS OF COLLECTION, TRANSPORT, RE-USE AND TREATMENT OF WEEE

In Europe, dedicated systems are in place to collect and transport WEEE for the purpose of re-use, recycling and recovery. During the collection process, WEEE is funnelled from decentralised collection points and collection facilities (e.g. retailers or municipalities), sometimes via sorting centres, to treatment operators.

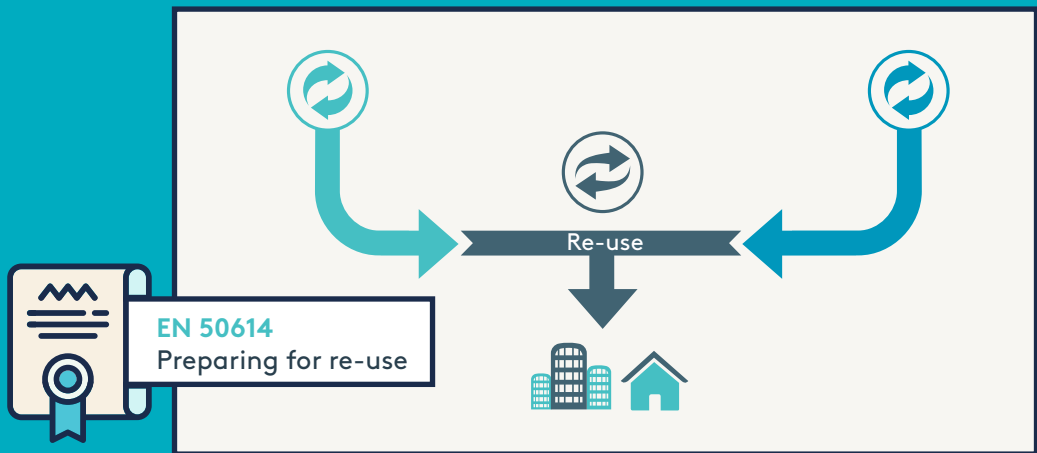
WEEE is recycled by specialised re-use and treatment operators. WEEE contains a wide variety of metals, metal-alloys, plastics, glass and other materials. The treatment process steps aim to liberate, separate and refine these materials. Since the composition of products varies, different materials are targeted and different treatment technologies are used during the recycling.

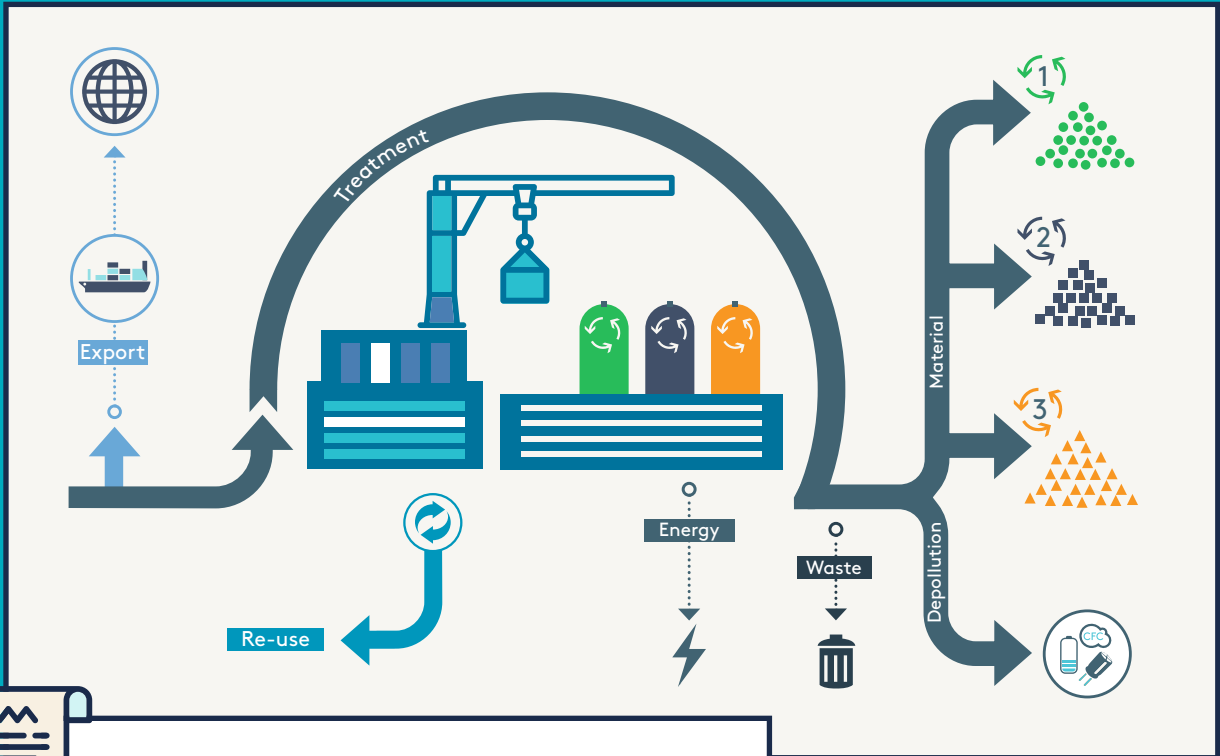


Recycling of e.g. a laptop requires a completely different approach than recycling of a washing machine or a refrigerator. Treatment processes are often advanced and innovative processes that are adapted to the changing material composition of EEE over time.

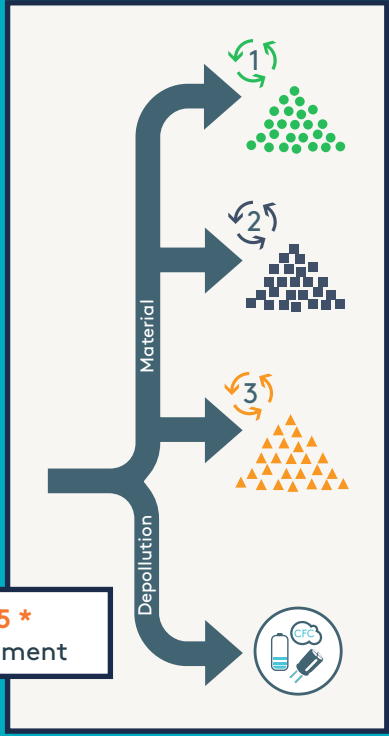
A cascade of treatment operators often form a chain of treatment activities, where interim fractions (e.g. plastic or iron fractions) are processed by downstream operators, which may be situated in other countries. The ENs and TSs cover the entire chain, even if WEEE or fractions thereof are transported cross-border or outside the EU.

An overview of European Standards for WEEE





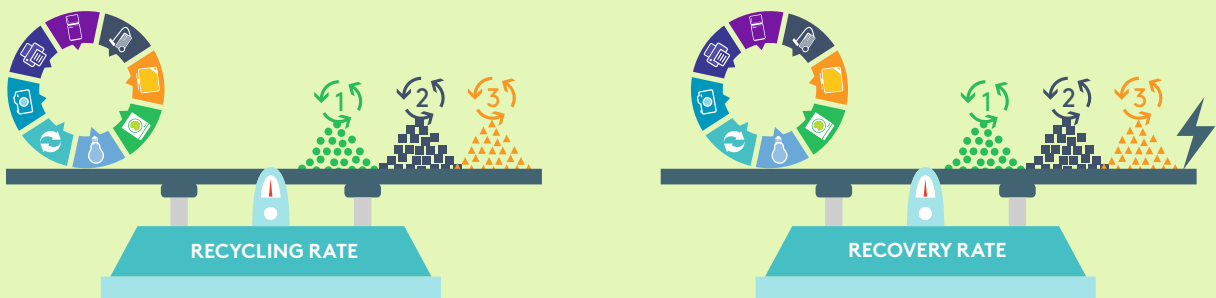
- EN 50625-1; TS 50625-3-1**
General treatment and depollution requirements
- EN 50625-2-1; TS 50625-3-2**
Lamps
- EN 50625-2-2; TS 50625-3-3**
Displays (CRT FPD)
- EN 50625-2-3; TS 50625-3-4**
Temperature exchange equipment
- EN 50625-2-4; TS 50625-3-5**
Photovoltaic panels



TS 50625-5 *
Final treatment

* not in mandate

Recycling and Recovery rates



STANDARDS SPECIFY HOW TO CALCULATE RECYCLING AND RECOVERY RATES

What is recycling and recovery?

In the standards the definitions of recycling and recovery originate from the Waste Framework Directive (2008/98/EC):

- Recycling concerns the reprocessing of waste materials into products, materials or substances for the original or other purposes but does not include energy recovery or the reprocessing into materials that are to be used as fuels or backfilling. Recycling targets in the WEEE Directive also include "preparing for re-use".
- Recovery means recycling plus the recovery of energy.

The WEEE Directive (Annex V) sets recycling and recovery targets for different WEEE categories but the methodology for calculating recycling and recovery rates is complex and is not uniform across Europe, resulting in reported rates that cannot be compared.

The ENs and the TSs address depollution and clearly define target values for batteries and capacitors, and limit values for concentrations of hazardous substances to be achieved by the end of the treatment processes.

The methodology described in the standards will help to benchmark the recycling and recovery rates across Europe, and as such it can create a transparent, level playing field for the various European stakeholders.

Depollution



STANDARDS SPECIFY HOW TO MEET DEPOLLUTION REQUIREMENTS

WEEE contains substances of concern which can be hazardous, for example mercury, polychlorinated biphenyls, cadmium, volatile fluorocarbons and some brominated flame retardants.

According to the WEEE Directive (Annex VII), materials and components that contain hazardous substances require dedicated handling and treatment to avoid environmental pollution and the associated health and safety risks. These materials and components are removed in a process that is called depollution.

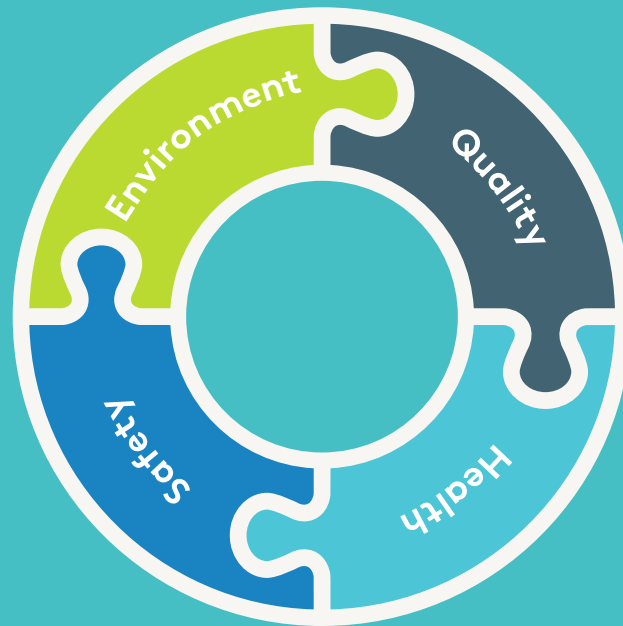
The ENs and the TSs address depollution and clearly define target values for batteries and capacitors, and limit values for concentrations

of hazardous substances to be achieved by the end of the treatment processes.

A very important aspect in showing compliance with target and limit values is the way WEEE and streams resulting from treatment are sampled and analysed. A substantial part of the standards, especially the TS 50625-3-1, addresses the procedures for specifying the concentrations of the substances of concern.

The standards provide tools and protocols that allow treatment operators to assess and design their depollution performance and meet the legal requirements.

Management requirements



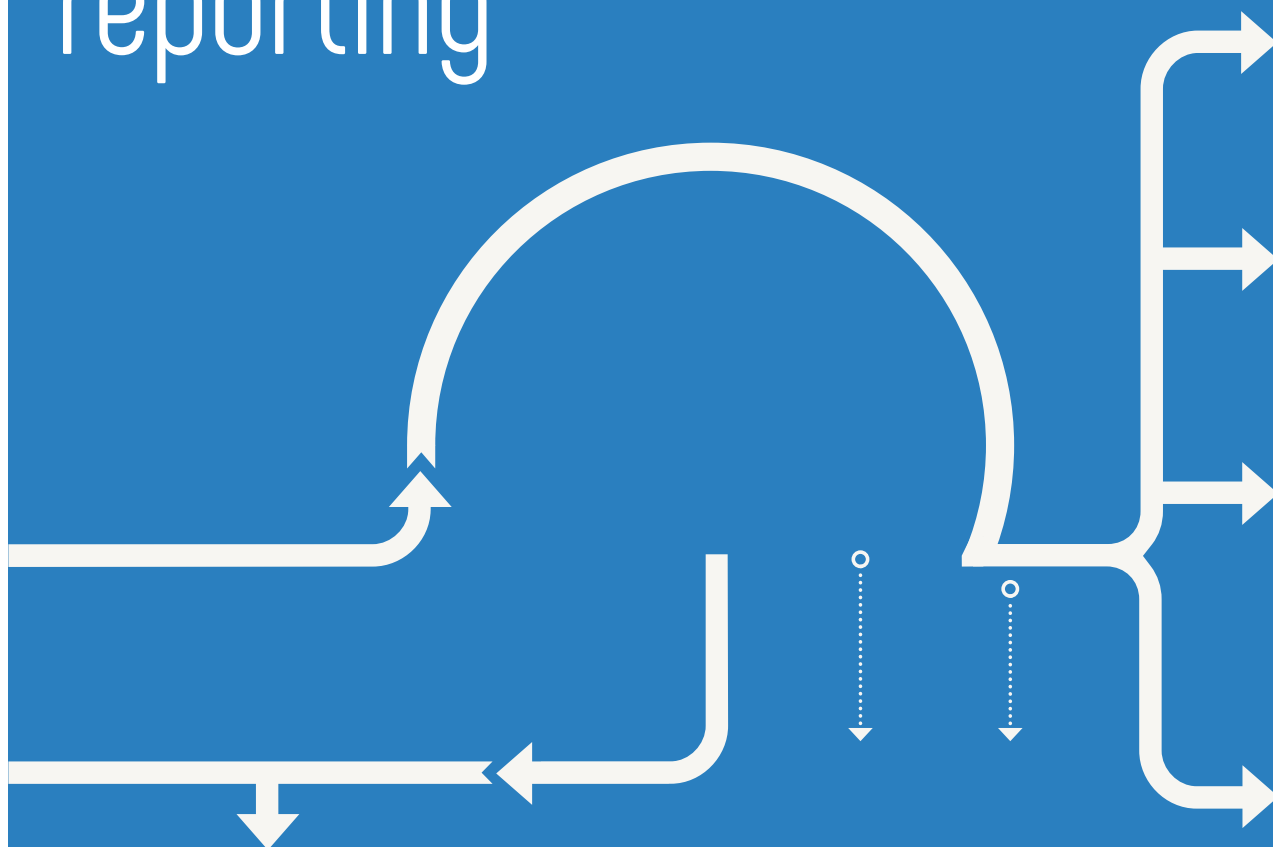
ADMINISTRATIVE PROCESSES ADDRESSED IN STANDARDS

Along with detailed technical requirements, the standards also specify administrative and organisational requirements. The administrative and organisational requirements concern management principles, environmental, health and safety requirements, and include:

- > A system for management requirements,
- > Demonstration of continuous improvement of activities by a review and management process,
- > Legal compliance report,
- > Organisational plan,
- > Work instructions,
- > Identification of hazards, the assessment of risk and, where appropriate, the elimination or reduction of the risk, and
- > Training in emergency response, occupational health and safety measures.

All of these processes need to be documented.

Monitoring and reporting



STANDARDS REQUIRE DOWNSTREAM MONITORING

The WEEE directive requires treatment facilities to report and record incoming WEEE and treated streams that leave the facilities. Treatment may consist of a cascade of treatment operations within the same country or in another country, both inside or outside Europe.

The standards require the first treatment operator to monitor downstream fractions.

Downstream monitoring within this chain of treatment activities provides a verifiable and accurate basis for the calculation of the recycling and recovery rates, and it provides a clear insight into the hazardous waste streams processed by downstream operators. By doing so, operators can demonstrate that WEEE is treated in a way that complies with the legislation and that state of the art technologies are being used.

INDICATION OF THE LINKS BETWEEN THE SUBJECTS COVERED IN THE STANDARDS AND THE WEEE DIRECTIVE

SUBJECT	WEEE DIRECTIVE ARTICLES AND ANNEXES	ADDRESSED IN STANDARDS *
Disposal and transport of collected WEEE for proper treatment and preparing for re-use	6.1 and 6.2	✓
Proper treatment	8.1, 8.2 and 8.3	✓
Permits	9.1 and 9.3	✓
Shipments of WEEE	10.2	✓
Recovery targets, calculation method and monitoring	11.1, 11.2, 11.4	✓
Registration, information and reporting	16.4	✓
Inspection and monitoring	23.1	✓
Categories of EEE covered	ANNEX I, ANNEX III	✓
Indicative list of EEE which falls within categories	ANNEX II, ANNEX IV	✓
Minimum recovery targets	ANNEX V	✓
Minimum requirements for shipments	ANNEX VI	✓
Selective treatment for materials and components of WEEE	ANNEX VII	✓
Technical requirements for proper treatment	ANNEX VIII	✓

* a European Technical Report is planned for further information

Compliance with European Standards for WEEE



Laws and regulations may refer to standards*, however the use of standards remains voluntary. Standard users can demonstrate compliance with a standard through a third-party conformity assessment, done by an independent accredited certification body that issues the relevant certificate, or by means of a self-declaration.

* for example Belgium, France, the Netherlands, Ireland, Slovenia.

About CENELEC



■ CENELEC Members

The European Committee for Electrotechnical Standardization (CENELEC) is one of three European Standardization Organizations officially recognized by the European Union (EU Regulation 1025/2012).

CENELEC provides a platform for the development of European Standards (ENs) and other deliverables through a transparent and consensus-driven process in the fields of electricity, electronics and associated technologies.

CENELEC brings together the National Electrotechnical Committees of 34 European countries including all of the EU member states, three EFTA countries (Iceland, Norway and Switzerland), Serbia, Turkey and the former Yugoslav Republic of Macedonia. CENELEC and its members work with various stakeholders, including industry, SMEs, societal stakeholders, public sector bodies, academics and researchers.

CENELEC collaborates with the other European Standardization Organizations, the European Committee for standardization (CEN) and European Telecommunications Standards Institute (ETSI) to develop joint activities in areas of common interest, and to promote and strengthen the European Standardization System for the benefit of businesses, consumers and society as a whole.

CENELEC cooperates with the European Commission to develop standards and other deliverables

that support the implementation of EU policies and legislation.

CENELEC works in partnership with the International Electrotechnical Commission (IEC) to coordinate their respective activities and enable the alignment of European and international standards.

For more information, please visit:
www.cenelec.eu

CENELEC members

 AFNOR-FrSS-UTE	 ILNAS	 NSAI
 ASRO	 IPQ	 OVE
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 CEI	 LST	 SIST
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 DS	 MSZT	 UNMS
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 Electrosuisse	 NEK	
 HZN	 NQIS/ELOT	

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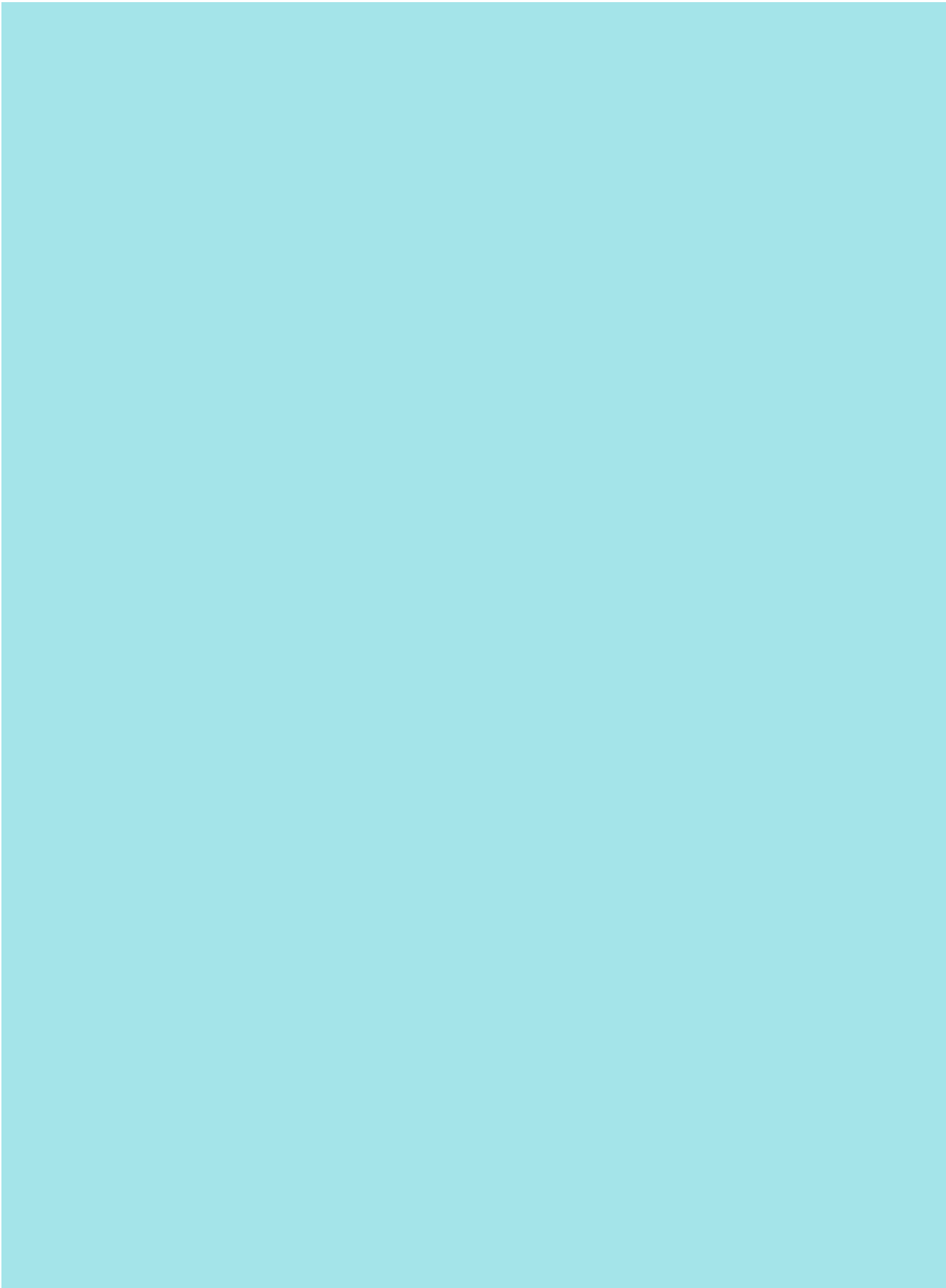
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The background of the page is a light blue gradient with a repeating pattern of white line-art icons representing diplomas or certificates. Each icon consists of a rectangular frame with a ribbon at the bottom and a wavy line at the top, symbolizing a document or award.

more information:
www.cenelec.eu

The CENELEC logo features the word "CENELEC" in a bold, blue, sans-serif font. A stylized lightning bolt graphic is positioned behind the letters "N" and "E", extending upwards and downwards from the center of the text.

CENELEC