

Top 5 **Standards and Regulations** **Driving Sustainability** **Strategies Today**

Building a Sustainable Future Through Innovation



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Shaping Innovation

Sustainability in the AV and electronics industries is no longer guided by ambition alone. More and more, it's shaped by regulation. Around the world, governments are implementing policies that hold organizations accountable for how products are designed, produced, used, and recycled. For manufacturers, consultants, systems integrators, and end users alike, understanding these standards is essential to maintaining compliance, meeting customer expectations, and staying competitive.

This article explores five of the most influential frameworks driving sustainability strategies today:

1. The Waste Electrical and Electronic Equipment (WEEE) Directive
2. Extended Producer Responsibility (EPR) Directives
3. The China Energy Label (CEL)
4. The Ecodesign for Sustainable Products Regulation (ESPR) with accompanying Digital Product Passports
5. The Corporate Sustainability Reporting Directive (CSRD)

Together, these policies are influencing how technology is made, managed, and measured, pushing the AV ecosystem toward greater transparency, efficiency, and circularity, and ultimately shaping innovation.



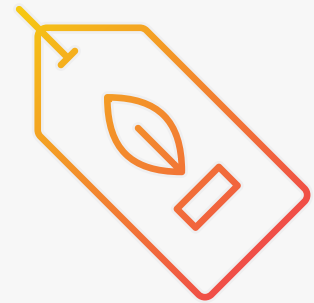
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Ecodesign for Sustainable Products Regulation (ESPR) and Digital Product Passport

Regulation Overview

The Ecodesign for Sustainable Products Regulation (ESPR) entered into force on 18 July 2024 and applies to all products sold across the European Union. Its goal is to make sustainable products the norm by extending eco-design obligations well beyond energy-using products.

- Expands eco-design requirements to almost all physical goods, not just energy-related ones.
- Covers aspects like durability, repairability, recyclability, and product carbon footprints.
- Introduces a Digital Product Passport (DPP) to track product sustainability data; this will be mandatory from 2027 on.



Product-specific ESPR rules will be rolled out gradually, with full implementation expected by 2027.

Who It Impacts

ESPR impacts manufacturers, distributors, integrators, and end users.

- **Manufacturers:** Must design products to meet new sustainability standards, document technical and sustainability specifications per ESPR guidelines, and create Digital Product Passports by 2027.
- **Distributors and Integrators:** Must verify that equipment sourced, sold, installed, and maintained meets ESPR requirements and data transparency mandates.
- **Consumers:** Gain easier access to transparent product information via Digital Product Passports (DPPs), including details on durability, repairability, recycled materials, embodied carbon, and energy efficiency.
- **Consultants/service-providers:** Will play a critical role in advising clients on compliance strategy, data systems, and downstream obligations.

Why It Matters

ESPR marks a major evolution. It sets new rules for how products should be made, used and disposed of to reduce waste and their environmental impact. It supports the EU's Circular Economy Action Plan and Green Deal, aiming to reduce climate impact and promote resource efficiency.

For AV companies, this means that product design, supply chain transparency, and lifecycle management are now central to regulatory compliance, not just sustainability ambitions.



Key Requirements

The ESPR sets out a framework for establishing product-specific rules. These rules will vary by product category, but generally include:

- Design for **durability**, reliability and long useful life.
- Ensure **repairability and upgradability** (e.g., accessible spare parts, modular design).
- Promote use of **recycled materials** and ensure products/components are **recycle-ready**.
- Disclose **environmental footprint** (including product-carbon footprint, substances of concern) through a **Digital Product Passport (DPP)**.

Support **resource and energy efficiency** across the product lifecycle and reduce waste where applicable.

Business Implications

For AV manufacturers, ESPR means embedding circular design thinking into new products (for example, modular digital signage components, user-replaceable batteries in conferencing gear) and building data systems capable of supporting DPPs.

Integrators, service providers, and consultants can differentiate themselves by helping clients map compliance roadmaps, audit legacy portfolios, and evolve procurement practices around product sustainability criteria.

Forward-looking organizations can view ESPR as a market differentiator, driving innovation, supply chain collaboration, and new circular business models.

2

China Energy Label (CEL)

Overview

The China Energy Label (CEL) is a mandatory system that indicates the energy efficiency of products sold in China. Launched on March 1, 2005, under the Measures for the Administration of Energy Efficiency Labels, CEL initially applied to appliances like refrigerators and air conditioners.

It has since expanded to over 25 product categories, including Pro AV-relevant equipment such as displays, monitors, and power supplies. Rack-mounted and tower servers, increasingly important in AV infrastructure, are included in the 17th product batch and must comply starting December 1, 2025.

Products must be tested in accordance with Guobiao (GB) standards, China's national standards developed by the Standardization Administration of China. CEL also requires registration with authorities and visible labeling that rates products from Grade 1 (most efficient) to Grade 5.

The program supports energy savings, emissions reduction, and China's broader carbon-neutrality goals, making it a key compliance factor for AV/IT and Pro AV companies.



Who It Impacts

CEL applies to all manufacturers, importers, and distributors of regulated products in the Chinese market. This includes lighting, office electronics, and some industrial equipment. For AV/IT and Pro AV companies, CEL is especially relevant for displays, monitors, power systems, and servers.

Why It Matters

- **Market access:** CEL is required for entry into retail and commercial channels.
- **Product differentiation:** Products with more efficient grades appeal to energy-conscious buyers.
- **Sustainability alignment:** Supports both end-user and government carbon emissions reduction targets.
- **Enforcement:** Non-compliance can lead to penalties, delisting, and blocked sales by China's market regulator (SAMR).



Key Requirements

- **Testing and Registration:** Products must be tested by accredited labs and registered in the CEL database.
- **Labeling:** The standardized energy label must appear on the product, packaging, and manuals.
- **Grades:** Efficiency is rated from 1 (most efficient) to 5 (least efficient); lower grades may be phased out.
- **Updates:** As standards evolve, products must be retested or redesigned to remain compliant.
- **Category Expansion:** The list of covered products grows; companies must monitor changes to ensure compliance.

Business Implications

For manufacturers, importers, and integrators, CEL is both a compliance requirement and a market differentiator. It enables solutions providers to specify energy-efficient products with confidence, helps clients meet sustainability goals, and supports industry-wide progress toward higher efficiency, lower emissions, and greater competitiveness in China.



3

Waste Electrical and Electronic Equipment (WEEE) Directive

Overview

The Waste Electrical and Electronic Equipment (WEEE) Directive is a European regulation aimed at preventing improper disposal of electronic waste and encouraging the recovery, recycling, and responsible treatment of electronic equipment at the end of its life cycle. It supports the European Union's (EU) broader sustainability goals by advancing the circular economy, cutting carbon emissions, and improving supply chain transparency.

The original WEEE Directive (2002/96/EC), effective since February 2003, introduced free collection programs for consumers to return waste electronics. The current version, Directive 2012/19/EU, came into force on 14 February 2014 and remains foundational to newer regulations, including Extended Producer Responsibility (EPR) laws.

Who It Impacts

WEEE applies to any company or organization that manufactures, sells, distributes, integrates, recycles, or handles electronics within the EU. This includes end users and indirectly impacts consultants and service providers who procure or specify electronic equipment.

Why It Matters

Electronic waste (E-waste) is among the fastest growing waste streams in Europe and globally. It covers everything from mobile phones and displays to household appliances and medical devices.

E-waste contains complex materials—some hazardous, others valuable. Improper disposal can release toxic substances that harm public health and ecosystems. On the other hand, responsible treatment allows for the recovery of critical raw materials, supporting both environmental and economic goals.

As electronic devices proliferate, the challenge of managing toxic waste grows. The WEEE Directive plays a key role in mitigating these risks and supporting a more sustainable product lifecycle.

Key Requirements

The Directive outlines specific responsibilities and targets:

- **Design:** Products must support easy dismantling, reuse, and recycling.
- **Collection and Recycling:** Free consumer takeback is required, with recovery targets of 50–80% by product type.
- **Financing:** Producers cover collection, treatment, and disposal. Post-2005 products need financial guarantees; earlier waste costs are shared.
- **Labeling and Information:** Products must display the crossed-out bin symbol; consumers must be informed of recycling options, and recyclers must receive technical data.

Business Implications

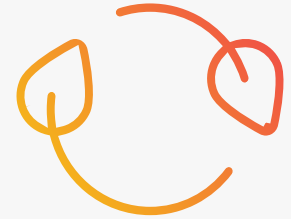
- WEEE enforces Extended Producer Responsibility, requiring companies to manage environmental impacts across the product lifecycle.
- For AV and IT manufacturers, distributors, and integrators, this affects product design, traceability, labeling, and participation in recycling schemes. Even stakeholders not directly regulated by WEEE may feel its effects through increased pressure for supply chain transparency and adoption of the circular economy, reducing environmental risk while building brand trust.

4

Extended Producer Responsibility (EPR) Directives

Overview

Extended Producer Responsibility (EPR) is a regulatory framework that requires producers to take accountability for the entire life cycle of their products, from design to end-of-life recycling and disposal. The European Union introduced updated EPR directives in February 2025, covering packaging, electronics, and batteries. Similar rules exist in the UK, Spain, and other regions, including some states in the U.S.



Who It Impacts

Manufacturers, importers, distributors, and integrators that place electronics or packaging on the EU market directly have obligations under EPR. Indirectly, this rule also impacts consultants, service providers, and end-users, who must navigate these obligations in their supply chains or procurement processes.

Why It Matters

EPR is central to the EU's shift toward a circular economy. For AV/IT companies, compliance is not just about avoiding penalties; it's also about meeting customer expectations for sustainable product stewardship. Businesses that can demonstrate responsible end-of-life management gain a competitive edge and build deeper engagements with clients.



Key Requirements

- **Registration** as a producer in each EU country where products are sold.
- **Participation in Producer Responsibility Organizations (PROs)** to manage collection, recycling, and reporting.
- **Data reporting and fee payment** based on packaging and product volumes, recyclability, and materials used.
- **Packaging compliance** by 2030, when all packaging must be recyclable or reusable.
- **Labeling** with clear disposal and sorting instructions, varying by country.



Business Implications

For manufacturers, EPR requires redesigning packaging and product lifecycles with recyclability in mind. Solutions providers and integrators may need to register in each EU market, contract with PROs, and manage reporting if they meet importer thresholds.

Consultants play a critical role in helping companies navigate country-specific obligations. End-users, while not directly regulated, benefit from transparent recycling systems and may incur new disposal fees.

Ultimately, EPR pushes the AV/IT sector toward shared accountability and creates new opportunities for service-based sustainability solutions.

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Corporate Sustainability Reporting Directive (CSRD)

Overview

The Corporate Sustainability Reporting Directive (CSRD) significantly expands the scope and depth of sustainability disclosures required from companies operating in or connected to the European Union (EU). Its goal is to enhance transparency and accountability by mandating standardized reporting on environmental, social, and governance (ESG) performance.

A central feature of CSRD is its move toward integrated reporting for in-scope public and large companies, by requiring financial and non-financial information to be combined in a single, cohesive management report. This offers investors, stakeholders, and customers a clearer view of long-term value creation, resilience, and sustainability-related risks and opportunities.

Who It Impacts

The 2025 Omnibus package substantially reduced the number of in-scope companies and delayed reporting timelines. This aligned CSRD more closely with the largest EU and non-EU groups while preserving coverage of major market actors. Many mid-sized public and private entities that were initially expected to report under "Wave 2" are now carved out or deferred, with those still in scope first reporting in 2028 for FY2027.

EU-based companies must comply if they meet:

- Over 1,000 employees
- Net turnover above €450 million or balance sheet total over €25 million

Non-EU companies fall under CSRD if they:

- Generate €450 million+ net turnover in the EU for each of the last two consecutive financial years, and
- Have a large EU subsidiary or branch with a net turnover of at least €200 million, in the last financial year.

Why It Matters

For AV and IT businesses, CSRD marks a shift from voluntary ESG reporting to a regulated, auditable mandate. It enables easier comparison of sustainability performance across companies.

Disclosures must address both how sustainability risks affect business and how the business impacts people and the planet. This is known as double materiality.

Non-compliance may lead to reputational harm, regulatory penalties, and loss of investor confidence. But compliance offers upside: stronger brand credibility and appeal to ESG-conscious clients and employees.

More broadly, CSRD is driving innovation. Companies are redesigning products and processes to meet ESG goals, such as:

- Lower energy use in operation
- Longer product lifecycles
- Improved recyclability
- Better tracking of related carbon emissions

Key Requirements

- **Double Materiality:** Sustainability issues that affect the company and how the company affects society and the environment.
- **Mandatory ESG Reporting:** Include ESG data in annual management reports.
- **European Sustainability Reporting Standards (ESRS):** Follow ESRS for structure and content.
- **External Assurance:** ESG disclosures must be audited.

Business Implications

WEEE enforces Extended Producer Responsibility, requiring companies to manage environmental impacts across the product lifecycle.

For AV and IT manufacturers, distributors, and integrators, this affects product design, traceability, labeling, and participation in recycling schemes. Even stakeholders not directly regulated by WEEE may feel its effects through increased pressure for supply chain transparency and adoption of the circular economy, reducing environmental risk while building brand trust.



MOVING FORWARD

As sustainability regulations expand and align globally, AV and electronics companies have a clear mandate: build environmental responsibility into every stage of the product and service lifecycle. While compliance may begin as a legal requirement, it quickly becomes a catalyst for innovative design, operational efficiency, and stronger partnerships across the value chain.

Whether you manufacture devices, integrate systems, or advise clients, understanding these five standards will help you anticipate change rather than react to it. Together, we can turn compliance into opportunity and lead an industry transformation that connects innovation with accountability for a more sustainable future.

Glossary

AV (Audiovisual): Technology that combines sound and visual components, such as projectors, displays, speakers, microphones, and control systems, for communication, presentation, or entertainment purposes.

Circular Economy: An economic model aimed at eliminating waste and keeping products, components, and materials in use for as long as possible through reuse, repair, refurbishment, and recycling.

DaaS (Device as a Service): A service model in which hardware, software, and support are provided to clients on a subscription basis, enabling upgrades and reducing waste through refurbishment and reuse.

Ecodesign: A design approach that considers environmental impacts throughout a product's life cycle, aiming for energy efficiency, modularity, durability, and minimal use of hazardous materials.

EPEAT (Electronic Product Environmental Assessment Tool): A global rating system for greener electronics, evaluating products based on environmental criteria such as energy use, recyclability, and chemical content.

ESG (Environmental, Social, and Governance): A set of criteria used to evaluate a company's environmental responsibility, social impact, and governance practices.

GRI (Global Reporting Initiative): An international standard for sustainability reporting, providing frameworks and metrics for organizations to disclose their environmental, social, and governance performance.

IFRS S2: A sustainability disclosure standard issued by the International Financial Reporting Standards Foundation, focusing on climate-related risks and opportunities.

KPI (Key Performance Indicator): A measurable value that indicates progress toward specific objectives, such as energy savings, waste reduction, or increased use of refurbished equipment.

LCA (Life Cycle Assessment): A systematic method for evaluating the environmental impact of a product across all stages of its life, from raw material extraction to disposal.

Modular Design: A product design approach that uses interchangeable and upgradeable components, allowing for easier repairs, upgrades, and waste reduction.

PCF (Product Carbon Footprint): The total greenhouse gas emissions associated with a product's life cycle, measured in carbon dioxide equivalent (CO₂e).

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals): An EU regulation aimed at protecting human health and the environment from risks posed by chemicals.

Remote Management: The ability to monitor, configure, and troubleshoot systems without traveling to the site, reducing emissions and improving efficiency.

RoHS (Restriction of Hazardous Substances): An EU directive that limits the use of specific hazardous materials in electrical and electronic equipment.

R2v3: The latest version of the Responsible Recycling standard for electronics recyclers, ensuring environmentally sound and safe management of electronic waste.

SLA (Service Level Agreement): A contractual commitment between a service provider and a client defining the quality, availability, and responsibilities for provided services.

Sustainable Packaging: Packaging designed to minimize environmental impact, typically recyclable, compostable, reusable, and compliant with regulations such as the EU Packaging and Packaging Waste Directive.

SDGs (Sustainable Development Goals): A set of 17 global goals established by the United Nations to address issues such as poverty, inequality, climate change, and environmental degradation by 2030.

WEEE (Waste Electrical and Electronic Equipment): An EU directive that sets requirements for the collection, recycling, and recovery of electronic waste to reduce environmental impact.